Revised
Traffic Impact Study

Here @ Kansas
A Mixed-Use Redevelopment

SWC of Indiana Street and 11th Street
Lawrence, Kansas

Prepared
for
Landplan Engineering, P.A.

Prepared
By

MGineering Solutions
Serving Communities Through Excellence
Kansas - Missouri - Michigan - California

MEHRDAD GIVECHI
LICENSED
9/21/16
14522
KANSAS
PROFESSIONAL ENGINEER

Mehrdad Givechi, P.E., P.T.O.E.

September 2016

TABLE OF CONTENTS

Introduction

Background

On 12/15/2013, a Traffic Impact Study (TIS) was completed for the proposed HERE @ Kansas mixed-use development to be located on the southwest corner of the intersection of Indiana Street and 11th Street in Lawrence, Kansas. Since then, a number of changes to the development project have instigated the need for a revised traffic impact study. The purpose of this report is to document the changes from the original plan and reassess the impact of these changes on the surrounding street network in the study area.

Proposed Changes to the Project

The proposed changes consist of:

- An increase in the number of dwelling units from 172 to 237 units;
- An increase in the number of bedrooms from 592 to 624 bedrooms;
- A reduction in the general retail space from 11,000 to 7,676 sq. ft.;
- An addition of a restaurant with an area of 5,882 sq. ft.;
- A reduction in the number of parking stalls in the garage from 592 to 510 stalls with egress and ingress from Mississippi Street only. As a result of this reduction, additional parking spaces will be provided near the site on the northwest corner of the intersection of Fambrough Drive and Mississippi Street. The two existing apartments on this parcel of land will be razed and the land will be converted to a surface parking lot having 68 parking stalls. Access to this surface lot will be provided at two locations – one on Mississippi Street and one on Illinois Street. Moreover, there will be 108 on-street angled parking spaces along Indiana and Mississippi Streets (57 on Mississippi and 51 on Indiana Street);
- A number of geometric improvements will be made to improve safety and operational efficiency of traffic in the study area. They include (See Figure 13 of Appendix I for a concept layout):
    - Realignment of Fambrough Drive to the south in order to line up with 11th Street creating a 4-legged intersection at Mississippi Street. The new lane configurations will consist of:

- A dedicated left-turn lane and a shared through and right-turn lane for north and south approaches (Mississippi Street);
- A dedicated right-turn lane and a shared through and left-turn lane for west approach (realigned Fambrough Drive); and
- One shared lane for east approach (11th Street).

This intersection will be controlled by STOP signs on all approaches (See justification in the *Traffic Signal Warrant Analysis* section of this report).

- Slight relocation of the intersection of Fambrough Drive and Illinois Street to the west and creating a 4-legged intersection with the south leg providing access to KU's Lot 94. Doing so, will eliminate the direct access to Lot 94 from Mississippi Street. The lane configurations for this intersection will consist of:
  - A dedicated left-turn lane and a shared through and right-turn lane for east and west approaches (Realigned Fambrough Drive); and
  - One shared lane for north and south approaches (Illinois Street/Access to KU's Lot 94)

  This intersection will be controlled by STOP signs on Illinois Street and access to KU's Lot 94.

Site Description

The proposed redevelopment site is located on the southwest corner of the intersection of 11th Street and Indiana Street, in proximity to the main campus of the University of Kansas in Lawrence, Kansas. It is bounded by Indiana Street to the east, 11th Street to the north, Mississippi Street to the west and residential development to the south (See Location Map, Figure 1 of Appendix 1).

Pre-Development Land Use

At the time this report was prepared, the construction of the HERE @ Kansas development was far along and near completion. Under the pre-development conditions, the project site was occupied by the "Berkeley Flats" apartment complex comprising of 10 individual buildings with a total of 102 dwelling units. In addition, there was a single family dwelling unit nested in the middle of the site with frontage on Indiana

Street. Due to steep topography along the west side of Indiana Street, access to this single family dwelling was provided in the back via “Berkeley Flats” parking lot.

The area around and near the site is fully developed with predominate use as residential and student housings with the Oread Hotel a half block to the south and the university football stadium across the street to the west.

Proposed “HERE @ Kansas” Development

Under the proposed development plan, the entire “Berkeley Flats” complex including the existing single family dwelling unit was razed and replaced by a mid-rise building as a mixed-use development (See Site Plan, Figure 2 of Appendix I). As mentioned earlier, the proposed development project will consist of 237 dwelling units of student apartments consisting of 624 bedrooms, a 5,882 sq. ft. restaurant, and approximately 7,676 sq. ft. of general retail space.

Parking

The project will have a total of 686 parking spaces. The garage will provide for 510 spaces. Additional 108 on-street angled parking spaces will be provided on Mississippi and Indiana Streets (57 and 51 stalls respectively). A surface lot will also be constructed on the northwest corner of the existing intersection of Mississippi Street and Fambrough Drive to provide for 68 additional parking spaces.

Access

Under the proposed development plan, access to the site will be as follows:

- No access on 11th Street;
- Access to the garage will be provided on Mississippi Street at two points with ingress to the south (approximately 383 ft. from 11th Street) and egress to the north (approximately 200 ft. from 11th Street); and
- Access to the surface lot between Mississippi and Illinois Streets will be provided at two locations – one on Mississippi Street and one on Illinois Street.

Zoning

The Oread Neighborhood Plan, which is incorporated into the Horizon 2020 Future Land Use Plan, calls for this site to be mixed-use with a district two (2) high density overlay. The zoning for the HERE @ Kansas site was changed from RM32 to MU-PD in 2014. The zoning for the proposed off-site parking lot must match the intensity of the use which it serves. Currently the east half of the parking lot site is zoned RM32 and the west half RM12D. Based on the residential density of the HERE @ Kansas development, the zoning for the parking lot must change from RM32 and RM12D to RM32-PD.

Purpose

The purpose of this study is to:

1. Evaluate the existing operating conditions of traffic at the following intersections per city staff consensus:
    - Mississippi Street and 11th Street
    - Mississippi Street and Realigned Fambrough Drive
    - Mississippi Street and Driveways to the site
    - Mississippi Street and 9th Street (signalized)
    - 11th Street and Indiana Street
    - 11th Street and Tennessee Street (signalized)
    - 11th Street and Kentucky Street (signalized)
2. Identify existing operational and/or safety deficiency(s), if any, at the above-mentioned intersections and recommend mitigation measures as needed.
3. Assess impact of the proposed development on the subject intersections.
4. Recommend on-site and off-site improvements, as the result of this development.
5. Evaluate future operating conditions of traffic for target year 2030.

Data Collection and Summary

Data collection efforts for this study included:

- Field observations and measurements to collect pertinent information such as lane configurations, posted speed limits, traffic control devices, and etc.
- Compilation of the existing vehicular turning movement counts at the subject intersections. For the signalized intersections, most recent counts were obtained from City's Public Works Department records. For the remaining intersections, where no counts were available, turning movement counts were conducted during both morning and afternoon peak hours of typical weekdays in November 2013 while university classes were in session.

It is to be noted that all traffic counts used for this analysis represent data prior to start of any construction activities for this project (which started in January 2015) in order to represent typical traffic patterns in the study area.

The following paragraphs summarize the results of data collection and field observations.

Roadway Network Geometry & Operational Characteristics

In the vicinity of the redevelopment site (See Figure 2 of Appendix I for summary):

- Mississippi Street runs north/south along the west side of the project site with one through lane and one parking lane in each direction, curb/gutter sections and no posted speed limit (Per state law, however, the speed limit is 30 mph whenever not posted). North of 11th Street, Mississippi Street is designated as a "Collector" on the *City's T2040 Thoroughfare Map*, whereas south of 11th Street, it is a "Local" Street.
- 11th Street runs east/west along the north side of the project site with one lane in each direction, curb/gutter sections, no on-street parking and no posted speed limit. According to the *City's T2040 Thoroughfare Map*, 11th Street is designated as a "Collector".
- Indiana Street runs north/south along the east side of the project site with one through lane in each direction, on street parking lane along the west side,

curb/gutter sections and no posted speed limit. It is designated as a "Local" Street on the *City's T2040 Thoroughfare Map*.

- Fambrough Drive runs east/west about half a block north of the project site with one lane in each direction, no on-street parking and no posted speed limit. It is designated as a "Collector" Street on the *City's T2040 Thoroughfare Map*.
- 9th Street runs east/west two blocks north of the project site with two lanes in each direction, no on-street parking, and posted speed limit of 30 mph. It is designated as a "Minor Arterial" on the *City's T2040 Thoroughfare Map*.
- Tennessee Street runs north/south three blocks east of the project site with posted speed limit of 30 mph. It is a one-way street in the southbound direction with two travel lanes and on-street parking along the west side. It is designated as a "Collector" on the *City's T2040 Thoroughfare Map*.
- Kentucky Street runs north/south four blocks east of the project site with posted speed limit of 30 mph. It is a one-way street in the northbound direction with two travel lanes and on-street parking along the east side. It is designated as a "Collector" on the *City's T2040 Thoroughfare Map*.
- The intersections of 11th Street with Mississippi Street and Indiana Street are both "all-way-stop-controlled" intersections with one lane on each approach.
- The intersection of Mississippi and Fambrough Drive is a "T" intersection controlled by a stop sign on Fambrough Drive with one lane on each approach.
- The intersection of 9th Street and Mississippi Street is a pre-timed (uncoordinated) signalized intersection operating under "protected/permissive" left-turn phase for eastbound/westbound movements and "permissive only" left-phase for northbound/southbound movements. The lane configurations for this intersection are shown in Figure 3 of Appendix I.
- The intersection of 11th Street and Tennessee Street is a pre-timed (time-base coordinated) signalized intersection operating under "protected/permissive" left-turn phase for westbound movement and "permissive only" left-turn phase for southbound movement. The lane configurations for this intersection are shown in Figure 3 of Appendix I.

- The intersection of 11th Street and Kentucky Street is a pre-timed (time-base coordinated) signalized intersection operating under "permissive only" left-turn phase for eastbound and northbound directions. The lane configurations for this intersection are shown in Figure 3 of Appendix I.

Manual Traffic Counts

For the purpose of this analysis, the most recent vehicular turning movement counts were obtained from the City's Public Works Department records. These counts were conducted at the signalized intersections a couple of years prior to start of any construction activities for this project. For the unsignalized intersections where no data was available from the city, vehicular turning movement counts were conducted during both morning and afternoon peak-hours (7:00 – 9:00 and 4:00 – 6:00) of typical weekdays in November and early December 2013 when the university classes were in session. The results, as summarized in Appendix IV and illustrated in Figures 4 and 5 of Appendix I, indicate that the peak characteristics of traffic along the street network within the study area are as follows:

- On a typical weekday, the morning peak occurs between 7:30 and 8:30 with
    - Mississippi Street carrying peak-hour volumes of approximately 240 vph south of 11th Street; 420 vph between 11th Street and Fambrough Drive; and 300 vph north of Fambrough Drive. The directional distribution of traffic on this facility is generally 80% - 20% (southbound – northbound) except between 11th Street and Fambrough Drive, which is approximately 62% - 38% (southbound – northbound).
    - 11th Street carrying peak-hour volumes of approximately 325 vph between Mississippi Street and Indiana Street; 180 vph west of Tennessee Street; 345 vph between Tennessee Street and Kentucky Street; and 515 vph east of Kentucky Street. The directional distribution of traffic on this facility is generally 55% - 45% (westbound – eastbound)
    - Fambrough Drive carrying peak-hour volumes of approximately 500 vph west of Mississippi Street with directional distribution of 65% - 35% (westbound –eastbound).

- On a typical weekday, the afternoon peak occurs sometime between 4:30 and 5:45 with
    - Mississippi Street carrying peak-hour volumes of approximately 425 vph south of 11th Street; 740 vph between 11th Street and Fambrough Drive; and 500 vph north of Fambrough Drive. The directional distribution of traffic on this facility is generally 30% - 70% (southbound – northbound) except between 11th Street and Fambroug Drive, which is approximately 40% - 60% (southbound – northbound).
    - 11th Street carrying peak-hour volumes of approximately 510 vph between Mississippi Street and Indiana Street; 350 vph west of Tennessee Street; 500 vph between Tennessee Street and Kentucky Street; and 775 vph east of Kentucky Street. The directional distribution of traffic on this facility is generally 50% - 50% (westbound – eastbound)
    - Fambrough Drive carrying peak-hour volumes of approximately 500 vph west of Mississippi Street with directional distribution of 50% - 50% (westbound –eastbound).
- The intersection of 11th Street and Mississippi Street carries approximately 545 vph and 860 vph during the morning and afternoon peak-hours, respectively.
- The intersection of 11th Street and Indiana Street carries approximately 460 vph and 765 vph during the morning and afternoon peak-hours, respectively.
- The intersection of Fambrough Drive and Mississippi Street carries approximately 510 vph and 865 vph during the morning and afternoon peak-hours, respectively.

Transit Services

The street network surrounding the project site is served by KU on Wheels - the transit system of the University of Kansas, a division of KU Parking & Transit. Currently, there are seven bus routes with designated stops on 11th Street, Indiana Street, Mississippi Street and Fambrough Drive with variable schedules throughout the day - routes 11, 29, 30, 36, 38, 42 and 43.

Evaluation of the Existing/Pre-Development Operating Conditions

Volume/Capacity Analysis

A volume/capacity analysis (using Synchro 8 Software and methodologies outlined in the *2010 Highway Capacity Manual (HCM) published by TRB*) was conducted to determine the level-of-service (LOS) for all movements at the intersections under study during both morning and afternoon peak-hours of a typical weekday.

Level-of-service, as defined in the HCM, describes the quality of traffic operating condition and ranges from "A" to "F", with LOS "A" representing the best (most desirable with minimum delay) conditions, LOS "E" the capacity of the facility and LOS "F" the worst (severely congested with excessive delays). The following chart outlines the level-of-service criteria for roundabouts, unsignalized and signalized intersections.

Level-Of-Service	Control Delay for Unsignalized Intersections (seconds/vehicle)	Control Delay for Signalized Intersections (seconds/vehicle)	Volume/Capacity Ratio for Roundabouts (aaSIDRA Criteria)
A	0 – 10	0 – 10	< 0.6
B	> 10 – 15	> 10 – 20	0.6 – 0.7
C	> 15 – 25	> 20 – 35	0.7 – 0.8
D	> 25 – 35	> 35 – 55	0.8 – 0.9
E	> 35 – 50	> 55 – 80	0.9 – 1.0
F	> 50	> 80	> 1.0

The results of analysis, as summarized in Appendix II and illustrated in Figure 6 of Appendix I, indicate that during the peak-hours of a typical weekday all movements at all subject intersections operate at LOS "B" and higher except for the eastbound movement on Fambrough Drive that operates at LOS "C" during the afternoon peak-hour under the existing alignment. With the proposed realignment and geometric improvements, the LOS for the eastbound movement at Fambrough Drive and Mississippi Street will improve to "B" and higher.

Intersection Sight Distance

Field observations indicate that none of the intersections within the study area experience sight distance restrictions because all on-street parking spaces are set back from the intersections and outside the departure sight triangles.

Revised Trip Generation Analysis

The trip generation of a proposed land development project is typically estimated using trip generation rates suggested by the *Institute of Transportation Engineers, Trip Generation Manual, 9th Edition*. A review of the individual land use components of the proposed "HERE @ Kansas" mixed-use development indicates that all of the uses are listed in the *ITE Trip Generation Manual* as summarized below:

Project Component	ITE Land-Use Code	Independent Variable
Apartments or Mid-Rise Apartments	220 or 221	No. of Units or No. of Persons (Bedrooms)
High-Turnover, Sit-Down Restaurant	932	Gross Floor Area
Specialty Retail Shops	826	Gross Floor Area

For the purpose of this analysis, the following steps are taken to estimate trips that are added to the street network as "new trips" (otherwise known as external trips).

- Step 1: Trips generated by the individual components are estimated separately and results combined to represent anticipated "gross total trips" for the project site. Using above-mentioned ITE land use codes and their independent variables, both "Average Rate Method" and "Regression Equation Method" were evaluated and the method that generated most trips with *statistical significance* was selected for analysis.
- Step 2: Because the retail component of the project is relatively small in size, the "pass-by" trips for this component are assumed to be zero.

- Step 3: The project site is located within walking distance of the university's main campus and also located on several transit bus routes. Therefore, the "unadjusted total trips" estimated in step 1 above are a combination of vehicular, bus, pedestrian, and bike trips. To estimate the actual vehicular trips, these numbers should be reduced using a discount factor for the area. In addition, these trips should be further discounted to account for some internal trips between different land uses within the project site. In the absence of such discount factors, a value of 10% is viewed as reasonable.
- Step 4: The project site was occupied by an apartment complex (a.k.a. Berkeley Flats) whose trips in/out of the site are eliminated as a result of this project. This results in further reduction in the number of trips on the network (See Figure 9 of Appendix I for details).

The results of the trip generation analysis, as summarized in Table 1 and shown in detail in Appendix III, indicate that on a typical weekday, the external trips (net added new trips) for this project will likely be as follows:

- On average, 214 new trip-ends (110 inbound and 104 outbound) during the morning peak-hour of a typical weekday;
- On average, 292 new trip-ends (150 inbound and 141 outbound) during the afternoon peak-hour of a typical weekday; and
- On average, 3,000 new trip-ends during 24-hour period of a typical weekday.

Analysis Time Period

An overview of the existing traffic volumes in the study area and their peak characteristics, in conjunction with estimated trips generated from the proposed "HERE @ Kansas" mixed-use development, indicate that the most critical peak period will likely occur during the *afternoon peak-hour* of a typical weekday. For the purpose of this analysis, however, both morning and afternoon peak-hours are selected as the analysis time periods.

Table 1

Summary of Trip Generation Calculations [a, b] for the Proposed "HERE @ Kansas" Mixed-Use Development (Southwest Corner of 11th Street and Indiana Street, Lawrence, KS)

Scenario	Land Use (ITE CODE)	Size	Typical Weekday						
			24-hr, 2-Way	AM Peak-Hour (vph)			PM Peak-Hour (vph)		
			Volume (vpd)	Enter	Exit	Total	Enter	Exit	Total
1	**Apartments (220) ***	237 units	1,560	24	96	120	96	52	148
	General Retail Shops (826)	7,676 GSF	488				9	12	21
	High Turnover Restaurant (932)	5,882 GSF	748	35	29	64	35	23	58
	Total (Scenario 1)		2,796	59	125	184	140	87	227
2	**Apartments (220) ***	624 bedrooms	2,101	87	86	173	123	122	245
	General Retail Shops (826)	7,676 GSF	488				9	12	21
	High Turnover Restaurant (932)	5,882 GSF	748	35	29	64	35	23	58
	Total (Scenario 2)		3,337	122	115	237	167	157	324
3	**Mid-Rise Apartments (223) ***	237 units	920	22	49	71	53	39	92
	General Retail Shops (826)	7,676 GSF	488				9	12	21
	High Turnover Restaurant (932)	5,882 GSF	748	35	29	64	35	23	58
	Total (Scenario 3)		2,156	57	78	135	97	74	171
4	**Mid-Rise Apartments (223)**	624 bedrooms							
	General Retail Shops (826)	7,676 GSF	488				9	12	21
	High Turnover Restaurant (932)	5,882 GSF	748	35	29	64	35	23	58
	Total (Scenario 4)		1,236	35	29	64	44	35	79
	Gross Total Trips (Worse Case Scenario 2)		**3,337**	**122**	**115**	**237**	**167**	**157**	**324**
	Internal Trips @ 10% (due to nearby amenities: transit and walkability to KU C		**-334**	**-12**	**-12**	**-24**	**-17**	**-16**	**-32**
	External Trips (added new trips)		**3,003**	**110**	**104**	**214**	**150**	**141**	**292**

NOTES:

a) The trip generation numbers in this table are calculated using the rates suggested in the "ITE Trip Generation Manual", 9th Edition.

b) The number of trips are determined by both Weighted Average Rate Method and the Regression Equation Method and the method that generates more trips with statistical significance is selected for analysis. (* denotes use of regression equation)

Blank cells indicate no data available.

Revised Trip Distribution and Assignment Analysis

For the purpose of this study, it is assumed that the trip distribution patterns for the development site will follow the existing traffic patterns as illustrated in Figure 7 of Appendix I and summarized below:

During Morning Peak-Hour of a Typical Weekday

- 59% from north / 57% to north on Mississippi Street;
- 20% from east / 27% to east on 11th Street;
- 11% from west / 6% to west on Fambrough Drive; and
- 10% from south / 10% to south on Mississippi Street.

During Afternoon Peak-Hour of a Typical Weekday

- 46% from north / 51% north on Mississippi Street;
- 15% from east / 15% to east on 11th Street;
- 9% from west / 4% to west on Fambrough Drive; and
- 30% from south / 30% from south on Mississippi Street.

Using the above trip distribution patterns, trips generated by the proposed development site are assigned to individual movements within the study area as illustrated in Figure 8 of Appendix I.

Revised Impact Assessment for the Proposed Development

Volume/Capacity Analysis

An evaluation of the "Existing – Berkeley Flats + Proposed HERE @ Kansas Mixed-Use development" traffic conditions indicates that, with the proposed Fambrough realignment and geometric improvements, all movements at subject intersections will likely operate at LOS "C" and higher during both peak-hours of a typical weekday (See Figures 10 and 11 of Appendix I and summary in Appendix II for details).

Traffic Signal Warrant Analysis

A signal warrant analysis, using methodology outlined in the MUTCD 2009 Edition (with Revisions 1 & 2), was conducted to determine the need for installation of a traffic signal at the intersection of Mississippi Street and realigned Fambrough Drive with the proposed lane configurations illustrated in Figure 13 of Appendix I. For this analysis, only the *Peak-Hour Vehicular Volume (Warrant #3)* can be evaluated because the only trip data available for the project site are for the peak-hours of a typical weekday. Other warrants such as 4-hour vehicular volumes, 8-hour vehicular volumes, pedestrian volumes, crash history can only be evaluated in the future when the project is fully constructed and occupied; and traffic in the study area is normalized.

The results of the analysis for this study, as summarized in Appendix V, indicate that traffic volume requirements for the *Peak-Hour Volume Warrant (Warrant #3)* are not met for either of the peak-hours of a typical weekday.

Impact Assessment for Target Year 2030

Figure 12 of Appendix I illustrates the forecasted Average Daily Traffic (ADT) in the study area for target year 2030. It also highlights LOS for target year 2030. This information is provided by KDOT Planning Bureau based on their Transportation Demand Model. According to this information

- Mississippi Street, south of 11th Street, will likely carry volumes of approximately 2,000 vpd experiencing no congestion with LOS “C” or higher;
- Mississippi Street, north of 11th Street, will likely carry volumes of approximately 8,000 vpd experiencing no congestion with LOS “C” or higher;
- 11th Street, east of Mississippi Street, will likely carry volumes in the range of 6,000 vpd to 7,000 vpd experiencing no congestion with LOS “C” or higher; and
- Fambroufg Drive, west of Mississippi Street, will likely carry volumes in the range of 6,000 vpd to 7,000 vpd experiencing no congestion with LOS “C” or higher.

Summary and Recommendations

Existing Conditions (See Figures 3 - 6 of Appendix I)

- Under the existing geometric and operating conditions, all movements at all intersections in the study area operate at LOS "B" and higher with ample "reserve" capacity except for the eastbound movement on Fambrough Drive at its intersection with Mississippi Street that operates at LOS "C" with limited "reserve" capacity. Realignment of Fambrough Drive with the proposed lane configurations improves the LOS for this movement to "B".
- The section of Mississippi Street between 11th Street and Fambrough Drive experiences some congestion with heavy left-turn movements in the northbound direction during both morning and afternoon peak-hours of a typical weekday (approximately 79% and 41%, respectively). Realignment of Fambrough Drive to create a 4-legged intersection at Mississippi and 11th Street will eliminate the offset and alleviates the congestion. (See Figure 13 of Appendix I for details).

Existing + Proposed HERE @ Kansas Development (See Figures 7 – 13 of Appendix I)

The results of this impact analysis indicate that the proposed "HERE @ Kansas" mixed-use development will have nominal impact on the capacity of the roadway network in the study area causing slight increase in the delay values but no reduction in LOS for any of the movements, except for some of the movements at the intersection of Mississippi Street and realigned Fambrough Drive that will likely operate at LOS "C" – still an acceptable LOS with some reserve capacity. To achieve this, an ALL-WAY STOPT control with the following lane configurations at this intersection is recommended:

- North approach and south approach (on Mississippi Street) will each have a dedicated left-turn lane with 100 ft. storage length; and a shared through and right-turn lane;
- West approach (on realigned Fambrough Drive) will have a dedicated right-turn lane with 150 ft. storage length and a shared through and left-turn lane;
- East approach will remain as one lane approach; and

The results also indicate that, with only peak-hour volume information at hand, the requirements for consideration of a traffic signal at this location are not met. A comprehensive traffic signal warrant analysis, to examine other signal warrants, can only be conducted in the future when the project is fully constructed and occupied; and traffic in the study area is normalized.

