Douglas Corporate Center
Traffic Impact Study

LEE'S SUMMIT, MISSOURI

January 27, 2026

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McCURDY ENGINEERS

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INTRODUCTION

The purpose of this traffic impact study is to assess the potential impact on traffic with the Douglas Corporate Center development generally located on the northeast corner of the intersection of Colbern Road and Douglas Street in Lee's Summit, Missouri. The location of the development in relation to the street network is shown in Figure 1. The site plan for the development is shown in Figure 2.

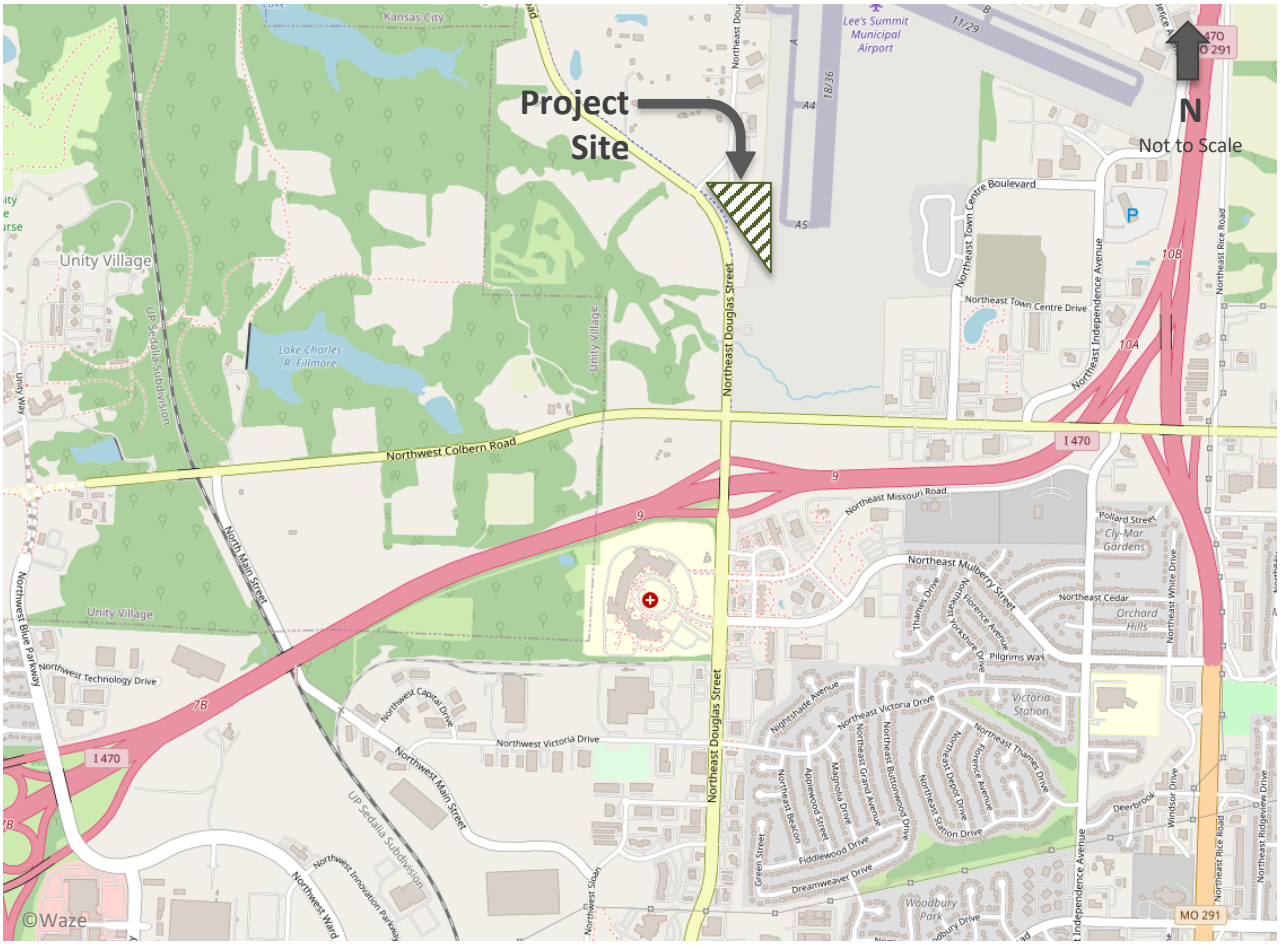


Figure 1 – Development Location

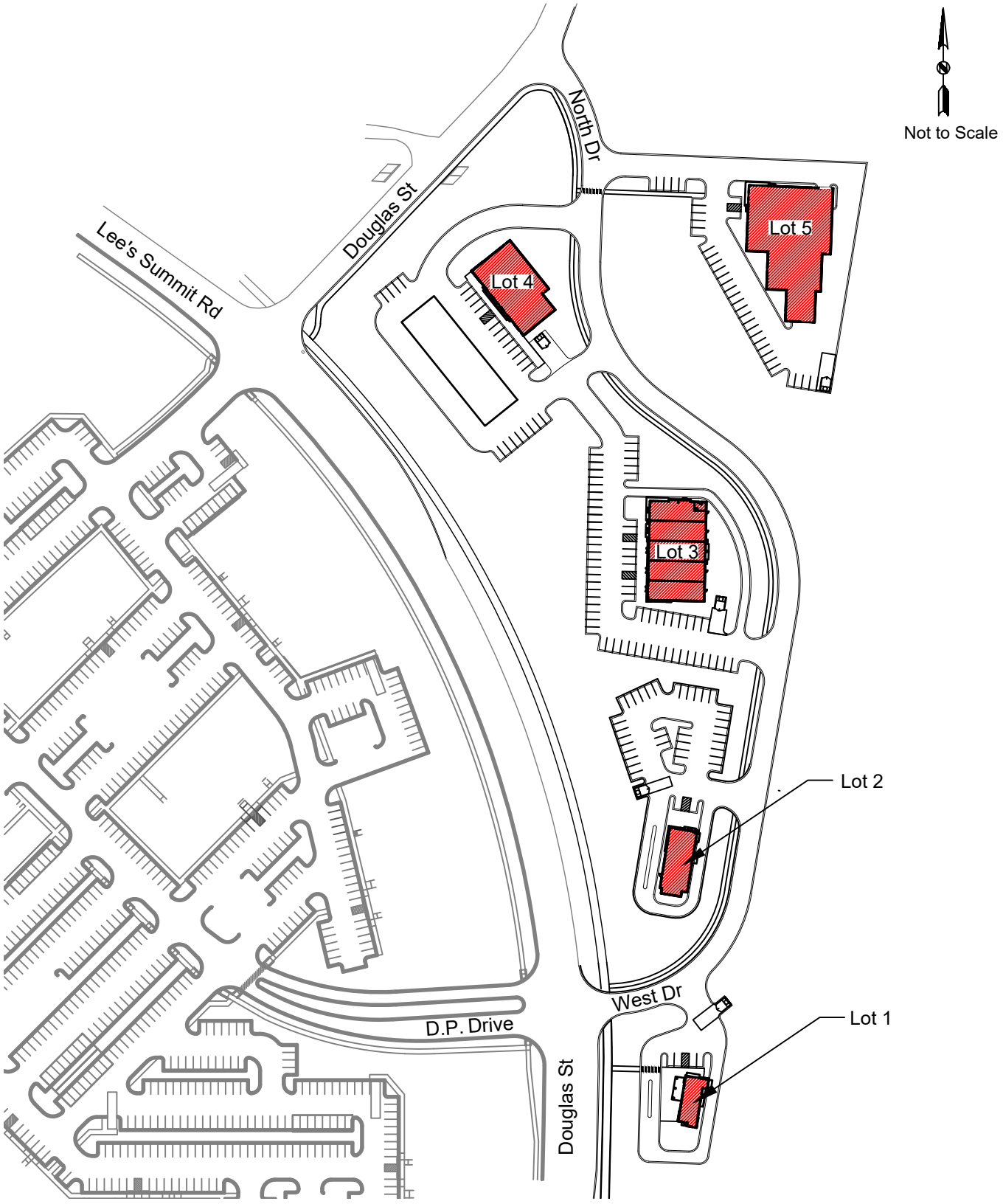


Figure 2 - Site Plan

EXISTING CONDITIONS

The site is in Lee's Summit, Missouri, generally in the northeast quadrant of the intersection Colbern Road and Douglas Street. The current land use of the planned development is undeveloped.

Street Network and Traffic Control

The development is generally bordered on the south by Colbern Road, on the west by Douglas St/Lee's Summit Road, and on the north Douglas Street.

Colbern Road is an east-west four-lane arterial roadway in the project vicinity with a posted speed limit of 45 miles per hour (mph). The roadway and lane configurations in the report and analysis are based on the 2022 reconstruction roadway plans.

I-470/M-291 is a four-lane divided interstate highway running north-south to the east of the project and east-west to the south of the project location. There are four northbound and southbound entrance and exit ramps intersecting Colbern Road—a signalized southbound off-ramp, a signalized northbound on-ramp/Independence Avenue, an unsignalized southbound on-ramp, and a signalized northbound on-ramp.

Douglas Street/Lee's Summit is a north-south arterial. North of Colbern Road, Douglas Street is a two-lane roadway with a two-way left-turn lane (TWLT) and a posted speed limit of 45 miles per hour (mph). Douglas Street becomes Lee's Summit Road at the intersection with the two-lane collector, Douglas Street, approximately half-a-mile north of Colbern Road. To the south of Colbern Road, Douglas Street is a four-lane median divided roadway. The intersection of Douglas Street/Lee's Summit Road (north-south).

Douglas Street (east-west) is a collector roadway with a posted speed limit of 25 miles per hour (mph). It operates as a stop-controlled, T-intersection with Douglas Street stopping. It also serves as the access road to Lee's Summit Municipal Airport.

The intersection of Douglas Street and Colbern Road is signalized.

I-470 runs east-west parallel to Colbern Road south of the development. The east and westbound ramps and Douglas Street are signalized intersections.

Traffic Volumes

Intersections count data included the study analysis from the 2023 Discovery Park Traffic Impact Study (*Olsson*) and 2024 Discovery Park Update Traffic Impact Study (*McCurdy*) the updated include:

- Colbern Road and Main Street (count from 2019)
- Colbern Road and Blue Parkway/Unity Way (count from 2019)
- Douglas Street/Lee's Summit Road and Douglas Street (count from 2019)
- Colbern Road and Douglas Street (count from 2022)
- Douglas Street and I-470 Westbound Ramp (count from 2022)
- Douglas Street and I-470 Eastbound Ramp (count from 2022)
- Colbern Road and Pryor Road (count from 2022)
- Colbern Road and M-350 Northbound Ramp (count from 2022)
- Colbern Road and M-350 Southbound Ramp (count from 2022)
- Colbern Road and I-470 Southbound Ramp (count from 2024)
- Colbern Road and I-470 Northbound Ramp/Independence Ave (count from 2024)
- Colbern Road and M-291 Southbound Ramp (count from 2024)
- Colbern Road and M-291 Northbound Ramp (count from 2024)

Trips from approved developments in the surrounding areas included in the existing conditions of the Olsson study were:

- Cable Dahmer KIA (December 2015)
- St. Michael Archangel Catholic High School (June 2016)
- Oakview Storage (March 2018)
- Aria/Summit Village North (April 2019)
- Automotive Detail Center (May 2020)
- Douglas Station Apartments (April 2021)
- Scannell LS (July 2021)
- Lot 1 Town Center (November 2021)

An existing conditions scenario was created by balancing the peak hour traffic counts (2019, 2022, and 2024), the approved trips, and the trips from the currently under construction Discovery Park development. Traffic counts, an overview map, and site generated traffic volumes for the approved developments can be found in the Appendix.

The existing plus approved traffic volumes are shown on Figure 3.

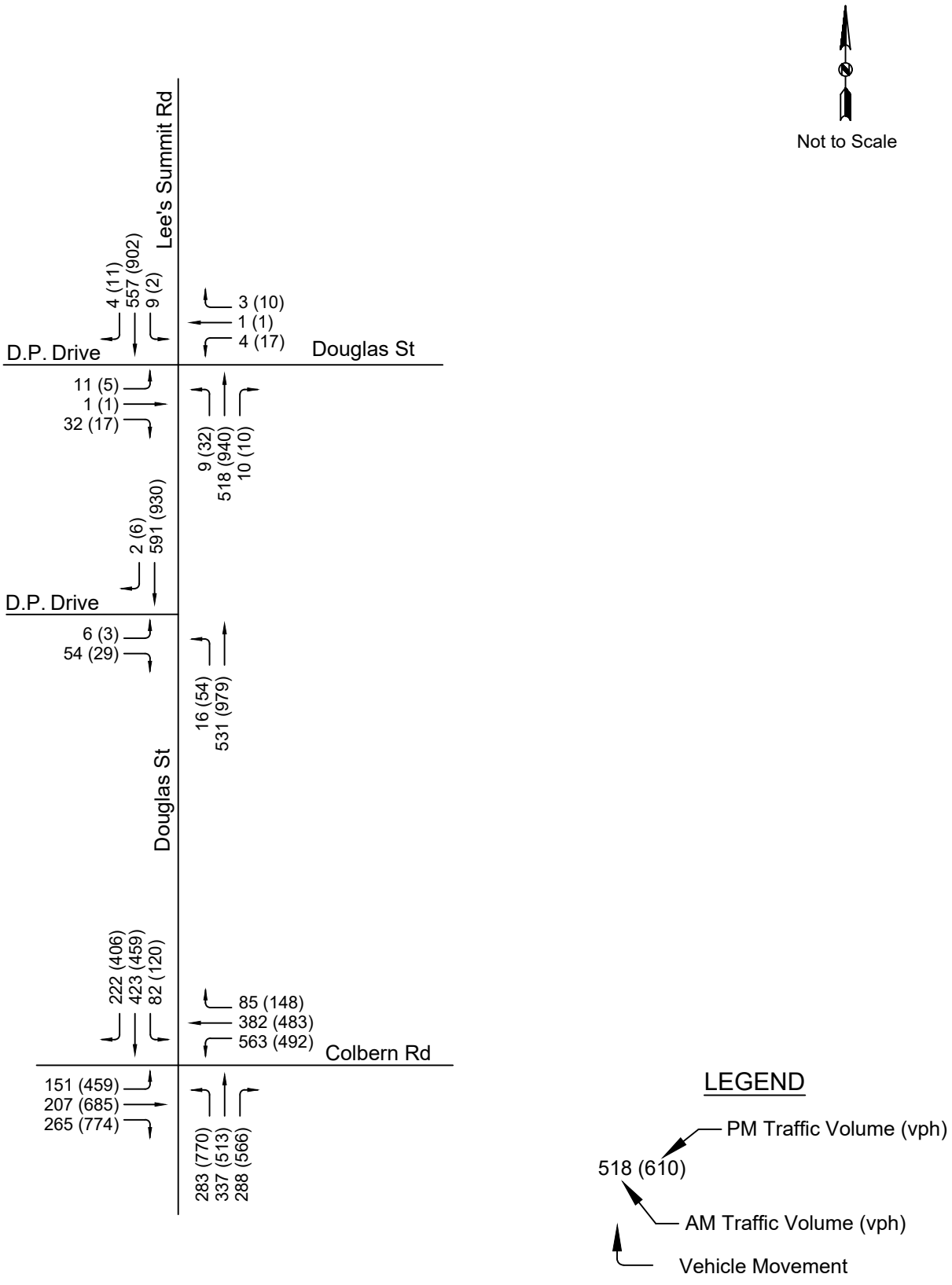


Figure 3 - Existing Traffic Volumes

PROPOSED CONDITIONS

The Douglas Corporate Center development is expected to be constructed in one phase and will consist of a mix of retail/commercial (restaurant, retail, and gas station) and storage land uses.

Access Plan

The site will be accessed from two entrances—an access on the northside of the site off Douglas Street and on the westside of the site as the fourth leg of the Discover Park drive. All access are planned as full access points and will be stop controlled with side streets stopping.

Sight Distance

Sight distance was measured at the proposed accesses using the methodology recommending by the American Association of State Highway and Transportation Engineers (AASHTO).

The posted speed limit is 45 mph along Thorn Road/Highway K at the proposed access points.

Sight distance was measured at the proposed accesses using the methodology recommending by the American Association of State Highway and Transportation Engineers (AASHTO) for the 45 mph speed limit on Douglas Street/Lee's Summit Road at the west drive and 25 mph on Douglas Street at the north drive. For 45 mph, AASHTO requires a minimum intersection sight distance of 500 feet and a stopping sight distance of 360 feet. The AASHTO required intersection site distance at 25 mph is 280 feet and 155 feet for stopping sight distance.

North Drive and Douglas Street

Based on field measurements, the available sight distance is greater than 400 feet and meets the AASHTO requirements.

West Drive and Douglas Street/Lee's Summit Road

The measured intersection and stopping sight distance is greater than 300 feet and meets the AASHTO requirements intersection and stopping sight distance requirements.

Throat Length Analysis

The throat lengths for the proposed entrances into the site were compared to City of Lee's Summit *Access Management Code*, March 2018 requirements for drives adjacent to arterial roadways based on vehicles per hour.

Due to site constraints and maintaining appropriate fire truck turning radii, the West Drive will be 15 feet short of meeting the recommended throat length but is not expected to have significant impacts on the site operation.

Throat lengths for entrances are provided in Table 1.

Table 1 –Driveway Throat Depths		
Intersection	**Recommended Throat Length (feet)**	**Site Plan Measured Throat Length (feet)**
North Drive and Douglas Street	75	140
West Drive and Douglas Street/Lee's Summit Road	125	110

Trip Generation

The expected trip generation for the development was estimated using the 11th Edition of the Trip Generation Handbook published by the Institute of Transportation Engineers. The trip generation was based on Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 AM along with Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 PM criteria.

