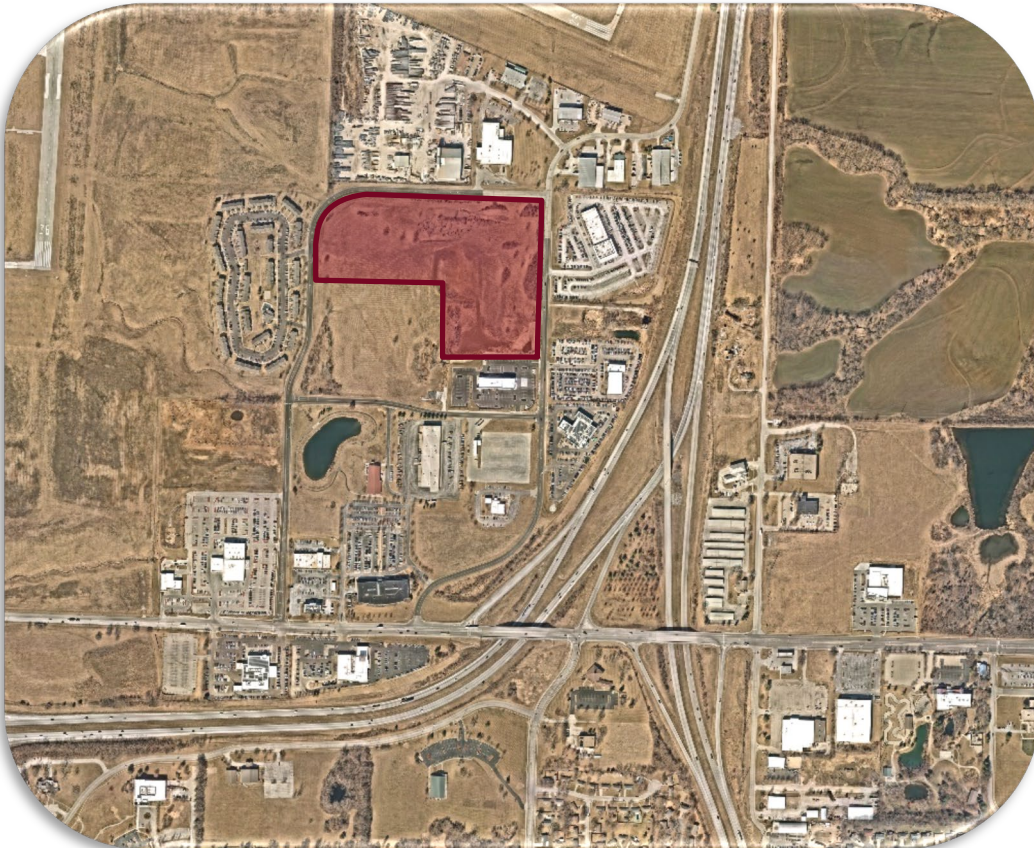


Traffic Impact Study

Town Centre Industrial

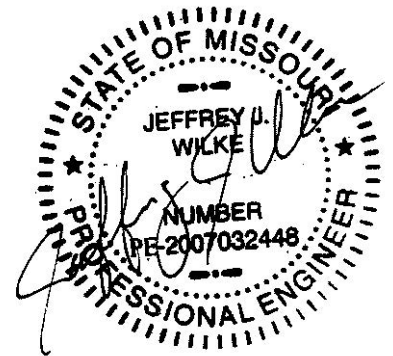


LEE'S SUMMIT, MISSOURI

AUGUST 2022

Prepared By:

Kimley»Horn



8/18/2022

Contents

1.0 INTRODUCTION.....	5
1.1 REPORT PURPOSE AND OBJECTIVES	5
2.0 EXISTING CONDITIONS	6
2.1 STREET NETWORK.....	6
2.2 STUDY AREA.....	7
2.3 SURROUNDING LAND USES	7
3.0 PROPOSED DEVELOPMENT	8
3.1 SITE DESCRIPTION.....	8
3.2 SITE CIRCULATION	8
3.3 TRIP GENERATION	8
3.4 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT	9
4.0 FUTURE CONDITIONS	10
4.1 BACKGROUND GROWTH.....	10
4.2 FUTURE ROADWAY IMPROVEMENTS	10
5.0 ACCESS MANAGEMENT	11
5.1 ACCESS SPACING	11
5.2 DRIVEWAY THROAT LENGTH	11
5.3 TURN LANE ANALYSIS.....	12
6.0 INTERSECTION CAPACITY ANALYSIS.....	13
6.1 LEVEL OF SERVICE OVERVIEW.....	13
6.2 EXISTING LEVEL OF SERVICE ANALYSIS	14
6.3 EXISTING PLUS DEVELOPMENT LEVEL OF SERVICE ANALYSIS	14
6.4 FUTURE LEVEL OF SERVICE ANALYSIS	15
7.0 CONCLUSIONS AND RECOMMENDATIONS.....	17
Appendix.....	18

TABLES

TABLE 1: TRIP GENERATION8

TABLE 2: TRIP DISTRIBUTION.....9

TABLE 3: LEVEL OF SERVICE13

TABLE 4: EXISTING (YEAR 2022) PEAK HOUR CONDITIONS14

TABLE 5: EXISTING PLUS DEVELOPMENT PEAK HOUR CONDITIONS15

TABLE 6: FUTURE (YEAR 2042) PEAK HOUR CONDITIONS16

EXHIBITS (SEE APPENDIX A)

- EXHIBIT 1: PROJECT SITE LOCATION AND STUDY AREA
- EXHIBIT 2: EXISTING GEOMETRY AND INTERSECTION CONTROL
- EXHIBIT 3: EXISTING CONDITIONS PEAK HOUR TRAFFIC VOLUMES
- EXHIBIT 4: TRIP DISTRIBUTION
- EXHIBIT 5: TOTAL TRIP ASSIGNMENT
- EXHIBIT 6: EXISTING PLUS PROPOSED PEAK HOUR TRAFFIC PROJECTIONS
- EXHIBIT 7: FUTURE CONDITIONS PEAK HOUR TRAFFIC PROJECTIONS

1.0 INTRODUCTION

This report serves as the traffic analysis for the Town Centre Industrial development, located on the southeast corner of Town Centre Boulevard and Independence Avenue in Lee's Summit, Missouri. The location of the development is shown on **Exhibit 1** in **Appendix A**.

1.1 REPORT PURPOSE AND OBJECTIVES

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact study was prepared based on criteria set forth by the City of Lee's Summit *Access Management Code* and the Missouri Department of Transportation (MoDOT) *Engineering Policy Guide*. The following information is provided.

- A description and map of the existing and proposed street network to be affected by the proposed development. This information includes existing and proposed roadway characteristics as well as existing year (2022) and horizon year (2042) traffic volumes.
- Trip generation calculations based on the *Institute of Traffic Engineers (ITE) Trip Generation Manual, 11th Edition*, for the proposed development. In addition, projected trip distributions onto the street network are provided.
- Review of the site plan for compliance with the Lee's Summit *Access Management Code*.
- Analysis of impacts of the traffic generated by the proposed development on the street network, including analysis of peak period levels of service (LOS), delay times, and queuing at study area intersections.
- Discussion of potential improvements and traffic management measures identified to mitigate operational concerns.

In summary, the study is to determine the trip generation of the Town Centre Industrial development, assign new development trips to the street network, analyze various scenarios to determine the impacts of proposed site traffic, and identify potential mitigation measures needed to achieve acceptable operations at the study intersections.

2.0 EXISTING CONDITIONS

2.1 STREET NETWORK

The existing street network within the study area includes Colbern Road, Town Centre Boulevard, Independence Avenue, and Town Centre Drive. The following provides a summary of the existing street network within the study area:

Colbern Road is an east-west roadway that runs south of the proposed development site. Through the study area, Colbern Road is a five-lane undivided roadway with curbs and gutters. There is a shared-use path along the south side of the road and a sidewalk along the north side. The sidewalk and shared-use path end approximately 600 feet west of Town Centre Boulevard. According to the Lee's Summit Thoroughfare Master Plan, Colbern Road is classified as a Major Arterial. The posted speed limit is 40 miles per hour (mph) east of Town Centre Boulevard and 45 mph west of Town Centre Boulevard.

Colbern Road provides access to the regional highway system with partial diamond interchanges at both Interstate 470 and Route 291 to the east of the development site. The other half of the partial diamond interchange with I-470 is accessed from Douglas Street, just south of Colbern Road to the west of the site.

Town Centre Boulevard runs north-south along the west edge of the site then turns 90-degrees to run east-west along the north edge of the site. The roadway is generally 40 feet wide, measured between the backs of curbs. Much of the roadway is marked as a three-lane roadway with a center two-way left-turn lane. South of Town Centre Drive, the pavement markings and lane use vary, and the road widens for two southbound left-turn lanes at the signalized intersection with Colbern Road. There are some sections of sidewalk along Town Centre Boulevard, but they are not continuous. The roadway is classified as an Industrial/Commercial Collector with a posted speed limit of 35 mph.

Independence Avenue is a north-south Industrial/Commercial Collector that runs along the east edge of the site. The roadway is 36 feet wide, measured between the backs of curbs. Most of the roadway is marked with two lanes. There are several sections of sidewalk along Independence Avenue, but most of the roadway has no sidewalks. The posted speed limit is 35 mph. North of the site, the roadway curves around the end of the runway at the Lee's Summit Municipal Airport. South of the site, Independence Avenue ends in a T-intersection at Colbern Road, where only right-turns are permitted.

Town Centre Drive is an east-west local street south of the site that runs between Town Centre Boulevard and Independence Avenue. The roadway has two lanes but widens for westbound left- and right-turn lanes at the intersection with Town Centre Boulevard. There are some sections of sidewalk along each side of the roadway, however they are not continuous. There is no posted speed limit along Town Centre Drive.

2.2 STUDY AREA

Through discussion with City staff, the following intersections were included within the study area for the traffic analysis. The list provides the existing intersection control for each of the study intersections.

- Independence Avenue & Town Centre Boulevard (Side Street Stop)
- Independence Avenue & Town Centre Drive (Side Street Stop)
- Town Centre Boulevard & Town Centre Drive (Side Street Stop)
- Colbern Road & Town Centre Boulevard (Signalized)

Turning Movement Counts (TMCs) were collected the study intersections on Thursday, August 4, 2022. The turning movement count data collected is included in **Appendix B**. The AM peak hour occurred between 7:15 AM and 8:15 AM, and the PM peak hour occurred between 4:30 PM and 5:30 PM. The Existing Conditions peak hour turning movement volumes are shown on **Exhibit 2**. The existing geometry with lane configurations and intersection control at the study intersections is shown on **Exhibit 3**.

2.3 SURROUNDING LAND USES

The development site currently consists of approximately 22 acres of undeveloped land. The site is surrounded by a variety of land uses. To the west of the site, across Town Centre Boulevard, is the Crossroads of Lee's Summit Apartments. North of the site across Town Centre Boulevard is a business park with industrial and manufacturing land uses. Farther to the north and west of the site is the Lee's Summit Municipal Airport. East of the site across Independence Avenue there are several car dealerships. South of the site the land is mostly undeveloped, however it is platted as lots along the north side of Town Centre Drive. Several commercial businesses are planned for these lots, one of which is an auto detailing business that was constructed at the time of this study. A self-storage facility is also planned for one of the larger lots.