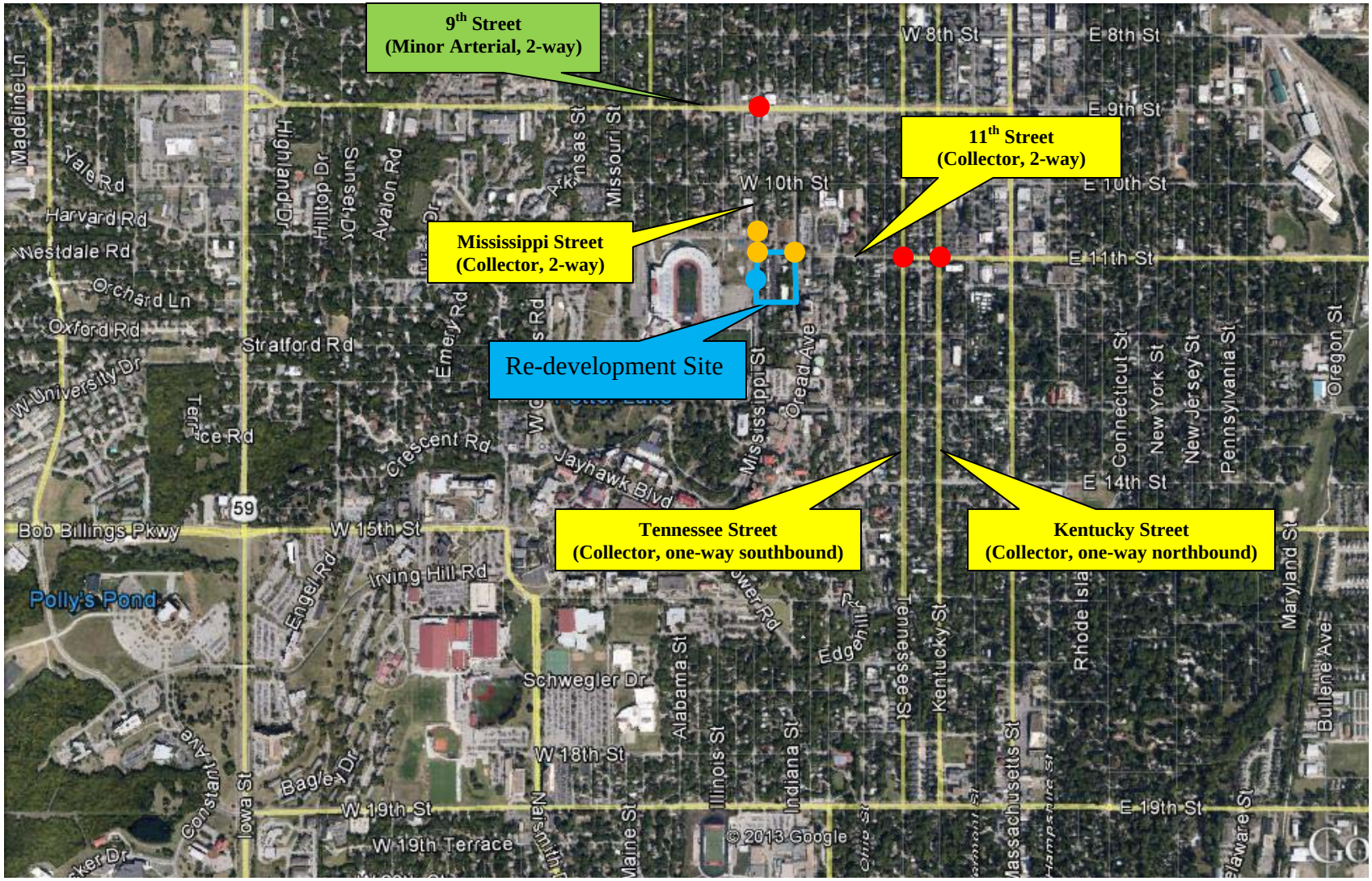
Furthermore, the requirements for provision of a dedicated southbound left-turn lane on Mississippi Street at the entrance to the proposed development garage are met. Therefore, as an added measure of operational efficiency and safety, provision of this lane with minimum storage length of 100 ft. is recommended.

Other recommended improvements include provision of the following dedicated turn lanes at the intersection of Illinois Street and realigned Fambrough Drive:

- A dedicated westbound left-turn lane with 75 ft. storage to accommodate 1 bus and one passenger car; and
- A dedicated eastbound left-turn lane with 50 ft. storage to accommodate two passenger cars. This serves as a safety measure to keep the eastbound left-turners away from the eastbound through traffic coming around the horizontal curve on Fambrough Drive.

APPENDIX I

Figures



Intersections under Study: ● Signalized Intersection ● Unsignalized Intersection ● Proposed Access Drive

Figure 1
Location Map & Study Area

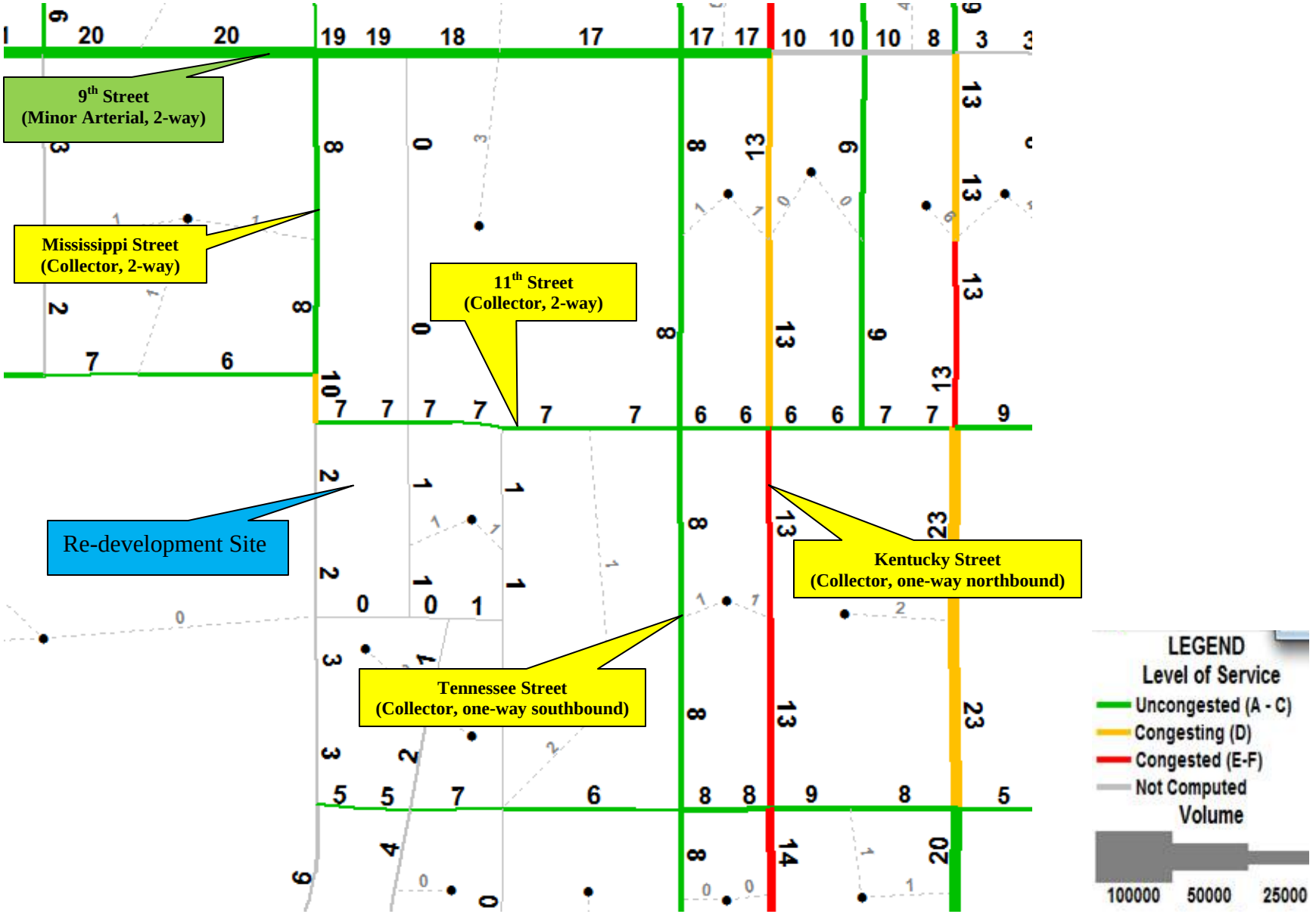


Figure 12
Forecasted Average Daily Volumes for Target Year 2030 (x1000, vpd)

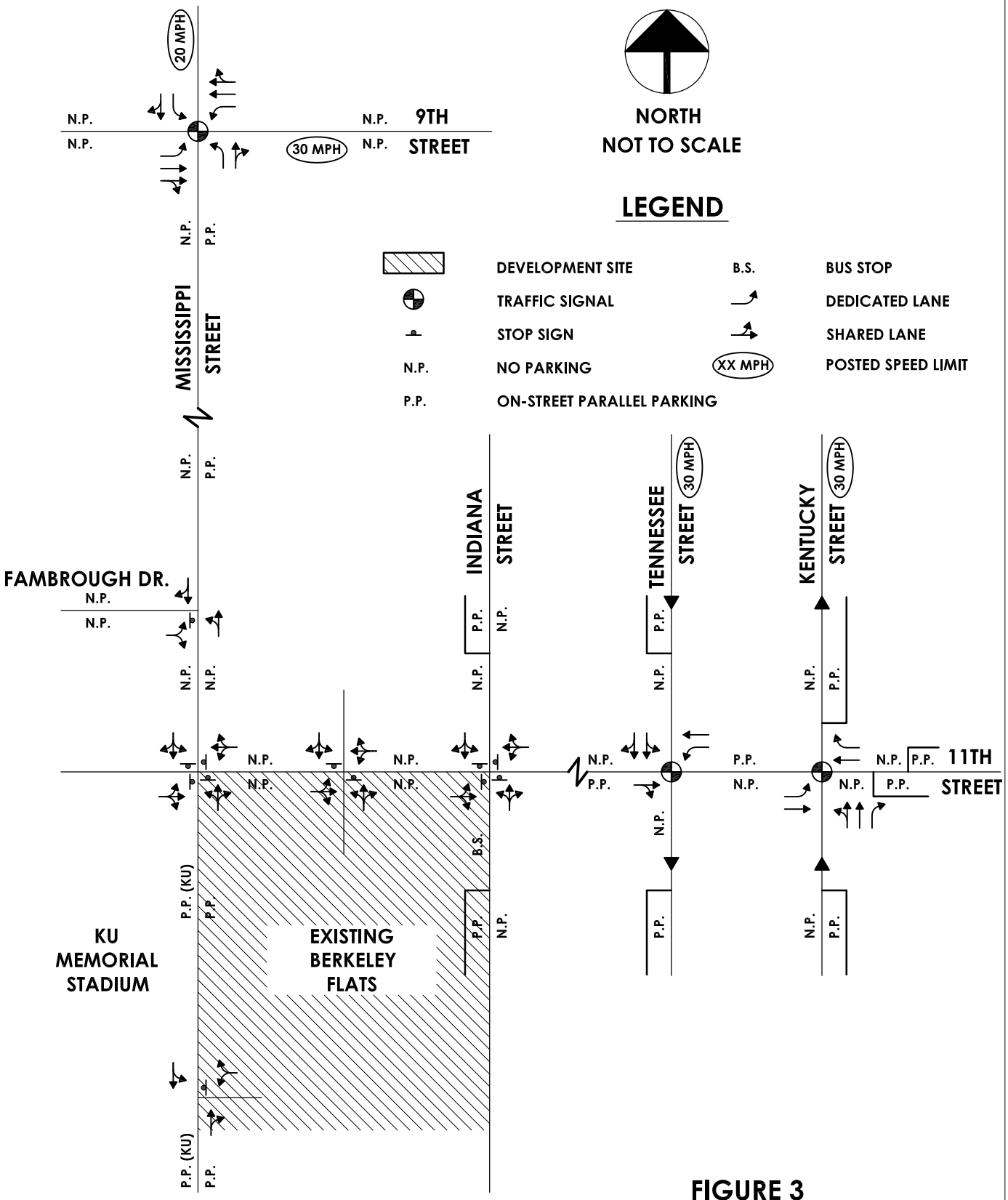


FIGURE 3

LANE CONFIGURATIONS, ON-STREET PARKING AND POSTED SPEED LIMITS (PRE-DEVELOPMENT CONDITIONS, NOV. 2013)

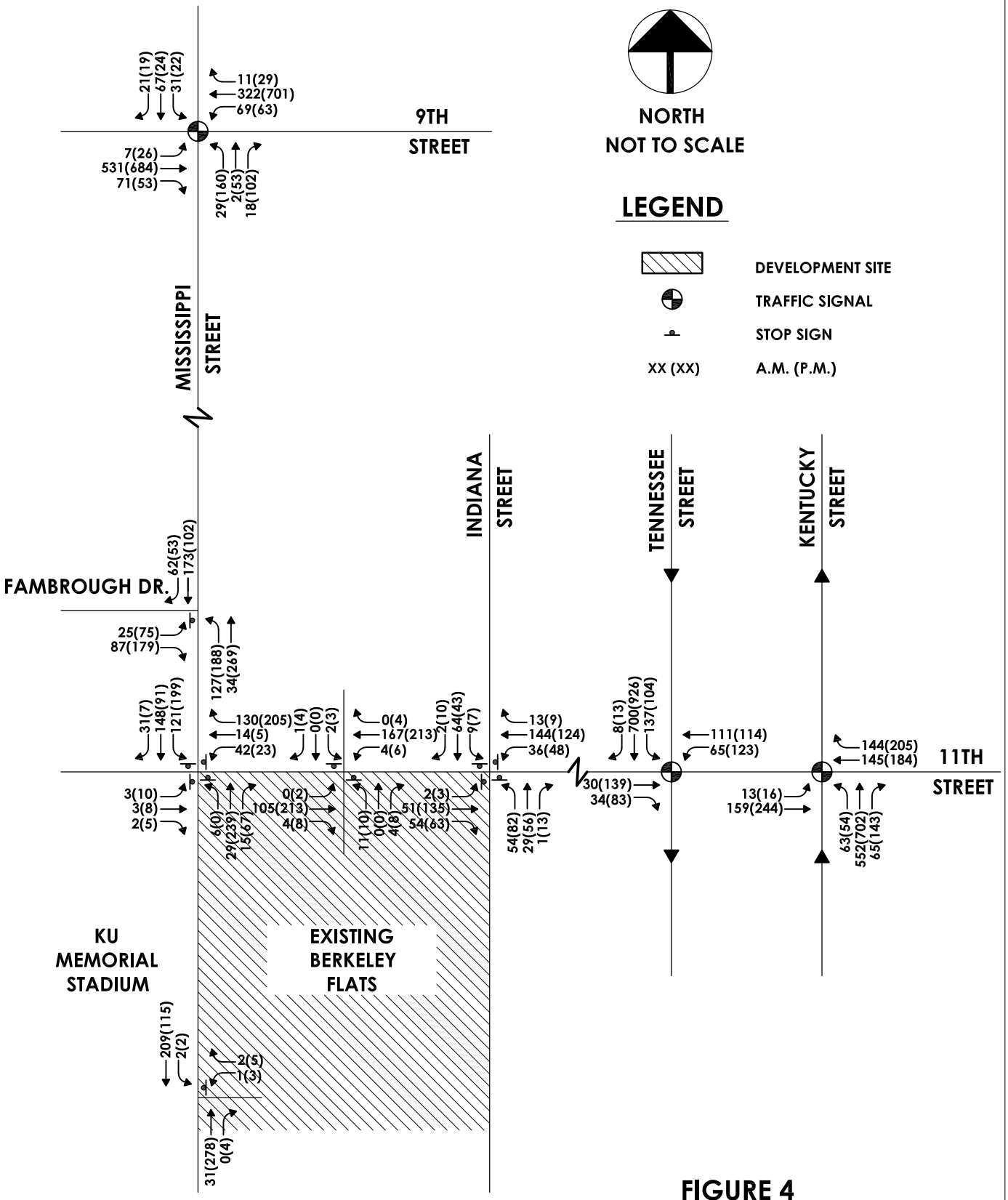


FIGURE 4

TYPICAL WEEKDAY PEAK-HOUR TRAFFIC VOLUMES
(PRE-DEVELOPMENT SCENARIO, NOV. 2013)

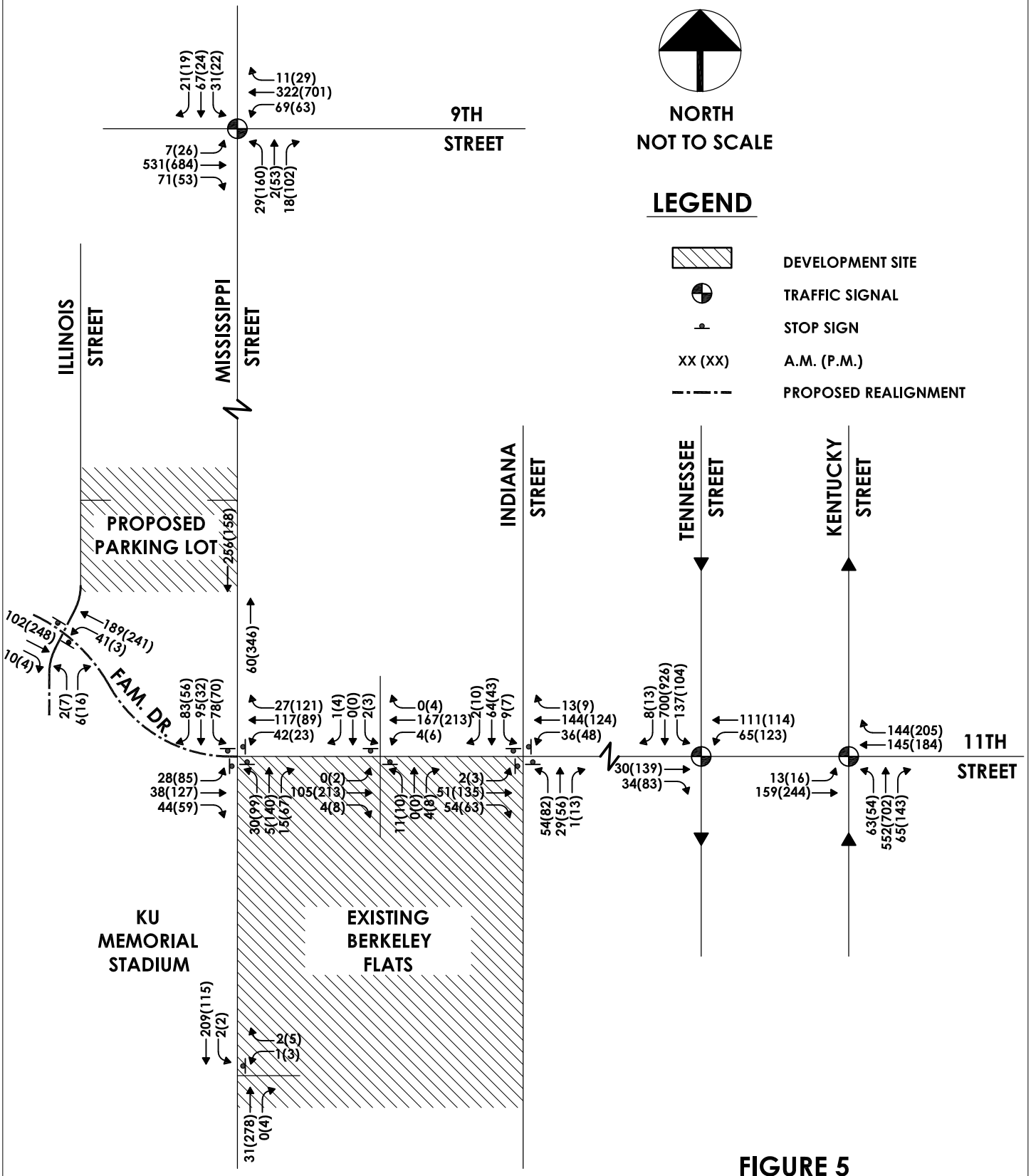


FIGURE 5

TYPICAL WEEKDAY PEAK-HOUR TRAFFIC VOLUMES (REDISTRIBUTED) (PRE-DEVELOPMENT SCENARIO, NOV. 2013)

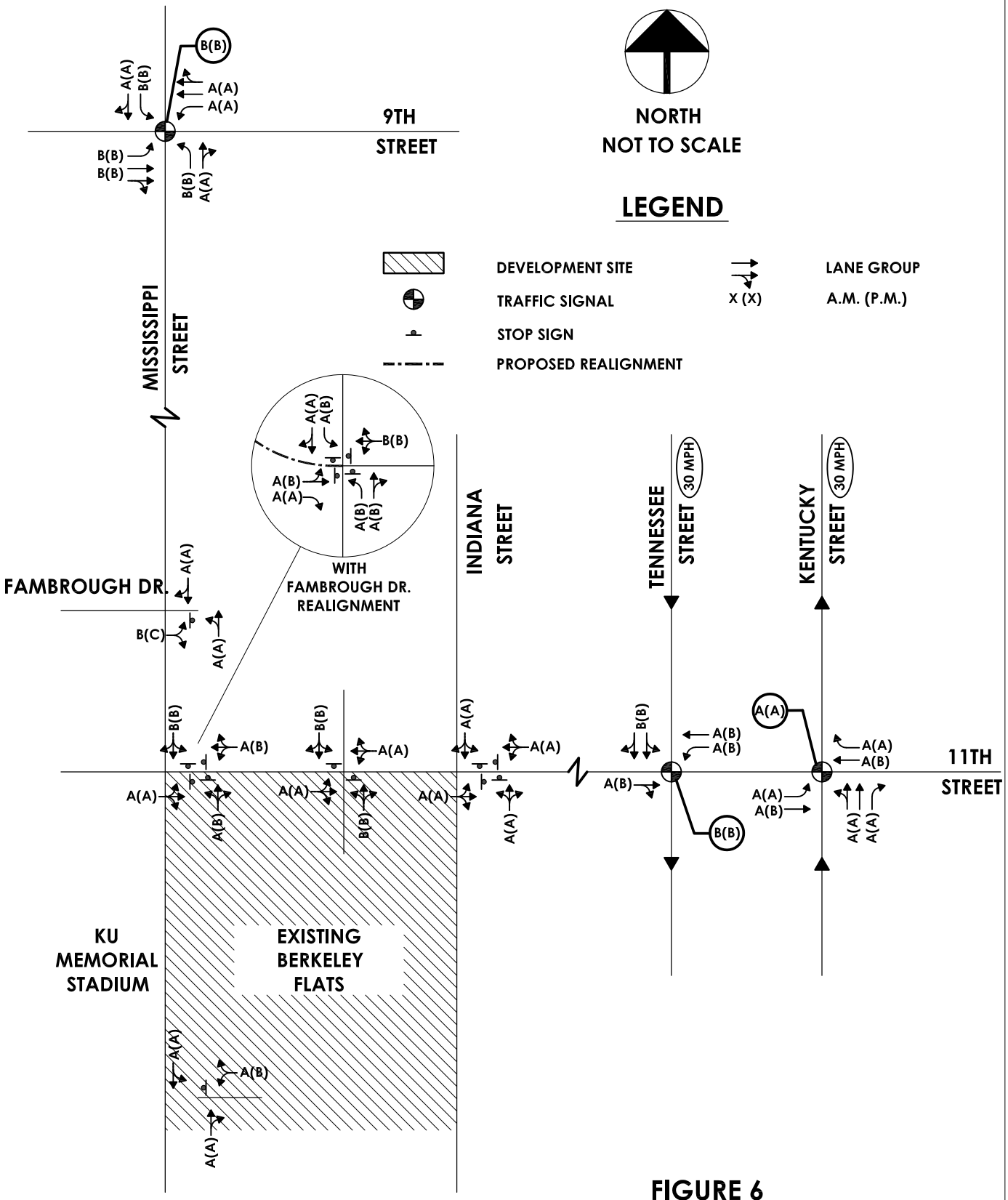


FIGURE 6

SUMMARY OF L.O.S.
(PRE-DEVELOPMMENT SCENARIO, NOV. 2013)

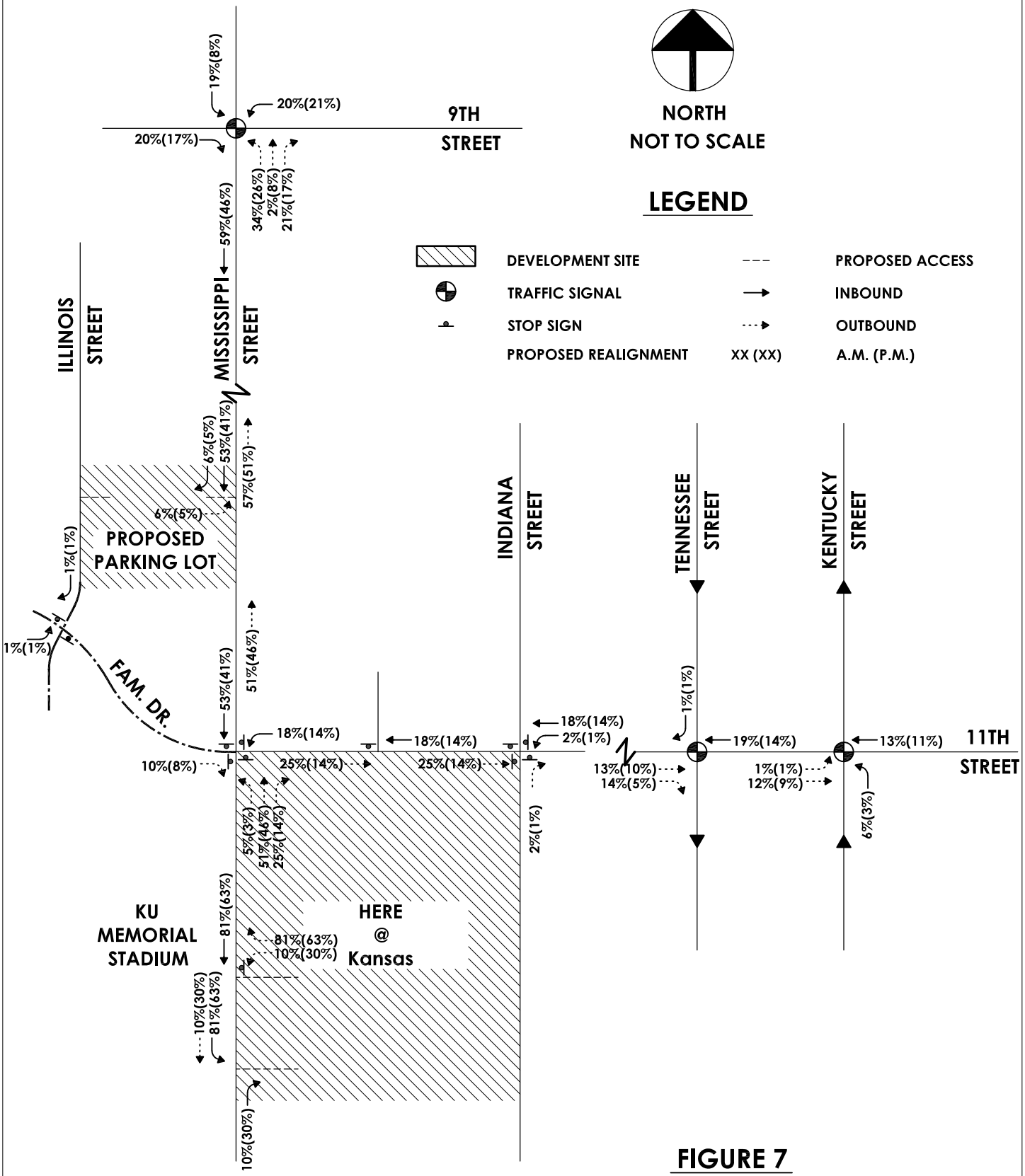


FIGURE 7

TRIP DISTRIBUTION PATTERNS FOR THE PROPOSED DEVELOPMENT (PEAK-HOURS OF A TYPICAL WEEKDAY)