Estimates for the expected trips generated by the development are provided in Table 2.

Table 2 – Trip Generation					
ITE Land Use Code	**Weekday Trips (vpd)**	**A.M.**		**P.M.**	
		Trips In (vph)	**Trips Out (vph)**	**Trips In (vph)**	**Trips Out (vph)**
151 – Mini-Warehousing (Lot 6) 37,500 sq ft	54	2	1	3	3
899 – Liquor Store (Partial Lot 3) 5,300 sq ft	748	n/a	n/a	55	54
930 – Fast Casual Restaurant (Partial Lot 3) 1,500 sq ft	146	n/a	n/a	6	5
934 – Fast-Food Restaurant with Drive-Thru Window (Lot 2 and Partial Lot 3) 2,700 + 1,500 sq ft	1,963	95	92	72	67
938 – Coffee/Donut with Drive-Drive Thru Window (Lot 1) 1 Drive-Thru Lane	179	18	18	8	8
945 – Convenience Store/Gas Station (Lot 4) 14 Fueling Positions	3,600	190	189	160	160
TOTAL	**6,691**	**305**	**300**	**304**	**297**

Trip Distribution

The trip distribution pattern was determined for the site based on the existing directional traffic pattern of the peak period and based on a general analysis of the surrounding area. The detailed distribution patterns can be found in the appendix. Based on the existing traffic patterns, the type of development, location of nearby schools, and the metropolitan population centers, the new trips were assigned onto the roadway network, as shown below for the morning and afternoon periods.

Trip distribution during the morning peak period:

- 15% to and from the north
- 35% to and from the south
- 15% to and from the east (on Colbern Rd)
- 35% to and from the west (on Colbern Rd)

Trip distribution during the afternoon peak period:

- 15% to and from the north
- 35% to and from the south
- 15% to and from the east (on Colbern Rd)
- 35% to and from the west (on Colbern Rd)

Existing Plus Site Traffic Volumes

The expected development site-generated traffic volumes were added to the existing (including approved trips) traffic scenario. The volumes are shown on Figures 4 and 5.

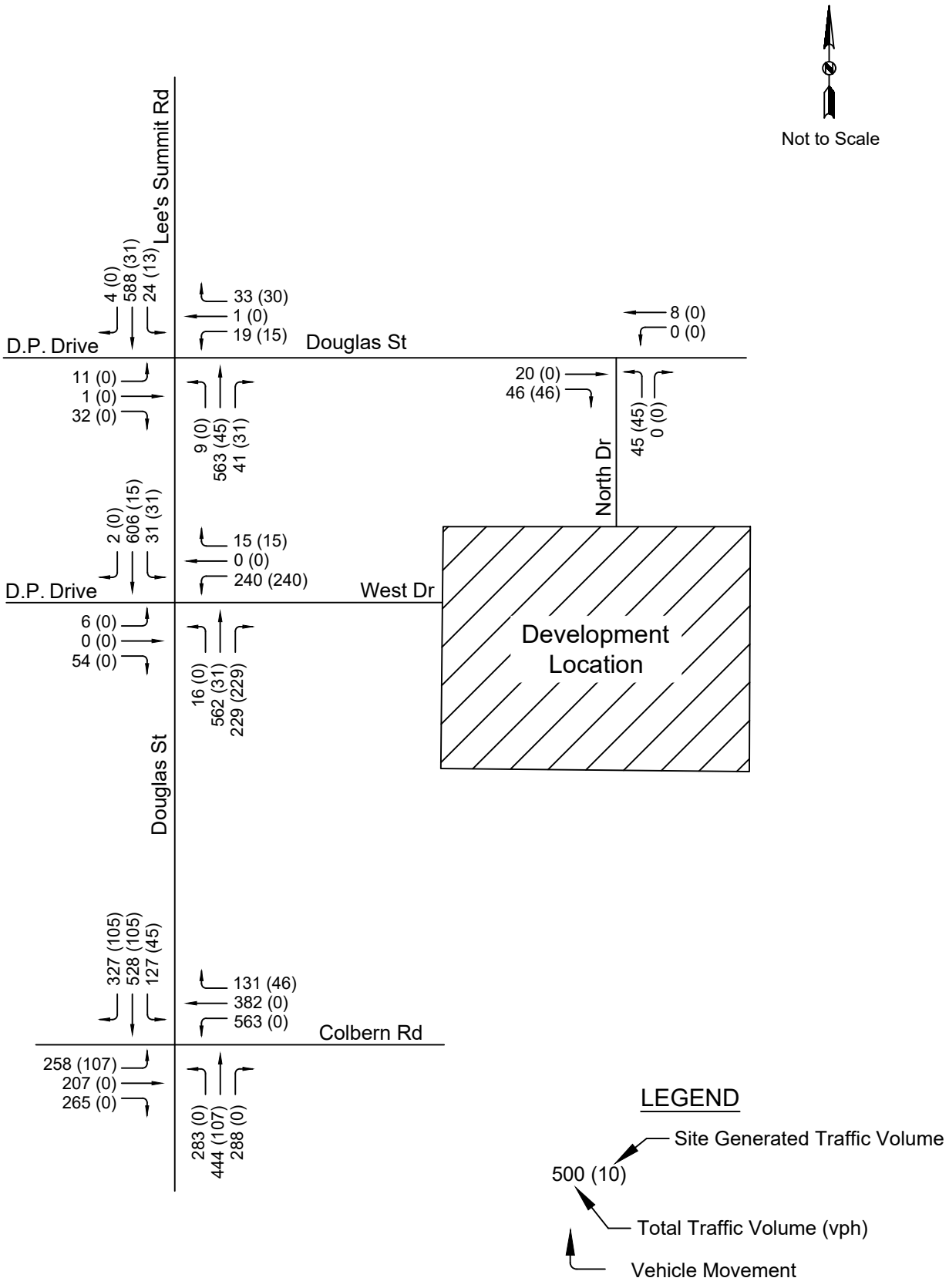


Figure 4 - Existing plus Site AM Peak Hour Volumes

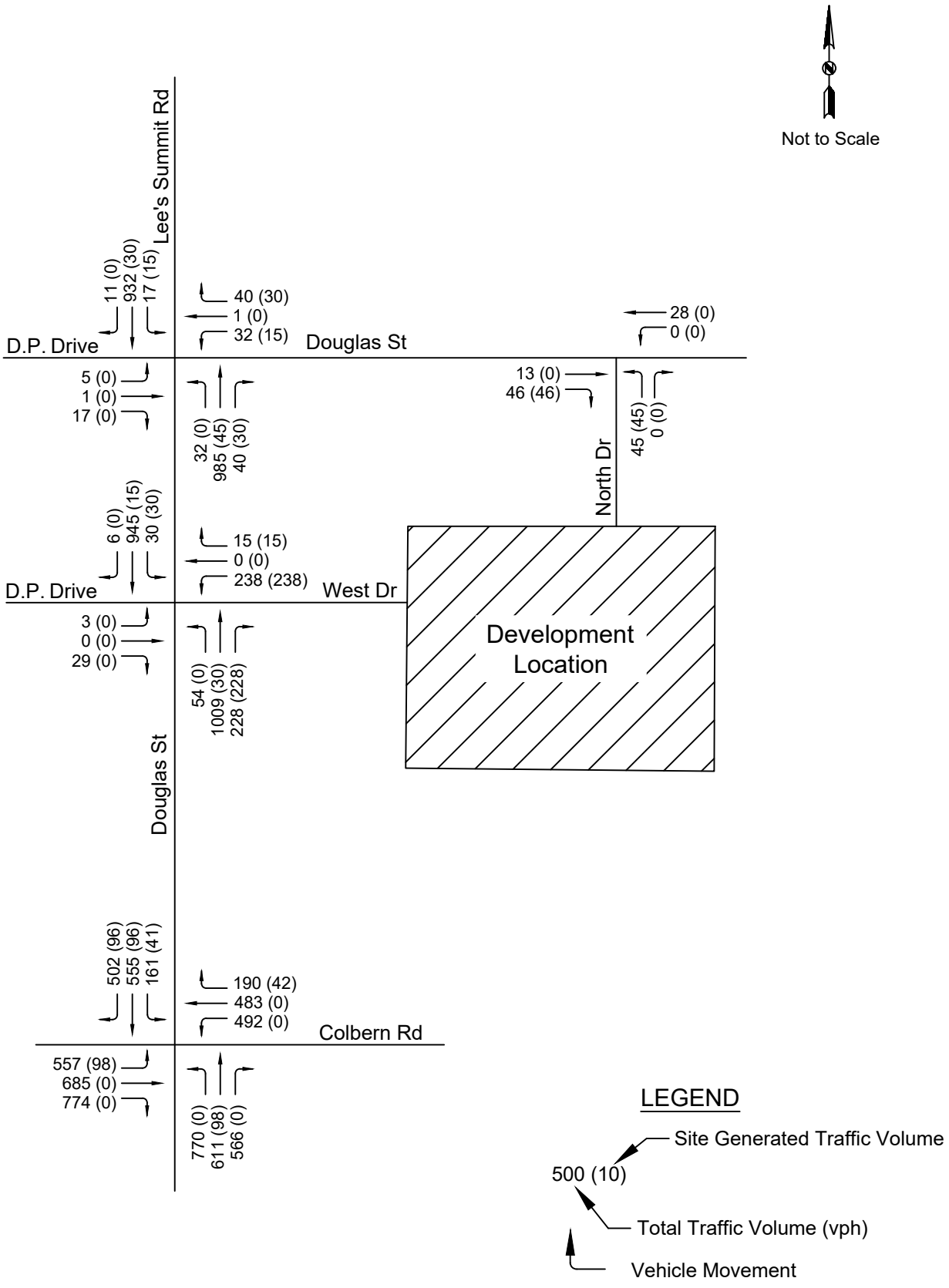


Figure 5 - Existing plus Site PM Peak Hour Volumes

Signal Warrant Study

It may be considered justified to install a traffic signal at a location if one or more of the traffic signal warrants listed in the 2023 MUTCD are met. The traffic signal warrants are:

Warrant 1: Eight-Hour Vehicular Volume
Warrant 2: Four-Hour Vehicular Volume
Warrant 3: Peak Hour
Warrant 4: Pedestrian Volume
Warrant 5: School Crossing
Warrant 6: Coordinated Signal System
Warrant 7: Crash Experience
Warrant 8: Roadway Network
Warrant 9: Intersection Near at Grade Crossing

Warrant 3 was evaluated at the analysis intersections as part of this study.

Warrant 3: Peak Hour

The peak hour warrant is satisfied if either of the two following conditions are met:

A: This condition is satisfied if any of the following conditions are met for a period of one hour during an average day:

1. The total stopped time delay experience by the traffic on one minor-street approach (one direction only) controlled by a stop sign equals or exceeds: 4 vehicles-hours for a one-lane approach or five vehicle hours for a two-land approach and

2. The volume on the same minor-street approach (one directions only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

(Condition A is not being examined in this study)

B: The peak hour warrant is satisfied if the vehicles per hour on both approaches of the major street and the vehicles on the higher volume approach of the minor street for one hour fall above the 2009 MUTCD Warrant 3 curve.

Warrant Analysis

Table 3 summarizes the results of the traffic signal warrant analysis. The raw data and graphs from the 2023 MUTCD are included in the Appendix.

Table 3 – Traffic Signal Warrant Analysis (Warrant 3: Peak Hour)			
Intersection	**Existing (with Approved Trips)**	**Existing plus Site**	**Future**
North Drive and Douglas Street	No	No	No
West Drive and Douglas Street/Lee's Summit Road	No	Yes	Yes
Douglas Street and Douglas Street/Lee's Summit Road	No	No	No

Traffic signals should not be installed based solely on Warrant 3: Peak Hour criteria. However, this data can serve as a trigger for a full traffic signal warrant analysis as background traffic volumes increase with nearby developments. Installing a signal before traffic volumes meet the warrant criteria could unnecessarily increase delays along Douglas Street/Lee's Summit Road and potentially lead to more crashes.

Based on existing and existing plus site traffic conditions, none of the study intersections are expected to meet the signal warrant criteria—except for the West Drive intersection and only then once nearby developments are fully constructed. A traffic signal may be appropriate if the projected background volumes reach the warranted traffic volumes.

Right-Turn and Left-Turn Lane Warrants

The need for right and left-turn lanes into the site entrances was evaluated using the City of Lees Summit *Access Management Code*, March 2018 turning lane guidelines as part of this study for the existing plus site condition.

Left-Turn Warrant

Left-turn lane guidelines per City of Lees Summit *Access Management Code*:

> 16.1.B. Left-turn lanes shall be provided on all arterial streets at the intersection with other arterial and collector streets. Left-turn lanes shall be provided on minor arterial streets at the intersection with any local street or driveway where the left-turn volume is at least 20 vehicles in any hour. On major arterial streets, left-turn lanes shall be at the intersection with all connectors (an exception may be granted for a singular, existing, residential lot).
>
> 16.1.E. Left-turn lanes shall be provided at all median openings on roadways with medians.

> 16.1.H. The minimum length of left-turn lane should be 250 feet plus taper on an arterial street intersecting another arterial street and 200 feet plus taper on an arterial street at other locations. The minimum length of left-turn lane on collectors should be 150 feet plus taper. The minimum length of left-turn lane on connectors should meet the driveway throat length requirements.

The existing TWLT lane provides southbound left-turn lanes at the intersections of Douglas Street and Douglas Street/Lee's Summit Road and at West Drive and Douglas Street/Lee's Summit Road. The intersection of North Drive and Douglas Street does not meet the left-turn lane warrants and is not recommended.

Right-Turn Warrant

Right-turn lane guidelines per City of Lees Summit *Access Management Code*:

> 16.2.A. Required on arterial streets at each intersecting street or driveway where the right-turn volume on the major arterial street is or is projected to be at least 30 vehicles in any hour, or the right-turn volume on the minor arterial street is or is projected to be at least 60 vehicles in any hour. Minimum length should be 250 feet plus the taper on a major arterial at the intersection of another arterial street or 200 feet plus the taper on a minor arterial at the intersection with another arterial street or on a major arterial at the intersection of a collector and 150 feet plus the taper at other locations along arterial streets.

The traffic volumes are expected to meet the right-turning volume criteria northbound at the intersections of Douglas Street and Douglas Street/Lee's Summit Road and at West Drive and Douglas Street/Lee's Summit Road. The intersection of North Drive and Douglas Street does not meet the right-turn lane warrants and is not recommended.

The raw analysis data is included in the Appendix.

CAPACITY

The capacity analysis for the study intersections was completed using the methodology outlined in the Highway Capacity Manual, 6th Edition. The volume and capacity analysis was completed using Trafficware SYNCHRO software (latest version) for the following scenarios:

- Existing (existing 2024 counts plus volumes from approved traffic impact studies)
- Existing plus Site
- Future (20-year scenario)

Level of Service (LOS) is defined as the measure of the quality of traffic flow and is graded from A to F—with A being the best situation, F being the worst, and D being generally the minimum acceptable level of service. The criteria for determining level of service for signalized and unsignalized study intersections and access points are based on the average vehicle delay and is outlined in Table 4.

Table 4 – Intersection Level of Service

Level of Service (LOS)	Average Control Delay (sec/veh)	
	Unsignalized	Signalized
A	< 10	< 10
B	< 15	< 20
C	< 25	< 35
D	< 35	< 55
E	< 50	< 80
F	≥ 50	≥ 80

Existing Conditions

Analysis was completed for existing conditions (peak hour counts and approved trips) using approved lane configurations from previous studies and Colbern Road design plans. Signal timings were optimized as necessary.

Douglas Street/Lee's Summit Road and Douglas Street

The through movements of Douglas Street/Lee's Summit Road are not stop-controlled and are therefore operating in a free-flow condition. All other movements operate at a LOS D or better and have sufficient capacity for queuing vehicles.

Discovery Park Drive and Douglas Street/Lee's Summit Road

The through movements of Douglas Street/Lee's Summit Road are not stop-controlled and are therefore operating in a free-flow condition. The eastbound movements operate at a LOS B during the morning peak hour and LOS C during the afternoon peak hour. The intersection has sufficient capacity for queuing vehicles.

Colbern Road and Douglas Street

Multiple movements operate at a LOS E; however, there is expected to be sufficient capacity for queueing vehicles.

The results of the existing conditions analysis are shown for the morning and afternoon peak hours along with lane configuration and queue lengths on Figures 6 and 7.