3.0 PROPOSED DEVELOPMENT

3.1 SITE DESCRIPTION

The proposed development includes a 250,000 square-foot rectangular building for distribution and warehousing type uses at the southwest corner of Independence Avenue & Town Centre Boulevard in Lee's Summit, Missouri. The building includes truck loading docks all along the south side of the building, and several smaller loading docks are proposed along the north side of the building. Parking areas are provided along the north and west sides of the building. A truck parking lot is proposed in the southeast corner of the site.

The proposed site plan is included in **Appendix C** for reference.

3.2 SITE CIRCULATION

The development will primarily be accessed from three new driveways that will align with existing drives. A new driveway to Town Centre Boulevard on the west will align with the northern driveway to the Crossroads of Lee's Summit Apartments. A new driveway to the north to Town Centre Boulevard will align with an existing driveway to an industrial business on the north side of the roadway. A new driveway to the east on Independence Avenue will align with an existing driveway the Volkswagen Lee's Summit dealership.

Drive aisles are proposed surrounding the entire building. This will allow drivers to use any of the driveways when entering or exiting the site. Truck traffic is expected to primarily use the east and west driveways, as they are most convenient to the truck loading docks and truck parking lot.

3.3 TRIP GENERATION

Trip generation estimates were prepared using the *ITE Trip Generation Manual, 11th Edition*. **Table 1** shows the expected trips to be generated by the proposed development. The total trip generation is anticipated to be 428 daily trips, 54 trips during the AM peak hour (41 entering and 13 exiting), and 56 trips during the PM peak hour (15 entering and 41 exiting).

The *Trip Generation Manual* also includes estimates for truck traffic for the Warehousing land use. The proposed development is projected to generate 150 daily truck trips. The Warehousing land use does not generate much truck traffic during peak hours. During the AM peak hour, 5 truck trips are anticipated and during the PM peak hour, 8 truck trips are anticipated.

TABLE 1: TRIP GENERATION

Land Use Description	ITE LUC	Intensity / Units	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Warehousing	150	250,000 Square Feet	428	41	13	54	15	41	56
Truck Trips			150	3	2	5	4	4	8
Passenger Vehicle Trips			278	38	11	49	11	37	48

Appendix D provides the *Trip Generation Manual* calculations used to determine the trip generation of the proposed site.

3.4 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The estimated new site trips generated by the proposed development were assigned to the street network based on the trip distribution summarized in **Table 2**. This distribution is based on existing traffic patterns, the surrounding street network, and engineering judgment. It is assumed that most development trips will be routed to/from the highway system via the I-470 interchanges to the east and west of the site on Colbern Road and Douglas Street. To a lesser degree, some development traffic may access the site to/from the north via Independence Avenue from the I-470 & Strother Road interchange. The detailed distribution patterns through the study intersections are shown on **Exhibit 4**.

TABLE 2: TRIP DISTRIBUTION

Direction To/From	Percentage
North on Independence Avenue	15%
East on Colbern Road	35%
West on Colbern Road	50%
Total	100%

Exhibit 5 shows the development trip assignment. The proposed development trip assignments were added to the Existing (Year 2022) traffic volumes. **Exhibit 6** illustrates the Existing plus Development Conditions peak hour traffic volumes. Existing volumes at the driveways that align with the site accesses were estimated to balance volumes between intersections.

4.0 FUTURE CONDITIONS

The traffic analysis focused on two analysis years: existing year (2022) and horizon year (2042). To develop the Future Conditions traffic volume projections, background traffic growth was added to the existing traffic volumes, then the proposed development site trips were added.

4.1 BACKGROUND GROWTH

To estimate background traffic growth, the existing traffic volumes at the study intersections were assumed to increase at a rate of 1% per year. The annual growth rate was estimated from historical traffic volumes in the area provided on the Missouri Department of Transportation's website. The Future Conditions (Year 2042) peak hour traffic volumes are shown on **Exhibit 7**. These volumes include the development trip assignments.

4.2 FUTURE ROADWAY IMPROVEMENTS

The study intersection of Independence Avenue & Town Centre Boulevard is to be improved in the next few years. The city has designed a capital improvement project to convert the existing intersection into a single-lane roundabout. The goal of the project is to direct more through traffic on Independence Avenue to instead follow Town Centre Boulevard to the signalized intersection at Colbern Road. It is possible that the roundabout project could divert some of the through traffic on Independence Avenue to Town Center Boulevard. No analysis of the magnitude of diversion has been completed, and no diversion of traffic is assumed in this study.

5.0 ACCESS MANAGEMENT

The City of Lee's Summit *Access Management Code* (AMC) provides guidance for the design of driveways, access spacing, and the need for turn lanes at intersections. These items are discussed in the following paragraphs.

5.1 ACCESS SPACING

The AMC includes requirements for minimum spacing between street connections, depending on street classification. Along Industrial/Commercial roadways such as Town Centre Boulevard and Independence Avenue, the minimum spacing is 300 feet, measured between centerlines. All proposed site driveways exceed this minimum spacing. Further, all proposed site driveways align with an existing driveway, which is indicative of good access management.

5.2 DRIVEWAY THROAT LENGTH

A driveway's throat length is the distance along a driveway from the intersecting roadway to the first location on site where a driver can make a turn. Adequate throat lengths minimize the potential for inbound traffic to queue onto the public street. The throat length also provides space for outbound traffic to queue without adversely impacting site circulation.

The throat length requirements in the AMC are based on the two-way traffic volume on the driveway and the adjacent street classification. All site access driveways are projected to have between 10 and 50 vehicles during the peak hours. As such the minimum required throat length for collector roadways is 50 feet. The west, north, and east site access driveways are proposed to have throat lengths of 115 feet, 55 feet and 75 feet, respectively. Therefore, all proposed site access drives exceed the minimum required throat length.

5.3 TURN LANE ANALYSIS

The AMC also provides requirements for right- and left-turn lanes based on traffic volumes and street classifications. For collector roadways with non-residential driveways, right-turn lanes are required if there are 100 or more right turns during a peak hour. The volumes in **Exhibit 6** indicate that far less than 100 right turns are projected during each peak hour at each of the site accesses. Therefore, right-turn lanes are not warranted at any of the site access driveway intersections.

The AMC states that left-turn lanes shall be provided on collector streets at non-residential driveways where the left-turn volume is at least 30 vehicles in any hour. There is already a continuous two-way left-turn lane on Town Centre Boulevard, therefore the need for a left-turn lane was not evaluated at the west or north site accesses. At the east site access along Independence Avenue, the northbound left-turn volume is well under 30 vehicles during both peak hours. Therefore, a left-turn lane is not warranted at the east site access driveway.

6.0 INTERSECTION CAPACITY ANALYSIS

6.1 LEVEL OF SERVICE OVERVIEW

Intersection capacity analysis was performed at the study intersections for the following scenarios:

- Existing Conditions (Year 2022)
- Existing plus Development Conditions
- Future Conditions (Year 2042)

The capacity analysis was performed for the weekday AM and PM peak hours using Synchro traffic modeling software to determine intersection delay and level of service (LOS). Calculations were performed based on the methodologies outlined in the *Highway Capacity Manual (HCM)*, 6th Edition, which is published by the Transportation Research Board.

LOS is a quantitative measure to describe the operations of an intersection. It ranges from A to F, with A being the best and F being the worst level of operation. LOS A conditions are characterized by minimal vehicle delay and free-flow conditions, while LOS F is characterized by long vehicle delay – usually when demand exceeds available roadway capacity. **Table 3** shows the definition of LOS for unsignalized and signalized intersections.