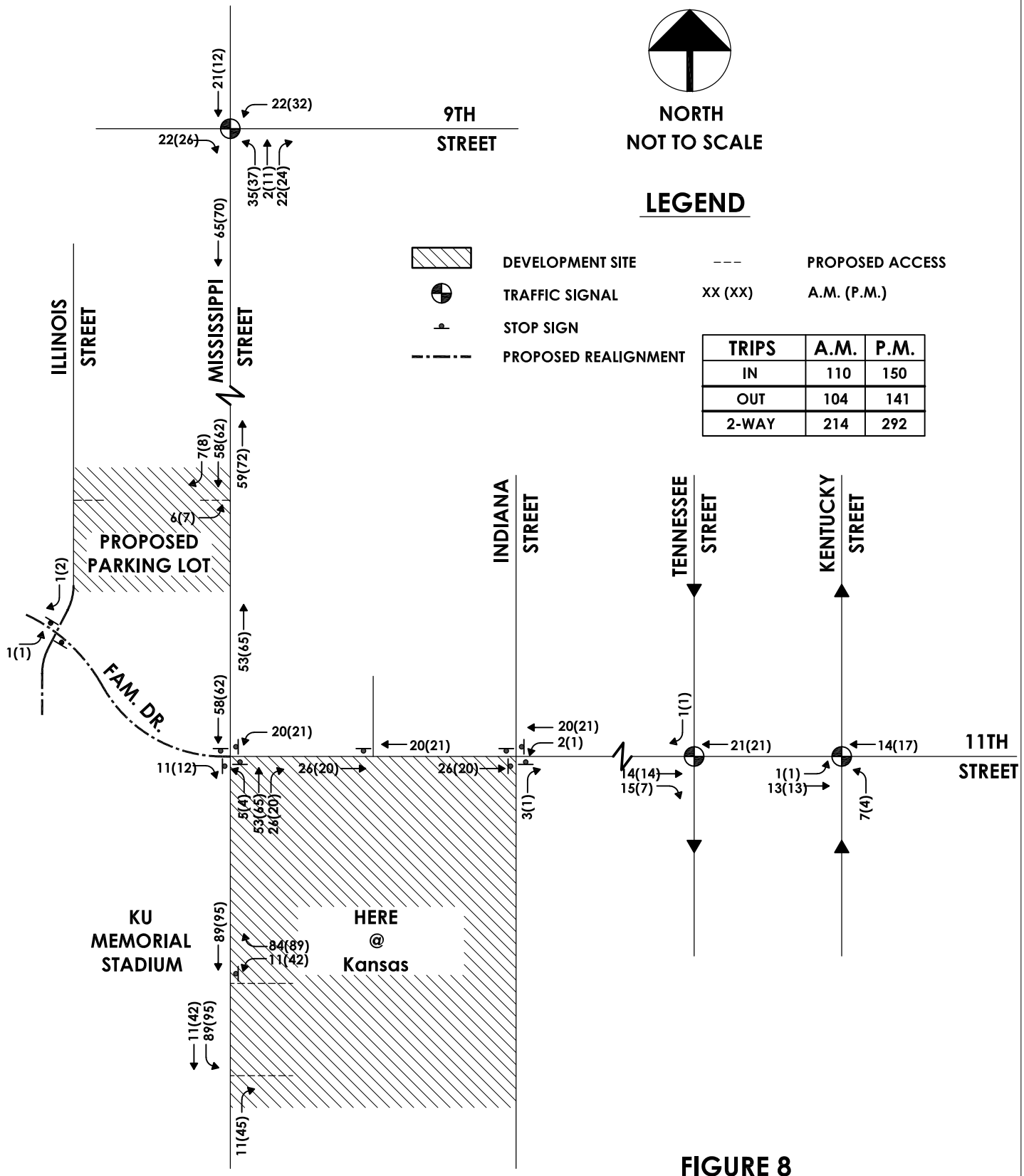


FIGURE 8

SITE-GENERATED TRIPS FOR THE PROPOSED DEVELOPMENT
(PEAK-HOURS OF A TYPICAL WEEKDAY)

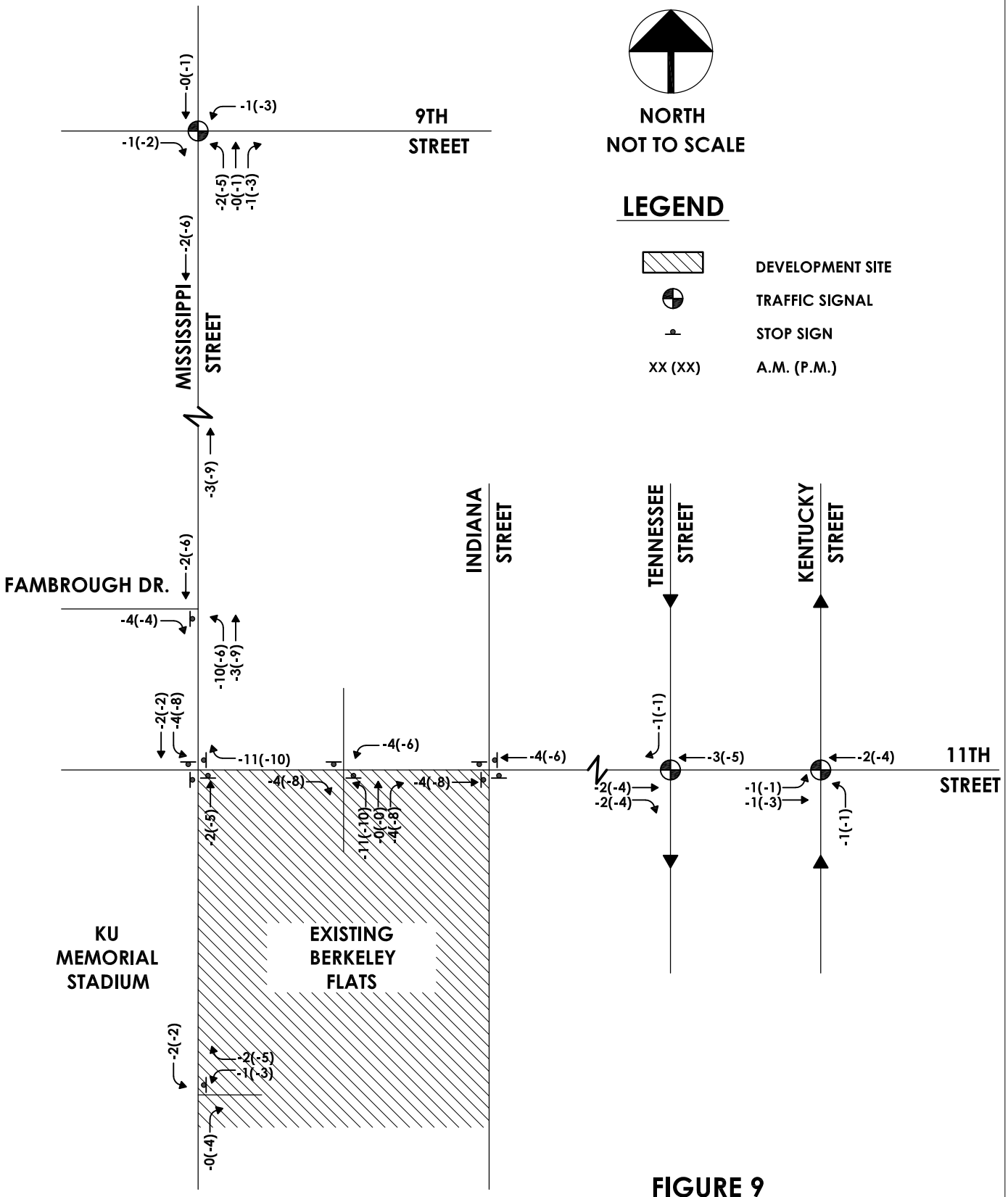


FIGURE 9

TRIPS FOR THE EXISTING BERKELEY FLATS
(PEAK-HOURS OF A TYPICAL WEEKDAY)

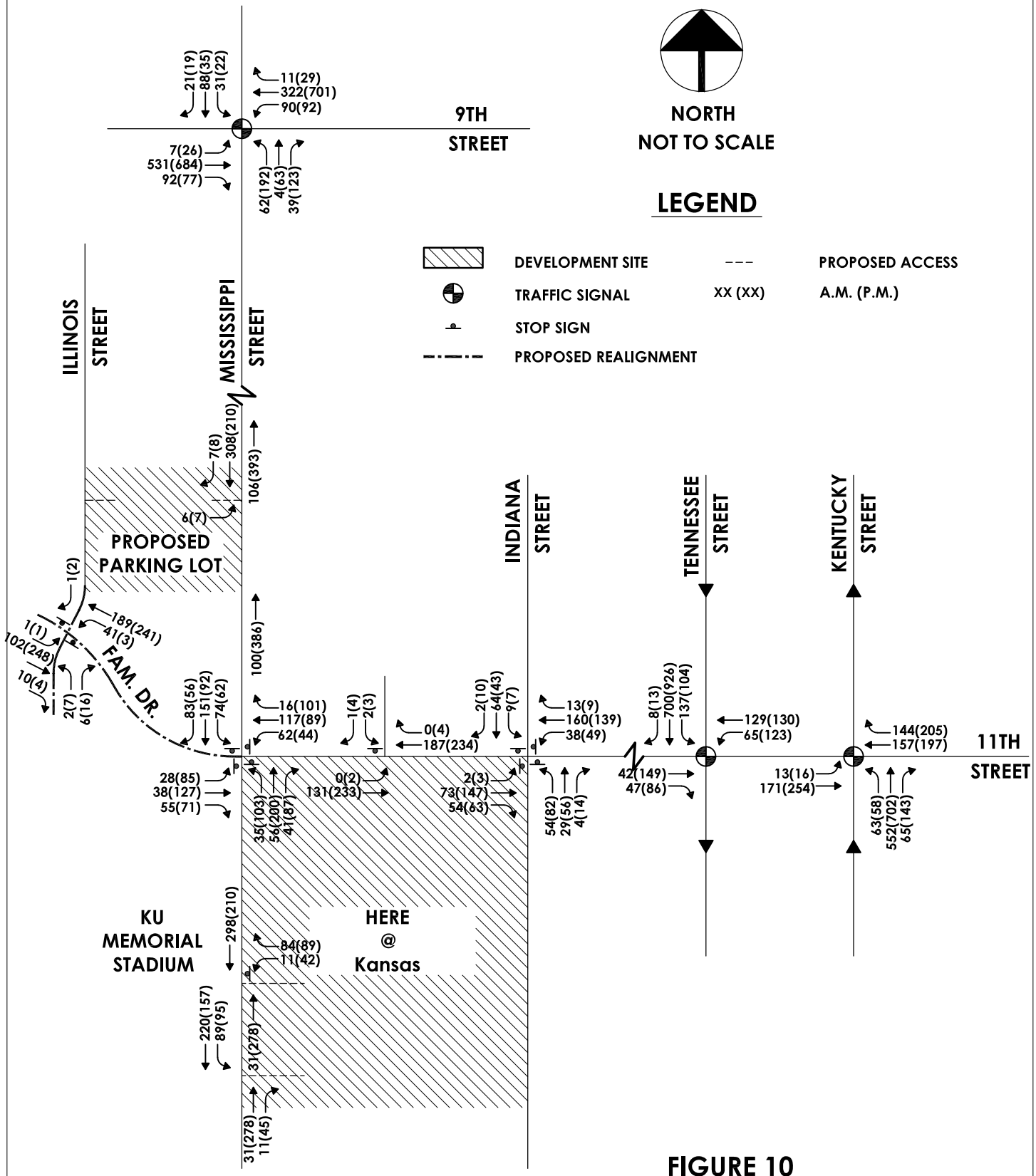


FIGURE 10

"EXISTING - BERKELEY FLATS + DEVELOPMENT" TRAFFIC VOLUMES
(PEAK-HOURS OF A TYPICAL WEEKDAY)
(POST-DEVELOPMENT SCENARIO)

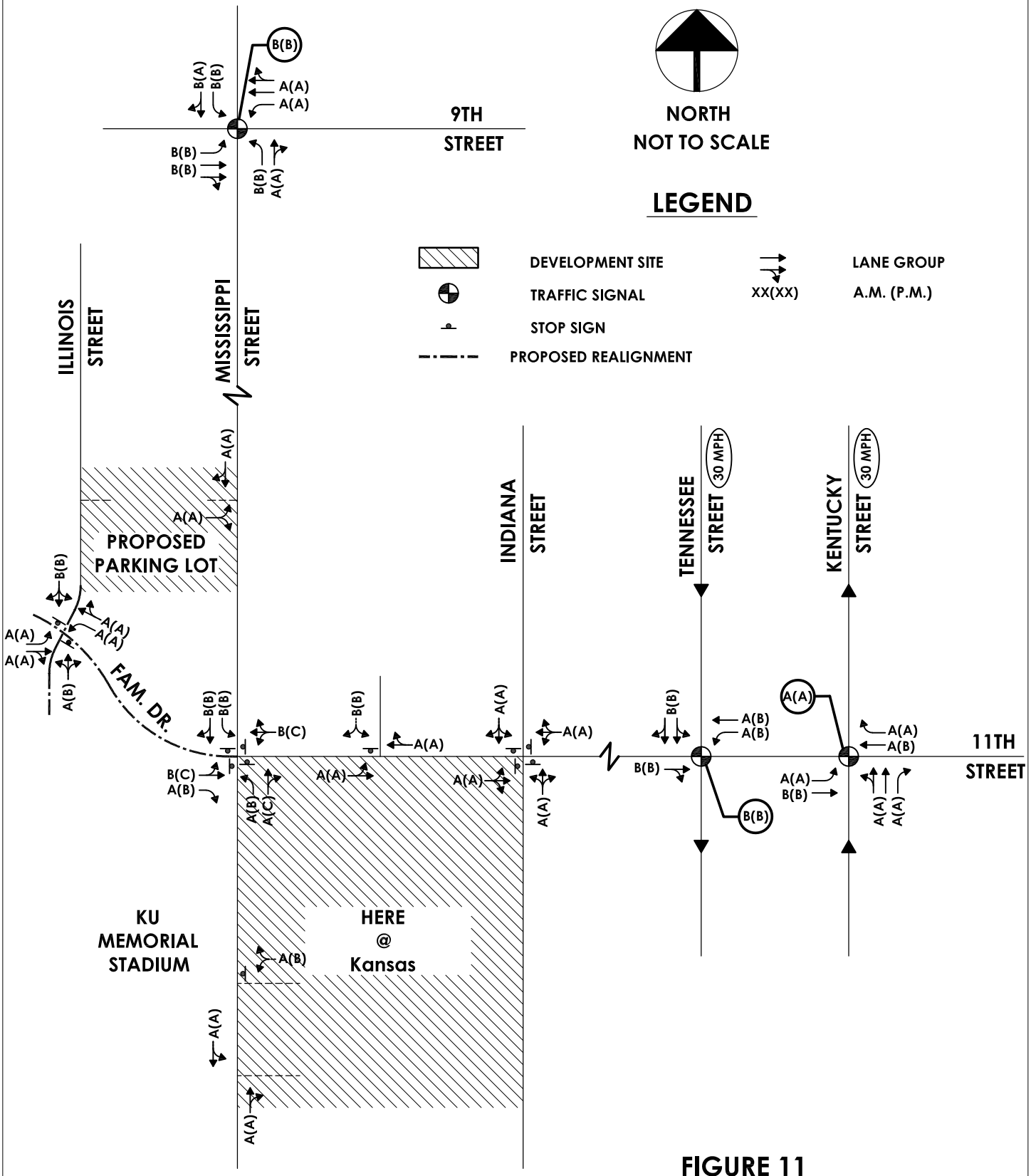
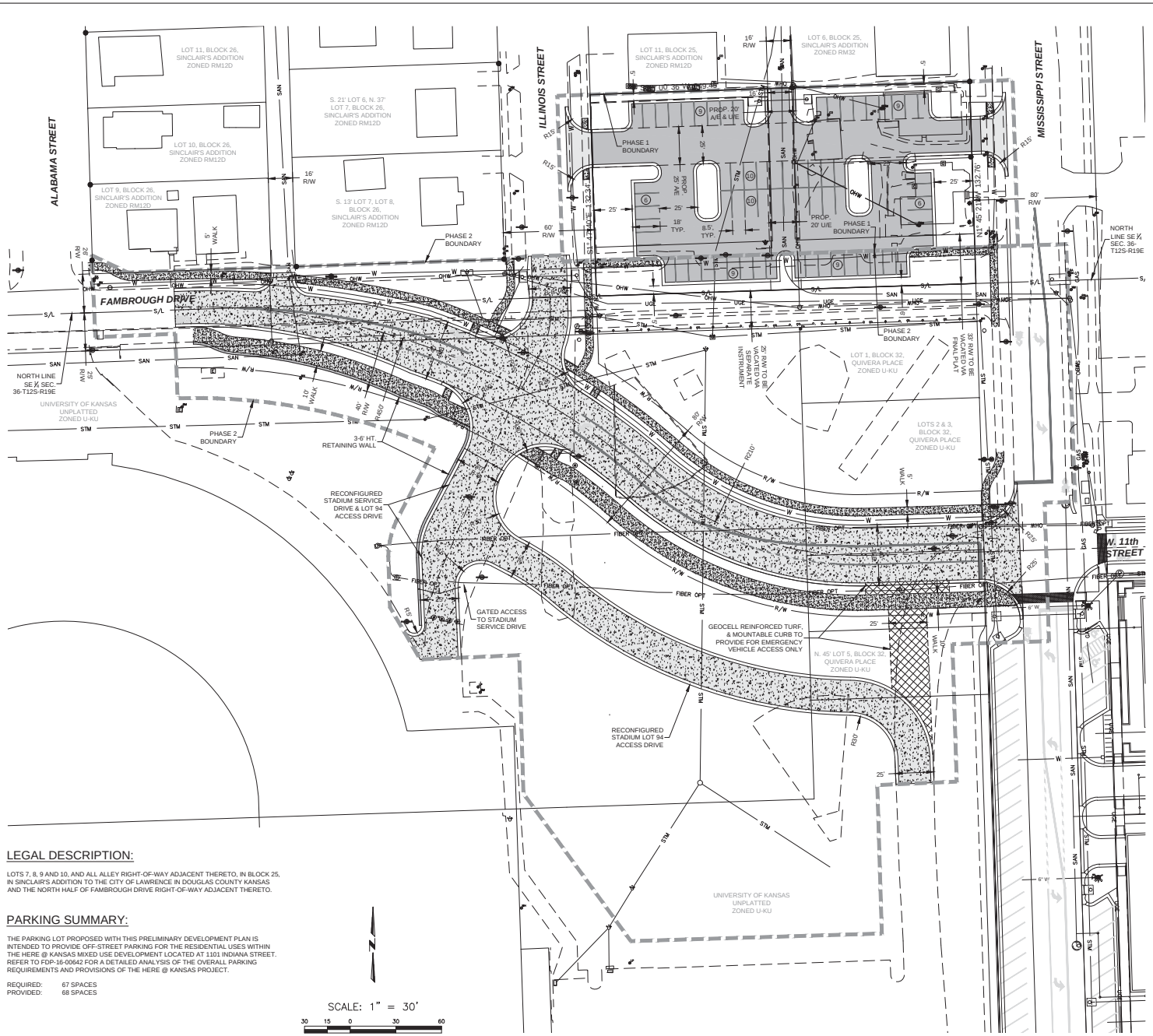
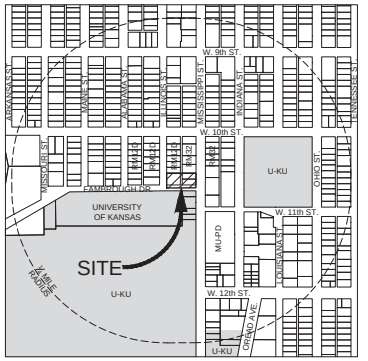


FIGURE 11

SUMMARY OF L.O.S. FOR "EXISTING - BERKELEY FLATS + DEVELOPMENT" TRAFFIC VOLUMES
(PEAK-HOURS OF A TYPICAL WEEKDAY)
(POST-DEVELOPMENT SCENARIO)



LOCATION MAP:



GENERAL NOTES:

1. OWNERS: 1029 MISSISSIPPI, LLC, 130 EAST RANDOLPH STREET, SUITE 2100, CHICAGO, ILLINOIS 60601; STADPKG, LLC, 10851 MASTIN BOULEVARD, SUITE 1000, OVERLAND PARK, KANSAS 66210
2. LAND PLANNER/ CIVIL ENGINEER/ SURVEYOR: LANDPLAN ENGINEERING, P.A., 1310 WAKARUSA DRIVE, LAWRENCE, KANSAS 66049
3. TOPOGRAPHIC INFORMATION SHOWN WAS OBTAINED FROM A FIELD SURVEY PERFORMED BY LANDPLAN ENGINEERING, P.A., AUGUST, 2016.
4. EXISTING ZONING: RM12D, RM32
5. PROPOSED ZONING: RM32-PD
6. EXISTING LAND USE: VACANT
7. PROPOSED LAND USE: ACCESSORY PARKING
8. NO PORTIONS OF THE SUBJECT PROPERTY LIE WITHIN A DESIGNATED "SPECIAL FLOOD HAZARD AREA" AS DEFINED BY FLOOD INSURANCE RATE MAP (FIRM); PANEL NO. 152, MAP NUMBER 20045C0152E, DOUGLAS COUNTY, KANSAS, BEARING AN EFFECTIVE DATE OF SEPTEMBER 2, 2015.
9. THIS SITE HAS BEEN DESIGNED TO COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) FOR BUILDINGS AND FACILITIES, APPENDIX A TO 28 CFR PART 36.
10. ALL CONCRETE CURB AND GUTTER SHALL BE INSTALLED AS "TYPE CG-1" PER CITY OF LAWRENCE DETAILS AND SPECIFICATIONS.
11. ALL CURB INLETS SHALL BE INSTALLED PER CITY OF LAWRENCE DETAILS AND SPECIFICATIONS.
12. THE CONCRETE COMMERCIAL DRIVEWAY APRON SHALL BE INSTALLED PER CITY OF LAWRENCE DETAILS AND SPECIFICATIONS.
13. ALL INTERNAL SIDEWALKS AND ACCESS RAMPS SHALL BE INSTALLED PER CITY OF LAWRENCE DETAILS AND SPECIFICATIONS.
14. ALL OFF-STREET PARKING AREAS AND DRIVEWAYS SHALL BE SURFACED WITH A MINIMUM OF 5 INCHES OF FULL DEPTH ASPHALT IN ACCORDANCE WITH SECTION 20-913(e)(1)(iv) OF THE CITY CODE.
15. THE CITY OF LAWRENCE SHALL NOT BE HELD RESPONSIBLE FOR PAVEMENT DAMAGE ON PRIVATE STREETS CAUSED DUE TO THE WEIGHT OF SOLID WASTE MANAGEMENT VEHICLES.
16. TREES SHALL BE PLANTED NO CLOSER THAN 8 FEET FROM EXISTING UTILITY LINES, WHERE PRACTICAL AND APPROVED BY THE PLANNING DIRECTOR, IN ACCORDANCE WITH SECTION 20-811(g)(2)(ii)(d) OF THE CITY CODE.
17. UNLESS OTHERWISE NOTED, ALL AREAS NOT DESIGNATED AS PAVEMENT OR BUILDING WILL BE SEEDED, SODDED OR LANDSCAPED WITH PLANT MATERIALS. ALL AREAS DEPICTED AS PLANTED WITH TREES OR SHRUBS SHALL BE TREATED WITH A 3" LAYER OF SHREDDED HARDWOOD MULCH. REFER TO SHEET 4 FOR THE LANDSCAPE PLAN.
18. THE LANDOWNER WILL PROVIDE FOR THE MAINTENANCE OF COMMON OPEN SPACE, RECREATION FACILITIES, NON-ENCROACHABLE AREAS, PRIVATE STREETS AND ANY OTHER AREA WITHIN THE PROPOSED DEVELOPMENT THAT IS TO BE RETAINED PRIMARILY FOR THE EXCLUSIVE USE AND BENEFIT OF THE RESIDENTS, LESSEES, AND OWNER OF THE PLANNED DEVELOPMENT.
19. NO VARIANCES, MODIFICATIONS, REDUCTIONS AND WAIVERS ARE BEING REQUESTED AS PART OF THE PLAN APPROVAL.
20. THE APPLICANT INTENDS TO FILE FOR FINAL DEVELOPMENT PLAN APPROVAL IMMEDIATELY FOLLOWING CITY COMMISSION APPROVAL OF THE PRELIMINARY DEVELOPMENT PLAN. THE APPLICANT INTENDS TO CONSTRUCT THIS DEVELOPMENT IN TWO PHASES. WORK SHOWN AS PART OF PHASE 1 IS TO BE COMPLETED BETWEEN DECEMBER, 2016 AND FEBRUARY, 2017. WORK SHOWN AS PART OF PHASE 2 IS TO BE COMPLETED BETWEEN MAY AND AUGUST, 2017. PHASE 2 WORK CANNOT BEGIN PRIOR TO MONDAY, MAY 15, 2017 AND MUST CONCLUDE PRIOR TO KU RESIDENCE HALL MOVE-IN IN MID-AUGUST.
21. CONTINUOUS ACCESS TO KU LOT 94 MUST BE PROVIDED DURING ALL PHASES OF CONSTRUCTION. DURING THE REALIGNMENT OF FAMBROUGH DRIVE, CONTRACTORS WILL FIRST INSTALL THE WESTERN LEG OF FAMBROUGH FROM ALABAMA THROUGH ILLINOIS STREETS AND THEN INSTALL THE NEW LOT 94 ACCESS DRIVE. ONCE THIS NEW CONNECTION IS COMPLETE, CONTRACTORS WILL REMOVE THE EXISTING MISSISSIPPI STREET ENTRANCE TO LOT 94 AND INSTALL THE EAST LEG OF FAMBROUGH DRIVE BETWEEN ILLINOIS AND MISSISSIPPI STREETS.
22. AS DEPICTED ON SHEET 4 OF THIS PRELIMINARY DEVELOPMENT PLAN, THIS SITE HAS ACCESS TO PUBLIC AND PRIVATE UTILITIES, INCLUDING BUT NOT LIMITED TO WASTE WATER, DOMESTIC WATER, STORM WATER, GAS AND ELECTRICITY.
23. ALL UTILITIES SERVING THE PROPERTIES AT 1029 AND 1031 MISSISSIPPI STREET, INCLUDING BUT NOT LIMITED TO DOMESTIC WATER, SANITARY SEWER, NATURAL GAS, ELECTRICITY, TELEPHONE AND CABLE, MUST BE DISCONNECTED AND/OR ABANDONED IN ACCORDANCE WITH ALL APPROPRIATE REGULATIONS PRIOR TO THEIR DEMOLITION.
24. THE LANDOWNER HEREBY DEDICATES TO THE CITY OF LAWRENCE THE RIGHT TO REGULATE ANY CONSTRUCTION WITHIN THE AREAS DESIGNATED AS "COMMON OPEN SPACE," AND "RECREATIONAL OPEN SPACE" AND TO PROHIBIT ANY CONSTRUCTION WITHIN SAID AREAS AND SPACES INCONSISTENT WITH THE APPROVED USE OR ENJOYMENT OF RESIDENTS, LESSEES, AND OWNERS OF THE PLANNED DEVELOPMENT.