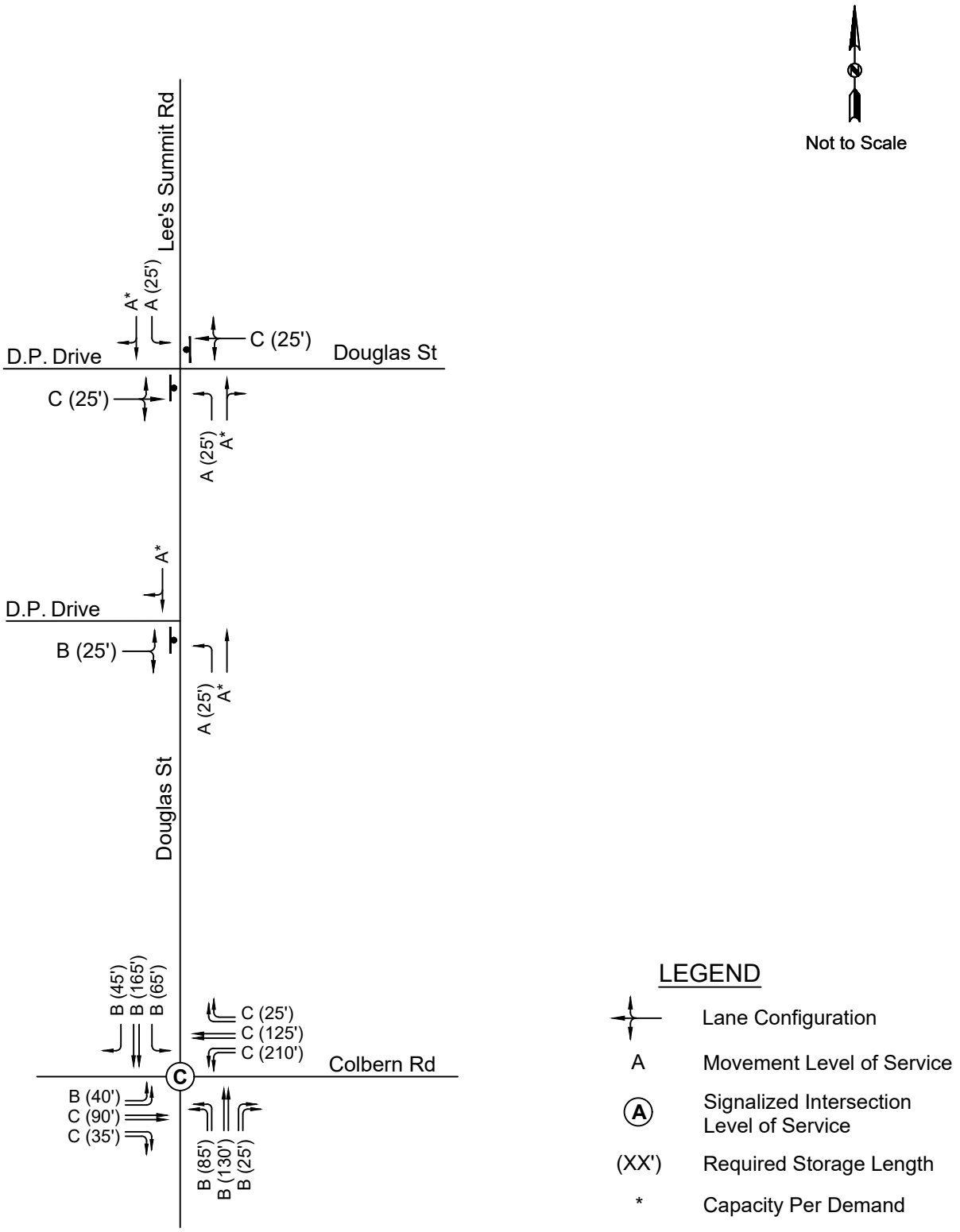


Figure 5 - Existing AM Level of Service

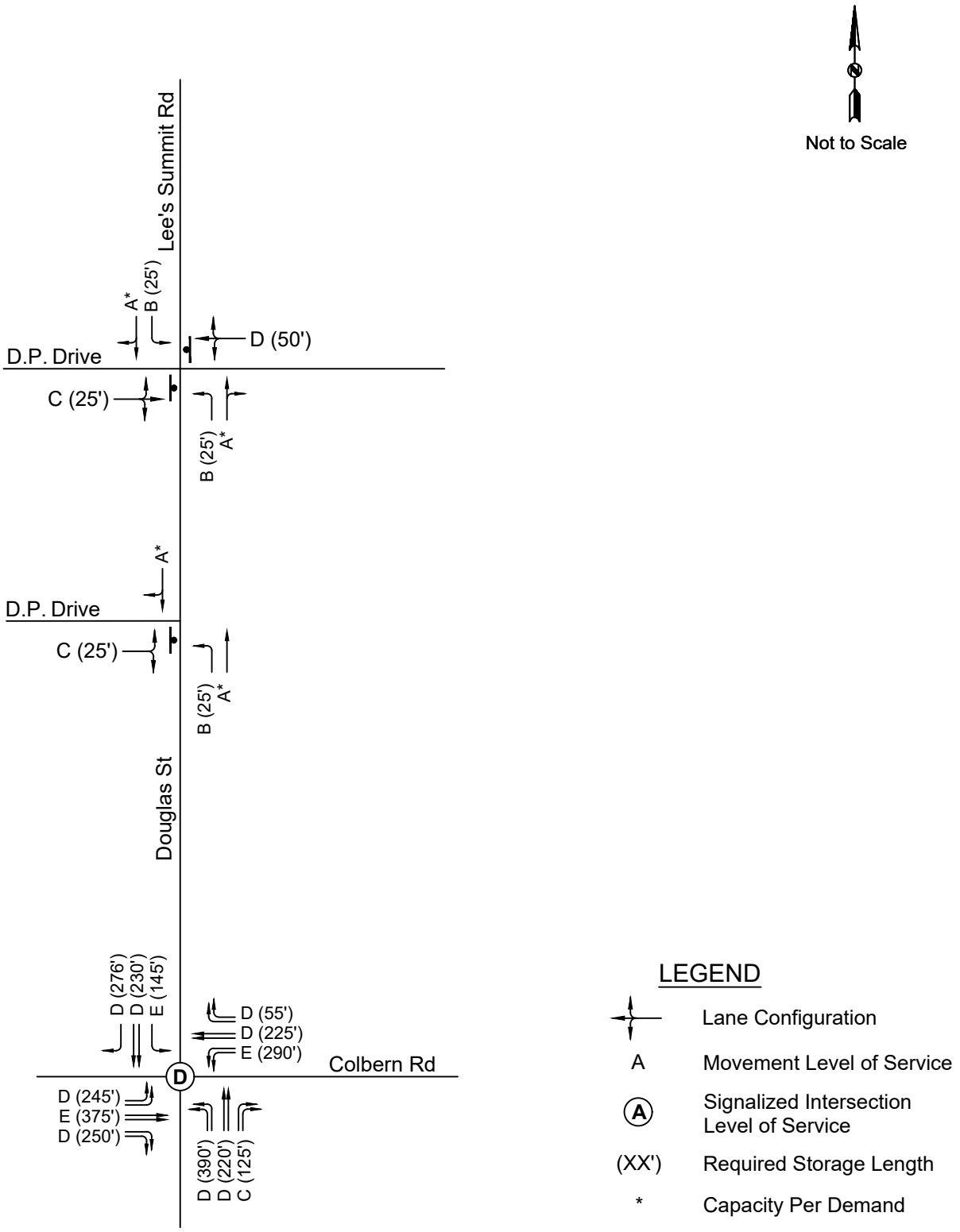


Figure 6 - Existing PM Level of Service

Existing Plus Site Conditions

Unless noted, analysis was completed with exiting roadway and lane configurations. Signal timings were optimized to account for the additional traffic.

Douglas Street/Lee's Summit Road and Douglas Street

With right-turn lane: All approaches continue to operate at a LOS D or better for the morning and afternoon peak periods, with the exception of the westbound movement during the afternoon peak period. The westbound movement drops to a LOS E during the afternoon peak period with an average delay of 44.3 seconds. The intersection has sufficient capacity for queuing vehicles.

North Drive and Douglas Street

The through movements of Douglas Street are not stop-controlled and are therefore operating in a free-flow condition. All northbound movements LOS A and have sufficient capacity for queuing vehicles.

West Drive and Douglas Street/Lee's Summit Road

Without signalization and with right-turn lane: Traffic along Douglas Street/Lee's Summit Road is free-flowing and operates at a LOS A. The stop-controlled westbound movement operates at a LOS C during the morning peak period and a LOS E during the afternoon peak period.

With signalization: All approaches operate at a LOS D or better for the morning and afternoon peak periods.

Colbern Road and Douglas Street

There is no significant change in the operations of this intersection from the existing conditions. Multiple movements continue to operate at a LOS E; however, there is expected to be sufficient capacity for queueing vehicles.

The results of the existing plus site analysis for the morning and afternoon peak hour conditions along with lane configuration and queue lengths are shown on Figures 8 and 9.

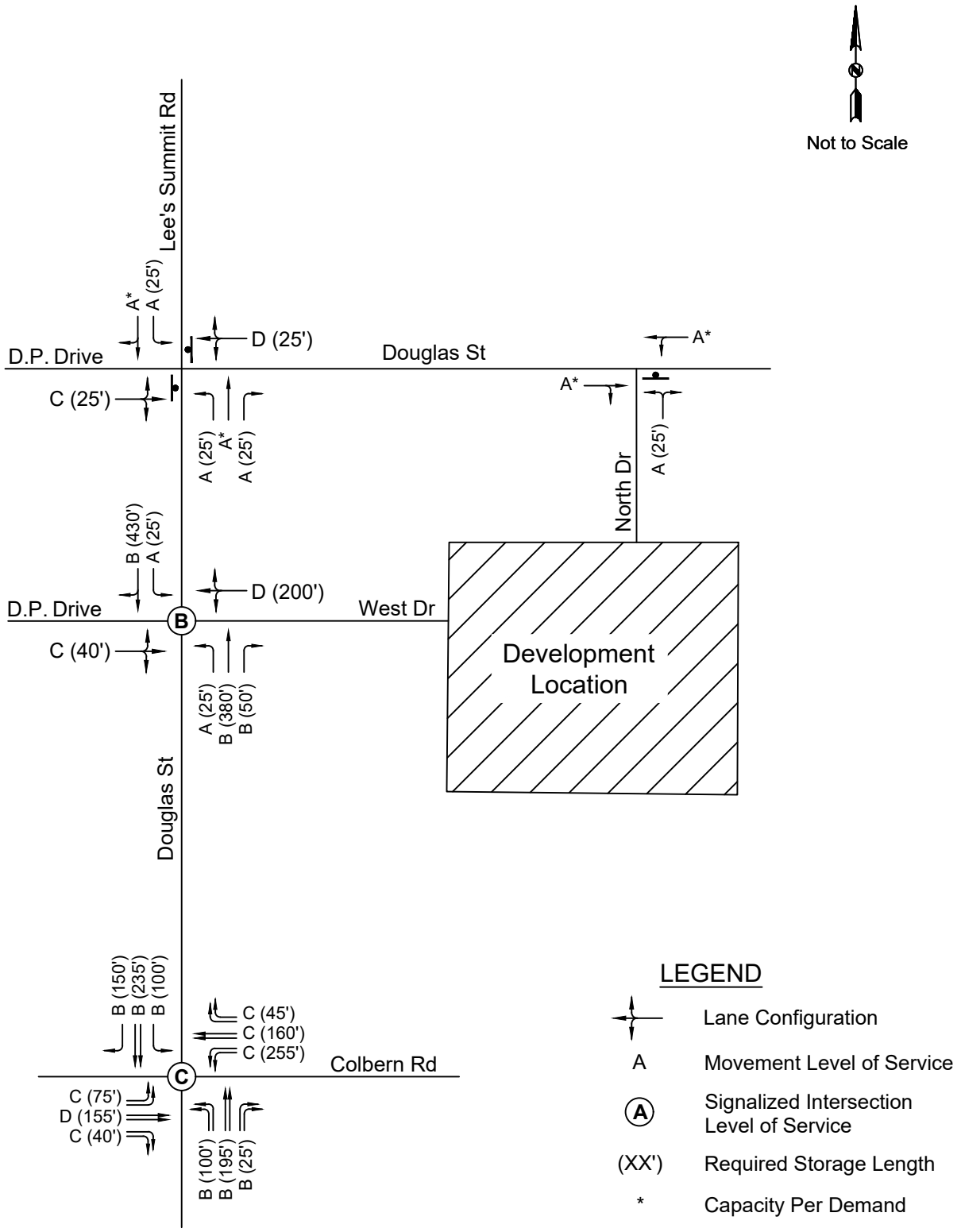


Figure 7 - Existing plus Site AM Level of Service

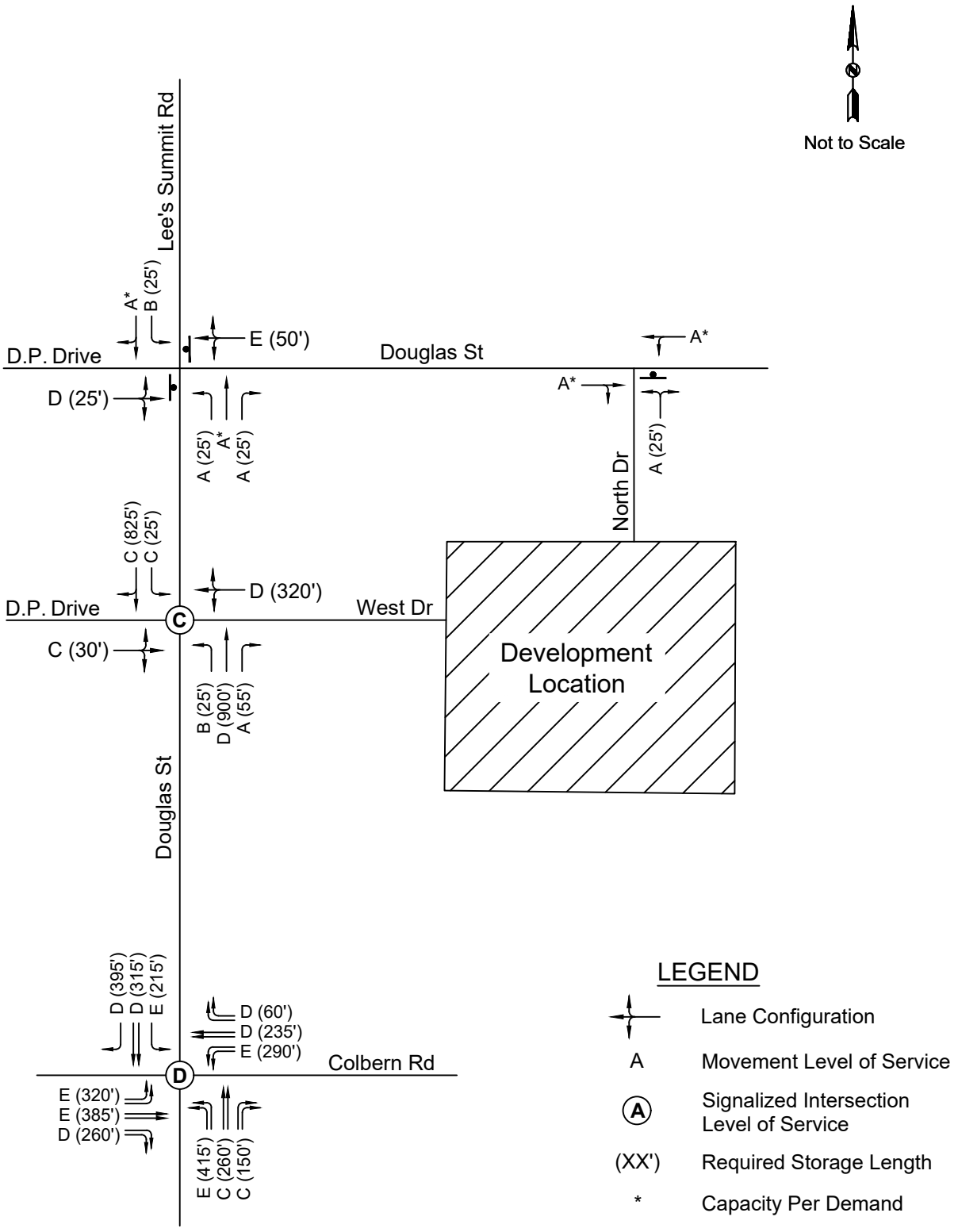


Figure 8 - Existing plus Site PM Level of Service

RECOMMENDATIONS

This study documents the findings of the traffic analysis of the expected traffic for the Douglas Corporate Center development in Lee's Summit, Missouri. The study includes an analysis of the existing conditions, existing plus site conditions, and future conditions.

Based on the results of the SYNCHRO analysis, observations from the field, and engineering judgment, the following recommendations are made:

- *General:* Reserve right-of-way for future roadway widening.
- *Colbern Road and Douglas Street:* Update traffic signal timings as necessary.
- *North Drive and Douglas Street/Lee's Summit Road:* The northbound approach should be stop-controlled with a shared left/right-turn lane.
- *Douglas Street and Douglas Street/Lee's Summit Road:* Construct a northbound right-turn lane (150 feet plus taper).
- *West Drive and Douglas Street/Lee's Summit Road:* Construct a northbound right-turn lane (150 feet plus taper). Monitor the traffic volumes at the intersection as a traffic signal will likely be warranted once the previously approved developments are constructed. Construct a northbound right-turn lane (150 feet plus taper). The westbound approach should be stop-controlled with a shared left/through/right-turn lane.