TABLE 3: LEVEL OF SERVICE

Level of Service	Average Control Delay (seconds/vehicle) at:	
	Unsignalized Intersections	Signalized Intersections
A	0 – 10	0 – 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Levels of service are evaluated based on the movement groupings which are required to yield to other traffic. Typically, these are left turns off the major street and the side street approaches for two-way stop-controlled intersections. For signalized intersections each movement grouping is evaluated, and LOS is evaluated for the intersection as a whole.

The City of Lee's Summit has adopted LOS C as the minimum desirable LOS. However, LOS D and E may be considered acceptable for low to moderate traffic volumes, the availability of alternate routes, and the duration of activity resulting in lower LOS.

Traffic queues were also evaluated as part of the analyses. Long traffic queues which extend beyond the amount of storage available, either between intersections or within turn lanes, can have significant impacts on operations. The 95th percentile vehicular queues were analyzed to ensure the analyses are reflective of the physical constraints of the study intersections and to identify if additional storage is needed for turn lanes. The 95th percentile queue represents the queue length that has only a 5% chance of being exceeded during the analysis period.

6.2 EXISTING LEVEL OF SERVICE ANALYSIS

Capacity analysis was conducted for Existing (Year 2022) Conditions at the study intersections to determine baseline conditions for the existing analysis year and to calibrate the models. The analysis was performed for weekday AM and PM peak hours and is based on the lane configurations and traffic volumes shown in **Exhibits 2 and 3**. The Synchro reports are provided in **Appendix E**.

Table 4 provides a summary of the capacity analysis at the study intersections.

TABLE 4: EXISTING (YEAR 2022) PEAK HOUR CONDITIONS

Intersection	Control	Movement	Operational Analysis Results					
			AM Peak Hour			PM Peak Hour		
			Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
Independence Ave. & Town Centre Blvd.	Side Street Stop	EBL	9.9	A	<50'	10.5	B	<50'
		EBR	9.0	A	<50'	9.0	A	<50'
		NBL	0.0	A	<50'	7.6	A	<50'
Independence Ave. & Town Centre Dr.	Side Street Stop	EB	10.3	B	<50'	10.7	B	<50'
		WB	9.7	A	<50'	9.1	A	<50'
		NBL	7.7	A	<50'	7.6	A	<50'
		SBL	7.4	A	<50'	7.5	A	<50'
Town Centre Blvd. & Town Centre Dr.	Side Street Stop	WBL	9.4	A	<50'	9.8	A	<50'
		WBR	9.2	A	<50'	8.8	A	<50'
		SBL	0.0	A	<50'	7.5	A	<50'
Colbern Road & Town Centre Blvd.	Traffic Signal	EBL	13.9	B	<50'	14.9	B	<50'
		EBT/R			87'			302'
		WBL			<50'			<50'
		WBT/R			292'			270'
		NB			<50'			<50'
		SBL			<50'			62'
		SBT/L			<50'			64'
		SBR			<50'			<50'

Based on the analysis, all intersections currently operate at LOS B or better. All queues are short, measuring less than 50 feet, except on Colbern Road at the signalized intersection with Town Centre Boulevard. During the AM peak hour, the 95th percentile westbound queues are 292 feet, which extends back to the next driveway to the east along Colbern Road. During the PM peak hour, the 95th percentile eastbound queues are 302 feet, which nearly extends back to the next driveway to the west along Colbern Road.

6.3 EXISTING PLUS DEVELOPMENT LEVEL OF SERVICE ANALYSIS

Capacity analysis was conducted for Existing plus Development Conditions traffic conditions at the study intersections to determine the impacts of the development site traffic. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes shown in **Exhibit 6**. The lane configurations, traffic control, for the analysis remain the same as in the Existing Conditions scenario. All site driveways were analyzed with stop sign control for the driveway and uninterrupted flow for the public street. All site driveways are assumed to have one entering and one exiting lane.

Table 5 provides a summary of the capacity analysis at the study intersections. The Synchro reports are provided in **Appendix F**.

TABLE 5: EXISTING PLUS DEVELOPMENT PEAK HOUR CONDITIONS

Intersection	Control	Movement	Operational Analysis Results					
			AM Peak Hour			PM Peak Hour		
			Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
Independence Ave. & Town Centre Blvd.	Side Street Stop	EBL	10.0	A	<50'	10.5	B	<50'
		EBR	9.1	A	<50'	9.0	A	<50'
		NBL	0.0	A	<50'	7.6	A	<50'
Independence Ave. & Town Centre Dr.	Side Street Stop	EB	10.3	B	<50'	10.8	B	<50'
		WB	9.8	A	<50'	9.2	A	<50'
		NBL	7.7	A	<50'	7.6	A	<50'
		SBL	7.5	A	<50'	7.5	A	<50'
Town Centre Blvd. & Town Centre Dr.	Side Street Stop	WBL	9.7	A	<50'	10.0	A	<50'
		WBR	9.4	A	<50'	8.8	A	<50'
		SBL	0.0	A	<50'	7.5	A	<50'
Colbern Road & Town Centre Blvd.	Traffic Signal	EBL	14.2	B	54'	15.3	B	<50'
		EBT/R			87'			307'
		WBL			<50'			<50'
		WBT/R			315'			287'
		NB			<50'			<50'
		SBL			<50'			70'
		SBT/L			<50'			71'
		SBR			<50'			<50'
Town Centre Blvd. & West Site Access	Side Street Stop	EB	8.8	A	<50'	9.3	A	<50'
		WB	9.7	A	<50'	9.7	A	<50'
		NBL	7.3	A	<50'	7.4	A	<50'
		SBL	7.4	A	<50'	7.3	A	<50'
Town Centre Blvd. & North Site Access	Side Street Stop	NB	9.1	A	<50'	9.2	A	<50'
		SB	9.9	A	<50'	9.0	A	<50'
		EBL	8.2	A	<50'	7.3	A	<50'
		WBL	7.4	A	<50'	7.3	A	<50'
Independence Ave. & East Site Access	Side Street Stop	EB	9.0	A	<50'	9.2	A	<50'
		WB	9.5	A	<50'	9.9	A	<50'
		NBL	7.4	A	<50'	7.4	A	<50'
		SBL	7.5	A	<50'	7.5	A	<50'

The analysis results in **Table 5** indicate that all study intersections are anticipated to operate at acceptable levels of service with the addition of development site trips. In fact, none of the levels of service are anticipated to change with the addition of site trips. Therefore, the proposed development is anticipated to have a negligible impact on the study intersections. All queues remain minimal, except at the Colbern Road & Town Centre Boulevard intersection. The through queues in the eastbound and westbound direction are projected to be similar in length to the Existing Conditions scenario.

6.4 FUTURE LEVEL OF SERVICE ANALYSIS

Capacity analysis was conducted for Future Conditions (Year 2042) at the study intersections to determine if improvements may be needed in the future. The analysis was performed for weekday AM and PM peak hours and is based on the traffic volumes shown on **Exhibit 7**. The lane configurations, traffic control, for

the analysis remain the same as in the Existing plus Development Conditions scenario, with one exception. The intersection of Independence Avenue & Town Centre Boulevard is assumed to be a single-lane roundabout in the Future Conditions scenario.

Table 6 provides a summary of the capacity analysis at the study intersections. The Synchro reports are provided in **Appendix E**.

TABLE 6: FUTURE (YEAR 2042) PEAK HOUR CONDITIONS

Intersection	Control	Movement	Operational Analysis Results					
			AM Peak Hour			PM Peak Hour		
			Delay (sec/veh)	LOS	95% Queue	Delay (sec/veh)	LOS	95% Queue
Independence Ave. & Town Centre Blvd.	Round- about	EB	3.9	A	<50'	3.6	B	<50'
		NB	3.7	A	<50'	3.9	A	<50'
		SB	3.6	A	<50'	3.9	A	<50'
Independence Ave. & Town Centre Dr.	Side Street Stop	EB	10.9	B	<50'	11.5	B	<50'
		WB	10.2	B	<50'	9.4	A	<50'
		NBL	7.7	A	<50'	7.7	A	<50'
		SBL	7.5	A	<50'	7.6	A	<50'
Town Centre Blvd. & Town Centre Dr.	Side Street Stop	WBL	9.9	A	<50'	10.4	A	<50'
		WBR	9.5	A	<50'	8.9	A	<50'
		SBL	0.0	A	<50'	7.6	A	<50'
Colbern Road & Town Centre Blvd.	Traffic Signal	EBL	16.6	B	110'	18.6	B	<50'
		EBT/R			107'			420'
		WBL			<50'			<50'
		WBT/R			400'			385'
		NB			<50'			53'
		SBL			<50'			93'
		SBT/L			<50'			93'
		SBR			<50'			<50'
Town Centre Blvd. & West Site Access	Side Street Stop	EB	8.9	A	<50'	9.5	A	<50'
		WB	9.8	A	<50'	9.9	A	<50'
		NBL	7.3	A	<50'	7.4	A	<50'
		SBL	7.4	A	<50'	7.3	A	<50'
Town Centre Blvd. & North Site Access	Side Street Stop	NB	9.2	A	<50'	9.4	A	<50'
		SB	10.0	A	<50'	9.1	A	<50'
		EBL	8.2	A	<50'	7.4	A	<50'
		WBL	7.4	A	<50'	7.4	A	<50'
Independence Ave. & East Site Access	Side Street Stop	EB	9.2	A	<50'	9.4	A	<50'
		WB	9.7	A	<50'	10.2	A	<50'
		NBL	7.4	A	<50'	7.5	A	<50'
		SBL	7.5	A	<50'	7.5	A	<50'

The analysis results in **Table 6** indicate that all study intersections are anticipated to operate at acceptable levels of service with background growth in the horizon year 2042. The levels of service are projected to slightly increase for several movements, but overall remain nearly the same as in the Existing plus Development Conditions scenario. The single-lane roundabout at Independence Avenue & Town Centre Boulevard is projected to operate at good levels of service in the Future Conditions scenario. All queues are anticipated to be minimal, except at the Colbern Road & Town Centre Boulevard intersection. The through queues in the eastbound and westbound direction are projected to increase, due to background traffic growth.

7.0 CONCLUSIONS AND RECOMMENDATIONS

A traffic impact study for the Town Centre Industrial development has been prepared by Kimley-Horn. The proposed site is located on the southeast corner of Town Centre Boulevard and Independence Avenue in Lee's Summit, Missouri. The purpose of this study was to assess the impact of the proposed development on the surrounding transportation system. The following provides a summary of the analysis.

Intersection capacity analysis was performed at the study intersections for the following three scenarios:

- Existing Conditions (Year 2022)
- Existing plus Development Conditions
- Future Conditions (Year 2042)

Traffic counts were collected in August 2022 to serve as the baseline for analysis. All study intersections were found to currently be operating at acceptable levels of service.

The proposed development is projected to generate 428 daily trips, with 54 trips during the AM peak hour and 56 trips during the PM peak hour. The site trips were added to the street network, and it was determined that none of the existing levels of service are expected to change. All intersections are projected to continue to operate at acceptable levels of service.

A review of the site plan determined that the development satisfies the City of Lee's Summit *Access Management Code (AMC)* guidelines for driveway spacings and driveway throat length. Traffic volumes indicate that turn lanes are not needed at any of the proposed site access drives.

In the Future Conditions (Year 2042) scenario, the existing traffic volumes were grown at a rate of 1% per year, and the proposed site trips were included. Overall, the study intersections are projected to operate similar to Existing plus Development Conditions scenario.