LEGAL DESCRIPTION:

LOTS 7, 8, 9 AND 10, AND ALL ALLEY RIGHT-OF-WAY ADJACENT THERETO, IN BLOCK 25, IN SINCLAIR'S ADDITION TO THE CITY OF LAWRENCE IN DOUGLAS COUNTY KANSAS AND THE NORTH HALF OF FAMBROUGH DRIVE RIGHT-OF-WAY ADJACENT THERETO.

PARKING SUMMARY:

THE PARKING LOT PROPOSED WITH THIS PRELIMINARY DEVELOPMENT PLAN IS INTENDED TO PROVIDE OFF-STREET PARKING FOR THE RESIDENTIAL USES WITHIN THE HERE @ KANSAS MIXED USE DEVELOPMENT LOCATED AT 1101 INDIANA STREET. REFER TO FDP-16-00642 FOR A DETAILED ANALYSIS OF THE OVERALL PARKING REQUIREMENTS AND PROVISIONS OF THE HERE @ KANSAS PROJECT.

REQUIRED:	67 SPACES
PROVIDED:	68 SPACES

LANDPLAN ENGINEERING
Lawrence, KS • Kansas City, MO • The Woodlands, TX
1310 Wakarusa Drive, Suite 100
Lawrence, Kansas 66049
785.843.7530(p) | 785.843.2410(f)
info@landplan-pa.com | www.landplan-pa.com

1029 MISSISSIPPI STREET
LAWRENCE, KANSAS 66044
HERE @ KANSAS OFF-SITE PARKING
PRELIMINARY DEVELOPMENT PLAN
LAYOUT PLAN

REV	DATE	DESCRIPTION

DATE:	7/25/16
PROJECT NO.:	20163016
DESIGNED BY:	LPE
DRAWN BY:	BS
CHECKED BY:	CMS

ISSUE

SHEET NO. 1 OF 5 SHEETS

FILE NAME: v:\2016\3016\CAD\Planning\PDP\16316C-PDP--LAYO.dwg LAST SAVED BY: Brian Sturm SAVED DATE: 9/13/2016 7:56 AM PLOTTED: 9/13/2016 7:57 AM

Figure 13 - Proposed geometric improvements and surface parking lot layout

APPENDIX II

Results of Highway Capacity Analysis

Using

Synchro 8 Software

(HCM 2010 Methodology)

PRE-DEVELOPMENT SCENARIO: 2011 – 2013 TRAFFIC VOLUMES

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	51	54	36	144	13	54	29	1	9	64	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	55	59	39	157	14	59	32	1	10	70	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	9.1	8.6	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	64%	2%	19%	12%
Vol Thru, %	35%	48%	75%	85%
Vol Right, %	1%	50%	7%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	84	107	193	75
LT Vol	29	51	144	64
Through Vol	1	54	13	2
RT Vol	54	2	36	9
Lane Flow Rate	91	116	210	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.124	0.139	0.261	0.109
Departure Headway (Hd)	4.894	4.299	4.484	4.795
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	731	834	801	747
Service Time	2.929	2.328	2.51	2.83
HCM Lane V/C Ratio	0.124	0.139	0.262	0.11
HCM Control Delay	8.6	8	9.1	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.5	1	0.4

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	135	63	48	124	9	82	56	13	7	43	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	147	68	52	135	10	89	61	14	8	47	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	9.6	9.6	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	1%	27%	12%
Vol Thru, %	37%	67%	69%	72%
Vol Right, %	9%	31%	5%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	151	201	181	60
LT Vol	56	135	124	43
Through Vol	13	63	9	10
RT Vol	82	3	48	7
Lane Flow Rate	164	218	197	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.23	0.277	0.262	0.092
Departure Headway (Hd)	5.04	4.57	4.793	5.052
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	707	782	746	704
Service Time	3.103	2.624	2.849	3.125
HCM Lane V/C Ratio	0.232	0.279	0.264	0.092
HCM Control Delay	9.6	9.4	9.6	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	1.1	1	0.3

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	3	3	2	42	14	130	6	29	15	121	148	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	3	2	46	15	141	7	32	16	132	161	34
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	9	8	10.6
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	38%	23%	40%
Vol Thru, %	58%	38%	8%	49%
Vol Right, %	30%	25%	70%	10%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	8	186	300
LT Vol	29	3	14	148
Through Vol	15	2	130	31
RT Vol	6	3	42	121
Lane Flow Rate	54	9	202	326
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.012	0.25	0.408
Departure Headway (Hd)	4.634	4.997	4.456	4.5
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	771	714	805	799
Service Time	2.676	3.043	2.487	2.531
HCM Lane V/C Ratio	0.07	0.013	0.251	0.408
HCM Control Delay	8	8.1	9	10.6
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.2	0	1	2

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	12.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	10	8	5	23	5	205	1	239	67	199	91	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	9	5	25	5	223	1	260	73	216	99	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	11.1	12.4	13
HCM LOS	A	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	43%	10%	67%
Vol Thru, %	78%	35%	2%	31%
Vol Right, %	22%	22%	88%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	307	23	233	297
LT Vol	239	8	5	91
Through Vol	67	5	205	7
RT Vol	1	10	23	199
Lane Flow Rate	334	25	253	323
Geometry Grp	1	1	1	1
Degree of Util (X)	0.467	0.042	0.361	0.474
Departure Headway (Hd)	5.036	6.053	5.133	5.282
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	714	590	699	681
Service Time	3.067	4.107	3.171	3.313
HCM Lane V/C Ratio	0.468	0.042	0.362	0.474
HCM Control Delay	12.4	9.4	11.1	13
HCM Lane LOS	B	A	B	B
HCM 95th-tile Q	2.5	0.1	1.6	2.6

Notes

~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	25	87	127	34	173	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	95	138	37	188	67

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	535	222	255	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	506	818	1310	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	451	818	1310	-	-	-
Mov Capacity-2 Maneuver	451	-	-	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	661	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	6.4	0
HCM LOS	B		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1310	-	692	-	-
HCM Lane V/C Ratio	0.105	-	0.176	-	-
HCM Control Delay (s)	8.072	0	11.3	-	-
HCM Lane LOS	A	A	B		
HCM 95th %tile Q(veh)	0.353	-	0.635	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	75	179	188	269	102	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	82	195	204	292	111	58

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	841	140	168	0	-	0
Stage 1	140	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Follow-up Headway	3.518	3.318	2.218	-	-	-
Pot Capacity-1 Maneuver	335	908	1410	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	277	908	1410	-	-	-
Mov Capacity-2 Maneuver	277	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	407	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	3.3	0
HCM LOS	C		

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1410	-	543	-	-
HCM Lane V/C Ratio	0.145	-	0.508	-	-
HCM Control Delay (s)	7.985	0	18.3	-	-
HCM Lane LOS	A	A	C		
HCM 95th %tile Q(veh)	0.507	-	2.858	-	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	28	38	44	0	42	117	27	0	30	5	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	30	41	48	0	46	127	29	0	33	5	16
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	8.8	11	8.9
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	42%	0%	23%	100%	0%
Vol Thru, %	0%	25%	58%	0%	63%	0%	53%
Vol Right, %	0%	75%	0%	100%	15%	0%	47%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	20	66	44	186	78	178
LT Vol	30	0	28	0	42	78	0
Through Vol	0	5	38	0	117	0	95
RT Vol	0	15	0	44	27	0	83
Lane Flow Rate	33	22	72	48	202	85	193
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.056	0.031	0.116	0.065	0.308	0.14	0.276
Departure Headway (Hd)	6.23	5.193	5.836	4.917	5.483	5.962	5.129
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	570	682	610	722	651	599	697
Service Time	4.021	2.983	3.615	2.694	3.55	3.728	2.894
HCM Lane V/C Ratio	0.058	0.032	0.118	0.066	0.31	0.142	0.277
HCM Control Delay	9.4	8.2	9.4	8	11	9.7	9.9
HCM Lane LOS	A	A	A	A	B	A	A
HCM 95th-tile Q	0.2	0.1	0.4	0.2	1.3	0.5	1.1

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	78	95	83
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	85	103	90
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	9.8
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	85	127	59	0	23	89	121	0	99	40	67
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	92	138	64	0	25	97	132	0	108	43	73
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	12.4	13.2	10.9
HCM LOS	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	40%	0%	10%	100%	0%
Vol Thru, %	0%	37%	60%	0%	38%	0%	36%
Vol Right, %	0%	63%	0%	100%	52%	0%	64%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	107	212	59	233	70	88
LT Vol	99	0	85	0	23	70	0
Through Vol	0	40	127	0	89	0	32
RT Vol	0	67	0	59	121	0	56
Lane Flow Rate	108	116	230	64	253	76	96
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.208	0.194	0.405	0.097	0.418	0.149	0.162
Departure Headway (Hd)	6.962	6.006	6.331	5.418	5.937	7.057	6.093
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	514	595	567	659	605	507	586
Service Time	4.722	3.766	4.084	3.172	3.992	4.821	3.857
HCM Lane V/C Ratio	0.21	0.195	0.406	0.097	0.418	0.15	0.164
HCM Control Delay	11.6	10.2	13.4	8.8	13.2	11.1	10
HCM Lane LOS	B	B	B	A	B	B	A
HCM 95th-tile Q	0.8	0.7	2	0.3	2.1	0.5	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	70	32	56
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	76	35	61
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	10.5
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	105	4	4	167	1	11	1	4	2	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	114	4	4	182	1	12	1	4	2	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	183	0	0	118	0	0	310	309	116	312	312	182
Stage 1	-	-	-	-	-	-	118	118	-	191	191	-
Stage 2	-	-	-	-	-	-	192	191	-	121	121	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1392	-	-	1470	-	-	642	605	936	641	603	861
Stage 1	-	-	-	-	-	-	887	798	-	811	742	-
Stage 2	-	-	-	-	-	-	810	742	-	883	796	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1392	-	-	1470	-	-	638	603	936	635	601	861
Mov Capacity-2 Maneuver	-	-	-	-	-	-	638	603	-	635	601	-
Stage 1	-	-	-	-	-	-	886	797	-	810	740	-
Stage 2	-	-	-	-	-	-	805	740	-	877	795	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	10.4	10.4
HCM LOS			B	B

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	690	1392	-	-	1470	-	-	669
HCM Lane V/C Ratio	0.025	0.001	-	-	0.003	-	-	0.006
HCM Control Delay (s)	10.4	7.588	0	-	7.456	0	-	10.4
HCM Lane LOS	B	A	A		A	A		B
HCM 95th %tile Q(veh)	0.077	0.002	-	-	0.009	-	-	0.02

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	2	213	8	6	213	4	10	1	8	3	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	232	9	7	232	4	11	1	9	3	1	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	236	0	0	240	0	0	489	489	236	492	492	234
Stage 1	-	-	-	-	-	-	240	240	-	247	247	-
Stage 2	-	-	-	-	-	-	249	249	-	245	245	-
Follow-up Headway	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Capacity-1 Maneuver	1331	-	-	1327	-	-	489	480	803	487	478	805
Stage 1	-	-	-	-	-	-	763	707	-	757	702	-
Stage 2	-	-	-	-	-	-	755	701	-	759	703	-
Time blocked-Platoon, %		-	-		-	-						
Mov Capacity-1 Maneuver	1331	-	-	1327	-	-	483	476	803	478	474	805
Mov Capacity-2 Maneuver	-	-	-	-	-	-	483	476	-	478	474	-
Stage 1	-	-	-	-	-	-	761	706	-	755	698	-
Stage 2	-	-	-	-	-	-	745	697	-	748	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.2	11.4	11.1
HCM LOS			B	B

Minor Lane / Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	580	1331	-	-	1327	-	-	599
HCM Lane V/C Ratio	0.036	0.002	-	-	0.005	-	-	0.015
HCM Control Delay (s)	11.4	7.709	0	-	7.726	0	-	11.1
HCM Lane LOS	B	A	A		A	A		B
HCM 95th %tile Q(veh)	0.111	0.005	-	-	0.015	-	-	0.044

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	1	2	31	1	2	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	34	1	2	227

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	266	34	0	0	35	0
Stage 1	34	-	-	-	-	-
Stage 2	232	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	723	1039	-	-	1576	-
Stage 1	988	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	722	1039	-	-	1576	-
Mov Capacity-2 Maneuver	722	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	806	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0.1
HCM LOS	A		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	906	1576	-
HCM Lane V/C Ratio	-	-	0.004	0.001	-
HCM Control Delay (s)	-	-	9	7.287	0
HCM Lane LOS			A	A	A
HCM 95th %tile Q(veh)	-	-	0.011	0.004	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection	
Intersection Delay, s/veh	0.2

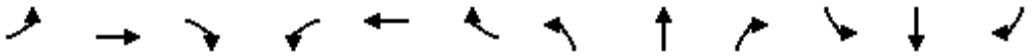
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	3	5	278	4	2	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	5	302	4	2	125

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	433	304	0	0	307	0
Stage 1	304	-	-	-	-	-
Stage 2	129	-	-	-	-	-
Follow-up Headway	3.518	3.318	-	-	2.218	-
Pot Capacity-1 Maneuver	580	736	-	-	1254	-
Stage 1	748	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Time blocked-Platoon, %			-	-		-
Mov Capacity-1 Maneuver	579	736	-	-	1254	-
Mov Capacity-2 Maneuver	579	-	-	-	-	-
Stage 1	748	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.1
HCM LOS	B		

Minor Lane / Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	668	1254	-
HCM Lane V/C Ratio	-	-	0.013	0.002	-
HCM Control Delay (s)	-	-	10.5	7.876	0
HCM Lane LOS			B	A	A
HCM 95th %tile Q(veh)	-	-	0.04	0.005	-

Notes
~ : Volume Exceeds Capacity; $: Delay Exceeds 300 Seconds; Error : Computation Not Defined

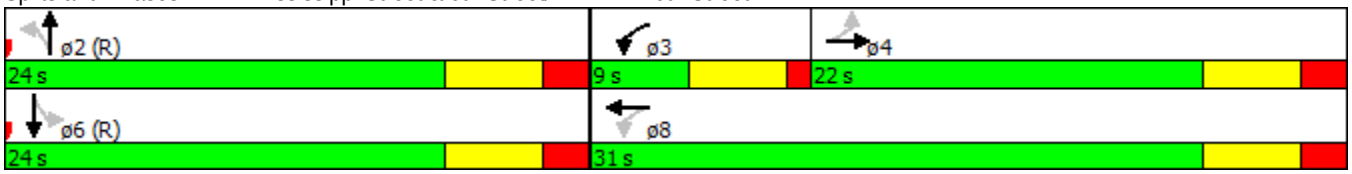


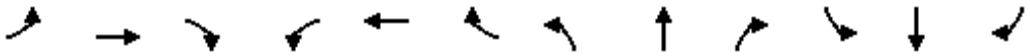
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	531	71	69	322	11	29	2	18	31	67	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	105		0	90		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.995			0.864			0.964	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3476	0	1770	3522	0	1770	1448	0	1770	1796	0
Flt Permitted	0.536			0.240			0.695			0.743		
Satd. Flow (perm)	998	3476	0	447	3522	0	1295	1448	0	1384	1796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			9			20			23	
Link Speed (mph)		30			30			30			20	
Link Distance (ft)		674			457			985			305	
Travel Time (s)		15.3			10.4			22.4			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)								0				
Adj. Flow (vph)	8	577	77	75	350	12	32	2	20	34	73	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	654	0	75	362	0	32	22	0	34	96	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.0	22.0		9.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		9.0	31.0		24.0	24.0		24.0	24.0	
Total Split (%)	40.0%	40.0%		16.4%	56.4%		43.6%	43.6%		43.6%	43.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Act Effct Green (s)	18.0	19.0		28.0	28.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.33	0.35		0.51	0.51		0.38	0.38		0.38	0.38	
v/c Ratio	0.02	0.54		0.20	0.20		0.06	0.04		0.06	0.14	
Control Delay	13.0	15.7		8.3	7.6		11.3	6.0		11.3	9.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.0	15.7		8.3	7.6		11.3	6.0		11.3	9.6	
LOS	B	B		A	A		B	A		B	A	
Approach Delay		15.7			7.7			9.2			10.0	
Approach LOS		B			A			A			B	
Queue Length 50th (ft)	2	83		11	30		6	0		7	15	
Queue Length 95th (ft)	9	126		28	49		20	11		21	39	
Internal Link Dist (ft)		594			377			905			225	
Turn Bay Length (ft)	125			105			90			90		
Base Capacity (vph)	326	1219		371	1797		494	565		528	699	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.54		0.20	0.20		0.06	0.04		0.06	0.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 39.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Mississippi Street & 9th Street/ 9th Street



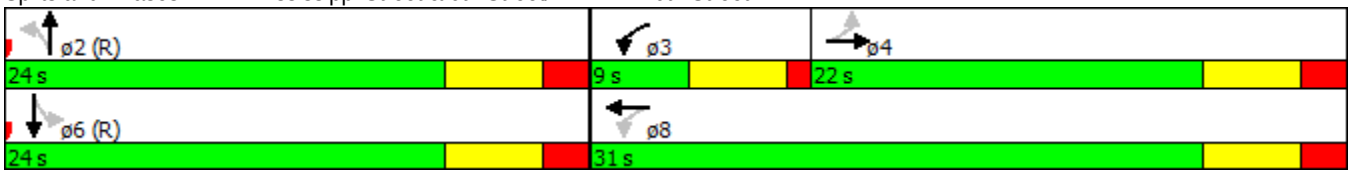


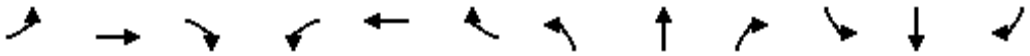
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	684	53	63	701	29	160	53	102	22	24	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	105		0	90		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.994			0.901			0.933	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3500	0	1770	3518	0	1770	1511	0	1770	1738	0
Flt Permitted	0.351			0.190			0.726			0.634		
Satd. Flow (perm)	654	3500	0	354	3518	0	1352	1511	0	1181	1738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			11			111			21	
Link Speed (mph)		30			30			30			20	
Link Distance (ft)		674			457			985			305	
Travel Time (s)		15.3			10.4			22.4			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)								0				
Adj. Flow (vph)	28	743	58	68	762	32	174	58	111	24	26	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	801	0	68	794	0	174	169	0	24	47	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.0	22.0		9.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		9.0	31.0		24.0	24.0		24.0	24.0	
Total Split (%)	40.0%	40.0%		16.4%	56.4%		43.6%	43.6%		43.6%	43.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Act Effct Green (s)	18.0	19.0		28.0	28.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.33	0.35		0.51	0.51		0.38	0.38		0.38	0.38	
v/c Ratio	0.13	0.66		0.20	0.44		0.34	0.26		0.05	0.07	
Control Delay	15.0	18.0		8.4	9.4		14.4	6.1		11.3	7.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.0	18.0		8.4	9.4		14.4	6.1		11.3	7.7	
LOS	B	B		A	A		B	A		B	A	
Approach Delay		17.9			9.3			10.3			8.9	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	6	111		10	77		39	12		5	5	
Queue Length 95th (ft)	22	163		26	113		80	44		17	21	
Internal Link Dist (ft)		594			377			905			225	
Turn Bay Length (ft)	125			105			90			90		
Base Capacity (vph)	214	1219		334	1796		516	645		450	676	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.66		0.20	0.44		0.34	0.26		0.05	0.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 12.9		Intersection LOS: B	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Mississippi Street & 9th Street/ 9th Street



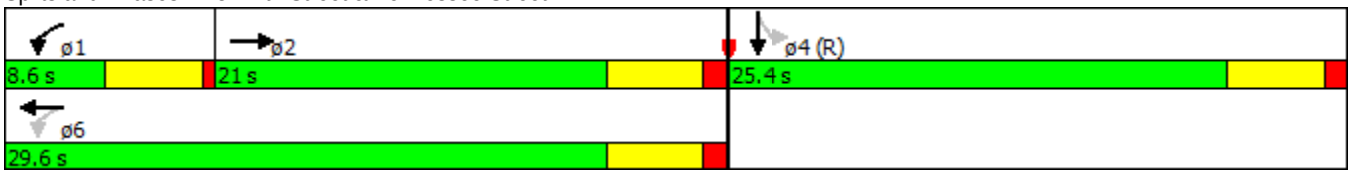


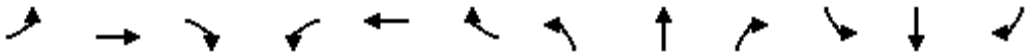
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	30	34	65	111	0	0	0	0	137	700	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.929									0.999	
Flt Protected				0.950							0.992	
Satd. Flow (prot)	0	1557	0	1770	1676	0	0	0	0	0	3332	0
Flt Permitted				0.590							0.992	
Satd. Flow (perm)	0	1557	0	1099	1676	0	0	0	0	0	3332	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37									2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		369			340			654			936	
Travel Time (s)		8.4			7.7			14.9			21.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0						0	
Adj. Flow (vph)	0	33	37	71	121	0	0	0	0	149	761	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	70	0	71	121	0	0	0	0	0	919	0
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Minimum Split (s)		21.0		8.5	21.0					21.0	21.0	
Total Split (s)		21.0		8.6	29.6					25.4	25.4	
Total Split (%)		38.2%		15.6%	53.8%					46.2%	46.2%	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		0.5	1.0					1.0	1.0	
Lost Time Adjust (s)		-2.0		-1.0	-2.0						-2.0	
Total Lost Time (s)		3.0		3.5	3.0						3.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Act Effct Green (s)		18.0		26.1	26.6						22.4	
Actuated g/C Ratio		0.33		0.47	0.48						0.41	
v/c Ratio		0.13		0.12	0.15						0.68	
Control Delay		8.5		8.5	8.6						16.4	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		8.5		8.5	8.6						16.4	
LOS		A		A	A						B	
Approach Delay		8.5			8.6						16.4	
Approach LOS		A			A						B	
Queue Length 50th (ft)		7		12	20						123	
Queue Length 95th (ft)		30		29	44						179	
Internal Link Dist (ft)		289			260			574			856	
Turn Bay Length (ft)				100								
Base Capacity (vph)		534		583	810						1358	
Starvation Cap Reductn		0		0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.13		0.12	0.15						0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 21.4 (39%), Referenced to phase 4:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 40.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: 11th Street & Tennessee Street



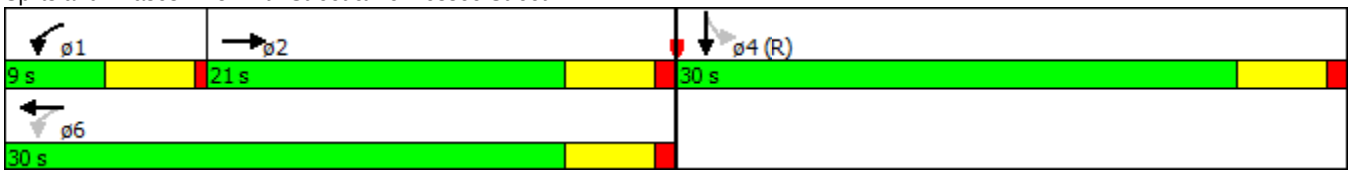


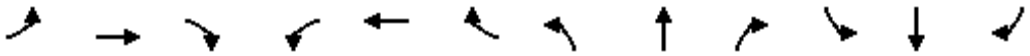
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	139	83	123	114	0	0	0	0	104	926	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.950									0.998	
Flt Protected				0.950							0.995	
Satd. Flow (prot)	0	1593	0	1770	1676	0	0	0	0	0	3339	0
Flt Permitted				0.401							0.995	
Satd. Flow (perm)	0	1593	0	747	1676	0	0	0	0	0	3339	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51									3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		369			340			654			936	
Travel Time (s)		8.4			7.7			14.9			21.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0						0	
Adj. Flow (vph)	0	151	90	134	124	0	0	0	0	113	1007	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	241	0	134	124	0	0	0	0	0	1134	0
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Minimum Split (s)		21.0		8.5	21.0					21.0	21.0	
Total Split (s)		21.0		9.0	30.0					30.0	30.0	
Total Split (%)		35.0%		15.0%	50.0%					50.0%	50.0%	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		0.5	1.0					1.0	1.0	
Lost Time Adjust (s)		-2.0		-1.0	-2.0						-2.0	
Total Lost Time (s)		3.0		3.5	3.0						3.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Act Effct Green (s)		18.0		26.5	27.0						27.0	
Actuated g/C Ratio		0.30		0.44	0.45						0.45	
v/c Ratio		0.47		0.32	0.16						0.75	
Control Delay		16.9		12.4	10.6						17.7	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		16.9		12.4	10.6						17.7	
LOS		B		B	B						B	
Approach Delay		16.9			11.5						17.7	
Approach LOS		B			B						B	
Queue Length 50th (ft)		54		28	25						168	
Queue Length 95th (ft)		112		57	52						239	
Internal Link Dist (ft)		289			260			574			856	
Turn Bay Length (ft)				100								
Base Capacity (vph)		513		423	754						1504	
Starvation Cap Reductn		0		0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.47		0.32	0.16						0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 16.6		Intersection LOS: B	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: 11th Street & Tennessee Street



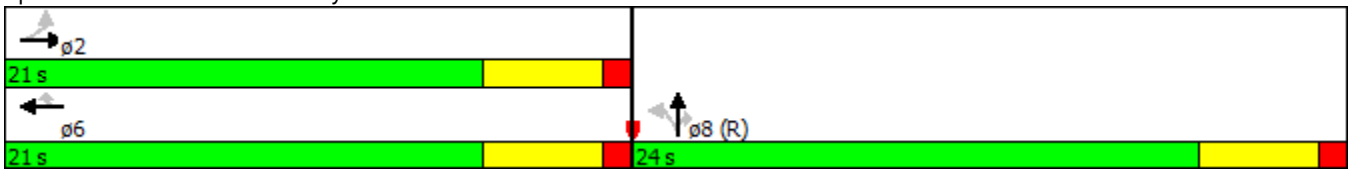


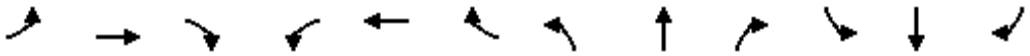
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	159	0	0	145	144	63	552	65	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		65	0		100	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.995				
Satd. Flow (prot)	1770	1863	0	0	1863	1583	0	3522	1583	0	0	0
Flt Permitted	0.657							0.995				
Satd. Flow (perm)	1224	1863	0	0	1863	1583	0	3522	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						157			71			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			277			660			920	
Travel Time (s)		7.7			6.3			15.0			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	173	0	0	158	157	68	600	71	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	173	0	0	158	157	0	668	71	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2					6	8		8			
Minimum Split (s)	21.0	21.0			21.0	21.0	21.0	21.0	21.0			
Total Split (s)	21.0	21.0			21.0	21.0	24.0	24.0	24.0			
Total Split (%)	46.7%	46.7%			46.7%	46.7%	53.3%	53.3%	53.3%			
Yellow Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	18.0	18.0			18.0	18.0		21.0	21.0			
Actuated g/C Ratio	0.40	0.40			0.40	0.40		0.47	0.47			
v/c Ratio	0.03	0.23			0.21	0.22		0.41	0.09			
Control Delay	8.5	10.0			9.8	3.0		8.9	2.7			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	8.5	10.0			9.8	3.0		8.9	2.7			
LOS	A	A			A	A		A	A			
Approach Delay		9.9			6.4			8.3				
Approach LOS		A			A			A				
Queue Length 50th (ft)	2	28			25	0		54	0			
Queue Length 95th (ft)	10	59			54	24		84	14			
Internal Link Dist (ft)		260			197			580			840	
Turn Bay Length (ft)	100					65			100			
Base Capacity (vph)	489	745			745	727		1643	776			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.03	0.23			0.21	0.22		0.41	0.09			

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 8:NBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 8.0		Intersection LOS: A	
Intersection Capacity Utilization 40.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Kentucky Street



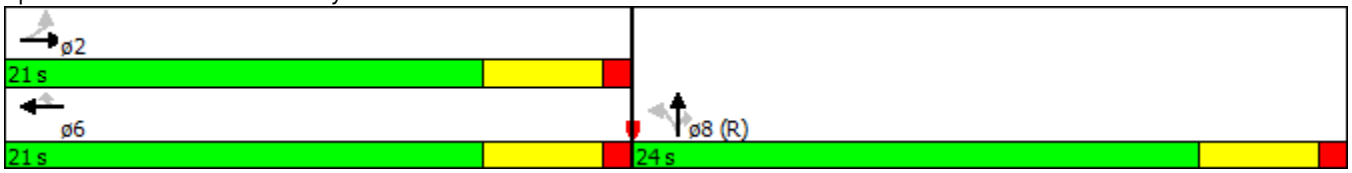


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	244	0	0	184	205	54	702	143	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		65	0		100	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1770	1863	0	0	1863	1583	0	3525	1583	0	0	0
Flt Permitted	0.619							0.996				
Satd. Flow (perm)	1153	1863	0	0	1863	1583	0	3525	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						126			155			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			277			660			920	
Travel Time (s)		7.7			6.3			15.0			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	265	0	0	200	223	59	763	155	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	265	0	0	200	223	0	822	155	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2					6	8		8			
Minimum Split (s)	21.0	21.0			21.0	21.0	21.0	21.0	21.0			
Total Split (s)	21.0	21.0			21.0	21.0	24.0	24.0	24.0			
Total Split (%)	46.7%	46.7%			46.7%	46.7%	53.3%	53.3%	53.3%			
Yellow Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	18.0	18.0			18.0	18.0		21.0	21.0			
Actuated g/C Ratio	0.40	0.40			0.40	0.40		0.47	0.47			
v/c Ratio	0.04	0.36			0.27	0.31		0.50	0.19			
Control Delay	8.6	11.2			10.3	5.9		9.7	2.3			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	8.6	11.2			10.3	5.9		9.7	2.3			
LOS	A	B			B	A		A	A			
Approach Delay		11.0			8.0			8.5				
Approach LOS		B			A			A				
Queue Length 50th (ft)	3	45			33	15		70	0			
Queue Length 95th (ft)	11	88			67	48		107	21			
Internal Link Dist (ft)		260			197			580			840	
Turn Bay Length (ft)	100					65			100			
Base Capacity (vph)	461	745			745	708		1645	821			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.04	0.36			0.27	0.31		0.50	0.19			

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 8:NBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 19: Kentucky Street



POST-DEVELOPMENT SCENARIO:
"EXISTING – BERKELEY FLATS + HERE@KANSAS" TRAFFIC VOLUMES

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	2	73	54	0	38	160	13	0	54	29	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	2	79	59	0	41	174	14	0	59	32	4
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	8.3	9.4	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	62%	2%	18%	12%
Vol Thru, %	33%	57%	76%	85%
Vol Right, %	5%	42%	6%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	129	211	75
LT Vol	54	2	38	9
Through Vol	29	73	160	64
RT Vol	4	54	13	2
Lane Flow Rate	95	140	229	82
Geometry Grp	1	1	1	1
Degree of Util (X)	0.131	0.171	0.288	0.111
Departure Headway (Hd)	4.973	4.386	4.526	4.904
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	719	816	794	729
Service Time	3.017	2.423	2.56	2.95
HCM Lane V/C Ratio	0.132	0.172	0.288	0.112
HCM Control Delay	8.8	8.3	9.4	8.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.6	1.2	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	9	64	2
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	10	70	2
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.6
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	3	147	63	0	49	139	9	0	82	56	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	3	160	68	0	53	151	10	0	89	61	15
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	9.6	9.8	9.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	54%	1%	25%	12%
Vol Thru, %	37%	69%	71%	72%
Vol Right, %	9%	30%	5%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	152	213	197	60
LT Vol	82	3	49	7
Through Vol	56	147	139	43
RT Vol	14	63	9	10
Lane Flow Rate	165	232	214	65
Geometry Grp	1	1	1	1
Degree of Util (X)	0.235	0.297	0.287	0.093
Departure Headway (Hd)	5.11	4.611	4.818	5.133
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	697	773	741	691
Service Time	3.182	2.672	2.881	3.217
HCM Lane V/C Ratio	0.237	0.3	0.289	0.094
HCM Control Delay	9.8	9.6	9.8	8.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.9	1.2	1.2	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	7	43	10
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	8	47	11
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.8
HCM LOS	A

Lane

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	28	38	55	0	62	117	16	0	35	56	41
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	30	41	60	0	67	127	17	0	38	61	45
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	9.5	12.4	9.7
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	42%	0%	32%	100%	0%
Vol Thru, %	0%	58%	58%	0%	60%	0%	65%
Vol Right, %	0%	42%	0%	100%	8%	0%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	97	66	55	195	74	234
LT Vol	35	0	28	0	62	74	0
Through Vol	0	56	38	0	117	0	151
RT Vol	0	41	0	55	16	0	83
Lane Flow Rate	38	105	72	60	212	80	254
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.069	0.169	0.128	0.091	0.357	0.141	0.392
Departure Headway (Hd)	6.568	5.76	6.416	5.492	6.066	6.301	5.543
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	546	623	559	652	593	570	651
Service Time	4.304	3.496	4.155	3.231	4.1	4.029	3.272
HCM Lane V/C Ratio	0.07	0.169	0.129	0.092	0.358	0.14	0.39
HCM Control Delay	9.8	9.7	10.1	8.8	12.4	10.1	11.8
HCM Lane LOS	A	A	B	A	B	B	B
HCM 95th-tile Q	0.2	0.6	0.4	0.3	1.6	0.5	1.9

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	74	151	83
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	80	164	90
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	11.4
HCM LOS	B

Lane

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	85	127	71	0	44	89	101	0	103	200	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	92	138	77	0	48	97	110	0	112	217	95
Number of Lanes	0	0	1	1	0	0	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	2	2
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	2	2	2
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	2	2	1
HCM Control Delay	15	17	17
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	SBLn1	SBLn2
Vol Left, %	100%	0%	40%	0%	19%	100%	0%
Vol Thru, %	0%	70%	60%	0%	38%	0%	62%
Vol Right, %	0%	30%	0%	100%	43%	0%	38%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	287	212	71	234	62	148
LT Vol	103	0	85	0	44	62	0
Through Vol	0	200	127	0	89	0	92
RT Vol	0	87	0	71	101	0	56
Lane Flow Rate	112	312	230	77	254	67	161
Geometry Grp	7	7	7	7	6	7	7
Degree of Util (X)	0.233	0.585	0.473	0.139	0.5	0.147	0.316
Departure Headway (Hd)	7.48	6.751	7.396	6.475	7.077	7.867	7.081
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	480	533	486	553	509	456	507
Service Time	5.226	4.497	5.144	4.223	5.126	5.623	4.836
HCM Lane V/C Ratio	0.233	0.585	0.473	0.139	0.499	0.147	0.318
HCM Control Delay	12.5	18.6	16.6	10.3	17	12	13.1
HCM Lane LOS	B	C	C	B	C	B	B
HCM 95th-tile Q	0.9	3.7	2.5	0.5	2.8	0.5	1.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	62	92	56
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	67	100	61
Number of Lanes	0	1	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	2
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	2
HCM Control Delay	12.8
HCM LOS	B

Lane

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	11	84	31	0	0	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	91	34	0	0	324

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	358	34	0	0	34	0
Stage 1	34	-	-	-	-	-
Stage 2	324	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	640	1039	-	-	1578	-
Stage 1	988	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	640	1039	-	-	1578	-
Mov Cap-2 Maneuver	640	-	-	-	-	-
Stage 1	988	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.2	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	969	1578	-
HCM Lane V/C Ratio	-	-	0.107	-	-
HCM Control Delay (s)	-	-	9.2	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

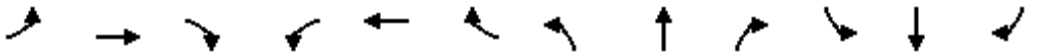
Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	42	89	278	0	0	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	97	302	0	0	228

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	530	302	0	0	302	0
Stage 1	302	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	510	738	-	-	1259	-
Stage 1	750	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	510	738	-	-	1259	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	645	1259	-
HCM Lane V/C Ratio	-	-	0.221	-	-
HCM Control Delay (s)	-	-	12.2	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.8	0	-

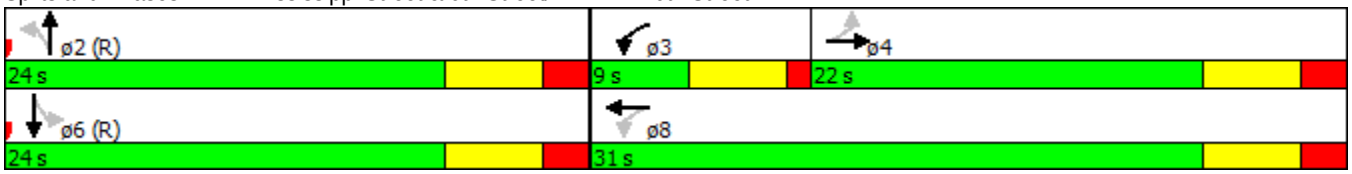


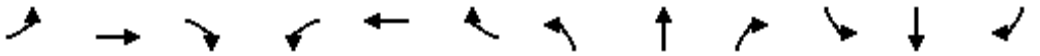
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	7	531	92	90	322	11	62	4	39	31	88	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	105		0	90		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.978			0.995			0.863			0.971	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3461	0	1770	3522	0	1770	1447	0	1770	1809	0
Flt Permitted	0.536			0.227			0.681			0.727		
Satd. Flow (perm)	998	3461	0	423	3522	0	1269	1447	0	1354	1809	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			9			42			23	
Link Speed (mph)		30			30			30			20	
Link Distance (ft)		674			457			985			305	
Travel Time (s)		15.3			10.4			22.4			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)								0				
Adj. Flow (vph)	8	577	100	98	350	12	67	4	42	34	96	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	677	0	98	362	0	67	46	0	34	119	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.0	22.0		9.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		9.0	31.0		24.0	24.0		24.0	24.0	
Total Split (%)	40.0%	40.0%		16.4%	56.4%		43.6%	43.6%		43.6%	43.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Act Effct Green (s)	18.0	19.0		28.0	28.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.33	0.35		0.51	0.51		0.38	0.38		0.38	0.38	
v/c Ratio	0.02	0.55		0.27	0.20		0.14	0.08		0.07	0.17	
Control Delay	13.0	15.8		9.1	7.6		12.1	5.0		11.3	10.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	13.0	15.8		9.1	7.6		12.1	5.0		11.3	10.1	
LOS	B	B		A	A		B	A		B	B	
Approach Delay		15.7			7.9			9.2			10.4	
Approach LOS		B			A			A			B	
Queue Length 50th (ft)	2	86		15	30		14	1		7	20	
Queue Length 95th (ft)	9	130		34	49		35	16		21	47	
Internal Link Dist (ft)		594			377			905			225	
Turn Bay Length (ft)	125			105			90			90		
Base Capacity (vph)	326	1221		362	1797		484	578		516	704	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.02	0.55		0.27	0.20		0.14	0.08		0.07	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 12.1		Intersection LOS: B	
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Mississippi Street & 9th Street/ 9th Street



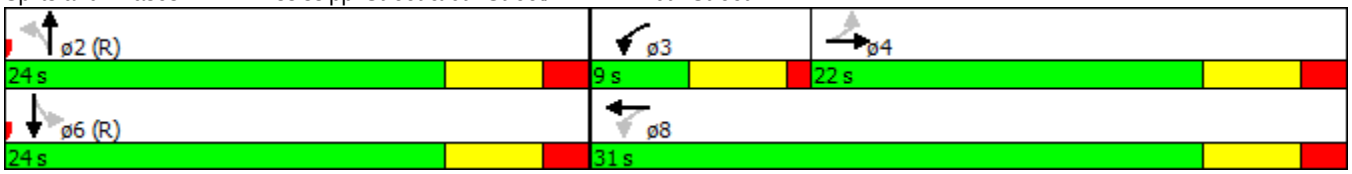


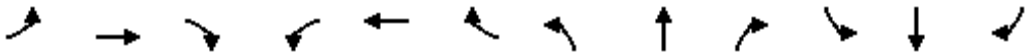
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	684	77	92	701	29	192	63	123	22	35	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	105		0	90		0	90		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.994			0.900			0.947	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3486	0	1770	3518	0	1770	1509	0	1770	1764	0
Flt Permitted	0.351			0.190			0.719			0.592		
Satd. Flow (perm)	654	3486	0	354	3518	0	1339	1509	0	1103	1764	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			11			134			21	
Link Speed (mph)		30			30			30			20	
Link Distance (ft)		674			457			985			305	
Travel Time (s)		15.3			10.4			22.4			10.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)								0				
Adj. Flow (vph)	28	743	84	100	762	32	209	68	134	24	38	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	827	0	100	794	0	209	202	0	24	59	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Minimum Split (s)	22.0	22.0		9.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	22.0	22.0		9.0	31.0		24.0	24.0		24.0	24.0	
Total Split (%)	40.0%	40.0%		16.4%	56.4%		43.6%	43.6%		43.6%	43.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-3.0		-2.0	-3.0		-3.0	-3.0		-3.0	-3.0	
Total Lost Time (s)	4.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Act Effct Green (s)	18.0	19.0		28.0	28.0		21.0	21.0		21.0	21.0	
Actuated g/C Ratio	0.33	0.35		0.51	0.51		0.38	0.38		0.38	0.38	
v/c Ratio	0.13	0.68		0.30	0.44		0.41	0.31		0.06	0.09	
Control Delay	15.0	18.3		9.5	9.4		15.5	6.1		11.3	8.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.0	18.3		9.5	9.4		15.5	6.1		11.3	8.4	
LOS	B	B		A	A		B	A		B	A	
Approach Delay		18.2			9.4			10.9			9.2	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	6	114		15	77		48	14		5	8	
Queue Length 95th (ft)	22	168		35	113		96	50		17	26	
Internal Link Dist (ft)		594			377			905			225	
Turn Bay Length (ft)	125			105			90			90		
Base Capacity (vph)	214	1219		334	1796		511	659		421	686	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.68		0.30	0.44		0.41	0.31		0.06	0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 13.0		Intersection LOS: B	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 11: Mississippi Street & 9th Street/ 9th Street



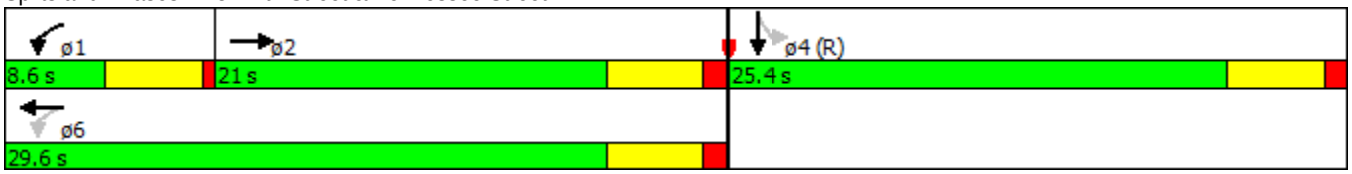


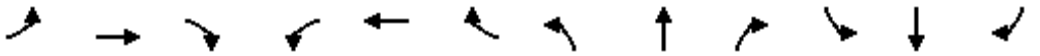
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	42	47	65	129	0	0	0	0	137	700	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.929									0.999	
Flt Protected				0.950							0.992	
Satd. Flow (prot)	0	1557	0	1770	1676	0	0	0	0	0	3332	0
Flt Permitted				0.576							0.992	
Satd. Flow (perm)	0	1557	0	1073	1676	0	0	0	0	0	3332	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51									2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		369			340			654			936	
Travel Time (s)		8.4			7.7			14.9			21.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0						0	
Adj. Flow (vph)	0	46	51	71	140	0	0	0	0	149	761	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	97	0	71	140	0	0	0	0	0	919	0
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Minimum Split (s)		21.0		8.5	21.0					21.0	21.0	
Total Split (s)		21.0		8.6	29.6					25.4	25.4	
Total Split (%)		38.2%		15.6%	53.8%					46.2%	46.2%	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		0.5	1.0					1.0	1.0	
Lost Time Adjust (s)		-2.0		-1.0	-2.0						-2.0	
Total Lost Time (s)		3.0		3.5	3.0						3.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Act Effct Green (s)		18.0		26.1	26.6						22.4	
Actuated g/C Ratio		0.33		0.47	0.48						0.41	
v/c Ratio		0.18		0.12	0.17						0.68	
Control Delay		8.6		8.6	8.7						16.4	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		8.6		8.6	8.7						16.4	
LOS		A		A	A						B	
Approach Delay		8.6			8.7						16.4	
Approach LOS		A			A						B	
Queue Length 50th (ft)		10		12	24						123	
Queue Length 95th (ft)		37		29	49						179	
Internal Link Dist (ft)		289			260			574			856	
Turn Bay Length (ft)				100								
Base Capacity (vph)		543		573	810						1358	
Starvation Cap Reductn		0		0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.18		0.12	0.17						0.68	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 21.4 (39%), Referenced to phase 4:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Pretimed			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 42.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: 11th Street & Tennessee Street



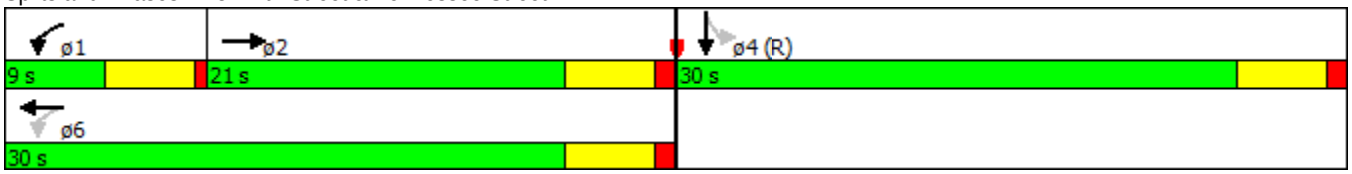


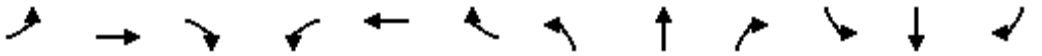
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	149	86	123	130	0	0	0	0	104	926	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.951									0.998	
Flt Protected				0.950							0.995	
Satd. Flow (prot)	0	1594	0	1770	1676	0	0	0	0	0	3339	0
Flt Permitted				0.383							0.995	
Satd. Flow (perm)	0	1594	0	713	1676	0	0	0	0	0	3339	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49									3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		369			340			654			936	
Travel Time (s)		8.4			7.7			14.9			21.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Parking (#/hr)		0			0						0	
Adj. Flow (vph)	0	162	93	134	141	0	0	0	0	113	1007	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	255	0	134	141	0	0	0	0	0	1134	0
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		2		1	6						4	
Permitted Phases				6						4		
Minimum Split (s)		21.0		8.5	21.0					21.0	21.0	
Total Split (s)		21.0		9.0	30.0					30.0	30.0	
Total Split (%)		35.0%		15.0%	50.0%					50.0%	50.0%	
Yellow Time (s)		4.0		4.0	4.0					4.0	4.0	
All-Red Time (s)		1.0		0.5	1.0					1.0	1.0	
Lost Time Adjust (s)		-2.0		-1.0	-2.0						-2.0	
Total Lost Time (s)		3.0		3.5	3.0						3.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Act Effct Green (s)		18.0		26.5	27.0						27.0	
Actuated g/C Ratio		0.30		0.44	0.45						0.45	
v/c Ratio		0.50		0.33	0.19						0.75	
Control Delay		17.8		12.5	10.8						17.7	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		17.8		12.5	10.8						17.7	
LOS		B		B	B						B	
Approach Delay		17.8			11.6						17.7	
Approach LOS		B			B						B	
Queue Length 50th (ft)		59		28	29						168	
Queue Length 95th (ft)		120		57	59						239	
Internal Link Dist (ft)		289			260			574			856	
Turn Bay Length (ft)				100								
Base Capacity (vph)		512		411	754						1504	
Starvation Cap Reductn		0		0	0						0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.50		0.33	0.19						0.75	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 4:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Pretimed			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 16.7		Intersection LOS: B	
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: 11th Street & Tennessee Street