APPENDIX

Douglas Corporate Center TIS Site Trip Generation

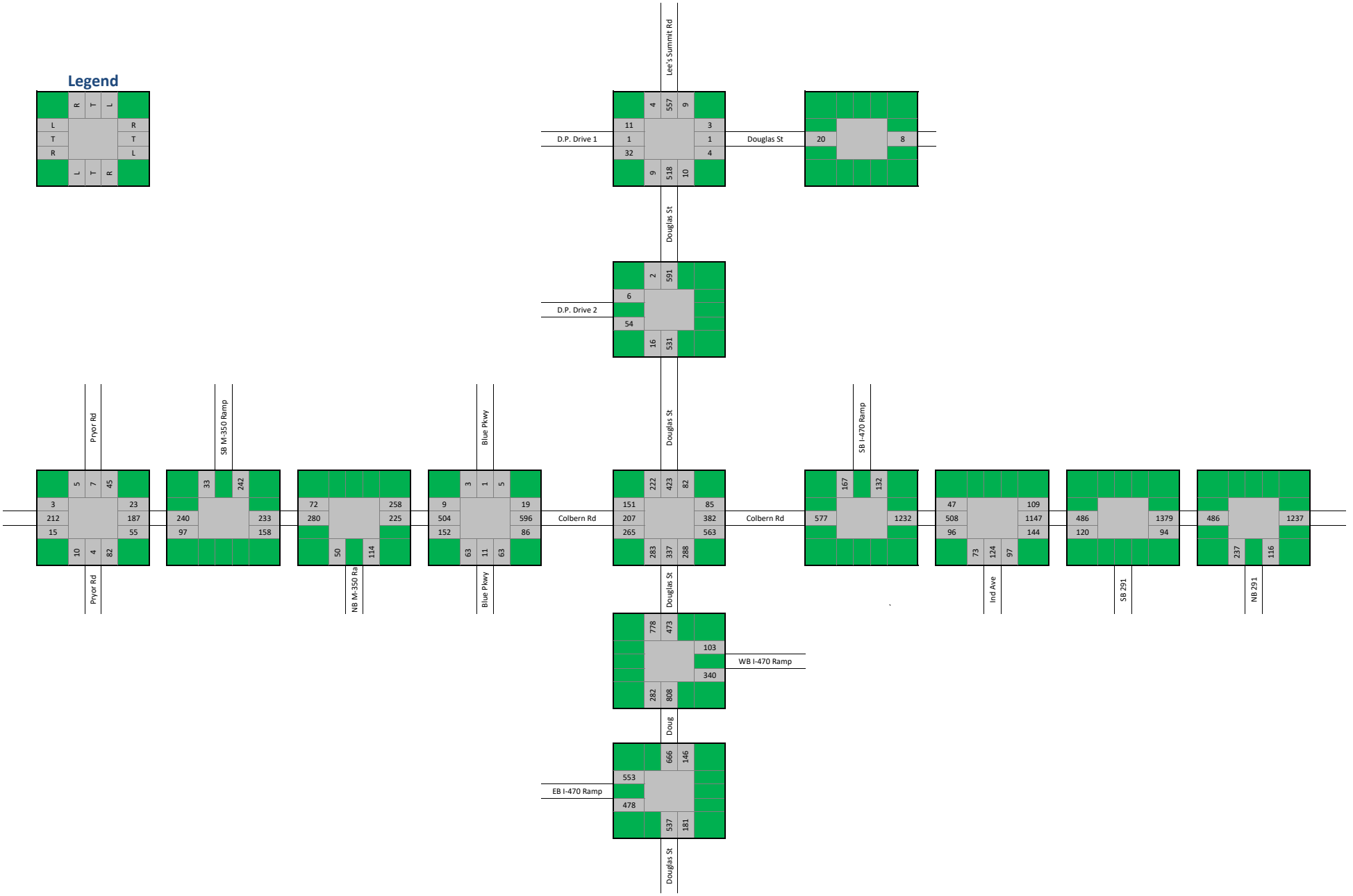
ITE Trip Generation Manual - 11th Edition

Highlighted text indicates trips used in Synchro and Warrant Analysis

Land Use	ITE Code	Size	Units	Equation	Trips (Eq.)	Av. Rate	Trips (Av. Rate)	In%	Out%	Trips In	Trips Out
Mini-Warehousing **(Weekday)**	151	37.5	1000 Sq Ft	n/a	n/a	1.45	54	50%	50%	27	27
Liquor Store	899	5.3	1000 Sq Ft	Ln(T)=0.52Ln(X)+5.75	748	107.21	568	50%	50%	374	374
Fast Casual Restaurant (Lot 3)	930	1.5	1000 Sq Ft	n/a	n/a	97.14	146	50%	50%	73	73
Fast-Food Restaurant with Drive-Through Window (Lot 2 & 3)	934	4.2	1000 Sq Ft	n/a	n/a	467.48	1963	50%	50%	982	981
Coffee/Donut Shop with Drive-Through Window and No Indoor Seating	938	1	Drive-Through Lanes	n/a		179	179	50%	50%	90	90
Convenience Store/Gas Station	945	14	Fueling Pos.	n/a		257.13	3600	50%	50%	1800	1800
										3346	3345
Mini-Warehousing **(AM)**	151	37.5	1000 Sq Ft	n/a	n/a	0.09	3	59%	41%	2	1
Liquor Store ***No AM Peak***	899	5.3	1000 Sq Ft	n/a	n/a	n/a	n/a			0	0
Fast Casual Restaurant ***No AM Peak***	930	1.5	1000 Sq Ft	n/a	n/a	n/a	n/a			0	0
Fast-Food Restaurant with Drive-Through Window	934	4.2	1000 Sq Ft	n/a	n/a	44.61	187	51%	49%	95	92
Coffee/Donut Shop with Drive-Through Window and No Indoor Seating	938	1	Drive-Through Lanes	T=53.21(X)-17.43	36	39.81	40	50%	50%	18	18
Convenience Store/Gas Station	945	14	Fueling Pos.	n/a	n/a	27.04	379	50%	50%	190	189
										305	300
Mini-Warehousing **(PM)**	151	37.5	1000 Sq Ft	n/a	n/a	0.15	6	47%	53%	3	3
Liquor Store	899	5.3	1000 Sq Ft	Ln(T)=0.47Ln(X)+3.91	109	16.62	88	50%	50%	55	54
Fast Casual Restaurant	930	1.5	1000 Sq Ft	T=17.96(X)-15.94	11	12.55	19	55%	45%	6	5
Fast-Food Restaurant with Drive-Through Window	934	4.2	1000 Sq Ft	n/a	n/a	33.03	139	52%	48%	72	67
Coffee/Donut Shop with Drive-Through Window and No Indoor Seating	938	1	Drive-Through Lanes	n/a		15.08	15	50%	50%	8	8
Convenience Store/Gas Station	945	14	Fueling Pos.	n/a	n/a	22.76	319	50%	50%	160	160
										304	297

AM Ex + Discovery Park

Plus 2023 Discovery Park TIS & 2024 Discovery Park TIS



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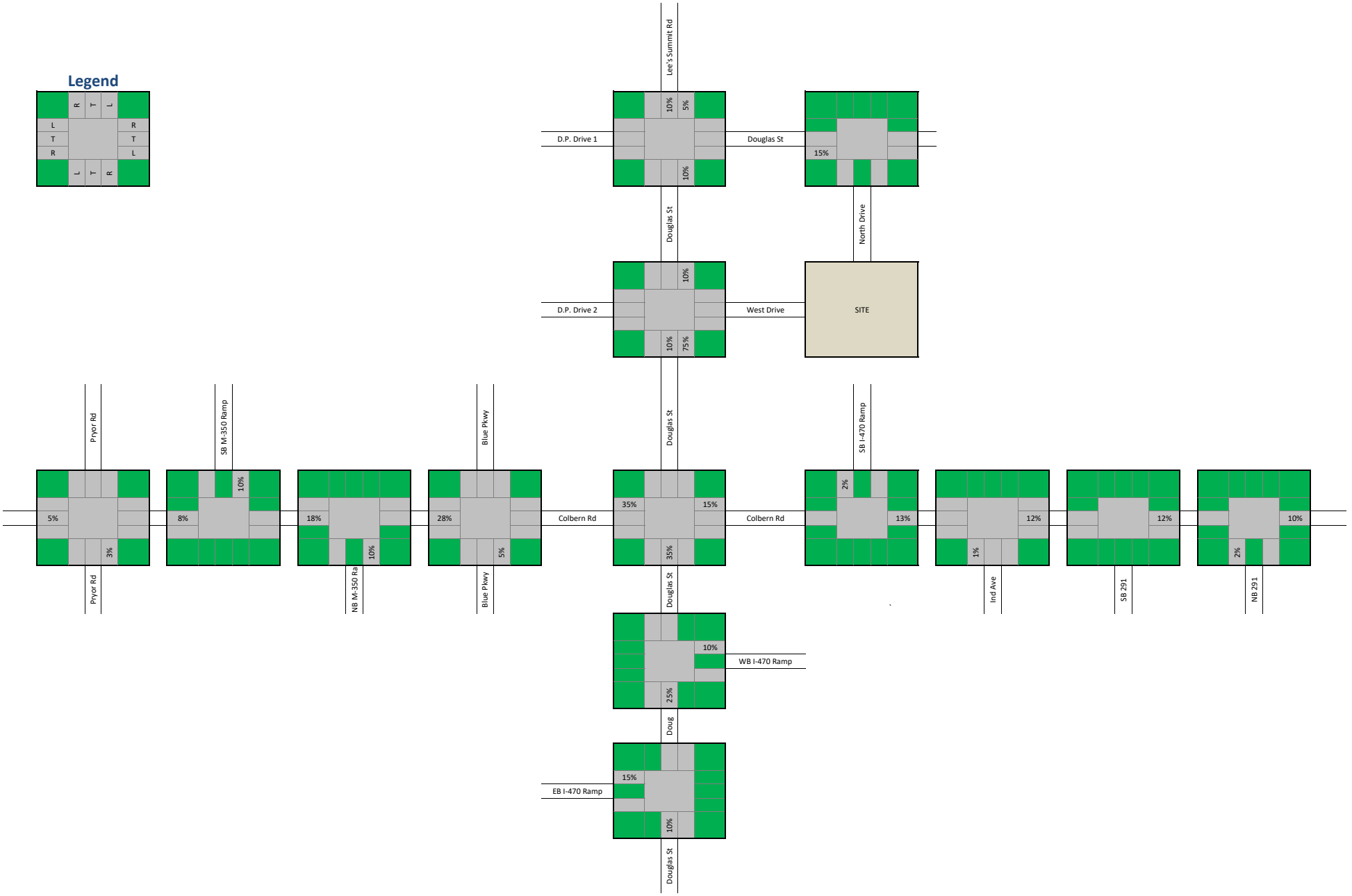

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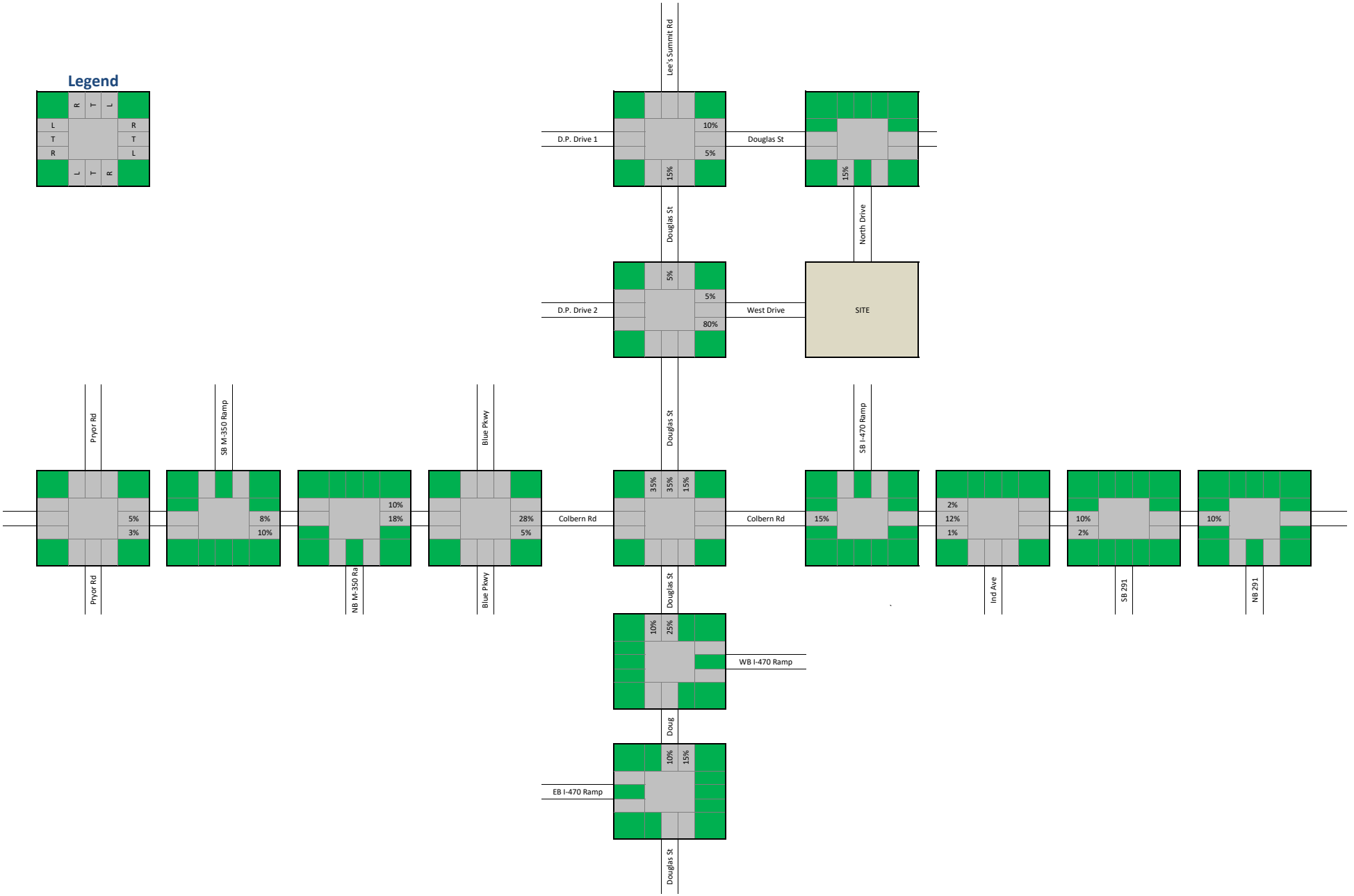
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Lee's Summit Rd
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SB M-350 Ramp
Blue Pkwy
Douglas St
SB I-470 Ramp
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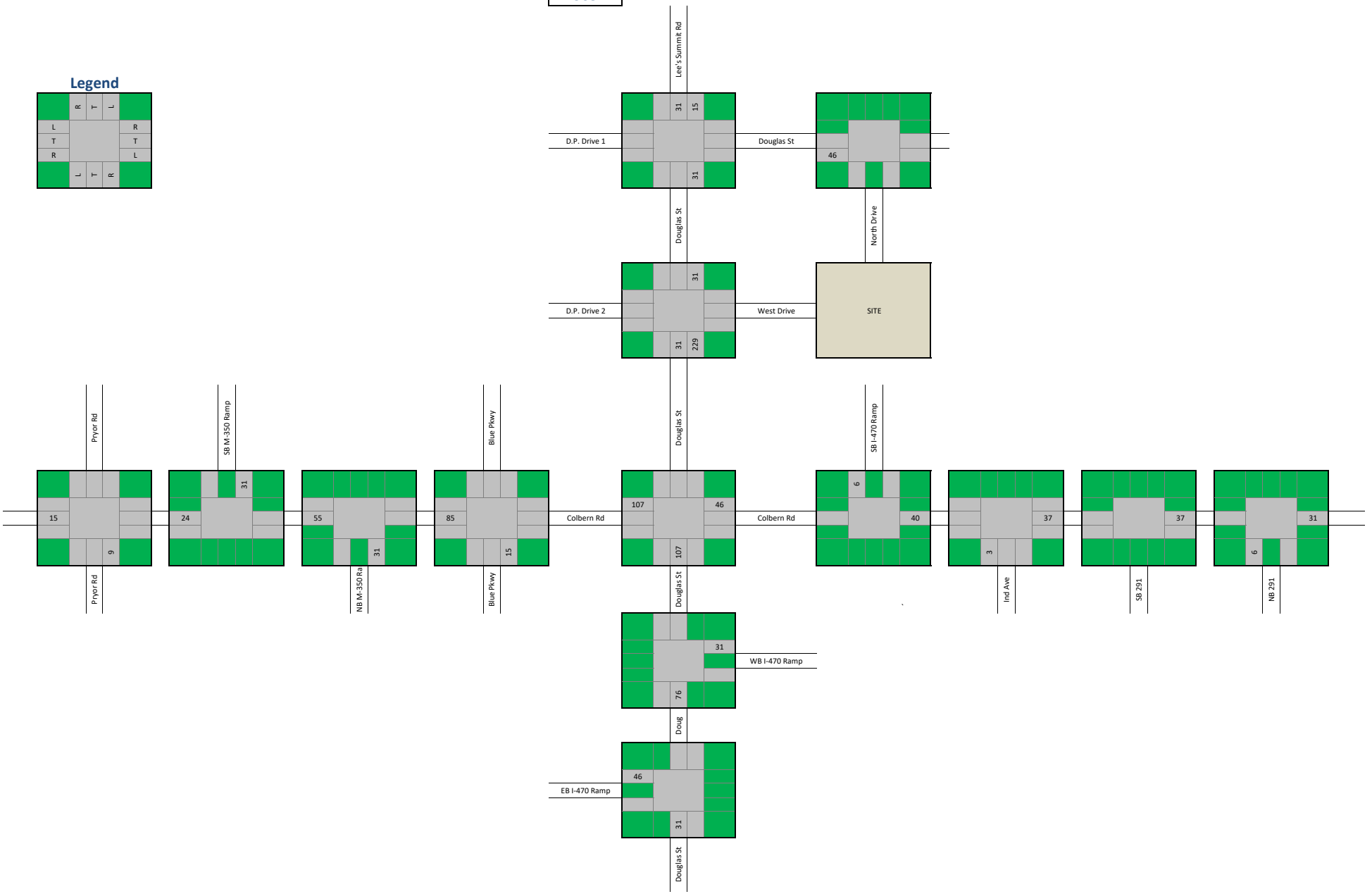

AM Trips Out

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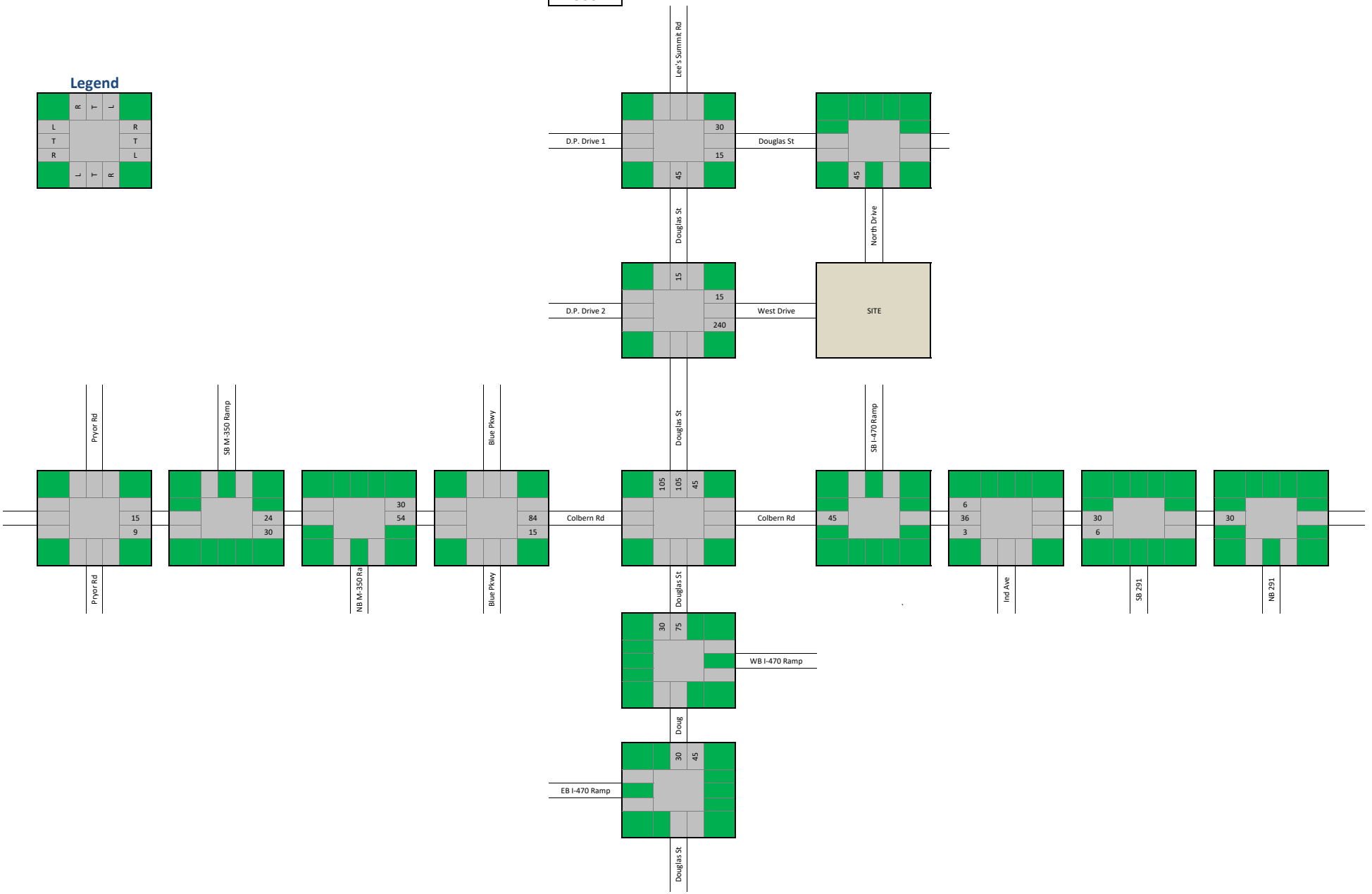
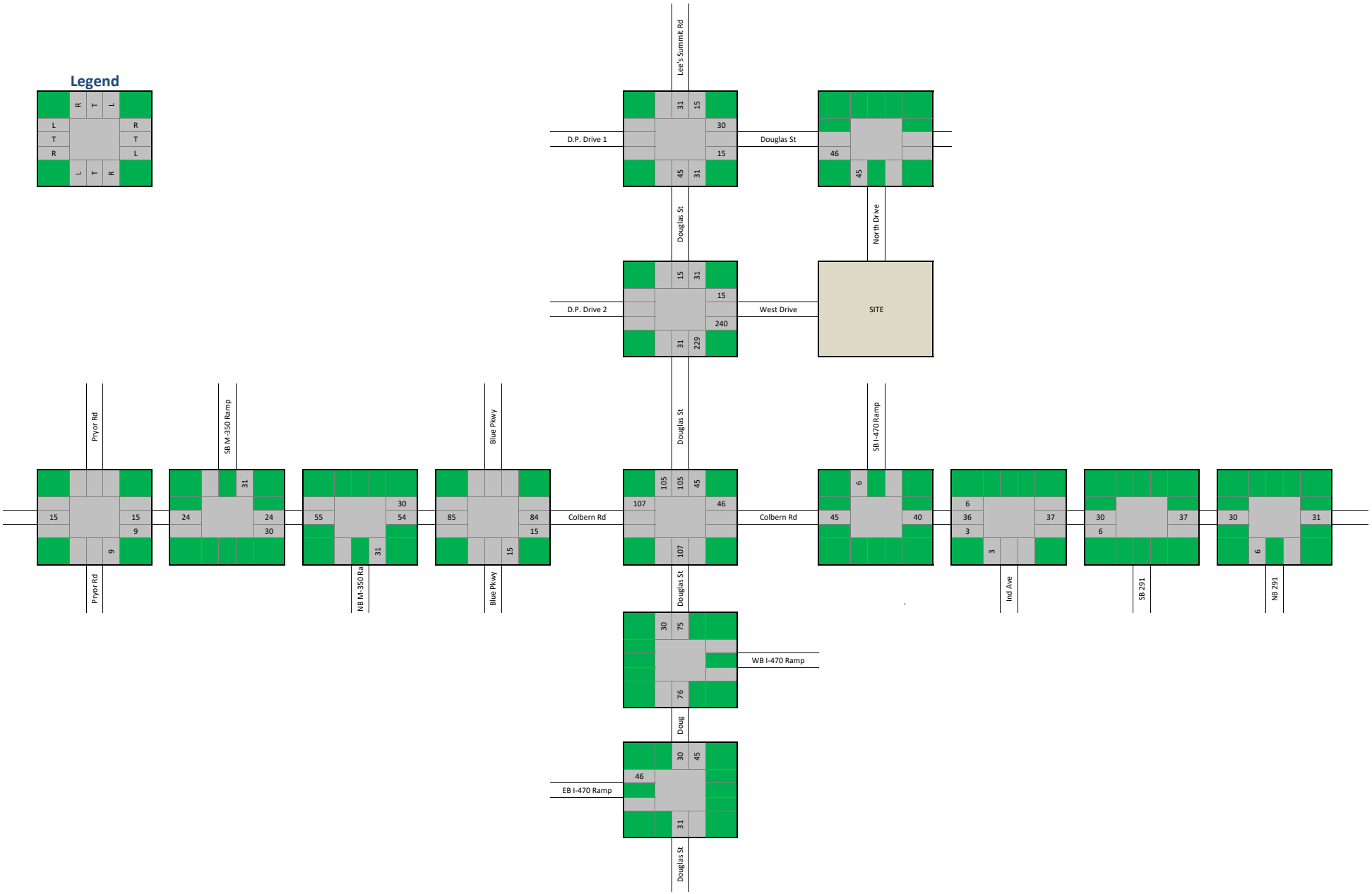
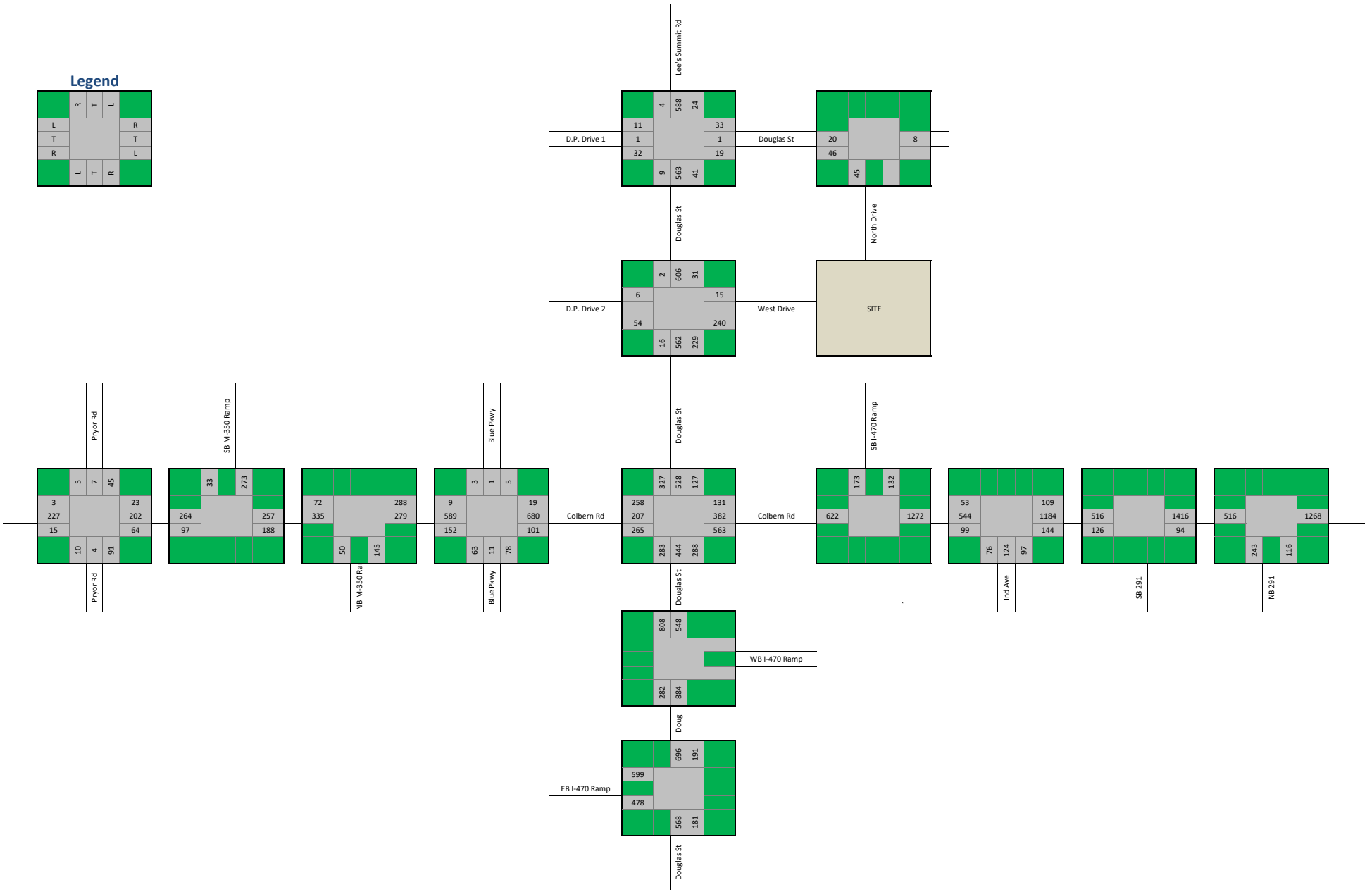