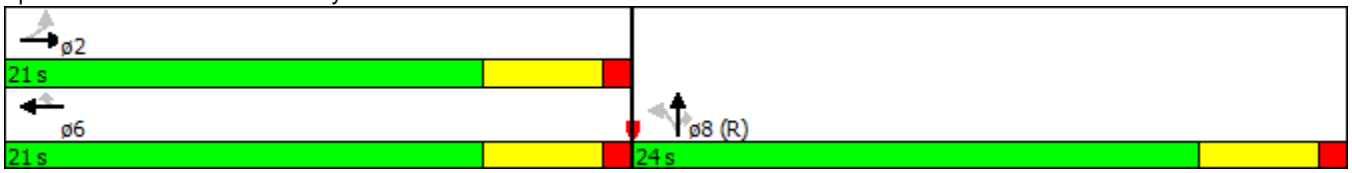


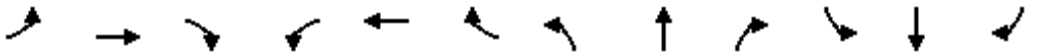
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	171	0	0	157	144	63	552	65	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		65	0		100	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.995				
Satd. Flow (prot)	1770	1863	0	0	1863	1583	0	3522	1583	0	0	0
Flt Permitted	0.649							0.995				
Satd. Flow (perm)	1209	1863	0	0	1863	1583	0	3522	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						157			71			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			277			660			920	
Travel Time (s)		7.7			6.3			15.0			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	186	0	0	171	157	68	600	71	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	186	0	0	171	157	0	668	71	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2					6	8		8			
Minimum Split (s)	21.0	21.0			21.0	21.0	21.0	21.0	21.0			
Total Split (s)	21.0	21.0			21.0	21.0	24.0	24.0	24.0			
Total Split (%)	46.7%	46.7%			46.7%	46.7%	53.3%	53.3%	53.3%			
Yellow Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	18.0	18.0			18.0	18.0		21.0	21.0			
Actuated g/C Ratio	0.40	0.40			0.40	0.40		0.47	0.47			
v/c Ratio	0.03	0.25			0.23	0.22		0.41	0.09			
Control Delay	8.5	10.1			10.0	3.0		8.9	2.7			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	8.5	10.1			10.0	3.0		8.9	2.7			
LOS	A	B			A	A		A	A			
Approach Delay		10.0			6.6			8.3				
Approach LOS		B			A			A				
Queue Length 50th (ft)	2	30			28	0		54	0			
Queue Length 95th (ft)	10	63			58	24		84	14			
Internal Link Dist (ft)		260			197			580			840	
Turn Bay Length (ft)	100					65			100			
Base Capacity (vph)	483	745			745	727		1643	776			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.03	0.25			0.23	0.22		0.41	0.09			

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 8:NBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay: 8.1		Intersection LOS: A	
Intersection Capacity Utilization 42.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 19: Kentucky Street



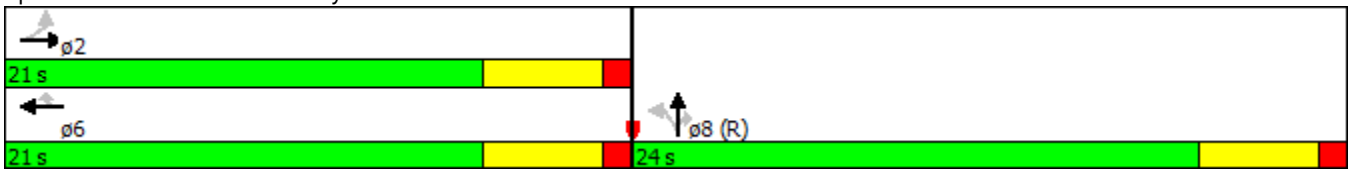


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	254	0	0	197	205	58	702	143	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		65	0		100	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.996				
Satd. Flow (prot)	1770	1863	0	0	1863	1583	0	3525	1583	0	0	0
Flt Permitted	0.602							0.996				
Satd. Flow (perm)	1121	1863	0	0	1863	1583	0	3525	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						126			155			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		340			277			660			920	
Travel Time (s)		7.7			6.3			15.0			20.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	276	0	0	214	223	63	763	155	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	276	0	0	214	223	0	826	155	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA	Perm			
Protected Phases		2			6			8				
Permitted Phases	2					6	8		8			
Minimum Split (s)	21.0	21.0			21.0	21.0	21.0	21.0	21.0			
Total Split (s)	21.0	21.0			21.0	21.0	24.0	24.0	24.0			
Total Split (%)	46.7%	46.7%			46.7%	46.7%	53.3%	53.3%	53.3%			
Yellow Time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0			
All-Red Time (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Lost Time Adjust (s)	-2.0	-2.0			-2.0	-2.0		-2.0	-2.0			
Total Lost Time (s)	3.0	3.0			3.0	3.0		3.0	3.0			
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	18.0	18.0			18.0	18.0		21.0	21.0			
Actuated g/C Ratio	0.40	0.40			0.40	0.40		0.47	0.47			
v/c Ratio	0.04	0.37			0.29	0.31		0.50	0.19			
Control Delay	8.6	11.4			10.5	5.9		9.7	2.3			
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			
Total Delay	8.6	11.4			10.5	5.9		9.7	2.3			
LOS	A	B			B	A		A	A			
Approach Delay		11.2			8.1			8.5				
Approach LOS		B			A			A				
Queue Length 50th (ft)	3	47			35	15		71	0			
Queue Length 95th (ft)	11	91			71	48		108	21			
Internal Link Dist (ft)		260			197			580			840	
Turn Bay Length (ft)	100					65			100			
Base Capacity (vph)	448	745			745	708		1645	821			
Starvation Cap Reductn	0	0			0	0		0	0			
Spillback Cap Reductn	0	0			0	0		0	0			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0			0	0		0	0			
Reduced v/c Ratio	0.04	0.37			0.29	0.31		0.50	0.19			

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 8:NBTL, Start of Green			
Natural Cycle: 45			
Control Type: Pretimed			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 19: Kentucky Street



Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	102	10	41	189	1	2	1	6	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	111	11	45	205	1	2	1	7	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	207	0	0	122	0	0	414	414	116	417	419	206
Stage 1	-	-	-	-	-	-	118	118	-	295	295	-
Stage 2	-	-	-	-	-	-	296	296	-	122	124	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1364	-	-	1465	-	-	549	529	936	546	525	835
Stage 1	-	-	-	-	-	-	887	798	-	713	669	-
Stage 2	-	-	-	-	-	-	712	668	-	882	793	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1364	-	-	1465	-	-	534	512	936	528	509	835
Mov Cap-2 Maneuver	-	-	-	-	-	-	534	512	-	528	509	-
Stage 1	-	-	-	-	-	-	886	797	-	712	648	-
Stage 2	-	-	-	-	-	-	688	647	-	874	792	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.3	9.9	11.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	743	1364	-	-	1465	-	-	593
HCM Lane V/C Ratio	0.013	0.001	-	-	0.03	-	-	0.005
HCM Control Delay (s)	9.9	7.6	-	-	7.5	-	-	11.1
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	1	248	4	3	241	1	7	1	16	1	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	75	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	270	4	3	262	1	8	1	17	1	1	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	263	0	0	274	0	0	545	544	272	552	545	263
Stage 1	-	-	-	-	-	-	274	274	-	269	269	-
Stage 2	-	-	-	-	-	-	271	270	-	283	276	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1301	-	-	1289	-	-	449	446	767	444	446	776
Stage 1	-	-	-	-	-	-	732	683	-	737	687	-
Stage 2	-	-	-	-	-	-	735	686	-	724	682	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1301	-	-	1289	-	-	446	445	767	432	445	776
Mov Cap-2 Maneuver	-	-	-	-	-	-	446	445	-	432	445	-
Stage 1	-	-	-	-	-	-	731	682	-	736	685	-
Stage 2	-	-	-	-	-	-	730	684	-	706	681	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	11.1	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	619	1301	-	-	1289	-	-	560
HCM Lane V/C Ratio	0.042	0.001	-	-	0.003	-	-	0.008
HCM Control Delay (s)	11.1	7.8	-	-	7.8	-	-	11.5
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

APPENDIX III

Results of Trip Generation Analysis

Using ITE Trip Generation Manual, 9th Edition

Trip Generation Summary - Apartments - Dwelling Units

Project: HERE@KANSAS
Alternative: Alternative 1 - Weighted Average Rate Mathod

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	APT 1	788	788	1576	24	97	121	96	51	147
	237 Dwelling Units									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Apartments - Bedrooms

Project: HERE@KANSAS
Alternative: Alternative 1 - Weighted Average Rate Mathod

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	APT 2	1033	1032	2065	88	87	175	125	125	250
	624 Persons									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Trip Generation Summary - Mid Rise Apartments - Dwelling Units

Project: HERE@KANSAS
Alternative: Alternative 1 - Weighted Average Rate Mathod

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
223	MRAPT 1				22	49	71	53	39	92
	237 Dwelling Units									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Trip Generation Summary - Restaurant

Project: HERE@KANSAS
Alternative: Alternative 1 - Weighted Average Rate Mathod

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips Enter	Average Daily Trips Exit	Average Daily Trips Total	AM Peak Hour of Adjacent Street Traffic Enter	AM Peak Hour of Adjacent Street Traffic Exit	AM Peak Hour of Adjacent Street Traffic Total	PM Peak Hour of Adjacent Street Traffic Enter	PM Peak Hour of Adjacent Street Traffic Exit	PM Peak Hour of Adjacent Street Traffic Total
932	RESTAURANTHT 1	374	374	748	35	29	64	35	23	58
	5.88 Gross Floor Area 1000 SF									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	15	10	25
Volume Added to Adjacent Streets		0	0	0	0	0	0	-15	-10	-25

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Retail

Project: HERE@KANSAS
Alternative: Alternative 1 - Weighted Average Rate Mathod

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
826	CENTERSPECIALTY 1	170	170	340				9	12	21
	7.68 Gross Leasable Area 1000 SF									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Trip Generation Summary - Apartments - Dwelling Units

Project: HERE@KANSAS
Alternative: Alternative 2 - Regression Equation Method

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	APT 3	780	780	1560	24	96	120	96	52	148
	237 Dwelling Units									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Trip Generation Summary - Apartments - Bedrooms

Project: HERE@KANSAS
Alternative: Alternative 2 - Regression Equation Method

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
220	APT 4	1051	1050	2101	87	86	173	123	122	245
	624 Persons									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Trip Generation Summary - Mid Rise Apartments - Dwelling Units

Project: HERE@KANSAS
Alternative: Alternative 2 - Regression Equation Method

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
223	MRAPT 2				26	58	84	60	43	103
	237 Dwelling Units									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Trip Generation Summary - Restaurant

Project: HERE@KANSAS
Alternative: Alternative 2 - Regression Equation Method

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
932	RESTAURANTHT 2	374	374	748	35	29	64	35	23	58
	5.88 Gross Floor Area 1000 SF									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	15	10	25
Volume Added to Adjacent Streets		0	0	0	0	0	0	-15	-10	-25

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Source: Institute of Transportation Engineers, Trip Generation Manual 9th Edition, 2012

Trip Generation Summary - Retail

Project: HERE@KANSAS
Alternative: Alternative 2 - Regression Equation Method

Open Date: 9/16/2016
Analysis Date: 9/16/2016

ITE	Land Use	Average Daily Trips			AM Peak Hour of Adjacent Street Traffic			PM Peak Hour of Adjacent Street Traffic		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
826	CENTERSPECIALTY 2	183	183	366				18	22	40
	7.68 Gross Leasable Area 1000 SF									
Unadjusted Volume		0	0	0	0	0	0	0	0	0
Internal Capture Trips		0	0	0	0	0	0	0	0	0
Pass-By Trips		0	0	0	0	0	0	0	0	0
Volume Added to Adjacent Streets		0	0	0	0	0	0	0	0	0

Total AM Peak Hour Internal Capture = 0 Percent

Total PM Peak Hour Internal Capture = 0 Percent

Detailed Land Use Data
For 237 Dwelling Units of APT 1
(220) Apartment

Project: HERE@KANSAS
Phase: Apartments - Dwelling Units
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1576	0	6.65	1.27	12.5	3.07	210	50	50	False	T = 6.06(X) + 123.56	0.87
Weekday AM Peak Hour of Generator	130	0	0.55	0.1	1.08	0.76	230	29	71	False	T = 0.54(X) + 2.45	0.82
Weekday AM Peak Hour of Adjacent Street Traffic	121	0	0.51	0.1	1.02	0.73	235	20	80	False	T = 0.49(X) + 3.73	0.83
Weekday PM Peak Hour of Generator	159	0	0.67	0.1	1.64	0.85	229	61	39	False	T = 0.60(X) + 14.91	0.8
Weekday PM Peak Hour of Adjacent Street Traffic	147	0	0.62	0.1	1.64	0.82	233	65	35	False	T = 0.55(X) + 17.65	0.77
Saturday Average Daily Trips	1514	0	6.39	2.84	8.4	2.99	175	50	50	False	T = 7.85(X) - 256.19	0.85
Saturday Peak Hour of Generator	123	0	0.52	0.26	1.05	0.74	178	50	50	False	T = 0.41(X) + 19.23	0.56
Sunday Average Daily Trips	1389	0	5.86	3.21	7.53	2.73	182	50	50	False	T = 6.42(X) - 101.12	0.82
Sunday Peak Hour of Generator	121	0	0.51	0.26	1.43	0.75	186	50	50	False		

Detailed Land Use Data
For 624 Persons of APT 2
(220) Apartment

Project: HERE@KANSAS
Phase: Apartments - Bedrooms
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	2065	0	3.31	1.16	5.85	1.99	397	50	50	False	T = 3.47(X) - 64.48	0.9
Weekday AM Peak Hour of Generator	187	0	0.3	0.1	0.55	0.56	408	48	52	False	T = 0.28(X) + 8.45	0.66
Weekday AM Peak Hour of Adjacent Street Traffic	175	0	0.28	0.1	0.52	0.54	427	50	50	False	T = 0.26(X) + 10.99	0.67
Weekday PM Peak Hour of Generator	250	0	0.4	0.19	0.77	0.64	402	59	41	False	T = 0.40(X) - 1.67	0.78
Weekday PM Peak Hour of Adjacent Street Traffic	250	0	0.4	0.2	0.77	0.65	412	50	50	False	T = 0.39(X) + 2.03	0.77
Saturday Average Daily Trips	2022	0	3.24	1.03	5.11	2.16	338	50	50	False	T = 3.30(X) - 21.03	0.56
Saturday Peak Hour of Generator	162	0	0.26	0.15	0.55	0.52	338	50	50	False		
Sunday Average Daily Trips	1909	0	3.06	1.79	5.04	1.93	359	50	50	False	T = 3.21(X) - 54.93	0.69
Sunday Peak Hour of Generator	162	0	0.26	0.16	0.45	0.51	359	50	50	False	Ln(T) = 0.77 Ln(X) - 0.04	0.52

Detailed Land Use Data
For 237 Dwelling Units of MRAPT 1
(223) Mid-Rise Apartment

Project: HERE@KANSAS
Phase: Mid Rise Apartments - Dwelling Units
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday AM Peak Hour of Generator	83	0	0.35	0.19	0.47	0.6	120	29	71	False	T = 0.46(X) - 14.01	0.91
Weekday AM Peak Hour of Adjacent Street Traffic	71	0	0.3	0.06	0.46	0.56	120	31	69	False	T = 0.41(X) - 13.06	0.83
Weekday PM Peak Hour of Generator	104	0	0.44	0.19	0.6	0.67	120	59	41	False	T = 0.53(X) - 11.27	0.9
Weekday PM Peak Hour of Adjacent Street Traffic	92	0	0.39	0.15	0.54	0.63	120	58	42	False	T = 0.48(X) - 11.07	0.89

Detailed Land Use Data
For 5.88 Gross Floor Area 1000 SF of RESTAURANTHT 1
(932) High-Turnover (Sit-Down) Restaurant

Project: HERE@KANSAS
Phase: Restaurant
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	748	0	127.15	73.51	246	41.77	7	50	50	False		
Weekday AM Peak Hour of Generator	78	0	13.33	3	54.09	9.44	7	53	47	False		
Weekday AM Peak Hour of Adjacent Street Traffic	64	0	10.81	2.32	25.6	6.59	6	55	45	False		
Weekday PM Peak Hour of Generator	109	0	18.49	5.6	69.2	13.32	5	54	46	False		
Weekday PM Peak Hour of Adjacent Street Traffic	58	25	9.85	0.92	62	8.54	6	60	40	False		
Saturday Average Daily Trips	931	0	158.37	144.6	172.71		5	50	50	False		
Saturday Peak Hour of Generator	83	0	14.07	4.44	50.4	12.19	4	53	47	False		
Sunday Average Daily Trips	775	0	131.84	119.38	143.8		5	50	50	False		
Sunday Peak Hour of Generator	109	0	18.46	9.79	43.2	13.74	4	55	45	False		

Detailed Land Use Data
For 7.68 Gross Leasable Area 1000 SF of CENTERSPECIALTY 1
(826) Specialty Retail Center

Project: HERE@KANSAS
Phase: Retail
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	340	0	44.32	21.3	64.21	15.52	25	50	50	False	T = 42.78(X) + 37.66	0.69
Weekday AM Peak Hour of Generator	53	0	6.84	5.33	14.08	3.55	60	48	52	False	T = 4.91(X) + 115.59	0.9
Weekday PM Peak Hour of Generator	39	0	5.02	4.59	6.18	2.31	75	56	44	False		
Weekday PM Peak Hour of Adjacent Street Traffic	21	0	2.71	2.03	5.16	1.83	69	44	56	False	T = 2.40(X) + 21.48	0.98
Saturday Average Daily Trips	323	0	42.04	22.57	54.47	13.97	28	50	50	False		
Sunday Average Daily Trips	157	0	20.43	6.96	32.82	10.27	28	50	50	False		

Detailed Land Use Data
For 237 Dwelling Units of APT 3
(220) Apartment

Project: HERE@KANSAS
Phase: Apartments - Dwelling Units
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1560	0	6.65	1.27	12.5	3.07	210	50	50	True	T = 6.06(X) + 123.56	0.87
Weekday AM Peak Hour of Generator	130	0	0.55	0.1	1.08	0.76	230	29	71	True	T = 0.54(X) + 2.45	0.82
Weekday AM Peak Hour of Adjacent Street Traffic	120	0	0.51	0.1	1.02	0.73	235	20	80	True	T = 0.49(X) + 3.73	0.83
Weekday PM Peak Hour of Generator	157	0	0.67	0.1	1.64	0.85	229	61	39	True	T = 0.60(X) + 14.91	0.8
Weekday PM Peak Hour of Adjacent Street Traffic	148	0	0.62	0.1	1.64	0.82	233	65	35	True	T = 0.55(X) + 17.65	0.77
Saturday Average Daily Trips	1604	0	6.39	2.84	8.4	2.99	175	50	50	True	T = 7.85(X) - 256.19	0.85
Saturday Peak Hour of Generator	116	0	0.52	0.26	1.05	0.74	178	50	50	True	T = 0.41(X) + 19.23	0.56
Sunday Average Daily Trips	1420	0	5.86	3.21	7.53	2.73	182	50	50	True	T = 6.42(X) - 101.12	0.82
Sunday Peak Hour of Generator	121	0	0.51	0.26	1.43	0.75	186	50	50	False		

Detailed Land Use Data
For 624 Persons of APT 4
(220) Apartment

Project: HERE@KANSAS
Phase: Apartments - Bedrooms
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	2101	0	3.31	1.16	5.85	1.99	397	50	50	True	T = 3.47(X) - 64.48	0.9
Weekday AM Peak Hour of Generator	183	0	0.3	0.1	0.55	0.56	408	48	52	True	T = 0.28(X) + 8.45	0.66
Weekday AM Peak Hour of Adjacent Street Traffic	173	0	0.28	0.1	0.52	0.54	427	50	50	True	T = 0.26(X) + 10.99	0.67
Weekday PM Peak Hour of Generator	248	0	0.4	0.19	0.77	0.64	402	59	41	True	T = 0.40(X) - 1.67	0.78
Weekday PM Peak Hour of Adjacent Street Traffic	245	0	0.4	0.2	0.77	0.65	412	50	50	True	T = 0.39(X) + 2.03	0.77
Saturday Average Daily Trips	2038	0	3.24	1.03	5.11	2.16	338	50	50	True	T = 3.30(X) - 21.03	0.56
Saturday Peak Hour of Generator	162	0	0.26	0.15	0.55	0.52	338	50	50	False		
Sunday Average Daily Trips	1948	0	3.06	1.79	5.04	1.93	359	50	50	True	T = 3.21(X) - 54.93	0.69
Sunday Peak Hour of Generator	136	0	0.26	0.16	0.45	0.51	359	50	50	True	Ln(T) = 0.77 Ln(X) - 0.04	0.52

Detailed Land Use Data
For 237 Dwelling Units of MRAPT 2
(223) Mid-Rise Apartment

Project: HERE@KANSAS
Phase: Mid Rise Apartments - Dwelling Units
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday AM Peak Hour of Generator	95	0	0.35	0.19	0.47	0.6	120	29	71	True	T = 0.46(X) - 14.01	0.91
Weekday AM Peak Hour of Adjacent Street Traffic	84	0	0.3	0.06	0.46	0.56	120	31	69	True	T = 0.41(X) - 13.06	0.83
Weekday PM Peak Hour of Generator	114	0	0.44	0.19	0.6	0.67	120	59	41	True	T = 0.53(X) - 11.27	0.9
Weekday PM Peak Hour of Adjacent Street Traffic	103	0	0.39	0.15	0.54	0.63	120	58	42	True	T = 0.48(X) - 11.07	0.89

Detailed Land Use Data
For 5.88 Gross Floor Area 1000 SF of RESTAURANTHT 2
(932) High-Turnover (Sit-Down) Restaurant

Project: HERE@KANSAS
Phase: Restaurant
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	748	0	127.15	73.51	246	41.77	7	50	50	False		
Weekday AM Peak Hour of Generator	78	0	13.33	3	54.09	9.44	7	53	47	False		
Weekday AM Peak Hour of Adjacent Street Traffic	64	0	10.81	2.32	25.6	6.59	6	55	45	False		
Weekday PM Peak Hour of Generator	109	0	18.49	5.6	69.2	13.32	5	54	46	False		
Weekday PM Peak Hour of Adjacent Street Traffic	58	25	9.85	0.92	62	8.54	6	60	40	False		
Saturday Average Daily Trips	931	0	158.37	144.6	172.71		5	50	50	False		
Saturday Peak Hour of Generator	83	0	14.07	4.44	50.4	12.19	4	53	47	False		
Sunday Average Daily Trips	775	0	131.84	119.38	143.8		5	50	50	False		
Sunday Peak Hour of Generator	109	0	18.46	9.79	43.2	13.74	4	55	45	False		

Detailed Land Use Data
For 7.68 Gross Leasable Area 1000 SF of CENTERSPECIALTY 2
(826) Specialty Retail Center

Project: HERE@KANSAS
Phase: Retail
Description: SWC of 11th Street & Indiana Street

Open Date: 9/16/2016
Analysis Date: 9/16/2016

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	366	0	44.32	21.3	64.21	15.52	25	50	50	True	T = 42.78(X) + 37.66	0.69
Weekday AM Peak Hour of Generator	153	0	6.84	5.33	14.08	3.55	60	48	52	True	T = 4.91(X) + 115.59	0.9
Weekday PM Peak Hour of Generator	39	0	5.02	4.59	6.18	2.31	75	56	44	False		
Weekday PM Peak Hour of Adjacent Street Traffic	40	0	2.71	2.03	5.16	1.83	69	44	56	True	T = 2.40(X) + 21.48	0.98
Saturday Average Daily Trips	323	0	42.04	22.57	54.47	13.97	28	50	50	False		
Sunday Average Daily Trips	157	0	20.43	6.96	32.82	10.27	28	50	50	False		

APPENDIX IV

Summary of Peak-Hour Traffic Counts

Summary of Turning Movement Counts
(All Vehicles)

11th Street and Indiana Street
Morning Peak-Hours
Sunny. Mild

File Name : Ind&11-eam
Site Code : 1
Start Date : 11/14/2013

Groups Printed- Unshifted

	Indiana Street From North					11th Street From East					Indiana Street From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
07:00 AM	0	9	0	0	9	0	8	2	0	10	0	4	5	0	9	6	5	1	0	12	40
07:15 AM	1	9	0	0	10	0	17	2	0	19	0	4	6	0	10	6	5	0	0	11	50
07:30 AM	0	9	2	0	11	5	34	10	0	49	0	8	14	0	22	16	12	1	0	29	111
07:45 AM	1	20	1	0	22	2	47	6	0	55	0	7	20	0	27	14	12	1	0	27	131
Total	2	47	3	0	52	7	106	20	0	133	0	23	45	0	68	42	34	3	0	79	332
08:00 AM	0	16	4	0	20	3	39	7	0	49	1	7	12	0	20	14	18	0	0	32	121
08:15 AM	1	19	2	0	22	3	24	13	0	40	0	7	8	0	15	10	9	0	0	19	96
08:30 AM	5	12	0	0	17	1	21	10	0	32	0	3	11	0	14	12	9	1	0	22	85
08:45 AM	1	12	0	0	13	1	25	8	0	34	0	5	21	0	26	5	13	1	0	19	92
Total	7	59	6	0	72	8	109	38	0	155	1	22	52	0	75	41	49	2	0	92	394
Grand Total	9	106	9	0	124	15	215	58	0	288	1	45	97	0	143	83	83	5	0	171	726
Apprch %	7.3	85.5	7.3	0		5.2	74.7	20.1	0		0.7	31.5	67.8	0		48.5	48.5	2.9	0		
Total %	1.2	14.6	1.2	0	17.1	2.1	29.6	8	0	39.7	0.1	6.2	13.4	0	19.7	11.4	11.4	0.7	0	23.6	

Summary of Turning Movement Counts
(All Vehicles)

11th Street and Indiana Street
Morning Peak-Hours
Sunny. Mild

File Name : Ind&11-eam
Site Code : 1
Start Date : 11/14/2013

	Indiana Street From North					11th Street From East					Indiana Street From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	9	2	0	11	5 2	34	10	0	49	0	8 7	14	0	22	16 14	12	1	0	29	111
07:45 AM	1	20	1	0	22	2	47	6	0	55	0	7	20	0	27	14	12	1	0	27	131
08:00 AM	0	16	4	0	20	3	39	7	0	49	1	7	12	0	20	14	18	0	0	32	121
08:15 AM	1	19	2	0	22	3	24	13	0	40	0	7	8	0	15	10	9	0	0	19	96
Total Volume	2	64	9	0	75	13	144	36	0	193	1	29	54	0	84	54	51	2	0	107	459
% App. Total	2.7	85.3	12	0		6.7	74.6	18.7	0		1.2	34.5	64.3	0		50.5	47.7	1.9	0		
PHF	.500	.800	.563	.000	.852	.650	.766	.692	.000	.877	.250	.906	.675	.000	.778	.844	.708	.500	.000	.836	.876