AM Total Trips



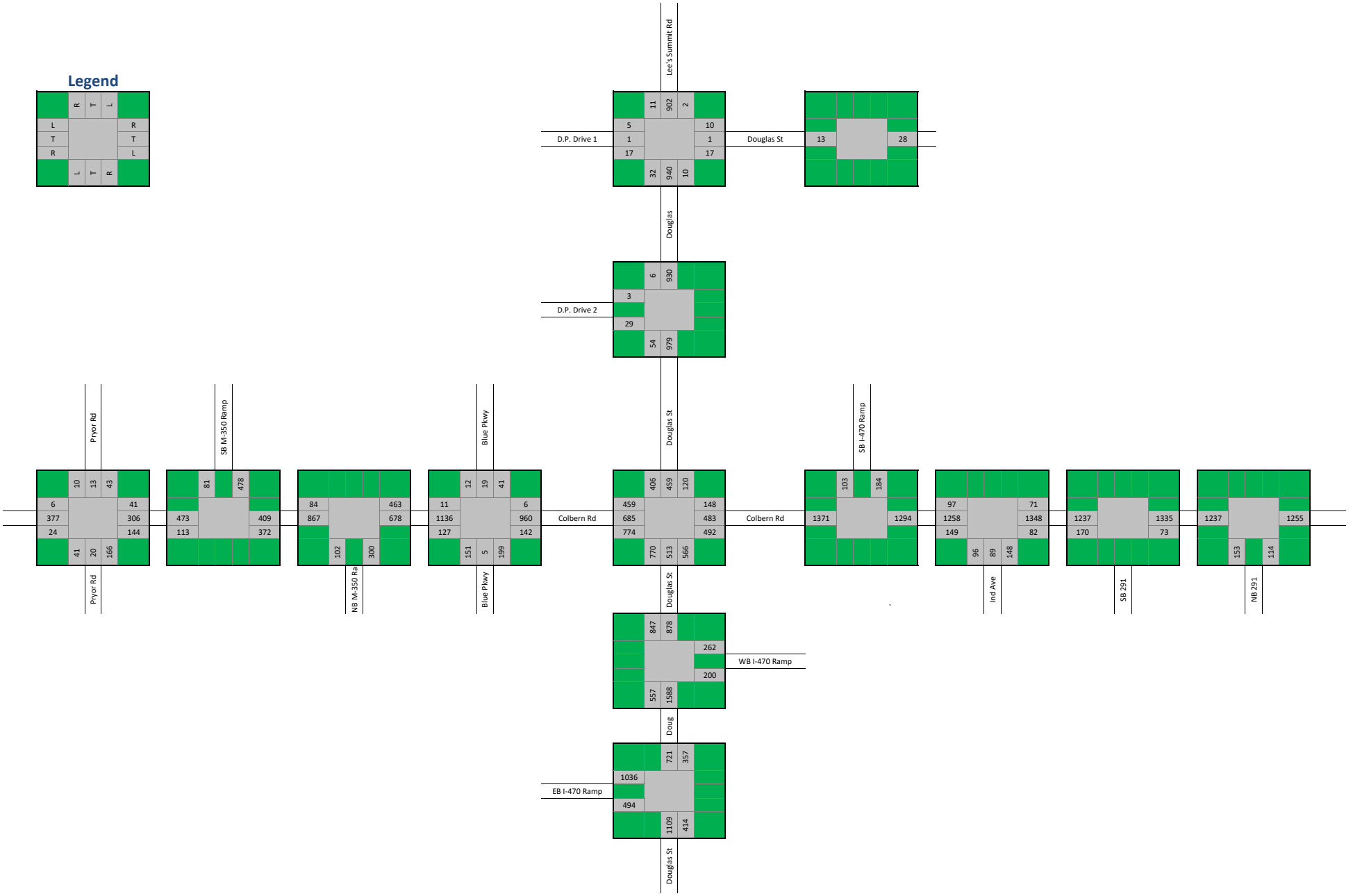
AM Existing plus Site



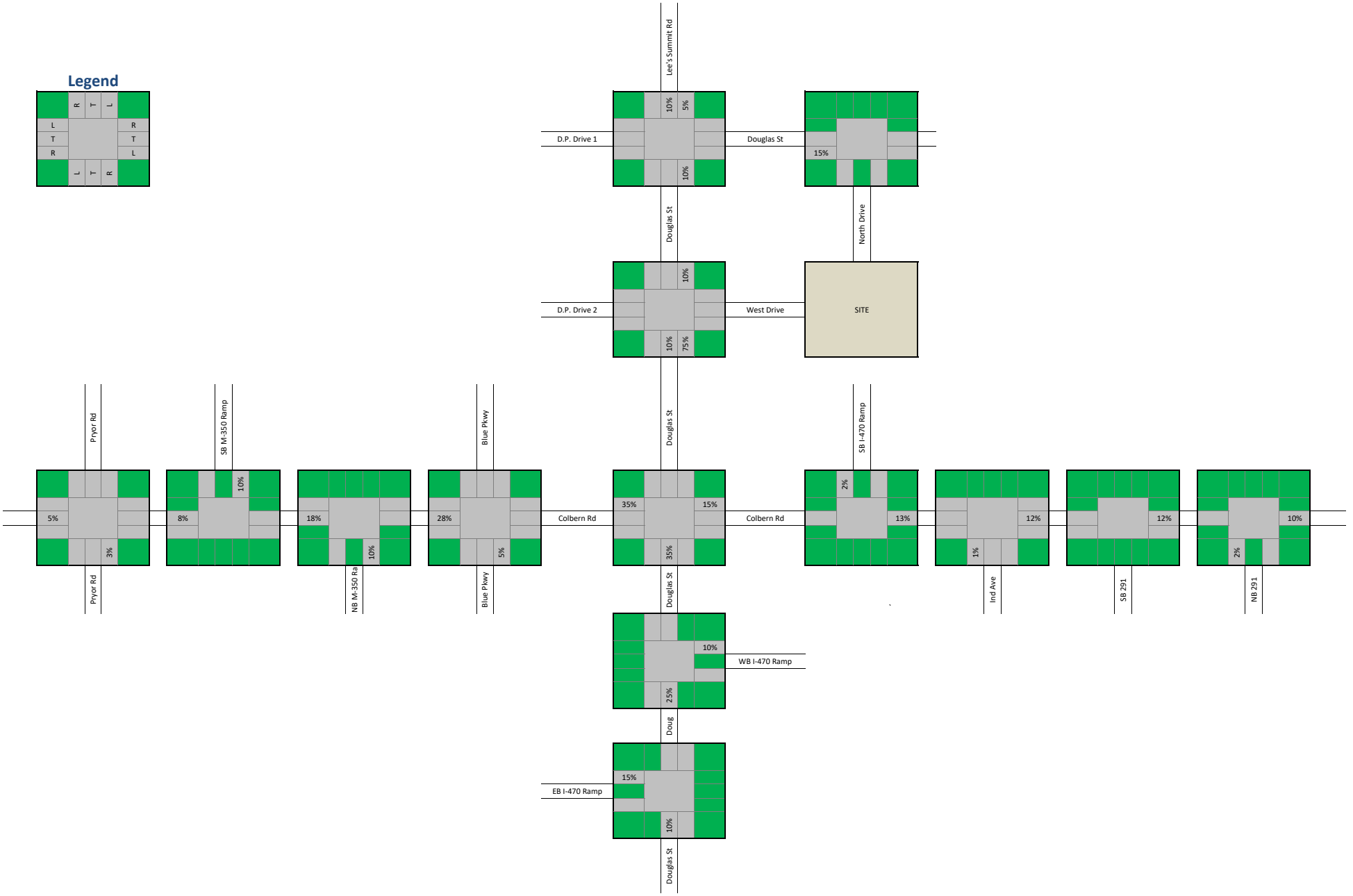
PM Ex + Discovery Park

Plus 2023 Discovery Park TIS & 2024 Discovery Park TIS

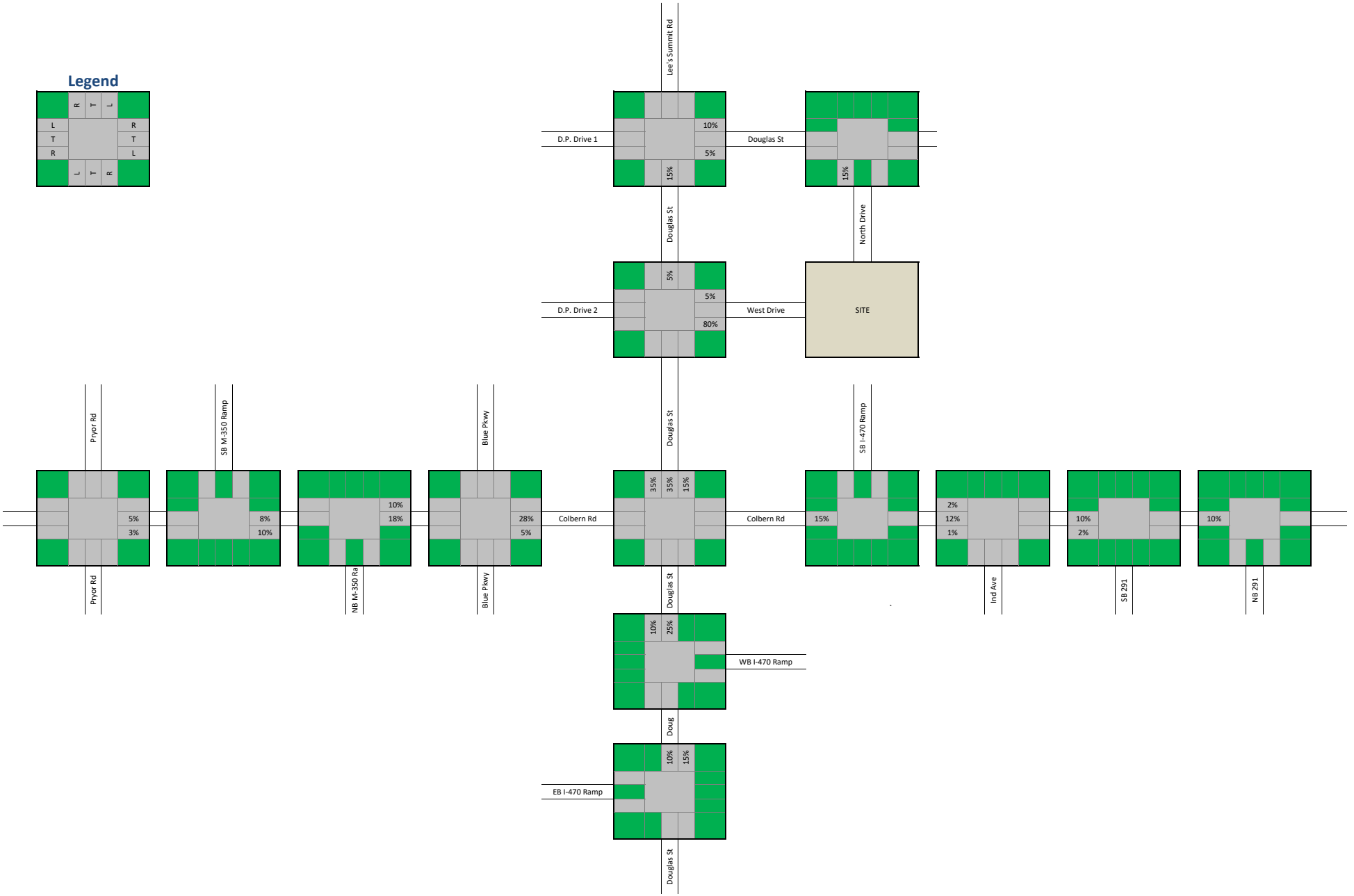
Legend



PM Dist In


Legend
R
T
L
Lee's Summit Rd
10%
5%
D.P. Drive 1
Douglas St
15%
10%
Douglas St
North Drive
10%
D.P. Drive 2
West Drive
SITE
10%
75%
Douglas St
Pryor Rd
SB M-350 Ramp
Blue Pkwy
SB I-470 Ramp
5%
8%
10%
18%
28%
35%
15%
Colbern Rd
Colbern Rd
2%
13%
12%
12%
10%
3%
10%
5%
35%
1%
2%
Pryor Rd
NB M-350 Ra
Blue Pkwy
Douglas St
Ind Ave
SB 291
NB 291
10%
WB I-470 Ramp
25%
Doug
15%
EB I-470 Ramp
10%
Douglas St

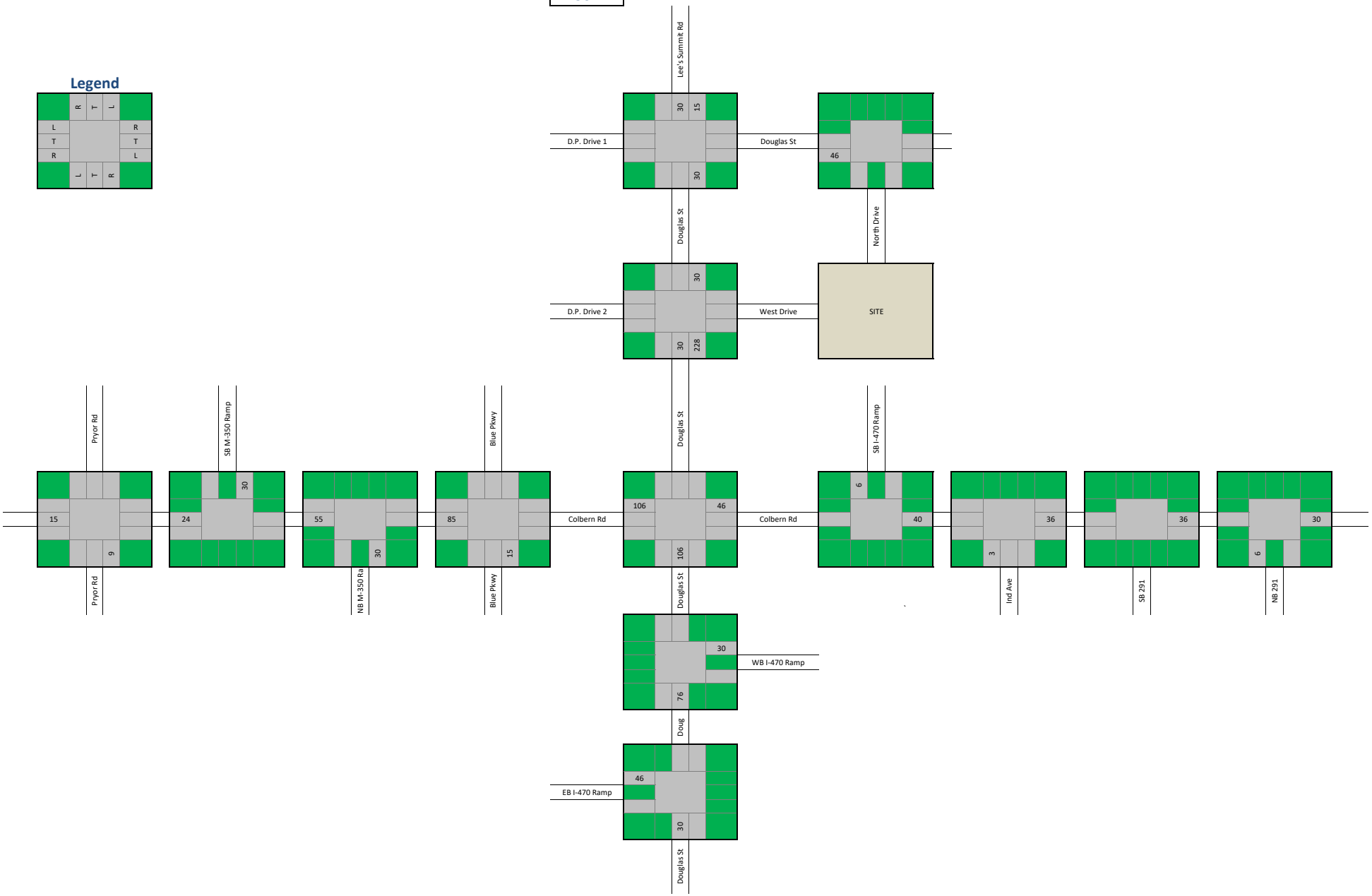
PM Dist Out


Legend
R
T
L
L
R
T
T
R
L
L
T
R
Lee's Summit Rd
D.P. Drive 1
10%
5%
15%
Douglas St
15%
Douglas St
North Drive
D.P. Drive 2
5%
5%
80%
West Drive
SITE
Douglas St
Pryor Rd
5%
3%
Pryor Rd
SB M-350 Ramp
8%
10%
10%
18%
NB M-350 Ra
Blue Pkwy
28%
5%
Blue Pkwy
Colbern Rd
35%
35%
15%
Douglas St
Colbern Rd
SB I-470 Ramp
15%
2%
12%
1%
Ind Ave
10%
2%
SB 291
10%
NB 291
10%
25%
WB I-470 Ramp
Doug
EB I-470 Ramp
10%
15%
Douglas St