Summary of Turning Movement Counts
(All Vehicles)

Indiana Street and 11th Street
Afternoon Peak-Hours
Sunny, Mild

File Name : Ind&11-epm
Site Code : 1
Start Date : 11/13/2013
Page No : 1

Groups Printed- Unshifted

	Indiana Street From North					11th Street From East					Indiana Street From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
04:00 PM	0	5	2	0	7	4	22	10	0	36	2	14	24	0	40	28	31	3	0	62	145
04:15 PM	1	2	5	0	8	2	16	4	0	22	0	15	21	0	36	12	29	3	0	44	110
04:30 PM	3	3	6	0	12	5	21	7	0	33	3	14	24	0	41	9	47	1	0	57	143
04:45 PM	3	16	5	0	24	8	18	11	0	37	3	6	18	0	27	15	23	0	0	38	126
Total	7	26	18	0	51	19	77	32	0	128	8	49	87	0	144	64	130	7	0	201	524
05:00 PM	2	14	2	0	18	3	40	15	0	58	3	15	31	0	49	17	45	2	0	64	189
05:15 PM	3	9	4	0	16	1	26	10	0	37	3	16	16	0	35	10	36	0	0	46	134
05:30 PM	4	8	0	0	12	2	28	9	0	39	2	16	14	0	32	11	27	0	0	38	121
05:45 PM	1	12	1	0	14	3	30	14	0	47	5	9	21	0	35	25	27	1	0	53	149
Total	10	43	7	0	60	9	124	48	0	181	13	56	82	0	151	63	135	3	0	201	593
Grand Total	17	69	25	0	111	28	201	80	0	309	21	105	169	0	295	127	265	10	0	402	1117
Apprch %	15.3	62.2	22.5	0		9.1	65	25.9	0		7.1	35.6	57.3	0		31.6	65.9	2.5	0		
Total %	1.5	6.2	2.2	0	9.9	2.5	18	7.2	0	27.7	1.9	9.4	15.1	0	26.4	11.4	23.7	0.9	0	36	

Summary of Turning Movement Counts
(All Vehicles)

Indiana Street and 11th Street
Afternoon Peak-Hours
Sunny, Mild

File Name : Ind&11-epm
Site Code : 1
Start Date : 11/13/2013

	Indiana Street From North					11th Street From East					Indiana Street From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	2	14	2	0	18	3	40	15	0	58	3	15	31	0	49	17	45	2	0	64	189
05:15 PM	3	9	4	0	16	1	26	10	0	37	3	16	16	0	35	10	36	0	0	46	134
05:30 PM	4	8	0	0	12	2	28	9	0	39	2	16	14	0	32	11	27	0	0	38	121
05:45 PM	1	12	1	0	14	3	30	14	0	47	5	9	21	0	35	25	27	1	0	53	149
Total Volume	10	43	7	0	60	9	124	48	0	181	13	56	82	0	151	63	135	3	0	201	593
% App. Total	16.7	71.7	11.7	0		5	68.5	26.5	0		8.6	37.1	54.3	0		31.3	67.2	1.5	0		
PHF	.625	.768	.438	.000	.833	.750	.775	.800	.000	.780	.650	.875	.661	.000	.770	.630	.750	.375	.000	.785	.784

Summary of Turning Movement Counts
(All Vehicles)

11th Street & Mississippi Street
Morning Peak-Hours
Sunny, Mild

File Name : Miss&11-eam-raw
Site Code : 2
Start Date : 11/15/2013
Page No : 1

Groups Printed- Unshifted

	Mississippi Street From North					11th Street From East					Mississippi Street From South					KU Parking Lot Access From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
07:00 AM	1	17	3	0	21	5	0	2	0	7	2	10	0	0	12	0	0	0	0	0	40
07:15 AM	1	31	12	0	44	10	1	7	0	18	2	2	0	0	4	0	0	2	0	2	68
07:30 AM	3	32	12	0	47	12	0	9	0	21	2	6	0	0	8	1	0	0	0	1	77
07:45 AM	1	49	18	0	68	39	0	6	0	45	0	7	4	0	11	1	0	2	0	3	127
Total	6	129	45	0	180	66	1	24	0	91	6	25	4	0	35	2	0	4	0	6	312
08:00 AM	2	54	24	0	80	25	0	14	0	39	2	3	2	0	7	1	1	1	0	3	129
08:15 AM	4	27	27	0	58	37	1	7	0	45	2	4	2	0	8	0	1	0	0	1	112
08:30 AM	13	33	29	0	75	33	8	9	0	50	5	8	1	0	14	1	1	1	0	3	142
08:45 AM	12	34	41	0	87	35	5	12	0	52	6	14	1	0	21	0	0	1	0	1	161
Total	31	148	121	0	300	130	14	42	0	186	15	29	6	0	50	2	3	3	0	8	544
Grand Total	37	277	166	0	480	196	15	66	0	277	21	54	10	0	85	4	3	7	0	14	856
Apprch %	7.7	57.7	34.6	0		70.8	5.4	23.8	0		24.7	63.5	11.8	0		28.6	21.4	50	0		
Total %	4.3	32.4	19.4	0	56.1	22.9	1.8	7.7	0	32.4	2.5	6.3	1.2	0	9.9	0.5	0.4	0.8	0	1.6	

Summary of Turning Movement Counts
(All Vehicles)

11th Street & Mississippi Street
Morning Peak-Hours
Sunny, Mild

File Name : Miss&11-eam-raw
Site Code : 2
Start Date : 11/15/2013
Page No : 2

	Mississippi Street From North					11th Street From East					Mississippi Street From South					KU Parking Lot Access From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	2	54	24	0	80	25	0	14	0	39	2	3	2	0	7	1	1	1	0	3	129
08:15 AM	4	27	27	0	58	37	1	7	0	45	2	4	2	0	8	0	1	0	0	1	112
08:30 AM	13	33	29	0	75	33	8	9	0	50	5	8	1	0	14	1	1	1	0	3	142
08:45 AM	12	34	41	0	87	35	5	12	0	52	6	14	1	0	21	0	0	1	0	1	161
Total Volume	31	148	121	0	300	130	14	42	0	186	15	29	6	0	50	2	3	3	0	8	544
% App. Total	10.3	49.3	40.3	0		69.9	7.5	22.6	0		30	58	12	0		25	37.5	37.5	0		
PHF	.596	.685	.738	.000	.862	.878	.438	.750	.000	.894	.625	.518	.750	.000	.595	.500	.750	.750	.000	.667	.845

Summary of Turning Movement Counts
(All Vehicles)

11th Street and Mississippi Street
Afternoon Peak-Hours
Sunny, Mild

File Name : Miss&11-epm
Site Code : 2
Start Date : 11/14/2013
Page No : 1

Groups Printed- Unshifted

	Mississippi Street From North					11th Street From East					Mississippi Street From South					Ku Parking Lot Access From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
04:00 PM	1	15	60	0	76	62	0	4	0	66	13	32	1	0	46	1	0	5	0	6	194
04:15 PM	3	19	42	0	64	45	1	3	0	49	11	28	0	0	39	0	3	7	0	10	162
04:30 PM	3	18	46	0	67	54	3	6	0	63	18	32	0	0	50	1	2	1	0	4	184
04:45 PM	1	19	60	0	80	49	0	4	0	53	17	43	0	0	60	3	1	4	0	8	201
Total	8	71	208	0	287	210	4	17	0	231	59	135	1	0	195	5	6	17	0	28	741
05:00 PM	2	30	43	0	75	58	1	8	0	67	18	98	0	0	116	0	2	2	0	4	262
05:15 PM	1	24	50	0	75	44	1	5	0	50	14	66	0	0	80	1	3	3	0	7	212
05:30 PM	0	16	42	0	58	34	1	10	0	45	2	45	3	0	50	1	2	3	0	6	159
05:45 PM	1	16	43	0	60	34	1	13	0	48	12	32	0	0	44	0	3	4	0	7	159
Total	4	86	178	0	268	170	4	36	0	210	46	241	3	0	290	2	10	12	0	24	792
Grand Total	12	157	386	0	555	380	8	53	0	441	105	376	4	0	485	7	16	29	0	52	1533
Apprch %	2.2	28.3	69.5	0		86.2	1.8	12	0		21.6	77.5	0.8	0		13.5	30.8	55.8	0		
Total %	0.8	10.2	25.2	0	36.2	24.8	0.5	3.5	0	28.8	6.8	24.5	0.3	0	31.6	0.5	1	1.9	0	3.4	

Summary of Turning Movement Counts
(All Vehicles)

11th Street and Mississippi Street
Afternoon Peak-Hours
Sunny, Mild

File Name : Miss&11-epm
Site Code : 2
Start Date : 11/14/2013
Page No : 2

	Mississippi Street From North					11th Street From East					Mississippi Street From South					Ku Parking Lot Access From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	3	18	46	0	67	54	3	6	0	63	18	32	0	0	50	1	2	1	0	4	184
04:45 PM	1	19	60	0	80	49	0	4	0	53	17	43	0	0	60	3	1	4	0	8	201
05:00 PM	2	30	43	0	75	58	1	8	0	67	18	98	0	0	116	0	2	2	0	4	262
05:15 PM	1	24	50	0	75	44	1	5	0	50	14	66	0	0	80	1	3	3	0	7	212
Total Volume	7	91	199	0	297	205	5	23	0	233	67	239	0	0	306	5	8	10	0	23	859
% App. Total	2.4	30.6	67	0		88	2.1	9.9	0		21.9	78.1	0	0		21.7	34.8	43.5	0		
PHF	.583	.758	.829	.000	.928	.884	.417	.719	.000	.869	.931	.610	.000	.000	.659	.417	.667	.625	.000	.719	.820

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Fambrough Drive
Morning Peak-Hours
Sunny, Mild

File Name : Miss&Famb-eam
Site Code : 3
Start Date : 11/19/2013

Groups Printed- Unshifted

	Mississippi Street From North					From East					Mississippi Street From South					Fambrough Drive From West					
Start Time	Right	Thru	Left		App. Total					App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
07:00 AM	6	23	0	0	29	0	0	0	0	0	0	14	8	0	22	7	0	2	0	9	60
07:15 AM	7	20	0	0	27	0	0	0	0	0	0	9	15	0	24	20	0	4	0	24	75
07:30 AM	13	40	0	0	53	0	0	0	0	0	0	12	20	0	32	15	0	5	0	20	105
07:45 AM	27	53	0	0	80	0	0	0	0	0	0	13	44	0	57	26	0	7	0	33	170
Total	53	136	0	0	189	0	0	0	0	0	0	48	87	0	135	68	0	18	0	86	410
08:00 AM	10	51	0	0	61	0	0	0	0	0	0	4	34	0	38	28	0	6	0	34	133
08:15 AM	12	29	0	0	41	0	0	0	0	0	0	5	29	0	34	18	0	7	0	25	100
08:30 AM	10	37	0	0	47	0	0	0	0	0	0	4	22	0	26	16	0	5	0	21	94
08:45 AM	12	39	0	0	51	0	0	0	0	0	0	11	37	0	48	28	0	2	0	30	129
Total	44	156	0	0	200	0	0	0	0	0	0	24	122	0	146	90	0	20	0	110	456
Grand Total	97	292	0	0	389	0	0	0	0	0	0	72	209	0	281	158	0	38	0	196	866
Apprch %	24.9	75.1	0	0		0	0	0	0		0	25.6	74.4	0		80.6	0	19.4	0		
Total %	11.2	33.7	0	0	44.9	0	0	0	0	0	0	8.3	24.1	0	32.4	18.2	0	4.4	0	22.6	

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Fambrough Drive
Morning Peak-Hours
Sunny, Mild

File Name : Miss&Famb-eam
Site Code : 3
Start Date : 11/19/2013
Page No : 2

	Mississippi Street From North					From East					Mississippi Street From South					Fambrough Drive From West					
Start Time	Right	Thru	Left		App. Total					App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	13	40	0	0	53	0	0	0	0	0	0	12	20	0	32	15	0	5	0	20	105
07:45 AM	27	53	0	0	80	0	0	0	0	0	0	13	44	0	57	26	0	7	0	33	170
08:00 AM	10	51	0	0	61	0	0	0	0	0	0	4	34	0	38	28	0	6	0	34	133
08:15 AM	12	29	0	0	41	0	0	0	0	0	0	5	29	0	34	18	0	7	0	25	100
Total Volume	62	173	0	0	235	0	0	0	0	0	0	34	127	0	161	87	0	25	0	112	508
% App. Total	26.4	73.6	0	0		0	0	0	0		0	21.1	78.9	0		77.7	0	22.3	0		
PHF	.574	.816	.000	.000	.734	.000	.000	.000	.000	.000	.000	.654	.722	.000	.706	.777	.000	.893	.000	.824	.747

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Fambrough Drive
Afternoon Peak-Hours
Sunny, Mild

File Name : Miss&Famb-epm
Site Code : 3
Start Date : 11/19/2013
Page No : 1

Groups Printed- Unshifted

	Mississippi Street From North					From East					Mississippi Street From South					Fambrough Drive From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
04:00 PM	12	14	0	0	26	0	0	0	0	0	0	34	58	0	92	51	0	19	0	70	188
04:15 PM	12	16	0	0	28	0	0	0	0	0	0	28	50	0	78	53	0	12	0	65	171
04:30 PM	15	16	0	0	31	0	0	0	0	0	0	39	32	0	71	40	0	22	0	62	164
04:45 PM	13	25	0	0	38	0	0	0	0	0	0	40	53	0	93	49	0	14	0	63	194
Total	52	71	0	0	123	0	0	0	0	0	0	141	193	0	334	193	0	67	0	260	717
05:00 PM	18	21	0	0	39	0	0	0	0	0	0	102	50	0	152	50	1	23	0	74	265
05:15 PM	13	27	0	0	40	0	0	0	0	0	0	75	54	0	129	51	0	22	0	73	242
05:30 PM	9	29	0	0	38	0	0	0	0	0	0	52	31	0	83	29	0	16	0	45	166
05:45 PM	20	34	0	0	54	0	0	0	0	0	0	29	31	0	60	35	0	8	0	43	157
Total	60	111	0	0	171	0	0	0	0	0	0	258	166	0	424	165	1	69	0	235	830
Grand Total	112	182	0	0	294	0	0	0	0	0	0	399	359	0	758	358	1	136	0	495	1547
Apprch %	38.1	61.9	0	0		0	0	0	0		0	52.6	47.4	0		72.3	0.2	27.5	0		
Total %	7.2	11.8	0	0	19	0	0	0	0	0	0	25.8	23.2	0	49	23.1	0.1	8.8	0	32	

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Fambrough Drive
Afternoon Peak-Hours
Sunny, Mild

File Name : Miss&Famb-epm
Site Code : 3
Start Date : 11/19/2013
Page No : 2

	Mississippi Street From North					From East					Mississippi Street From South					Fambrough Drive From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	13	25	0	0	38	0	0	0	0	0	0	40	53	0	93	49	0	14	0	63	194
05:00 PM	18	21	0	0	39	0	0	0	0	0	0	102	50	0	152	50	1	23	0	74	265
05:15 PM	13	27	0	0	40	0	0	0	0	0	0	75	54	0	129	51	0	22	0	73	242
05:30 PM	9	29	0	0	38	0	0	0	0	0	0	52	31	0	83	29	0	16	0	45	166
Total Volume	53	102	0	0	155	0	0	0	0	0	0	269	188	0	457	179	1	75	0	255	867
% App. Total	34.2	65.8	0	0		0	0	0	0		0	58.9	41.1	0		70.2	0.4	29.4	0		
PHF	.736	.879	.000	.000	.969	.000	.000	.000	.000	.000	.000	.659	.870	.000	.752	.877	.250	.815	.000	.861	.818

Summary of Turning Movement Counts
(All Vehicles)

11th Street & Private Drives
Morning Peak-Hours
Overcast, Cold

File Name : 11&Pdrive-eam
Site Code : 4
Start Date : 11/20/2013
Page No : 1

Groups Printed- Unshifted

	11th Street From North					11th Street From East					Private Drive From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	12	0	0	14	0	0	0	0	0	1	16	2	0	19	33
07:15 AM	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	19	0	0	19	48
07:30 AM	1	0	0	0	1	0	37	1	0	38	1	0	2	0	3	0	8	0	0	8	50
07:45 AM	0	0	0	0	0	0	47	0	0	47	0	0	0	0	0	1	23	0	0	24	71
Total	1	0	0	0	1	2	125	1	0	128	1	0	2	0	3	2	66	2	0	70	202
08:00 AM	1	0	0	0	1	0	38	0	0	38	3	0	2	0	5	2	19	0	0	21	65
08:15 AM	0	0	0	0	0	0	36	1	0	37	0	0	4	0	4	0	18	0	0	18	59
08:30 AM	0	0	1	0	1	0	44	1	0	45	1	0	1	0	2	0	23	0	0	23	71
08:45 AM	0	0	1	0	1	0	49	2	0	51	0	0	4	0	4	2	45	0	0	47	103
Total	1	0	2	0	3	0	167	4	0	171	4	0	11	0	15	4	105	0	0	109	298
Grand Total	2	0	2	0	4	2	292	5	0	299	5	0	13	0	18	6	171	2	0	179	500
Apprch %	50	0	50	0		0.7	97.7	1.7	0		27.8	0	72.2	0		3.4	95.5	1.1	0		
Total %	0.4	0	0.4	0	0.8	0.4	58.4	1	0	59.8	1	0	2.6	0	3.6	1.2	34.2	0.4	0	35.8	

Summary of Turning Movement Counts
(All Vehicles)

11th Street & Private Drives
Morning Peak-Hours
Overcast, Cold

File Name : 11&Pdrive-eam
Site Code : 4
Start Date : 11/20/2013

	11th Street From North					11th Street From East					Private Drive From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	0	0	0	1	0	38	0	0	38	3	0	2	0	5	2	19	0	0	21	65
08:15 AM	0	0	0	0	0	0	36	1	0	37	0	0	4	0	4	0	18	0	0	18	59
08:30 AM	0	0	1	0	1	0	44	1	0	45	1	0	1	0	2	0	23	0	0	23	71
08:45 AM	0	0	1	0	1	0	49	2	0	51	0	0	4	0	4	2	45	0	0	47	103
Total Volume	1	0	2	0	3	0	167	4	0	171	4	0	11	0	15	4	105	0	0	109	298
% App. Total	33.3	0	66.7	0		0	97.7	2.3	0		26.7	0	73.3	0		3.7	96.3	0	0		
PHF	.250	.000	.500	.000	.750	.000	.852	.500	.000	.838	.333	.000	.688	.000	.750	.500	.583	.000	.000	.580	.723

Summary of Turning Movement Counts
(All Vehicles)

11th Street & Private Drives
Afternoon Peak-Hours
Overcast, Cold

File Name : 11&Pdrive-epm
Site Code : 4
Start Date : 11/20/2013
Page No : 1

Groups Printed- Unshifted

	Private Drive From North					11th Street From East					Private Drive From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
04:00 PM	1	0	0	0	1	1	43	0	0	44	1	0	4	0	5	0	43	0	0	43	93
04:15 PM	1	0	0	0	1	0	53	2	0	55	0	0	1	0	1	1	50	0	0	51	108
04:30 PM	2	0	4	0	6	0	36	2	0	38	1	0	2	0	3	1	50	0	0	51	98
04:45 PM	1	0	1	0	2	0	64	1	0	65	0	0	2	0	2	1	53	1	0	55	124
Total	5	0	5	0	10	1	196	5	0	202	2	0	9	0	11	3	196	1	0	200	423
05:00 PM	0	0	1	0	1	0	59	1	0	60	5	0	3	0	8	3	63	0	0	66	135
05:15 PM	3	0	0	0	3	1	39	3	0	43	1	0	1	0	2	0	57	0	0	57	105
05:30 PM	0	0	1	0	1	3	51	1	0	55	2	0	4	0	6	4	40	1	0	45	107
05:45 PM	1	0	2	0	3	2	39	1	0	42	1	1	1	0	3	3	43	2	0	48	96
Total	4	0	4	0	8	6	188	6	0	200	9	1	9	0	19	10	203	3	0	216	443
Grand Total	9	0	9	0	18	7	384	11	0	402	11	1	18	0	30	13	399	4	0	416	866
Apprch %	50	0	50	0		1.7	95.5	2.7	0		36.7	3.3	60	0		3.1	95.9	1	0		
Total %	1	0	1	0	2.1	0.8	44.3	1.3	0	46.4	1.3	0.1	2.1	0	3.5	1.5	46.1	0.5	0	48	

Summary of Turning Movement Counts
(All Vehicles)

11th Street & Private Drives
Afternoon Peak-Hours
Overcast, Cold

File Name : 11&Pdrive-epm
Site Code : 4
Start Date : 11/20/2013

	Private Drive From North					11th Street From East					Private Drive From South					11th Street From West					
Start Time	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Right	Thru	Left		App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	1	0	1	0	2	0	64	1	0	65	0	0	2	0	2	1	53	1	0	55	124
05:00 PM	0	0	1	0	1	0	59	1	0	60	5	0	3	0	8	3	63	0	0	66	135
05:15 PM	3	0	0	0	3	1	39	3	0	43	1	0	1	0	2	0	57	0	0	57	105
05:30 PM	0	0	1	0	1	3	51	1	0	55	2	0	4	0	6	4	40	1	0	45	107
Total Volume	4	0	3	0	7	4	213	6	0	223	8	0	10	0	18	8	213	2	0	223	471
% App. Total	57.1	0	42.9	0		1.8	95.5	2.7	0		44.4	0	55.6	0		3.6	95.5	0.9	0		
PHF	.333	.000	.750	.000	.583	.333	.832	.500	.000	.858	.400	.000	.625	.000	.563	.500	.845	.500	.000	.845	.872

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Private Drive
Morning Peak-Hours
Overcast, Mild

File Name : Miss&PDrive-eam
Site Code : 5
Start Date : 12/3/2013
Page No : 1

Groups Printed- Unshifted

	Mississippi Street From North					Private Drive From East					Mississippi Street From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
07:00 AM	0	17	0	0	17	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	33
07:15 AM	0	27	0	0	27	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	29
07:30 AM	0	43	0	0	43	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	52
07:45 AM	0	57	0	0	57	0	0	1	0	1	0	11	0	0	11	0	0	0	0	0	69
Total	0	144	0	0	144	0	0	1	0	1	2	36	0	0	38	0	0	0	0	0	183
08:00 AM	0	61	1	0	62	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	70
08:15 AM	0	48	1	0	49	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	54
08:30 AM	0	35	3	0	38	1	0	0	0	1	0	9	0	0	9	0	0	0	0	0	48
08:45 AM	0	30	0	0	30	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	37
Total	0	174	5	0	179	3	0	0	0	3	0	27	0	0	27	0	0	0	0	0	209
Grand Total	0	318	5	0	323	3	0	1	0	4	2	63	0	0	65	0	0	0	0	0	392
Apprch %	0	98.5	1.5	0		75	0	25	0		3.1	96.9	0	0		0	0	0	0		
Total %	0	81.1	1.3	0	82.4	0.8	0	0.3	0	1	0.5	16.1	0	0	16.6	0	0	0	0	0	

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Private Drive
Morning Peak-Hours
Overcast, Mild

File Name : Miss&PDrive-eam
Site Code : 5
Start Date : 12/3/2013

	Mississippi Street From North					Private Drive From East					Mississippi Street From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:30 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	43	0	0	43	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	52
07:45 AM	0	57	0	0	57	0	0	1	0	1	0	11	0	0	11	0	0	0	0	0	69
08:00 AM	0	61	1	0	62	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	70
08:15 AM	0	48	1	0	49	1	0	0	0	1	0	4	0	0	4	0	0	0	0	0	54
Total Volume	0	209	2	0	211	2	0	1	0	3	0	31	0	0	31	0	0	0	0	0	245
% App. Total	0	99.1	0.9	0		66.7	0	33.3	0		0	100	0	0		0	0	0	0		
PHF	.000	.857	.500	.000	.851	.500	.000	.250	.000	.750	.000	.705	.000	.000	.705	.000	.000	.000	.000	.000	.875

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Private Drive
Afternoon Peak-Hours
Sunny, Mild

File Name : Miss&PDrive-epm
Site Code : 5
Start Date : 12/2/2013
Page No : 1

Groups Printed- Unshifted

	Mississippi Street From North					Private Drive From East					Mississippi Street From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
04:00 PM	0	15	0	0	15	4	0	0	0	4	2	41	0	0	43	0	0	0	0	0	62
04:15 PM	0	14	1	0	15	2	0	2	0	4	0	38	0	0	38	0	0	0	0	0	57
04:30 PM	0	16	0	0	16	0	0	1	0	1	1	38	0	0	39	0	0	0	0	0	56
04:45 PM	0	22	0	0	22	2	0	1	0	3	1	41	0	0	42	0	0	0	0	0	67
Total	0	67	1	0	68	8	0	4	0	12	4	158	0	0	162	0	0	0	0	0	242
05:00 PM	0	26	1	0	27	1	0	1	0	2	0	117	0	0	117	0	0	0	0	0	146
05:15 PM	0	32	1	0	33	0	0	1	0	1	2	76	0	0	78	0	0	0	0	0	112
05:30 PM	0	35	0	0	35	2	0	0	0	2	1	44	0	0	45	0	0	0	0	0	82
05:45 PM	0	25	0	0	25	0	0	0	0	0	1	26	0	0	27	0	0	0	0	0	52
Total	0	118	2	0	120	3	0	2	0	5	4	263	0	0	267	0	0	0	0	0	392
Grand Total	0	185	3	0	188	11	0	6	0	17	8	421	0	0	429	0	0	0	0	0	634
Apprch %	0	98.4	1.6	0		64.7	0	35.3	0		1.9	98.1	0	0		0	0	0	0		
Total %	0	29.2	0.5	0	29.7	1.7	0	0.9	0	2.7	1.3	66.4	0	0	67.7	0	0	0	0	0	

Summary of Turning Movement Counts
(All Vehicles)

Mississippi Street & Private Drive
Afternoon Peak-Hours
Sunny, Mild

File Name : Miss&PDrive-epm
Site Code : 5
Start Date : 12/2/2013

	Mississippi Street From North					Private Drive From East					Mississippi Street From South					From West					
Start Time		Thru	Left		App. Total	Right		Left		App. Total	Right	Thru			App. Total					App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	22	0	0	22	2	0	1	0	3	1	41	0	0	42	0	0	0	0	0	67
05:00 PM	0	26	1	0	27	1	0	1	0	2	0	117	0	0	117	0	0	0	0	0	146
05:15 PM	0	32	1	0	33	0	0	1	0	1	2	76	0	0	78	0	0	0	0	0	112
05:30 PM	0	35	0	0	35	2	0	0	0	2	1	44	0	0	45	0	0	0	0	0	82
Total Volume	0	115	2	0	117	5	0	3	0	8	4	278	0	0	282	0	0	0	0	0	407
% App. Total	0	98.3	1.7	0		62.5	0	37.5	0		1.4	98.6	0	0		0	0	0	0		
PHF	.000	.821	.500	.000	.836	.625	.000	.750	.000	.667	.500	.594	.000	.000	.603	.000	.000	.000	.000	.000	.697

File Name: C:\PetraPro\9th&Mississippi\AM\9th&MississippiAM.ppd
Start Date: 5/12/2011
Start Time: 7:00:00 AM
Site Code: 00000000
Comment 1: Default Comments
Comment 2: Change These in The Preferences Window
Comment 3: Select File/Preference in the Main Scree
Comment 4: Then Click the Comments Tab

	MISSISSIPPI South Bound				9 West Bound				MISSISSIPPI North Bound				9 East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00	2	4	3	0	1	35	3	0	5	6	4	0	9	46	0	0	**118**
07:15	2	7	4	0	1	54	10	0	4	3	5	0	16	85	0	0	**191**
07:30	9	18	9	0	2	72	14	0	4	0	8	0	18	111	0	0	**265**
07:45	4	22	8	0	2	78	19	0	2	1	8	0	20	191	2	0	**357**
08:00	4	18	8	0	4	81	21	0	3	1	8	0	21	119	2	0	**290**
08:15	4	9	6	0	3	91	15	0	9	0	5	0	12	110	3	0	**267**
08:30	2	6	4	0	4	62	10	0	3	1	9	0	16	133	1	0	**251**
08:45	5	12	6	0	7	75	8	0	3	2	6	0	9	129	1	0	**263**
Total	**32**	**96**	**48**	**0**	**24**	**548**	**100**	**0**	**33**	**14**	**53**	**0**	**121**	**924**	**9**	**0**	**2002**

07:30	9	18	9	0	2	72	14	0	4	0	8	0	18	111	0	0	**265**
07:45	4	22	8	0	2	78	19	0	2	1	8	0	20	191	2	0	**357**
08:00	4	18	8	0	4	81	21	0	3	1	8	0	21	119	2	0	**290**
08:15	4	9	6	0	3	91	15	0	9	0	5	0	12	110	3	0	**267**
Total	**21**	**67**	**31**	**0**	**11**	**322**	**69**	**0**	**18**	**2**	**29**	**0**	**71**	**531**	**7**	**0**	**1179**

Source: City of Lawrence, Public Works Department

File Name: C:\PetraPro\9th&Mississippi\PM\9th&MississippiPM.ppd
Start Date: 5/12/2011
Start Time: 4:00:00 PM
Site Code: 00000000
Comment 1: Default Comments
Comment 2: Change These in The Preferences Window
Comment 3: Select File/Preference in the Main Scree
Comment 4: Then Click the Comments Tab

	MISSISSIPPI South Bound				9 West Bound				MISSISSIPPI North Bound				9 East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
16:00	10	8	7	0	5	158	13	0	24	15	38	0	12	158	5	0	**453**
16:15	2	6	6	0	7	135	14	0	21	14	24	0	11	152	6	0	**398**
16:30	5	2	7	0	7	154	15	0	23	8	33	0	9	169	8	0	**440**
16:45	6	6	3	0	6	164	12	0	29	10	30	0	12	158	5	0	**441**
17:00	5	8	7	0	8	207	23	0	20	22	57	0	10	196	8	0	**571**
17:15	3	8	5	0	8	176	13	0	30	13	40	0	22	161	5	0	**484**
17:30	2	6	3	0	5	145	18	0	18	17	34	0	21	163	7	0	**439**
17:45	3	15	7	0	6	135	9	0	14	9	15	0	25	163	2	0	**403**
Total	**36**	**59**	**45**	**0**	**52**	**1274**	**117**	**0**	**179**	**108**	**271**	**0**	**122**	**1320**	**46**	**0**	**3629**

16:30	5	2	7	0	7	154	15	0	23	8	33	0	9	169	8	0	**440**
16:45	6	6	3	0	6	164	12	0	29	10	30	0	12	158	5	0	**441**
17:00	5	8	7	0	8	207	23	0	20	22	57	0	10	196	8	0	**571**
17:15	3	8	5	0	8	176	13	0	30	13	40	0	22	161	5	0	**484**
Total	**19**	**24**	**22**	**0**	**29**	**701**	**63**	**0**	**102**	**53**	**160**	**0**	**53**	**684**	**26**	**0**	**1936**

Soucre: City of Lawrence, Public Works Department

File Name: C:\Lohman\2013\2013 Petra Pro\11th & Tennessee\AM\11th & TennesseeAM.ppd
Start Date: 11/12/2013
Start Time: 7:00:00 AM
Site Code: 36

	TENNESSEE South Bound				11TH West Bound				TENNESSEE North Bound				11TH East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00	4	102	13	0	0	12	3	0	0	0	0	0	1	2	0	0	**137**
07:15	1	139	21	0	0	23	4	0	0	0	0	0	0	4	0	0	**192**
07:30	1	178	26	0	0	19	10	0	0	0	0	0	5	6	0	0	**245**
07:45	4	197	49	0	0	35	21	0	0	0	0	0	9	16	0	0	**331**
08:00	3	199	34	0	0	34	18	0	0	0	0	0	12	2	0	0	**302**
08:15	0	126	28	0	0	23	16	0	0	0	0	0	8	6	0	0	**207**
08:30	2	139	27	0	0	31	5	0	0	0	0	0	13	7	0	0	**224**
08:45	1	127	29	0	0	18	20	0	0	0	0	0	8	14	0	0	**217**
Total	**16**	**1207**	**227**	**0**	**0**	**195**	**97**	**0**	**0**	**0**	**0**	**0**	**56**	**57**	**0**	**0**	**1855**

	TENNESSEE South Bound				11TH West Bound				TENNESSEE North Bound				11TH East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:30	1	178	26	0	0	19	10	0	0	0	0	0	5	6	0	0	**245**
07:45	4	197	49	0	0	35	21	0	0	0	0	0	9	16	0	0	**331**
08:00	3	199	34	0	0	34	18	0	0	0	0	0	12	2	0	0	**302**
08:15	**0**	**126**	**28**	**0**	**0**	**23**	**16**	**0**	**0**	**0**	**0**	**0**	**8**	**6**	**0**	**0**	**207**
Total	**8**	**700**	**137**	**0**	**0**	**111**	**65**	**0**	**0**	**0**	**0**	**0**	**34**	**30**	**0**	**0**	**1085**

Source: City of Lawrence, Public Works Department

File Name: C:\Lohman\2013\2013 Petra Pro\11th & Tennessee\PM\11th & TennesseePM.ppd
Start Date: 11/12/2013
Start Time: 4:00:00 PM
Site Code: 36

	TENNESSEE South Bound				11TH West Bound				TENNESSEE North Bound				11TH East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
16:00	4	206	25	0	0	23	25	0	0	0	0	0	20	26	0	0	**329**
16:15	2	175	21	0	0	35	29	0	0	0	0	0	17	20	0	0	**299**
16:30	2	203	21	0	0	32	30	0	0	0	0	0	22	30	0	0	**340**
16:45	5	225	17	0	0	27	28	0	0	0	0	0	17	32	0	0	**351**
17:00	3	284	41	0	0	33	35	0	0	0	0	0	24	42	0	0	**462**
17:15	3	214	25	0	0	22	30	0	0	0	0	0	20	35	0	0	**349**
17:30	4	194	26	0	0	24	31	0	0	0	0	0	10	26	0	0	**315**
17:45	9	175	20	0	0	23	23	0	0	0	0	0	19	24	0	0	**293**
Total	**32**	**1676**	**196**	**0**	**0**	**219**	**231**	**0**	**0**	**0**	**0**	**0**	**149**	**235**	**0**	**0**	**2738**

	TENNESSEE South Bound				11TH West Bound				TENNESSEE North Bound				11TH East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
16:30	2	203	21	0	0	32	30	0	0	0	0	0	22	30	0	0	**340**
16:45	5	225	17	0	0	27	28	0	0	0	0	0	17	32	0	0	**351**
17:00	3	284	41	0	0	33	35	0	0	0	0	0	24	42	0	0	**462**
17:15	3	214	25	0	0	22	30	0	0	0	0	0	20	35	0	0	**349**
Total	**13**	**926**	**104**	**0**	**0**	**114**	**123**	**0**	**0**	**0**	**0**	**0**	**83**	**139**	**0**	**0**	**1502**

Source: City of Lawrence, Public Works Department

File Name: C:\Lohman\2013\2013 Petra Pro\11th & Kentucky\AM\11th & KentuckyAM.ppd
Start Date: 11/14/2013
Start Time: 7:00:00 AM
Site Code: 34

	KENTUCKY South Bound				11TH West Bound				KENTUCKY North Bound				11TH East Bound				**Total**
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:00	0	0	0	0	32	7	0	0	13	87	2	0	0	19	1	0	**161**
07:15	0	0	0	0	26	11	0	0	5	99	6	0	0	18	0	0	**165**
07:30	0	0	0	0	33	36	0	0	4	118	12	0	0	33	0	0	**236**
07:45	0	0	0	0	55	37	0	0	10	156	22	0	0	67	6	0	**353**
08:00	0	0	0	0	33	51	0	0	27	169	15	0	0	31	5	0	**331**
08:15	0	0	0	0	23	21	0	0	24	109	14	0	0	28	2	0	**221**
08:30	0	0	0	0	30	21	0	0	17	105	5	0	0	39	2	0	**219**
08:45	0	0	0	0	48	29	0	0	11	128	17	0	0	40	7	0	**280**
Total	**0**	**0**	**0**	**0**	**280**	**213**	**0**	**0**	**111**	**971**	**93**	**0**	**0**	**275**	**23**	**0**	**1966**

	KENTUCKY South Bound				11TH West Bound				KENTUCKY North Bound				11TH East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
07:30	0	0	0	0	33	36	0	0	4	118	12	0	0	33	0	0	236
07:45	0	0	0	0	55	37	0	0	10	156	22	0	0	67	6	0	353
08:00	0	0	0	0	33	51	0	0	27	169	15	0	0	31	5	0	331
08:15	0	0	0	0	23	21	0	0	24	109	14	0	0	28	2	0	221
Total	0	0	0	0	144	145	0	0	65	552	63	0	0	159	13	0	1141

Source: City of Lawrence, Public Works Department

File Name: C:\Lohman\2013\2013 Petra Pro\11th & Kentucky\PM\11th & KentuckyPM.ppd
Start Date: 11/14/2013
Start Time: 4:00:00 PM
Site Code: 34

	KENTUCKY South Bound				11TH West Bound				KENTUCKY North Bound				11TH East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
16:00	0	0	0	0	35	46	0	0	30	169	19	0	0	39	8	0	**346**
16:15	0	0	0	0	43	51	0	0	27	171	9	0	0	48	7	0	**356**
16:30	0	0	0	0	44	43	0	0	18	162	19	0	0	37	2	0	**325**
16:45	0	0	0	0	31	39	0	0	23	176	9	0	0	55	8	0	**341**
17:00	0	0	0	0	77	50	0	0	39	193	17	0	0	52	5	0	**433**
17:15	0	0	0	0	54	48	0	0	36	173	20	0	0	64	2	0	**397**
17:30	0	0	0	0	31	40	0	0	31	155	9	0	0	66	6	0	**338**
17:45	0	0	0	0	43	46	0	0	37	181	8	0	0	62	3	0	**380**
Total	**0**	**0**	**0**	**0**	**358**	**363**	**0**	**0**	**241**	**1380**	**110**	**0**	**0**	**423**	**41**	**0**	**2916**

	KENTUCKY South Bound				11TH West Bound				KENTUCKY North Bound				11TH East Bound				Total
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
17:00	0	0	0	0	77	50	0	0	39	193	17	0	0	52	5	0	**433**
17:15	0	0	0	0	54	48	0	0	36	173	20	0	0	64	2	0	**397**
17:30	0	0	0	0	31	40	0	0	31	155	9	0	0	66	6	0	**338**
17:45	0	0	0	0	43	46	0	0	37	181	8	0	0	62	3	0	**380**
Total	**0**	**0**	**0**	**0**	**205**	**184**	**0**	**0**	**143**	**702**	**54**	**0**	**0**	**244**	**16**	**0**	**1548**

Source: City of Lawrence, Public Works Department

Signal Locatio	Last Updated 5/12/16	Count PM Date	Begin Peak	Peak Volume	South Bound		
					Right	Thru	Left
9 th St.	Mississippi St.	04-Nov-15	17:00	1978	23	44	40
11 th St	Kentucky St.	23-Oct-14	17:00	1462	0	0	0
11 th St	Tennessee St.	28-Oct-14	16:30	1453	20	872	113

Signal Locatio	Last Updated 5/12/16	Count AM Date	Begin Peak	Peak Volume	South Bound		
					Right	Thru	Left
9 th St.	Mississippi St.	04-Nov-15	7:45	1379	16	64	41
11 th St	Kentucky St.	23-Oct-14	7:30	1022	0	0	0
11 th St	Tennessee St.	28-Oct-14	7:30	1128	20	714	148

Source: City of Lawrence, Public Works Department

West Bound			North Bound			East Bound		
Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
50	713	74	98	52	142	55	665	22
199	205	0	107	680	48	0	204	19
0	106	129	0	0	0	91	122	0

West Bound			North Bound			East Bound		
Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
22	367	62	26	14	23	76	660	8
147	117	0	48	487	54	0	158	11
0	130	46	0	0	0	31	39	0

Source: City of Lawrence, Public Works Department

APPENDIX V

Traffic Signal Warrant Analysis

Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	HERE @ KANSAS Development
Project/File #	Realigned Fambrough Dr. & Mississippi St.
Scenario	Pre-Development Traffic Volumes (AM Peak, 2013)

Intersection Information			
Major Street (N/S Road)	Mississippi St.	Minor Street (E/W Road)	Realigned Fambrough/11th St.
Analyzed with	2 or more approach lanes	Analyzed with	1 Approach Lane
Total Approach Volume	306 vehicles	Total Approach Volume	296 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

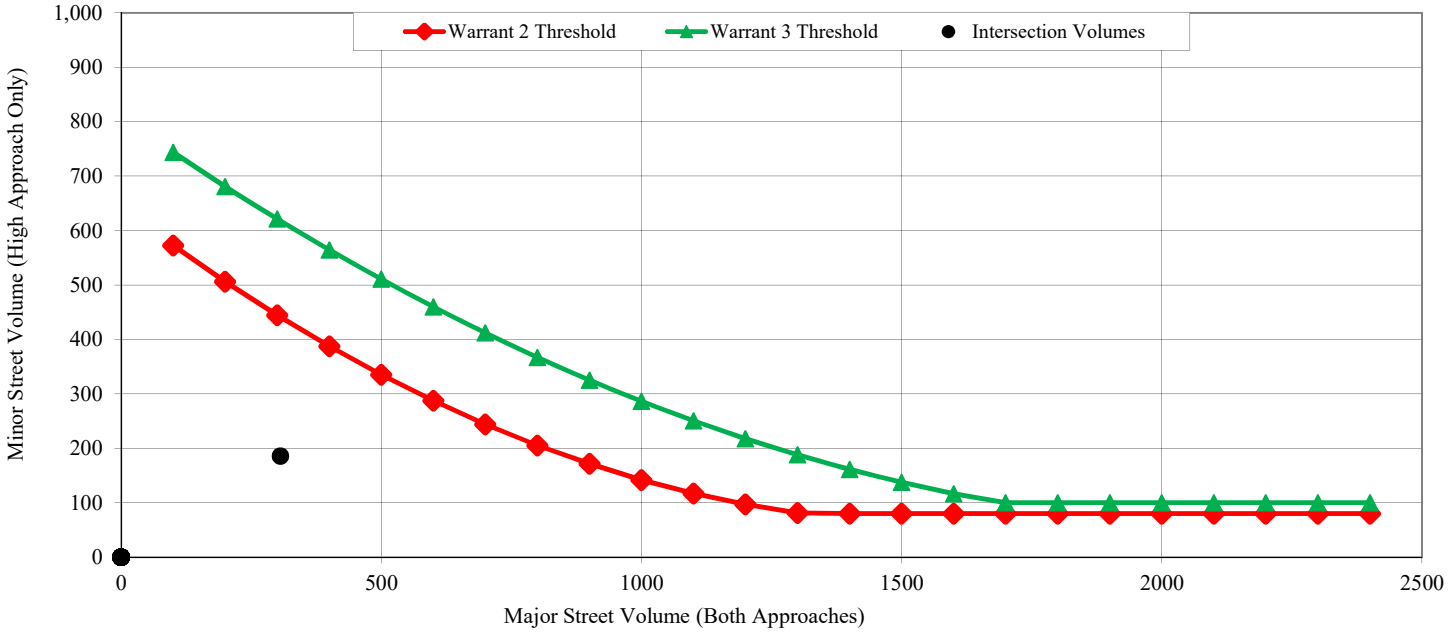
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	602 total, 186 minor, 3.1 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	HERE @ KANSAS Development
Project/File #	Realigned Fambrough Dr. & Mississippi St.
Scenario	Pre-Development Traffic Volumes (PM Peak, 2013)

Intersection Information			
Major Street (N/S Road)	Mississippi St.	Minor Street (E/W Road)	Realigned Fambrough/11th St.
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	464 vehicles	Total Approach Volume	504 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

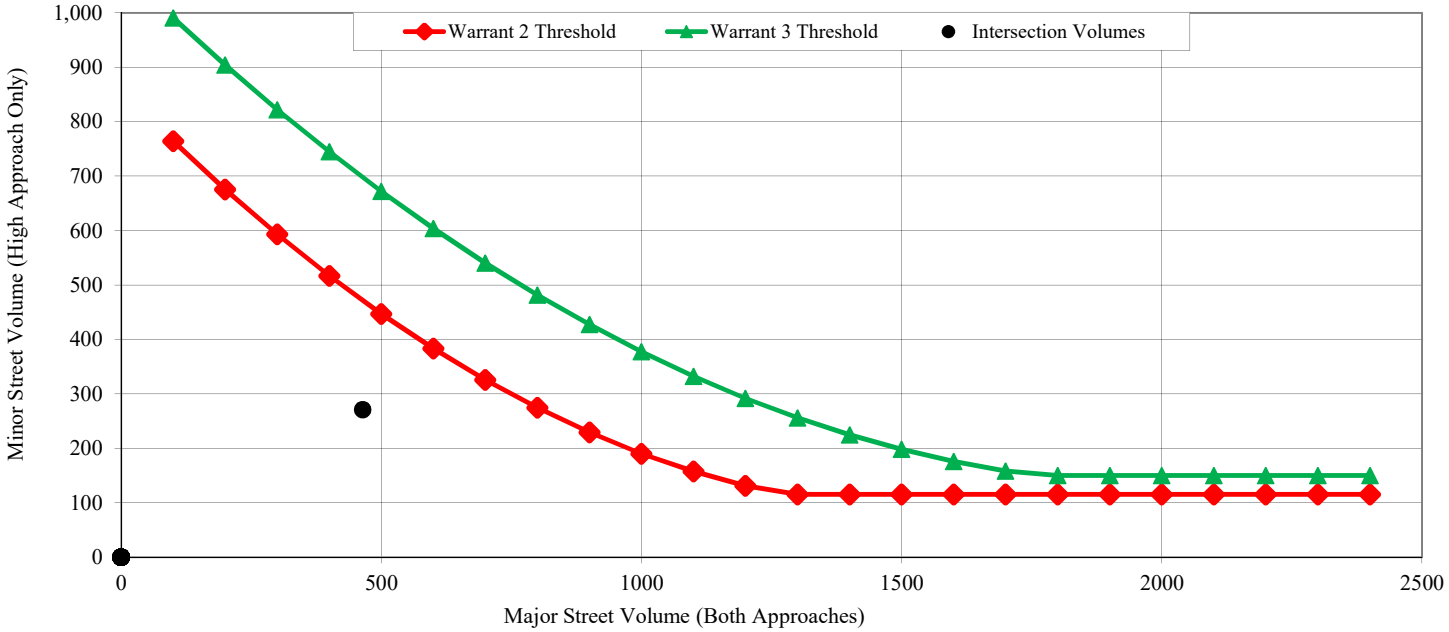
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	200	100	160 (Cond. A) & 80 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	968 total, 271 minor, 4.5 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	HERE @ KANSAS Development
Project/File #	Realigned Fambrough Dr. & Mississippi St.
Scenario	Post-Development Traffic Volumes (AM Peak, Future)

Intersection Information			
Major Street (N/S Road)	Mississippi St.	Minor Street (E/W Road)	Realigned Fambrough/11th St.
Analyzed with	2 or more approach lanes	Analyzed with	1 Approach Lane
Total Approach Volume	440 vehicles	Total Approach Volume	316 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

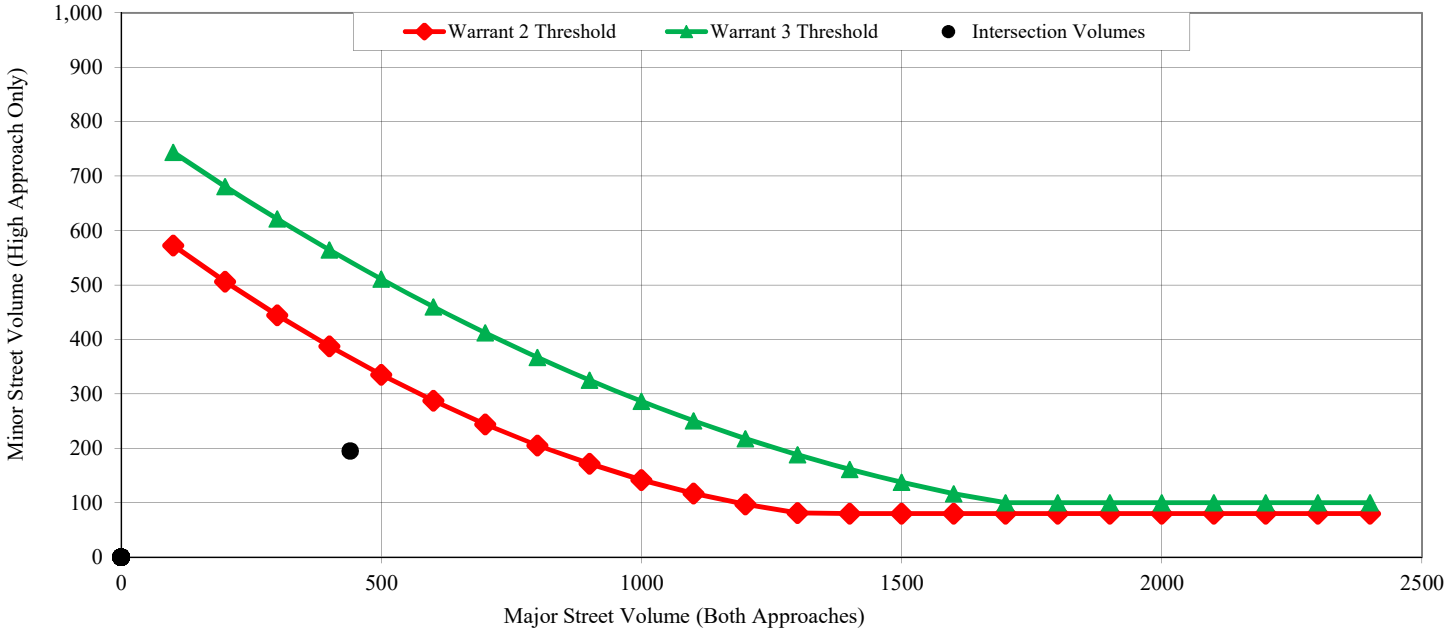
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	0 hours	0 hours	0 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	756 total, 195 minor, 3.3 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	HERE @ KANSAS Development
Project/File #	Realigned Fambrough Dr. & Mississippi St.
Scenario	Post-Development Traffic Volumes (PM Peak, Future)

Intersection Information			
Major Street (N/S Road)	Mississippi St.	Minor Street (E/W Road)	Realigned Fambrough/11th St.
Analyzed with	2 or more approach lanes	Analyzed with	2 or more approach lanes
Total Approach Volume	600 vehicles	Total Approach Volume	517 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	0 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

Warrant 1, Eight Hour Vehicular Volume			
	Condition A	**Condition B**	**Condition A+B***
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**	**Not Satisfied**
Required values reached for	1 hour	0 hours	1 (Cond. A) & 0 (Cond. B)
Criteria - Major Street (veh/hr)	600	900	480 (Cond. A) & 720 (Cond. B)
Criteria - Minor Street (veh/hr)	200	100	160 (Cond. A) & 80 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	**Not Satisfied**
Required values reached for	0 hours
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	**Condition B**
Condition Satisfied?	**Not Satisfied**	**Not Satisfied**
Required values reached for	1027 total, 283 minor, 4.7 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	800	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	150	
Criteria - Minor Street High Side Delay (veh-hrs)	5	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)