PM Trips In

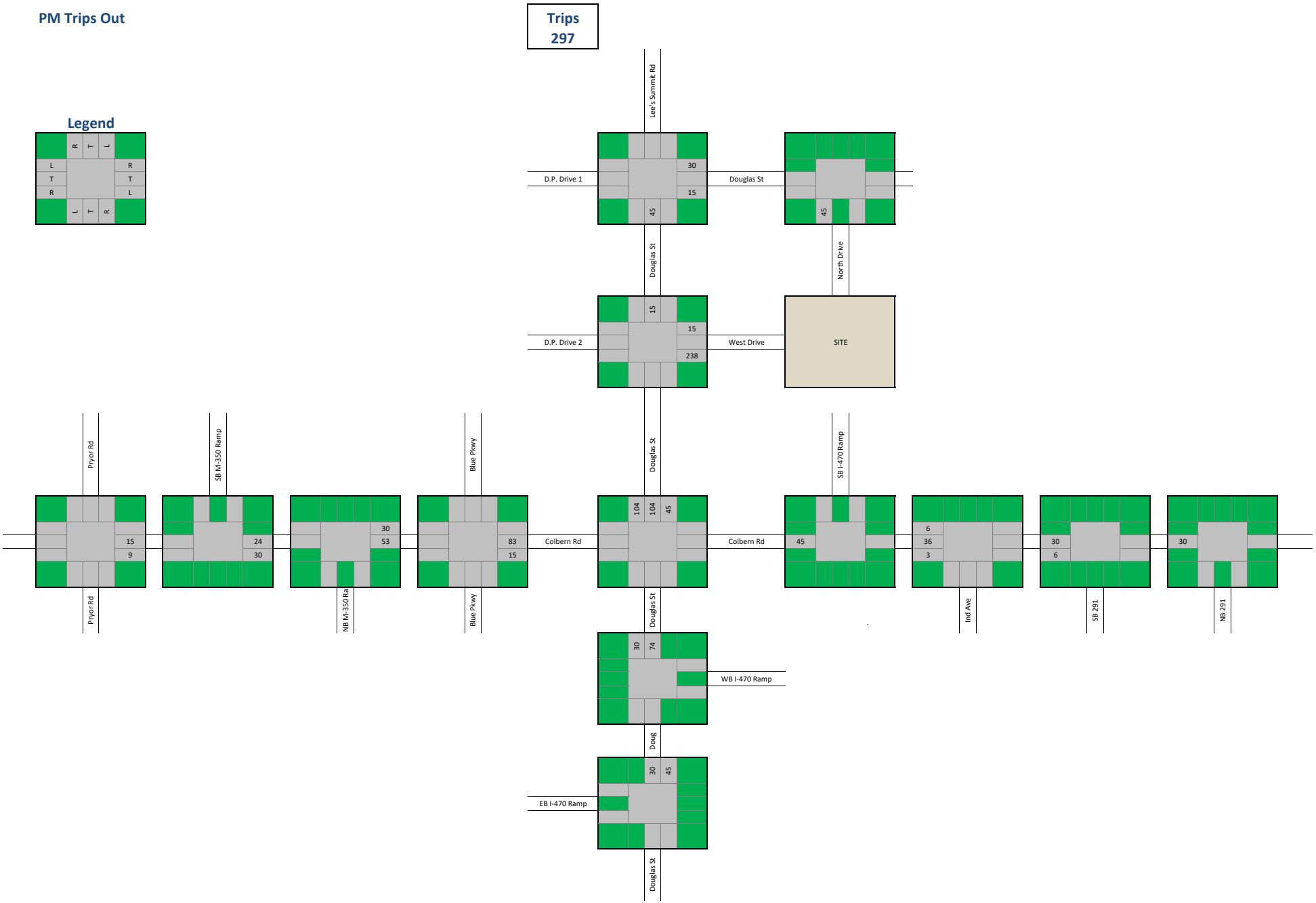
Trips
304

Legend

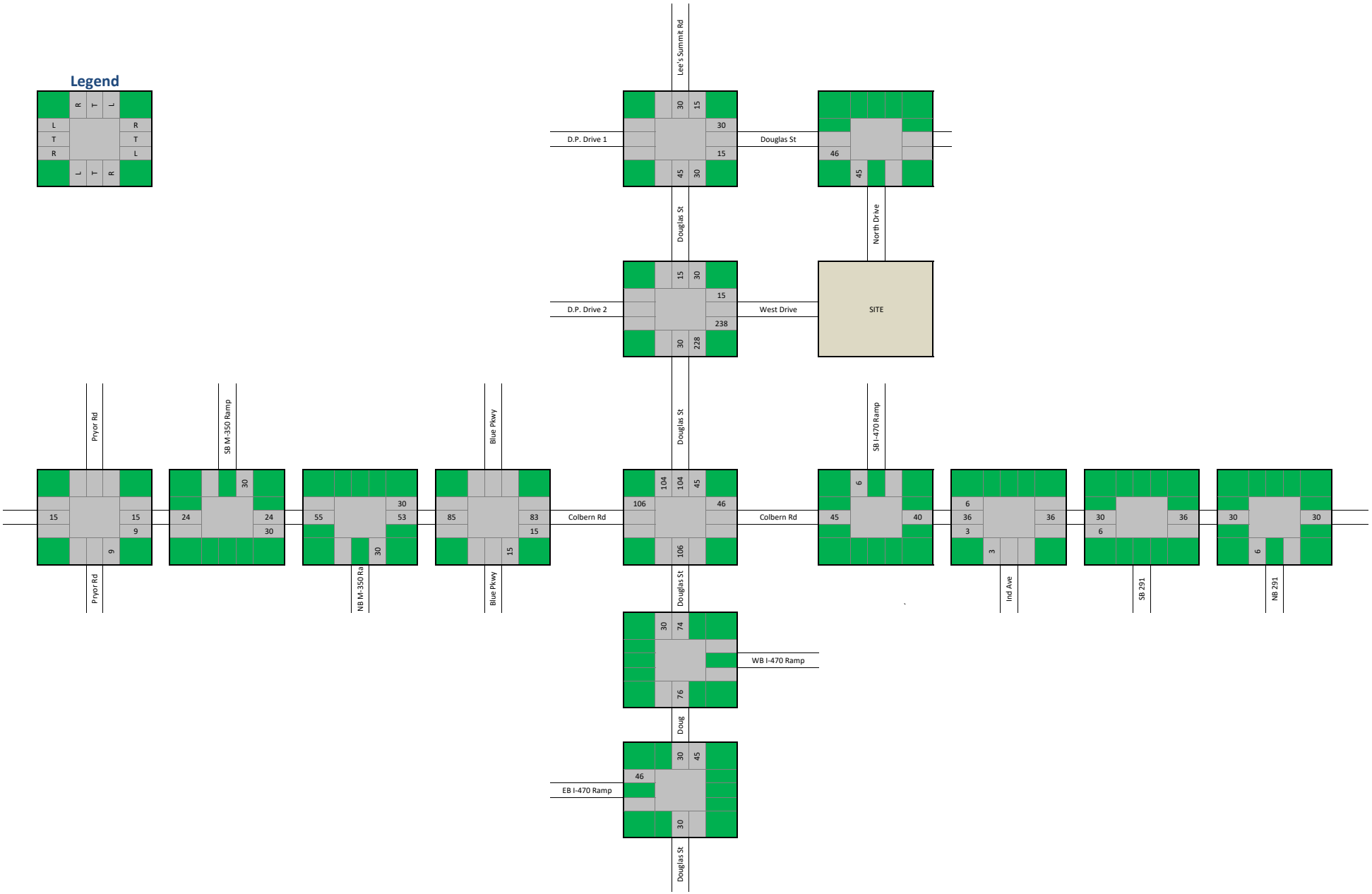


PM Trips Out

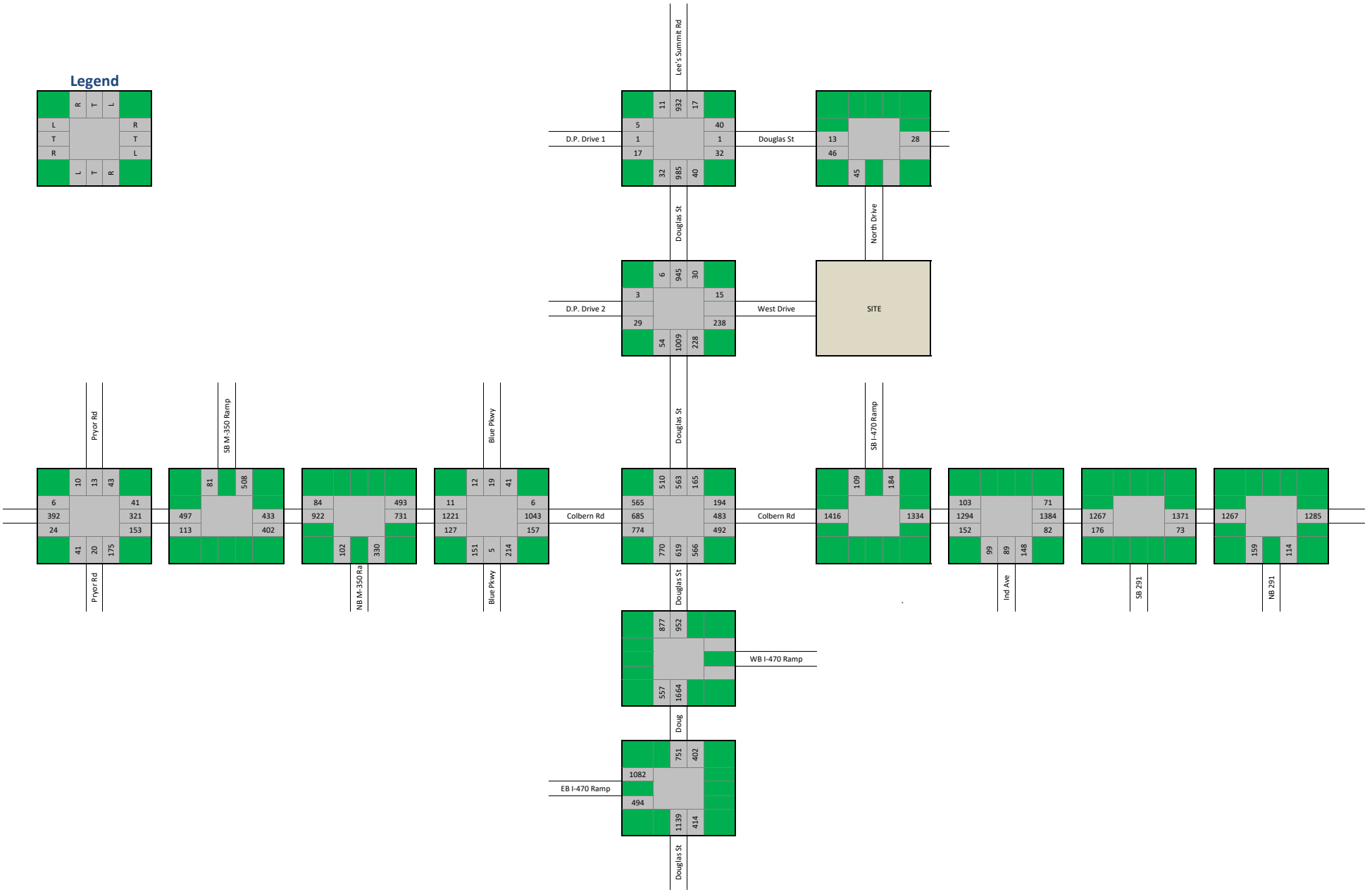
Trips
297



PM Total Trips



PM Existing plus Site

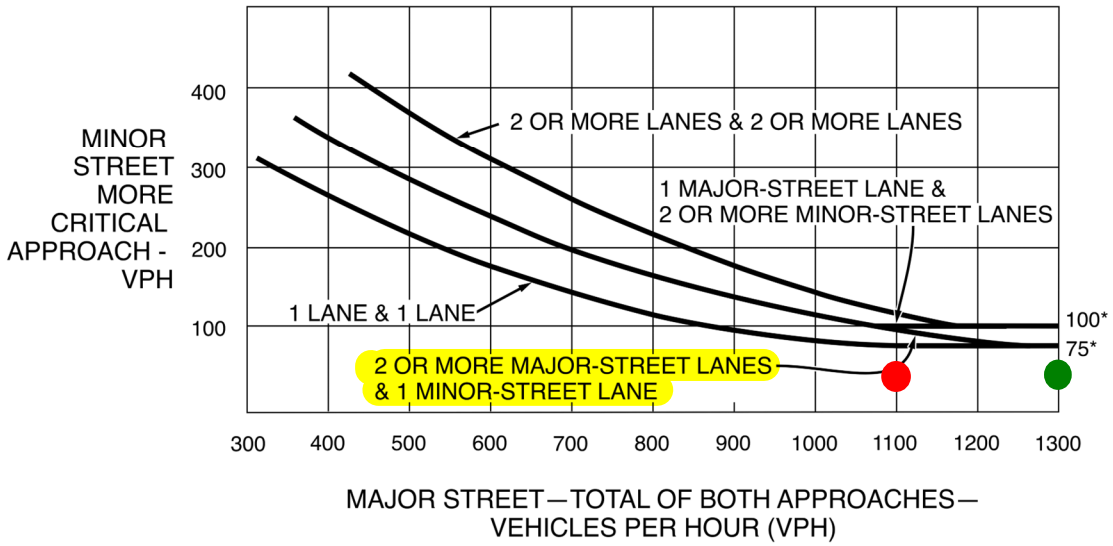


EXISTING

Douglas Street & Douglas Street/Lee's Summit Road – AM & PM

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

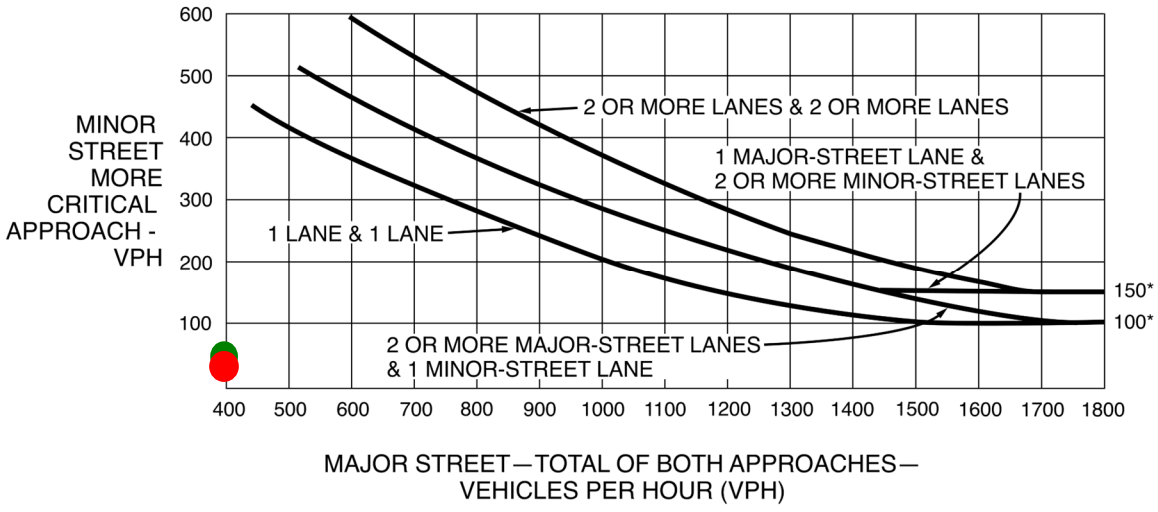


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

EXISTING PLUS SITE

North Drive & Douglas Street/Lee's Summit Road – AM & PM

Figure 4C-3. Warrant 3, Peak Hour

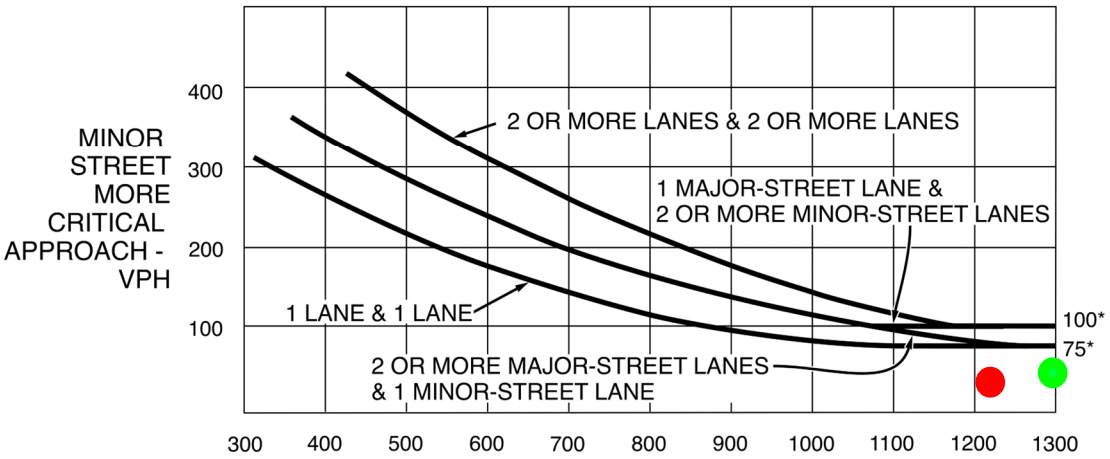


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane

Douglas Street & Douglas Street/Lee's Summit Road – AM & PM

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

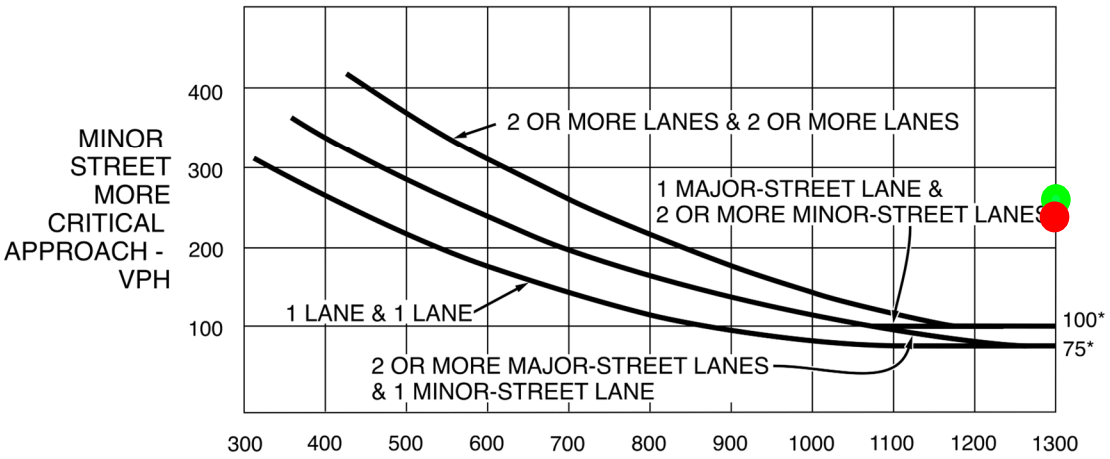


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

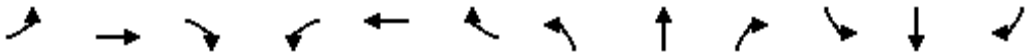
West Drive & Douglas Street/Lee's Summit Road – AM & PM

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

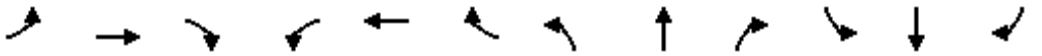


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	160	221	277	612	411	92	299	366	313	89	460	237
v/c Ratio	0.20	0.44	0.44	0.71	0.40	0.17	0.40	0.31	0.17	0.21	0.49	0.29
Control Delay	12.5	34.0	6.6	31.8	22.7	2.5	16.9	22.9	1.1	16.8	27.4	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	34.0	6.6	31.8	22.7	2.5	16.9	22.9	1.1	16.8	27.4	3.6
Queue Length 50th (ft)	21	52	0	139	82	0	44	72	0	25	99	0
Queue Length 95th (ft)	37	90	35	206	122	17	84	126	16	62	165	43
Internal Link Dist (ft)		2342			2823			1501			1236	
Turn Bay Length (ft)	200		200	200		200	160		200	290		200
Base Capacity (vph)	881	853	882	1096	1559	768	758	1163	2062	423	946	837
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.26	0.31	0.56	0.26	0.12	0.39	0.31	0.15	0.21	0.49	0.28

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	203	255	563	378	85	275	337	288	82	423	218
Future Volume (veh/h)	147	203	255	563	378	85	275	337	288	82	423	218
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	221	0	612	411	92	299	366	0	89	460	237
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	738	370		775	916	409	833	1221		487	1115	609
Arrive On Green	0.07	0.10	0.00	0.22	0.26	0.26	0.09	0.34	0.00	0.06	0.31	0.31
Sat Flow, veh/h	3456	3554	2790	3456	3554	1585	3456	3554	2790	1781	3554	1585
Grp Volume(v), veh/h	160	221	0	612	411	92	299	366	0	89	460	237
Grp Sat Flow(s),veh/h/ln	1728	1777	1395	1728	1777	1585	1728	1777	1395	1781	1777	1585
Q Serve(g_s), s	2.2	4.0	0.0	11.2	6.5	3.1	3.8	5.1	0.0	2.1	6.9	7.3
Cycle Q Clear(g_c), s	2.2	4.0	0.0	11.2	6.5	3.1	3.8	5.1	0.0	2.1	6.9	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	738	370		775	916	409	833	1221		487	1115	609
V/C Ratio(X)	0.22	0.60		0.79	0.45	0.23	0.36	0.30		0.18	0.41	0.39
Avail Cap(c_a), veh/h	966	978		1259	1786	797	958	1221		536	1115	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.2	28.8	0.0	24.6	20.9	19.7	13.5	16.2	0.0	12.8	18.2	15.0
Incr Delay (d2), s/veh	0.1	1.5	0.0	1.8	0.3	0.3	0.3	0.6	0.0	0.2	1.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	1.7	0.0	4.5	2.6	1.1	1.4	2.0	0.0	0.8	2.8	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.4	30.3	0.0	26.4	21.3	19.9	13.8	16.8	0.0	13.0	19.3	16.9
LnGrp LOS	B	C		C	C	B	B	B		B	B	B
Approach Vol, veh/h		381			1115			665			786	
Approach Delay, s/veh		24.5			24.0			15.4			17.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	27.6	19.6	11.5	10.6	25.6	9.2	21.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	23.1	24.5	18.5	8.5	20.5	9.2	33.8
Max Q Clear Time (g_c+I1), s	4.1	7.1	13.2	6.0	5.8	9.3	4.2	8.5
Green Ext Time (p_c), s	0.0	2.1	1.9	1.0	0.3	3.0	0.2	3.1

Intersection Summary	
HCM 6th Ctrl Delay	20.5
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	54	16	527	587	2
Future Vol, veh/h	6	54	16	527	587	2
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	-	200	-	-	-
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	7	59	17	573	638	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1246	639	640	0	-	0
Stage 1	639	-	-	-	-	-
Stage 2	607	-	-	-	-	-
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	192	476	944	-	-	-
Stage 1	526	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	189	476	944	-	-	-
Mov Cap-2 Maneuver	328	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	544	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	944	-	455	-	-
HCM Lane V/C Ratio	0.018	-	0.143	-	-
HCM Control Delay (s)	8.9	-	14.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

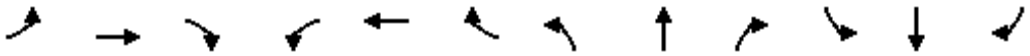
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Traffic Vol, veh/h	11	1	32	4	1	3	9	514	10	9	553	4
Future Vol, veh/h	11	1	32	4	1	3	9	514	10	9	553	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
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	12	1	35	4	1	3	10	559	11	10	601	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1210	1213	603	1226	1210	565	605	0	0	570	0	0
Stage 1	623	623	-	585	585	-	-	-	-	-	-	-
Stage 2	587	590	-	641	625	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	159	182	499	155	183	524	973	-	-	1002	-	-
Stage 1	474	478	-	497	498	-	-	-	-	-	-	-
Stage 2	496	495	-	463	477	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	155	178	499	141	179	524	973	-	-	1002	-	-
Mov Cap-2 Maneuver	155	178	-	141	179	-	-	-	-	-	-	-
Stage 1	469	473	-	492	493	-	-	-	-	-	-	-
Stage 2	487	490	-	425	472	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.6	23.6	0.1	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	973	-	-	313	202	1002	-	-
HCM Lane V/C Ratio	0.01	-	-	0.153	0.043	0.01	-	-
HCM Control Delay (s)	8.7	-	-	18.6	23.6	8.6	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0	-	-



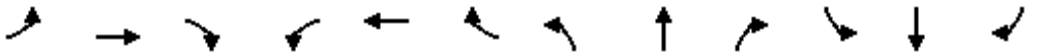
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	605	745	841	535	525	207	837	664	615	175	603	546
v/c Ratio	0.95	0.96	0.57	0.94	0.74	0.43	0.96	0.59	0.40	0.78	0.90	0.76
Control Delay	68.3	64.6	17.9	68.6	46.5	8.0	62.2	33.2	12.0	68.6	60.3	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.3	64.6	17.9	68.6	46.5	8.0	62.2	33.2	12.0	68.6	60.3	28.4
Queue Length 50th (ft)	208	261	194	185	175	0	287	198	100	115	210	249
Queue Length 95th (ft)	#317	#382	259	#286	235	60	#411	260	146	#215	#312	392
Internal Link Dist (ft)		2342			2823			1501			1236	
Turn Bay Length (ft)	200		200	200		200	160		200	290		200
Base Capacity (vph)	637	778	1468	572	711	483	869	1116	1534	237	667	723
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.96	0.57	0.94	0.74	0.43	0.96	0.59	0.40	0.74	0.90	0.76

Intersection Summary

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

HCM 6th Signalized Intersection Summary
21: Douglas St & Colbern Rd

PM Existing plus Site



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	557	685	774	492	483	190	770	611	566	161	555	502
Future Volume (veh/h)	557	685	774	492	483	190	770	611	566	161	555	502
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	605	745	0	535	525	207	837	664	0	175	603	546
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	642	782		576	714	319	875	1160		206	670	593
Arrive On Green	0.19	0.22	0.00	0.17	0.20	0.20	0.25	0.33	0.00	0.12	0.19	0.19
Sat Flow, veh/h	3456	3554	2790	3456	3554	1585	3456	3554	2790	1781	3554	1585
Grp Volume(v), veh/h	605	745	0	535	525	207	837	664	0	175	603	546
Grp Sat Flow(s),veh/h/ln	1728	1777	1395	1728	1777	1585	1728	1777	1395	1781	1777	1585
Q Serve(g_s), s	18.1	21.7	0.0	16.0	14.5	12.6	25.1	16.3	0.0	10.1	17.4	19.8
Cycle Q Clear(g_c), s	18.1	21.7	0.0	16.0	14.5	12.6	25.1	16.3	0.0	10.1	17.4	19.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	642	782		576	714	319	875	1160		206	670	593
V/C Ratio(X)	0.94	0.95		0.93	0.74	0.65	0.96	0.57		0.85	0.90	0.92
Avail Cap(c_a), veh/h	642	782		576	714	319	875	1160		239	670	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.2	40.4	0.0	43.1	39.3	38.6	38.6	29.3	0.0	45.5	41.6	31.4
Incr Delay (d2), s/veh	22.5	21.4	0.0	21.6	4.0	4.6	20.5	2.1	0.0	21.7	17.4	21.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	11.7	0.0	8.5	6.7	5.3	12.9	7.2	0.0	5.7	9.2	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.6	61.9	0.0	64.8	43.3	43.2	59.1	31.4	0.0	67.3	59.0	53.2
LnGrp LOS	E	E		E	D	D	E	C		E	E	D
Approach Vol, veh/h		1350			1267			1501			1324	
Approach Delay, s/veh		63.1			52.3			46.8			57.7	
Approach LOS		E			D			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.6	38.8	22.0	27.6	31.1	24.3	24.0	25.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	14.1	32.3	17.5	23.1	26.6	19.8	19.5	21.1
Max Q Clear Time (g_c+I1), s	12.1	18.3	18.0	23.7	27.1	21.8	20.1	16.5
Green Ext Time (p_c), s	0.1	3.9	0.0	0.0	0.0	0.0	0.0	1.8

Intersection Summary	
HCM 6th Ctrl Delay	54.8
HCM 6th LOS	D

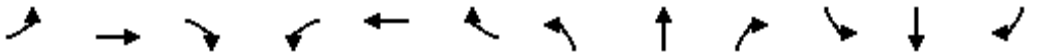
Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	254	59	1095	229	30	1033
v/c Ratio	0.10	0.95	0.33	0.93	0.22	0.17	0.91
Control Delay	13.0	80.6	9.6	31.2	3.7	6.4	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	80.6	9.6	31.2	3.7	6.4	29.5
Queue Length 50th (ft)	2	142	9	563	19	4	494
Queue Length 95th (ft)	27	#294	20	#886	49	12	#813
Internal Link Dist (ft)	743	873		720			900
Turn Bay Length (ft)			200		150	250	
Base Capacity (vph)	349	268	181	1181	1056	179	1139
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.95	0.33	0.93	0.22	0.17	0.91

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	29	219	1	14	54	1007	211	28	944	6
Future Volume (veh/h)	3	1	29	219	1	14	54	1007	211	28	944	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1	32	238	1	15	59	1095	229	30	1026	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	54	27	291	342	1	17	224	1160	983	169	1125	8
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.04	0.62	0.62	0.03	0.61	0.61
Sat Flow, veh/h	48	136	1475	1335	6	84	1781	1870	1585	1781	1855	13
Grp Volume(v), veh/h	36	0	0	254	0	0	59	1095	229	30	0	1033
Grp Sat Flow(s),veh/h/ln	1660	0	0	1425	0	0	1781	1870	1585	1781	0	1868
Q Serve(g_s), s	0.0	0.0	0.0	13.7	0.0	0.0	1.1	47.3	5.7	0.5	0.0	42.9
Cycle Q Clear(g_c), s	1.6	0.0	0.0	15.3	0.0	0.0	1.1	47.3	5.7	0.5	0.0	42.9
Prop In Lane	0.08		0.89	0.94		0.06	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	371	0	0	360	0	0	224	1160	983	169	0	1133
V/C Ratio(X)	0.10	0.00	0.00	0.71	0.00	0.00	0.26	0.94	0.23	0.18	0.00	0.91
Avail Cap(c_a), veh/h	383	0	0	370	0	0	250	1160	983	217	0	1133
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	0.0	34.3	0.0	0.0	17.3	15.3	7.4	19.2	0.0	15.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	5.8	0.0	0.0	0.6	16.0	0.6	0.5	0.0	12.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	5.8	0.0	0.0	0.6	22.1	1.9	0.4	0.0	19.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	0.0	0.0	40.1	0.0	0.0	17.9	31.3	8.0	19.7	0.0	27.8
LnGrp LOS	C	A	A	D	A	A	B	C	A	B	A	C
Approach Vol, veh/h		36			254			1383			1063	
Approach Delay, s/veh		29.2			40.1			26.9			27.6	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	59.1		21.9	8.3	57.9		21.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	53.5		18.0	5.1	53.4		18.0				
Max Q Clear Time (g_c+I1), s	2.5	49.3		3.6	3.1	44.9		17.3				
Green Ext Time (p_c), s	0.0	3.1		0.1	0.0	5.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	17	31	1	37	32	981	38	16	930	11
Future Vol, veh/h	5	1	17	31	1	37	32	981	38	16	930	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	-	200	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	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	5	1	18	34	1	40	35	1066	41	17	1011	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2228	2228	1017	2218	2214	1087	1023	0	0	1107	0	0
Stage 1	1051	1051	-	1157	1157	-	-	-	-	-	-	-
Stage 2	1177	1177	-	1061	1057	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	31	43	288	~ 31	44	263	679	-	-	631	-	-
Stage 1	274	304	-	239	271	-	-	-	-	-	-	-
Stage 2	233	265	-	271	302	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	25	40	288	~ 27	41	263	679	-	-	631	-	-
Mov Cap-2 Maneuver	104	137	-	112	136	-	-	-	-	-	-	-
Stage 1	260	296	-	227	257	-	-	-	-	-	-	-
Stage 2	186	251	-	246	294	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.4	45.1	0.3	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	679	-	-	201	162	631	-	-
HCM Lane V/C Ratio	0.051	-	-	0.124	0.463	0.028	-	-
HCM Control Delay (s)	10.6	-	-	25.4	45.1	10.9	-	-
HCM Lane LOS	B	-	-	D	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	2.2	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	46	0	8	45	0
Future Vol, veh/h	20	46	0	8	45	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	22	50	0	9	49	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	56	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1528	-	952	1022
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1528	-	952	1022
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	1014	-

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

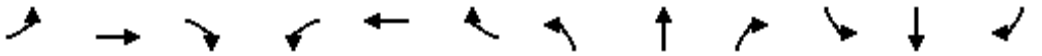
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	952	-	-	1528	-
HCM Lane V/C Ratio	0.051	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	67	277	17	611	249	34	661
v/c Ratio	0.18	0.79	0.04	0.54	0.24	0.07	0.56
Control Delay	10.8	39.5	6.6	14.8	3.2	6.7	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	39.5	6.6	14.8	3.2	6.7	14.3
Queue Length 50th (ft)	4	109	3	215	8	6	168
Queue Length 95th (ft)	36	200	12	380	48	19	428
Internal Link Dist (ft)	743	873		720			900
Turn Bay Length (ft)			200		150	250	
Base Capacity (vph)	533	492	434	1134	1048	457	1176
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.56	0.04	0.54	0.24	0.07	0.56

Intersection Summary

HCM 6th Signalized Intersection Summary
41: Douglas St & Discovery Park Drive/West Drive

AM Existing plus Site



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1	54	240	0	15	16	562	229	31	606	2
Future Volume (veh/h)	6	1	54	240	0	15	16	562	229	31	606	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	1	59	261	0	16	17	611	249	34	659	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	27	324	371	0	18	392	1074	910	433	1093	3
Arrive On Green	0.22	0.22	0.22	0.22	0.00	0.22	0.02	0.57	0.57	0.03	0.59	0.59
Sat Flow, veh/h	78	122	1476	1339	0	82	1781	1870	1585	1781	1864	6
Grp Volume(v), veh/h	67	0	0	277	0	0	17	611	249	34	0	661
Grp Sat Flow(s),veh/h/ln	1676	0	0	1421	0	0	1781	1870	1585	1781	0	1869
Q Serve(g_s), s	0.0	0.0	0.0	14.0	0.0	0.0	0.3	18.8	7.2	0.7	0.0	20.6
Cycle Q Clear(g_c), s	3.1	0.0	0.0	17.0	0.0	0.0	0.3	18.8	7.2	0.7	0.0	20.6
Prop In Lane	0.10		0.88	0.94		0.06	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	412	0	0	389	0	0	392	1074	910	433	0	1097
V/C Ratio(X)	0.16	0.00	0.00	0.71	0.00	0.00	0.04	0.57	0.27	0.08	0.00	0.60
Avail Cap(c_a), veh/h	527	0	0	488	0	0	458	1074	910	477	0	1097
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	0.0	34.0	0.0	0.0	9.5	12.3	9.8	9.2	0.0	12.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	3.6	0.0	0.0	0.0	2.2	0.7	0.1	0.0	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	6.2	0.0	0.0	0.1	7.8	2.5	0.3	0.0	8.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	0.0	37.6	0.0	0.0	9.6	14.4	10.5	9.3	0.0	14.5
LnGrp LOS	C	A	A	D	A	A	A	B	B	A	A	B
Approach Vol, veh/h		67			277			877			695	
Approach Delay, s/veh		29.1			37.6			13.2			14.2	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	57.6		25.3	7.0	58.7		25.3				
Change Period (Y+Rc), s	* 5.3	* 5.3		* 5.3	* 5.3	* 5.3		* 5.3				
Max Green Setting (Gmax), s	* 5.1	* 52		* 27	* 5.1	* 52		* 27				
Max Q Clear Time (g_c+I1), s	2.7	20.8		5.1	2.3	22.6		19.0				
Green Ext Time (p_c), s	0.0	5.6		0.3	0.0	5.1		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	1	32	19	1	33	9	563	41	24	588	4
Future Vol, veh/h	11	1	32	19	1	33	9	563	41	24	588	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	-
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	12	1	35	21	1	36	10	612	45	26	639	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1366	1370	641	1343	1327	612	643	0	0	657	0	0
Stage 1	693	693	-	632	632	-	-	-	-	-	-	-
Stage 2	673	677	-	711	695	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	124	146	475	129	155	493	942	-	-	931	-	-
Stage 1	434	445	-	468	474	-	-	-	-	-	-	-
Stage 2	445	452	-	424	444	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	111	140	475	115	149	493	942	-	-	931	-	-
Mov Cap-2 Maneuver	111	140	-	115	149	-	-	-	-	-	-	-
Stage 1	429	433	-	463	469	-	-	-	-	-	-	-
Stage 2	407	447	-	381	432	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	26.8	0.1	0.3
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	942	-	-	253	222	931	-	-
HCM Lane V/C Ratio	0.01	-	-	0.189	0.259	0.028	-	-
HCM Control Delay (s)	8.9	-	-	22.5	26.8	9	-	-
HCM Lane LOS	A	-	-	C	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	1	0.1	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	13	46	0	28	45	0
Future Vol, veh/h	13	46	0	28	45	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	14	50	0	30	49	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	69	39
Stage 1	-	-	-	-	39	-
Stage 2	-	-	-	-	30	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1538	-	936	1033
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1538	-	936	1033
Mov Cap-2 Maneuver	-	-	-	-	936	-
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	993	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

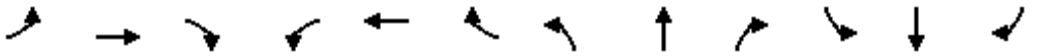
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	936	-	-	1538	-
HCM Lane V/C Ratio	0.052	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	36	276	59	1097	248	33	1034
v/c Ratio	0.10	0.98	0.32	0.95	0.24	0.18	0.93
Control Delay	12.7	85.5	9.6	34.9	4.0	6.8	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	85.5	9.6	34.9	4.0	6.8	32.5
Queue Length 50th (ft)	2	156	9	~584	22	5	506
Queue Length 95th (ft)	26	#320	20	#898	55	13	#825
Internal Link Dist (ft)	743	873		720			900
Turn Bay Length (ft)			200		150	250	
Base Capacity (vph)	366	282	183	1157	1041	182	1116
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.98	0.32	0.95	0.24	0.18	0.93

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	1	29	238	1	15	54	1009	228	30	945	6
Future Volume (veh/h)	3	1	29	238	1	15	54	1009	228	30	945	6
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	1	32	259	1	16	59	1097	248	33	1027	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	28	313	360	1	17	207	1133	960	156	1102	8
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.04	0.61	0.61	0.03	0.59	0.59
Sat Flow, veh/h	51	134	1484	1334	5	82	1781	1870	1585	1781	1855	13
Grp Volume(v), veh/h	36	0	0	276	0	0	59	1097	248	33	0	1034
Grp Sat Flow(s),veh/h/ln	1670	0	0	1422	0	0	1781	1870	1585	1781	0	1868
Q Serve(g_s), s	0.0	0.0	0.0	15.2	0.0	0.0	1.1	49.6	6.5	0.6	0.0	44.7
Cycle Q Clear(g_c), s	1.6	0.0	0.0	16.8	0.0	0.0	1.1	49.6	6.5	0.6	0.0	44.7
Prop In Lane	0.08		0.89	0.94		0.06	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	396	0	0	378	0	0	207	1133	960	156	0	1109
V/C Ratio(X)	0.09	0.00	0.00	0.73	0.00	0.00	0.28	0.97	0.26	0.21	0.00	0.93
Avail Cap(c_a), veh/h	396	0	0	378	0	0	233	1133	960	200	0	1109
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.3	0.0	0.0	34.1	0.0	0.0	18.6	16.7	8.2	21.1	0.0	16.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	7.0	0.0	0.0	0.7	20.1	0.7	0.7	0.0	14.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	6.4	0.0	0.0	0.7	24.4	2.2	0.4	0.0	21.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	0.0	0.0	41.1	0.0	0.0	19.4	36.8	8.8	21.7	0.0	31.3
LnGrp LOS	C	A	A	D	A	A	B	D	A	C	A	C
Approach Vol, veh/h		36			276			1404			1067	
Approach Delay, s/veh		28.4			41.1			31.1			31.0	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	58.2		23.2	8.3	57.2		23.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	52.8		18.7	5.1	52.7		18.7				
Max Q Clear Time (g_c+I1), s	2.6	51.6		3.6	3.1	46.7		18.8				
Green Ext Time (p_c), s	0.0	0.9		0.1	0.0	3.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		32.0	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	1	17	32	1	39	32	981	38	16	930	11
Future Vol, veh/h	5	1	17	32	1	39	32	981	38	16	930	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	200	-	200	200	-	-
Veh in Median Storage, #	-	1	-	-	1	-	-	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	5	1	18	35	1	42	35	1066	41	17	1011	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2229	2228	1017	2197	2193	1066	1023	0	0	1107	0	0
Stage 1	1051	1051	-	1136	1136	-	-	-	-	-	-	-
Stage 2	1178	1177	-	1061	1057	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	31	43	288	~ 32	45	270	679	-	-	631	-	-
Stage 1	274	304	-	246	277	-	-	-	-	-	-	-
Stage 2	233	265	-	271	302	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	24	40	288	~ 28	41	270	679	-	-	631	-	-
Mov Cap-2 Maneuver	104	137	-	114	138	-	-	-	-	-	-	-
Stage 1	260	296	-	233	263	-	-	-	-	-	-	-
Stage 2	186	251	-	246	294	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.4	44.3	0.3	0.2
HCM LOS	D	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	679	-	-	201	167	631	-	-
HCM Lane V/C Ratio	0.051	-	-	0.124	0.469	0.028	-	-
HCM Control Delay (s)	10.6	-	-	25.4	44.3	10.9	-	-
HCM Lane LOS	B	-	-	D	E	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	2.2	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon