Summit Orchards West
Traffic Impact Study
Lee's Summit, Missouri

August 26th, 2022

Prepared by:

McCurdy Engineers

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

The purpose of this traffic impact study is to assess the potential impact on traffic with the Summit Orchards West development on the northwest corner of the intersection of Ward Road and Chipman Road 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. The site plan includes the naming convention used for the various site entrances.

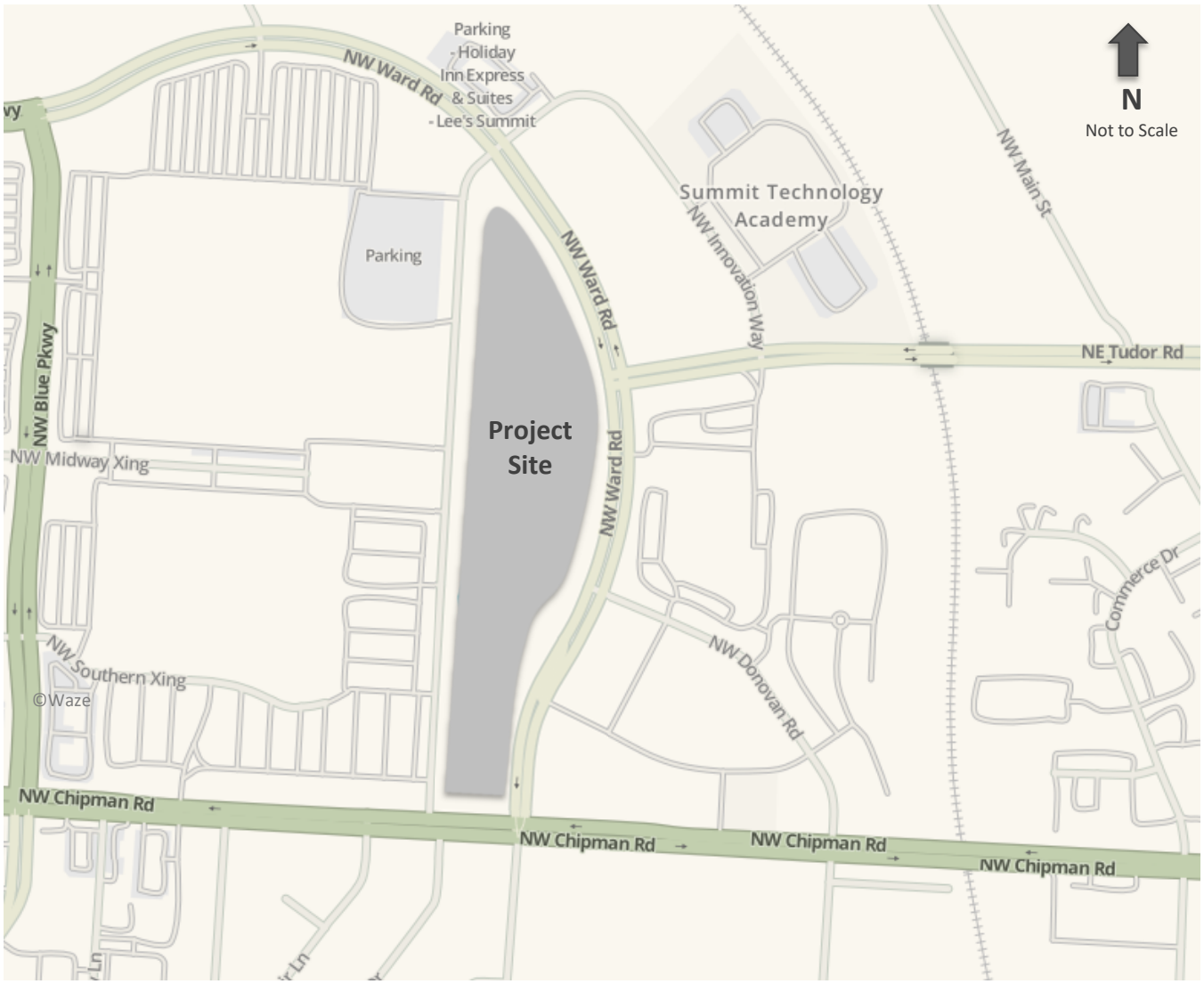


Figure 1 – Development Location

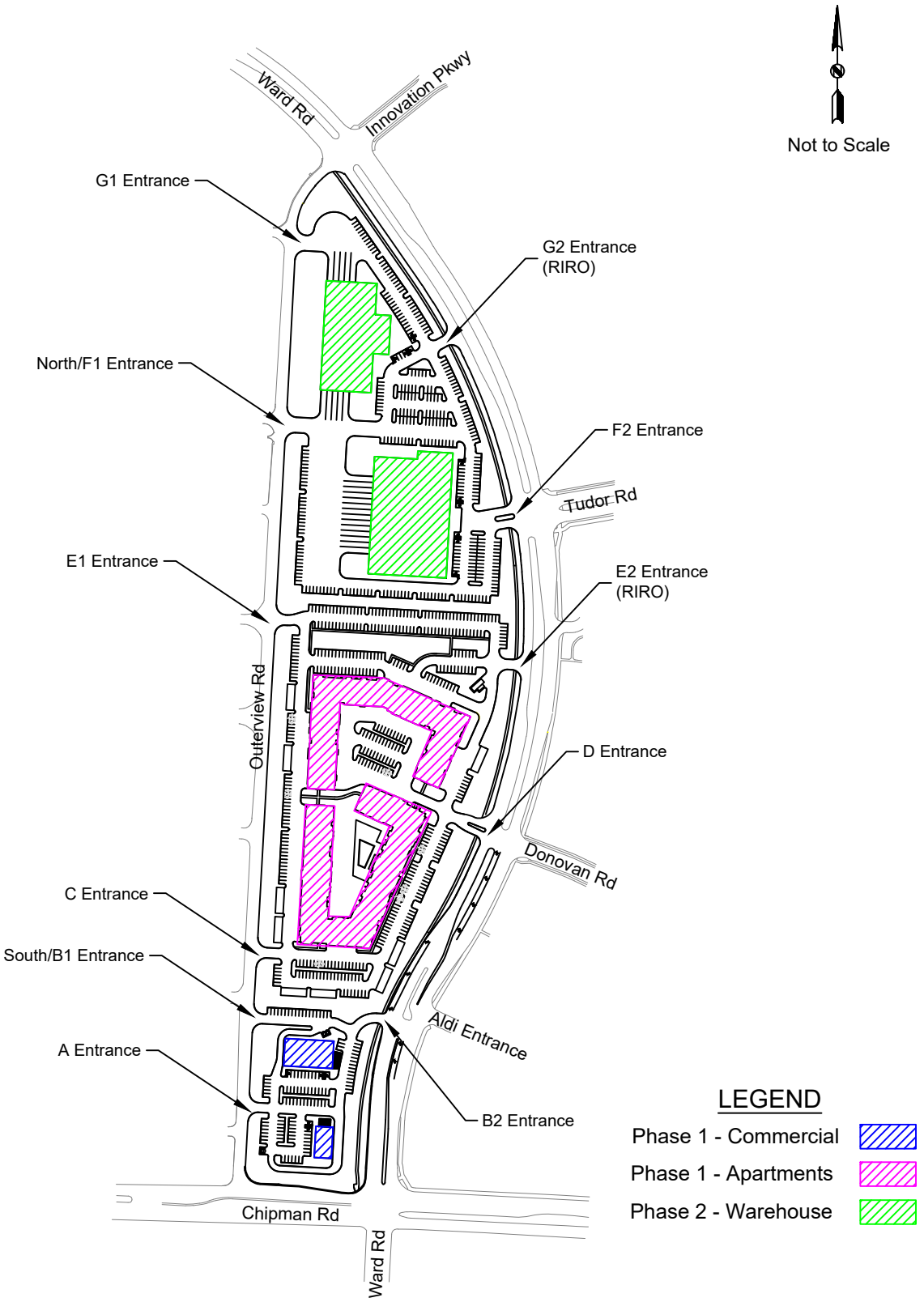


Figure 2 - Site Plan

Figure 2 – Site Plan

EXISTING CONDITIONS

The site is in Lee's Summit, Missouri, in the northwest quadrant of the intersection of Chipman Road and Ward Road. The current land use of the planned development is undeveloped. The land use of the surrounding areas is undeveloped to the northeast, light industrial to the west, commercial/retail/multi-family housing to the east, and low density residential to the south.

Street Network and Traffic Control

The development is bordered on the west by Outerview Road and on the east by Ward Road. Chipman Road is located to the south of the site and provides access to Missouri Highway 50.

Chipman Road is a four-lane east-west median divided major arterial with a posted speed limit is 45 miles per hour (mph).

Ward Road is a four-lane north-south median divided major arterial roadway with a posted speed limit of 35 mph. The intersection of Chipman Road and Ward Road is signalized with left-turn lanes on all approaches (dual lefts southbound and eastbound), a southbound right-turn lane, and a westbound right-turn lane. The intersection of Chipman Road and Ward Road is approximately 2,700 feet west of MO 50.

Outerview Road is a two-lane unmarked north-south private drive with no posted speed limit. The intersection of Outerview Road and Chipman Road is stop-controlled, with Outerview Road stopping; this intersection is right-in/right-out (RIRO) with a concrete median preventing left-turns on or off Chipman Road. The intersection of Outerview Road and Ward Road to the north is stop-controlled, with Outerview Road stopping and aligning with Innovation Parkway on the east side of Ward Road.

Donovan Road is a two-lane east-west collector roadway with a two-way left-turn lane and no posted speed limit. The intersection of Donovan Road and Ward Road is a stop-controlled T-intersection with Donovan Road stopping.

Tudor Road is a four-lane east-west median divided minor arterial roadway. There is a posted speed limit of 35 mph. The intersection of Tudor Road and Ward Road is a signalized T-intersection.

Traffic Volumes

Intersections counted for analysis in this study were:

- Chipman Road and Ward Road
- Chipman Road and Outerview Road
- Chipman Road and Donovan Road
- Ward Road and Aldi Entrance
- Ward Road and Donovan Road
- Ward Road and Tudor Road
- Ward Road and Outerview Road
- Outerview Road and South Entrance (existing to the west)
- Outerview Road and North Entrance (existing to the west)

The turning movement traffic counts were completed on Tuesday, July 12th, 2022, and Wednesday, July 13th, 2022, for the peak volume time periods. Morning traffic counts were conducted from 7:00 AM until 9:00 AM and afternoon traffic counts were from 4:00 PM until 6:00 PM The morning peak period was determined to be from 8:00 AM until 9:00 AM and the afternoon peak period was determined to be from 5:00 PM until 6:00 PM.

Trips from the July 2022 counts were compared to City supplied counts from April 19th, 2018, counts at the intersection of Chipman Road and Ward Road to determine what changes in traffic counts and distribution the current construction and detours on MO 50 might have on the intersection. On average, the July 2022 counts from the Chipman Road and Ward Road intersection were found to be between 10-55% lower than the April 2018 counts. The lower counts were expected due to the local construction and due to lower traffic volumes in general due to change in traffic patterns as a result of COVID.

For the Chipman and Ward intersection, the higher April 2018 traffic counts were used for the existing conditions traffic counts with an increase of 1% per year to account for nearby development since 2018. In addition, traffic generated from adjacent developments as part of the 2016 McClure TIS and the 2018 Olsson TIS were added to existing counts (McClure Engineering Co, *Summit Orchards Traffic Impact Study*, March 2016 and Olsson Engineers, *Tudor Road Development Traffic Impact Study*, July 2021).

July 2022 counts were used for the remaining study intersections and balanced with the April 2018 traffic counts.

The generated existing traffic volumes are shown on Figure 3. The April 2018 counts, July 2022 counts, and the previous study trip/generation counts are included in the Appendix.

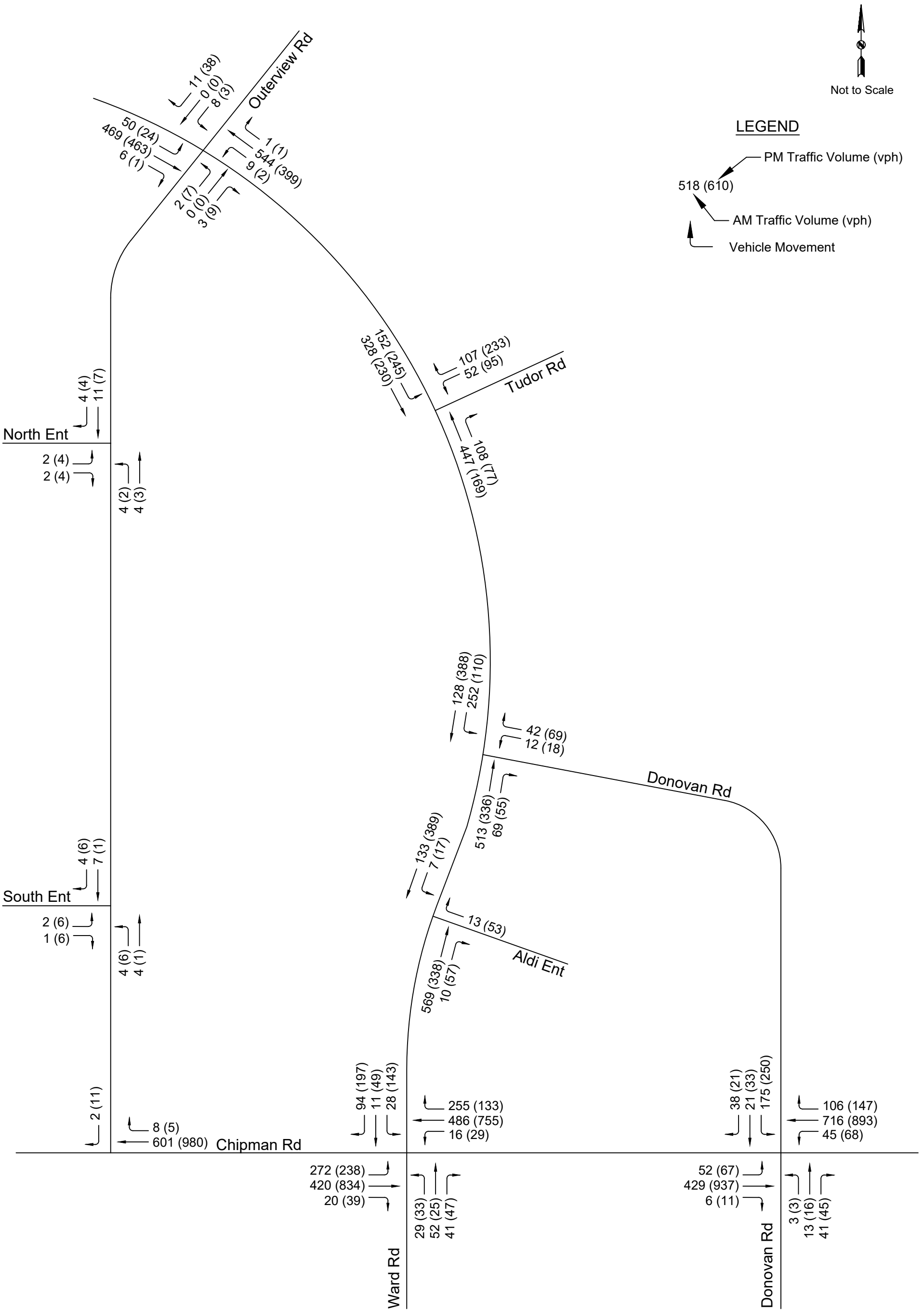


Figure 3 - Existing plus Approved Peak Hour Volumes

PROPOSED CONDITIONS

Summit Orchard West is expected to be constructed in two phases. The first phase will be on the south side of the development and will include two fast-food restaurants with drive-through windows and a residential apartment complex with 323 units. The second phase will be on the north side of the development and will include two warehouse buildings totally 123,000 square feet. There will be no interconnectivity between the land uses.

Access Plan

The site will be accessed from the west (Outerview Road) via six entrances. There will be two entrances into each of the different land use areas. Where possible, these entrances will align with existing drives on the west side of Outerview Road. All entrances from Outerview Road will be full access points and will be stop controlled.

The site will be accessed from Ward Road via five entrances. The southern entrance will be a three-quarter access into the fast-food restaurant portion of the site. Two entrances will access the multifamily housing; one will be a full access aligned with Donovan Road and the second will be RIRO between Donovan Road and Tudor Road. The warehouse site will also be accessed in two locations, with the southern access being a full access aligning with Tudor Road and the northern access being a RIRO between Tudor Road and Outerview Road.

There will be no access into the site from Chipman Road.

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) for the 35 mph speed limits on Ward Road and 25 mph on Outerview Road as City code states that a speed limit of 25 mph governs areas with no posted speed limit.

For 35 mph, AASHTO requires a minimum intersection sight distance of 390 feet and a stopping sight distance of 250 feet. The AASHTO required intersection site distance at 25 mph is 280 feet and 155 feet for stopping sight distance.

Ward Road and Aldi Entrance/B2 Entrance
Based on field measurements, the available sight distance is approximately 420 feet and is adequate for the speed limit.

Ward Road and Donovan Road
No sight distance was measured as this is an existing intersection.

Ward Road and E2 (RIRO) Entrance
Based on field measurements, the available sight distance is greater than 400 feet and meets the AASHTO requirements.

Ward Road and Tudor Road
No sight distance was measured as this is an existing signalized intersection.

Ward Road and G2 (RIRO) Entrance
The available sight distance, based on field measurements, is greater than 400 feet and is adequate for the 35 mph speed limit.

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

Outerview Road and South Entrance/B1 Entrance
No sight distance was measured as this is an existing intersection.

Outerview Road and C Entrance
Based on field measurements, the available sight distance is greater than 300 feet and meets the AASHTO requirements.

Outerview Road and E1 Entrance
The available sight distance, based on field measurements, is in excess of 300 feet and is adequate for the 25 mph speed limit.

Outerview Road and North Entrance/F1 Entrance
No sight distance was measured as this is an existing intersection.

Outerview Road and G1 Entrance
The measured intersection sight distance is in excess of 300 feet and the stopping sight distance is in excess of 160 feet and is adequate.

Crash Analysis

Crash data was not available at the time this report was submitted.

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 1.

Table 1 – Trip Generation

ITE Land Use Code	Units	A.M.		P.M.	
		Trips In (vph)	Trips Out (vph)	Trips In (vph)	Trips Out (vph)
220- Multifamily Housing (Low-Rise)	323 dwelling units	30	93	100	59
934- Fast Food Restaurant with Drive-Through Window	12,300 sq ft	280	269	211	195
Phase I Total		**310**	**362**	**311**	**254**
150- Warehousing	123,000 sq ft	29	9	11	30
Total		**339**	**371**	**322**	**284**

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/from the north
- 5% to/from the south
- 35% to/40% from the east (Chipman Road)
- 5% to/from the east (Chipman Road)
- 40% to/35% from the west

Trip distribution during the afternoon peak period:

- 15% to/from the north
- 5% to/from the south
- 40% to/35% from the east (Chipman Road)
- 5% to/from the east (Chipman Road)
- 35% to/40% from the west

Existing Plus Site Traffic Volumes

The expected development site-generated traffic volumes were added to the existing plus approved traffic scenario. The volumes are shown on Figures 4, 5, 6, and 7.

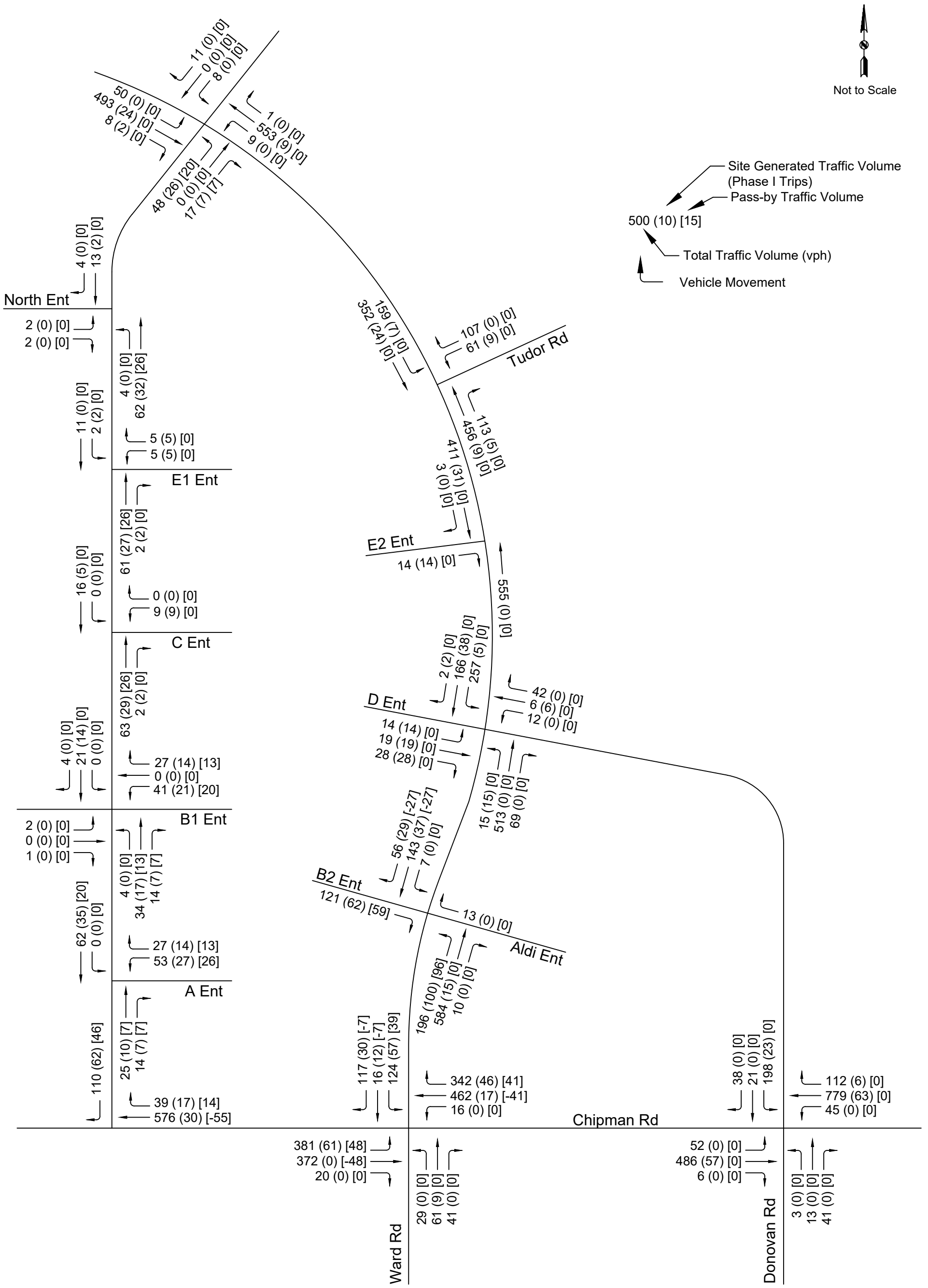


Figure 4 - Existing plus Phase I Site AM Peak Hour Volumes (Commercial & Apartments)

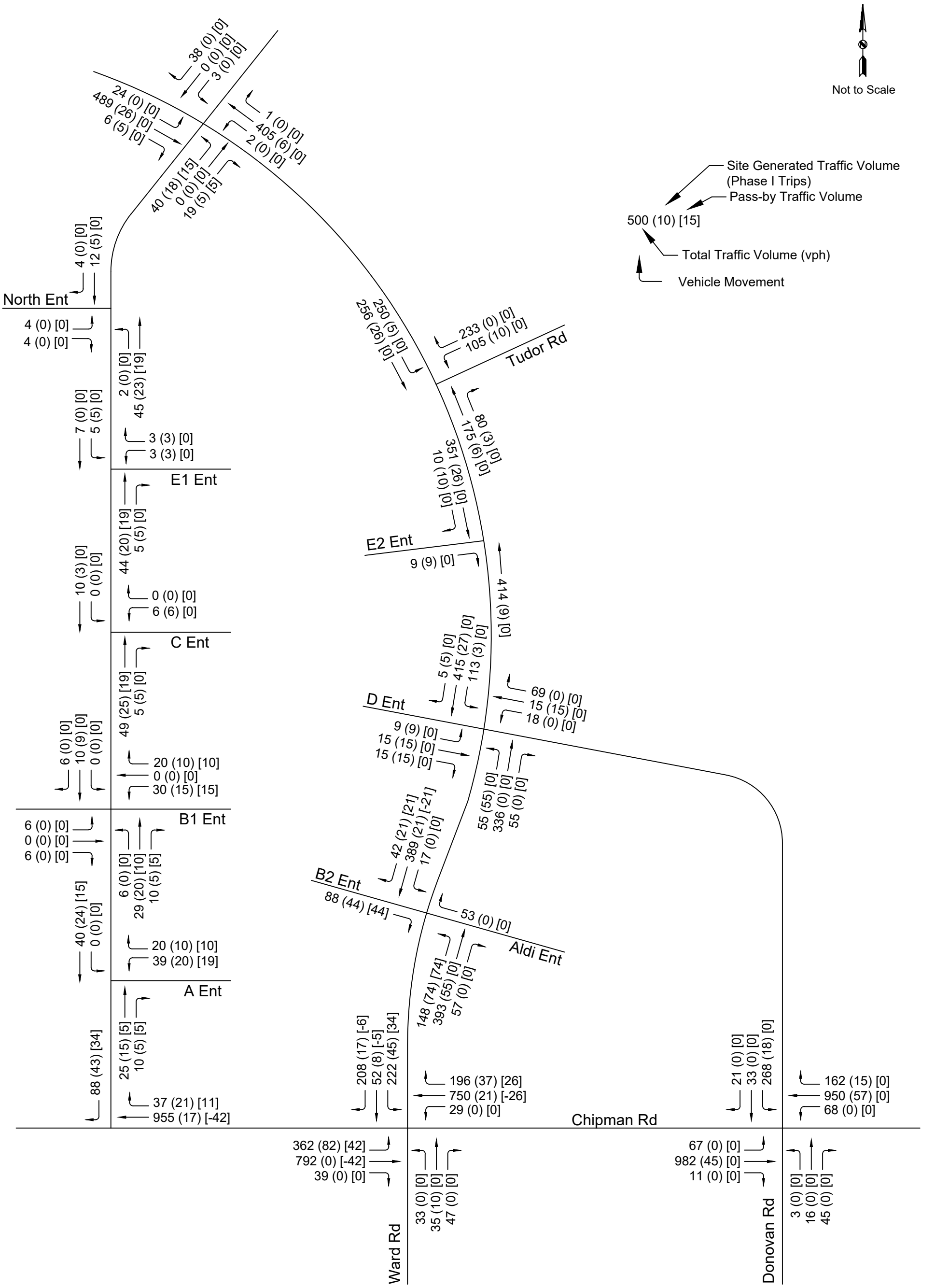


Figure 5 - Existing plus Phase I Site PM Peak Hour Volumes (Commercial & Apartments)

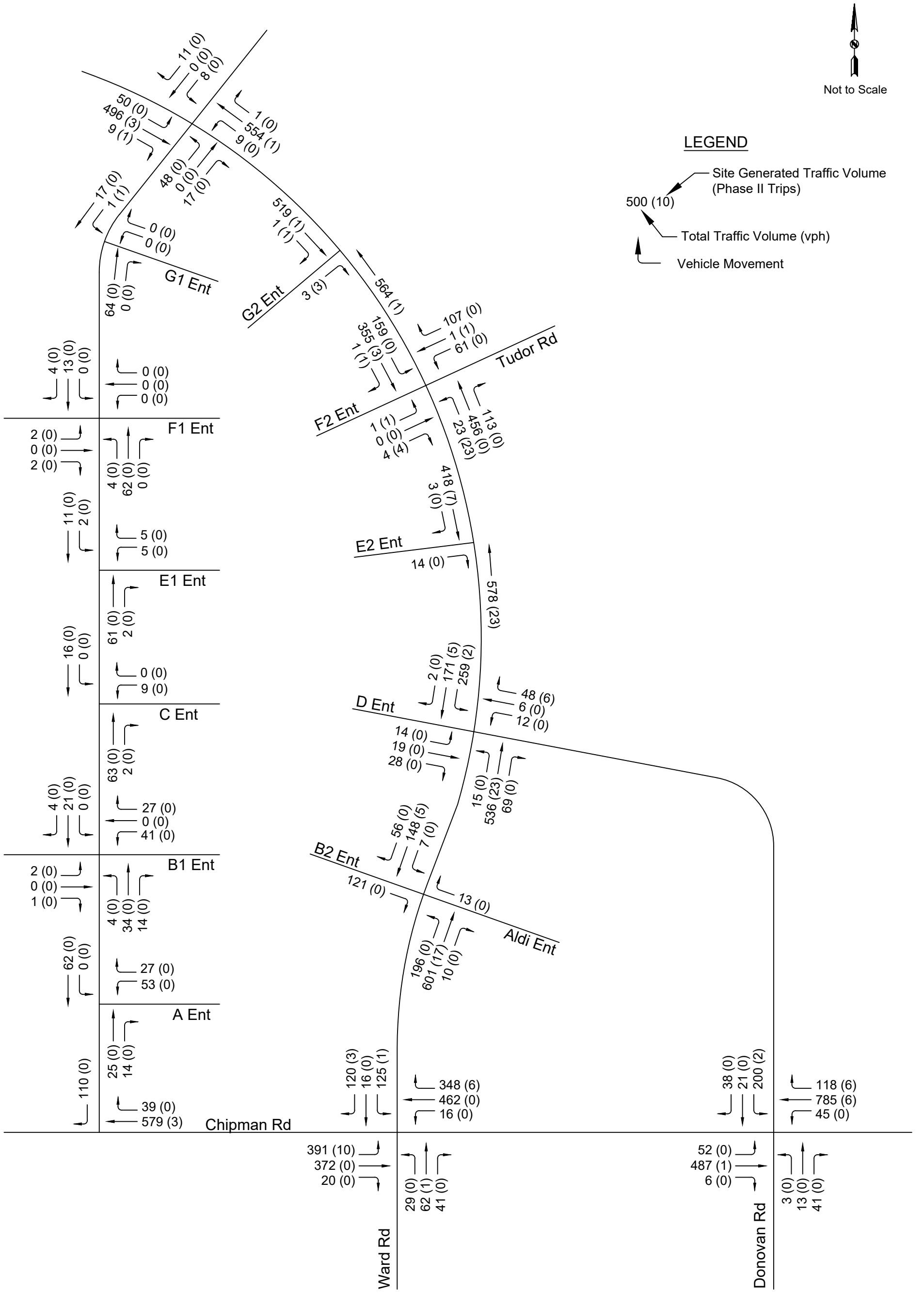


Figure 6 - Existing plus Phase I&II Site AM Peak Hour Volumes (Full Build-Out)

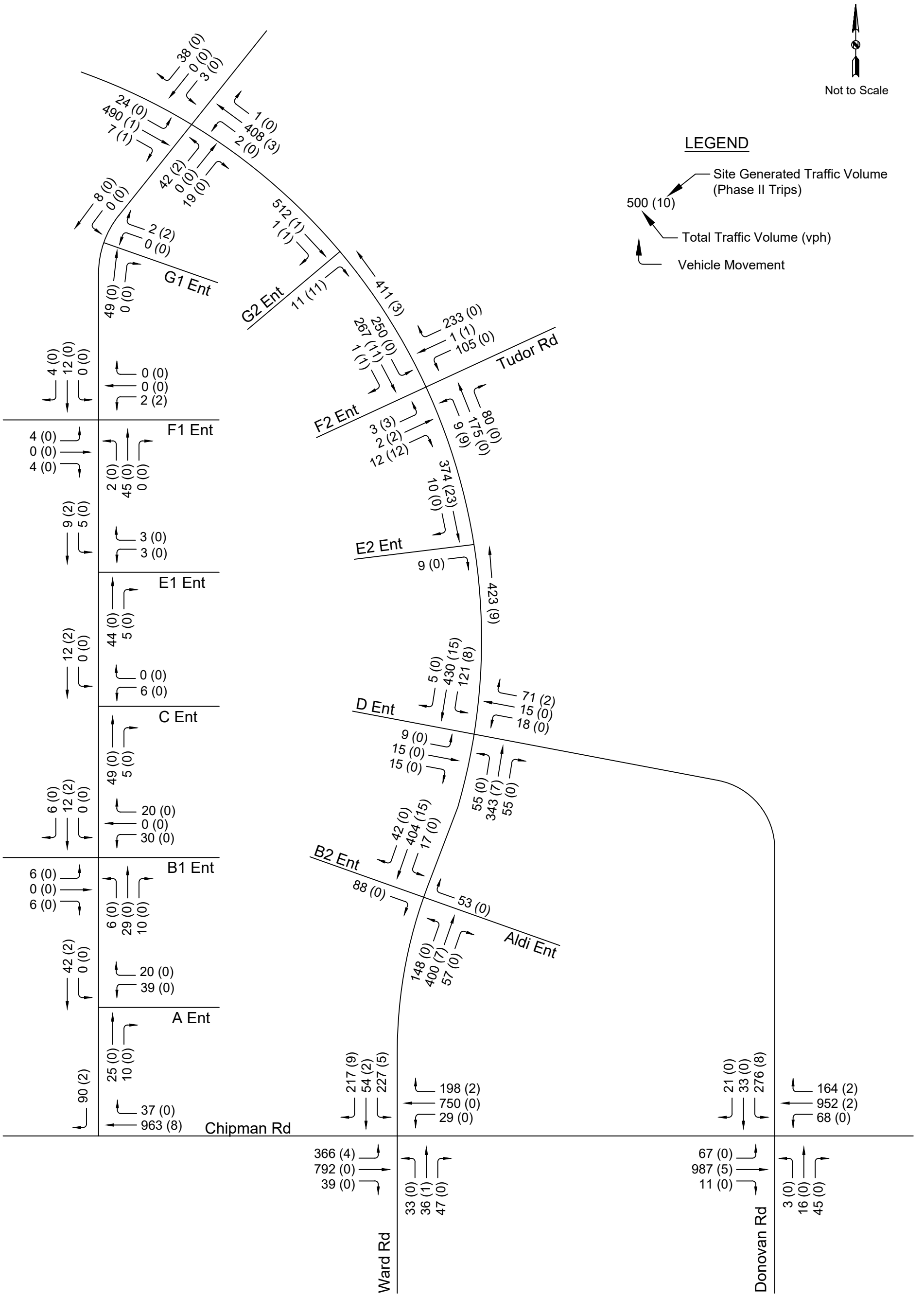


Figure 7 - Existing plus Phase I&II Site PM Peak Hour Volumes (Full Build-Out)

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 2009 MUTCD is 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 Ward Road and Outerview Road and at Ward Road and Donovan Road 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 experienced 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

The traffic volumes are not expected to warrant a traffic signal at the Ward Road and Outerview Road and at Ward Road and Donovan Road intersections. The raw data and curves from the 2009 MUTCD are included in the Appendix.

Right-Turn and Left-Turn Lane Warrants

The need for right and left-turn lanes at the site entrances were evaluated using the City of Lee's Summit *Access Management Code*, March 2018 turning lane guidelines as part of this study for the existing plus site (Phase I & II) condition.

Left-Turn Warrant

Left-turn lane guidelines per City of Lee's Summit *Access Management Code*:

> 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.

Left-turn lanes will be required northbound on Ward Road at the Aldi/B2 entrance, Donovan Road intersection, and Tudor Road intersection, as Ward Road is a median divided arterial roadway.

Right-Turn Warrant

Right-turn lane guidelines per City of Lee's 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 southbound at the Ward Road and Aldi/B2 entrance.

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). The criteria for determining Level of Service (LOS) for signalized and unsignalized study intersections and access points are based on the average vehicle delay and is outlined in Table 2 below. Level of Service is defined as the measure of the quality of traffic flow and is graded from "A" to "F"—with "A" being the best situation and "F" being the worst.

Table 2 – 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

Chipman Road and Ward Road

All approaches operate at a LOS D or above for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles. The overall LOS for the intersection is a LOS C during the morning peak period and a LOS D during the afternoon peak period.

Chipman Road and Outerview Road

The through movements of Chipman Road are not stop-controlled and are therefore operating in a free-flow condition. The southbound right-turn lane operates at a LOS B and has sufficient capacity for queuing vehicles.

Chipman Road and Donovan Road

All approaches operate at a LOS C or above for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles. The overall LOS for the signal is a LOS C during the morning and afternoon peak periods.

Ward Road and Aldi Entrance

All approaches operate at a LOS B for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Donovan Road

The through movements (northbound and southbound) of Ward Road are not stop-controlled and are therefore operating in a free-flow condition. The southbound left-turn lane operates at a LOS B or better and has sufficient capacity for queuing vehicles.

The westbound left-turn lane operates at a LOS E during the morning peak period due to the traffic volumes on Ward Road.

Ward Road and Tudor Road

All approaches operate at a LOS D or above for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles. The overall LOS for the signal is a LOS B during the morning and afternoon peak periods.

Ward Road and Outerview Road

All approaches operate at a LOS D or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and South Entrance

All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and North Entrance

All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

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

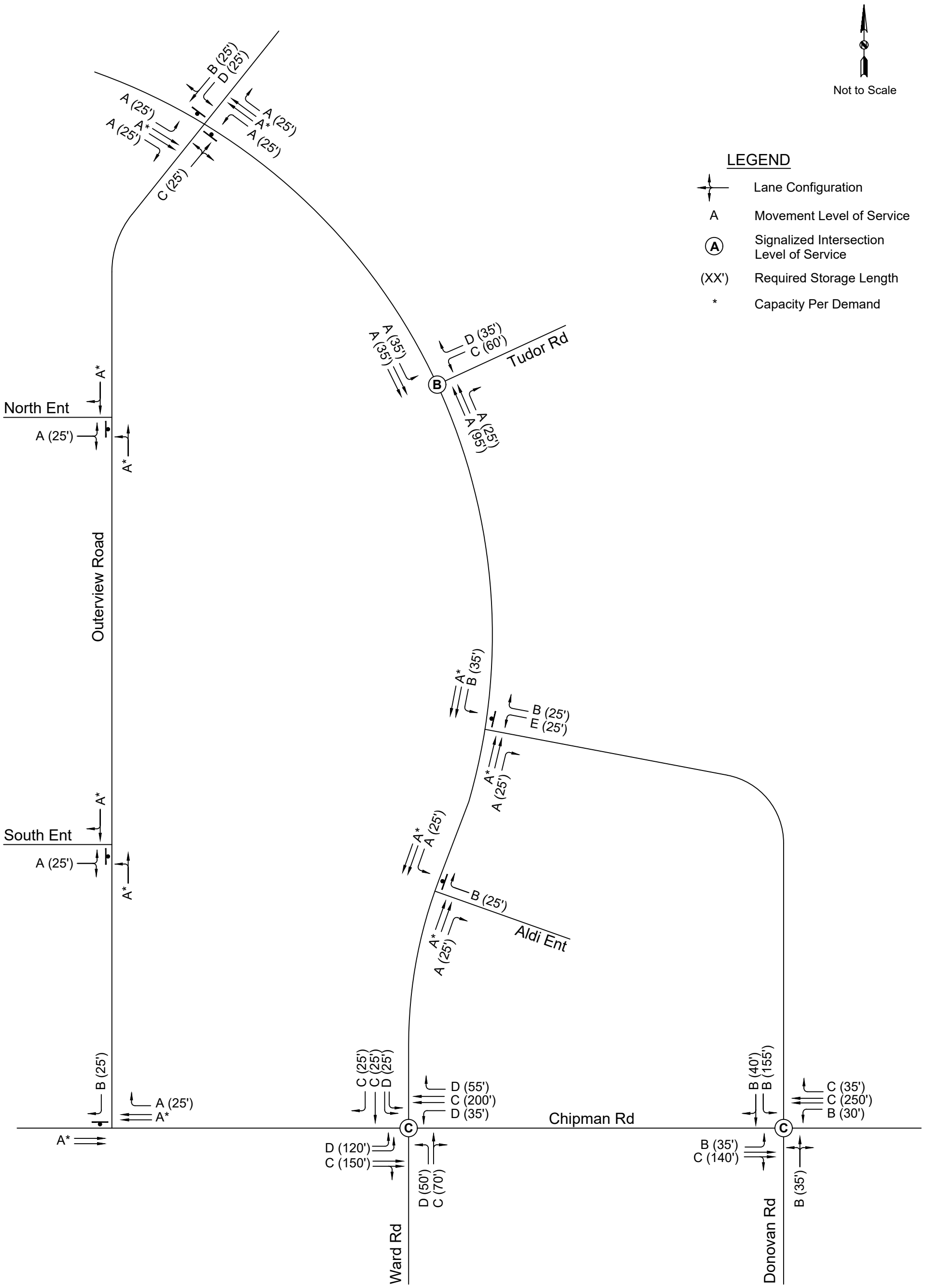


Figure 8 - Existing AM Level of Service

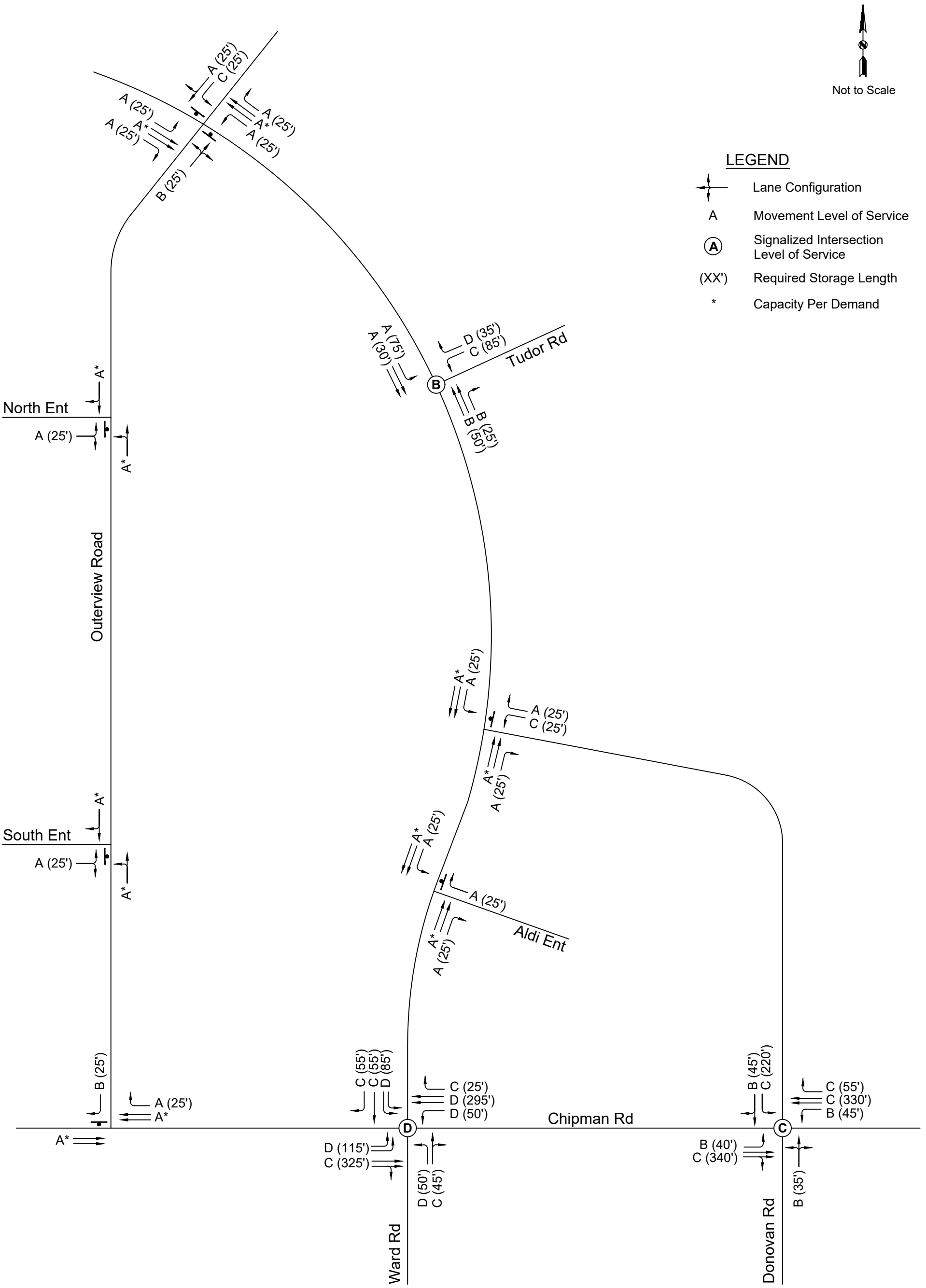


Figure 9 - Existing PM Level of Service

Existing Plus Phase I Site Conditions

Signal timings were optimized to account for the additional traffic.

Chipman Road and Ward Road

There is no significant change in the operations of this intersection from the existing conditions. All approaches continue to operate at a LOS D or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Chipman Road and Outerview Road

There is no significant change in operations of this intersection from the existing conditions. All approaches continue to operate at a LOS B or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Chipman Road and Donovan Road

There is no significant change in the operations of this intersection from the existing conditions. All approaches continue to operate at a LOS C or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Aldi Entrance/B2 Entrance

All approaches operate at a LOS B for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

The northbound left-turn lane into the site will have sufficient queuing with 50 feet of storage and the southbound dual left-turn lane at Chipman Road is expected to need a maximum of 120 feet and there are currently 310 feet of storage available.

Ward Road and Donovan Road

During this phase the additional traffic on Ward Road and from the site will cause the westbound left-turn lane to drop to a LOS F from a LOS E, and the eastbound left-turn lane will operate at a LOS E during the morning peak period due to the traffic volumes on Ward Road. The volumes experiencing this unacceptable level of delay are less than 15 for each movement and there are alternative routes available during the peak periods—as this drive accesses the multifamily residential section of the development most of these trips would be vehicles that are familiar with peak hour characteristics and know to take an alternative route during the morning peak period.

As a signal is not expected to be warranted at this intersection; the installation of one to help with delays is not recommended.

Ward Road and E2 (RIRO) Entrance

All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Tudor Road

There is no significant change in the operations of this intersection from the existing conditions. All approaches continue to operate at a LOS C or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Outerview Road

During the morning peak period, the northeast movement drops from a LOS C to a LOS E. All other movements continue to operate at a LOS D or better and have sufficient capacity for queuing vehicles. The expected delay for the northeast movement is 38.2 seconds and the limit for LOS D is 35 seconds, so the movement is 3.2 seconds outside the LOS D criteria.

As a signal is not expected to be warranted at this intersection, the installation of one to help with delays is not recommended.

Outerview Road and A Entrance

All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and South Entrance/B1 Entrance

There is no significant change in the operations of this intersection from the existing conditions. All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and C Entrance

All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and E1 Entrance

All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and North Entrance/F1 Entrance

There is no significant change in the operations of this intersection from the existing conditions. All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

The results of the capacity analysis for the existing plus phase I morning and afternoon peak hour conditions along with lane configuration and queue lengths are shown on Figures 10 and 11.

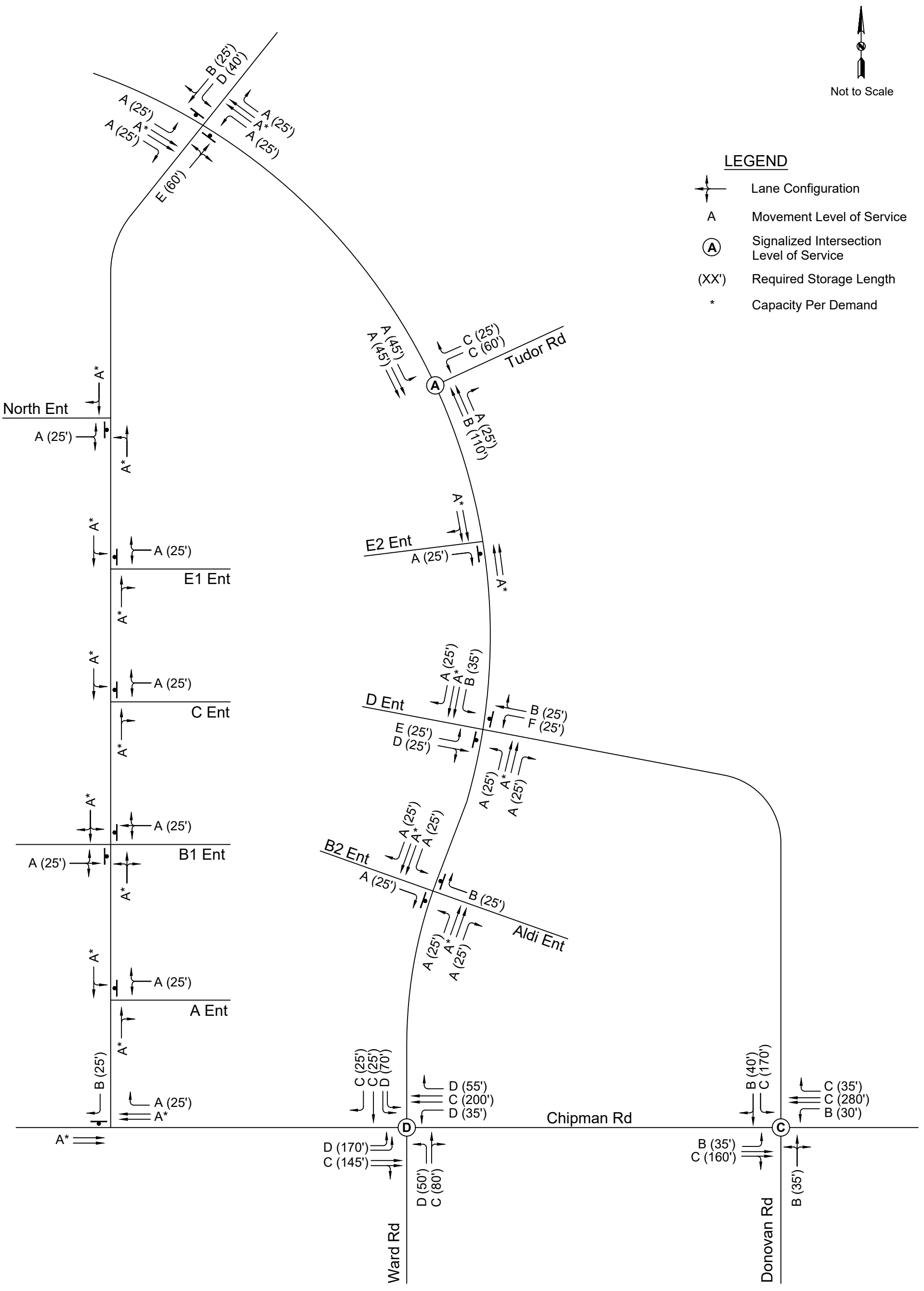


Figure 10 - Existing plus Phase I Site AM Level of Service (Commercial & Apartments)

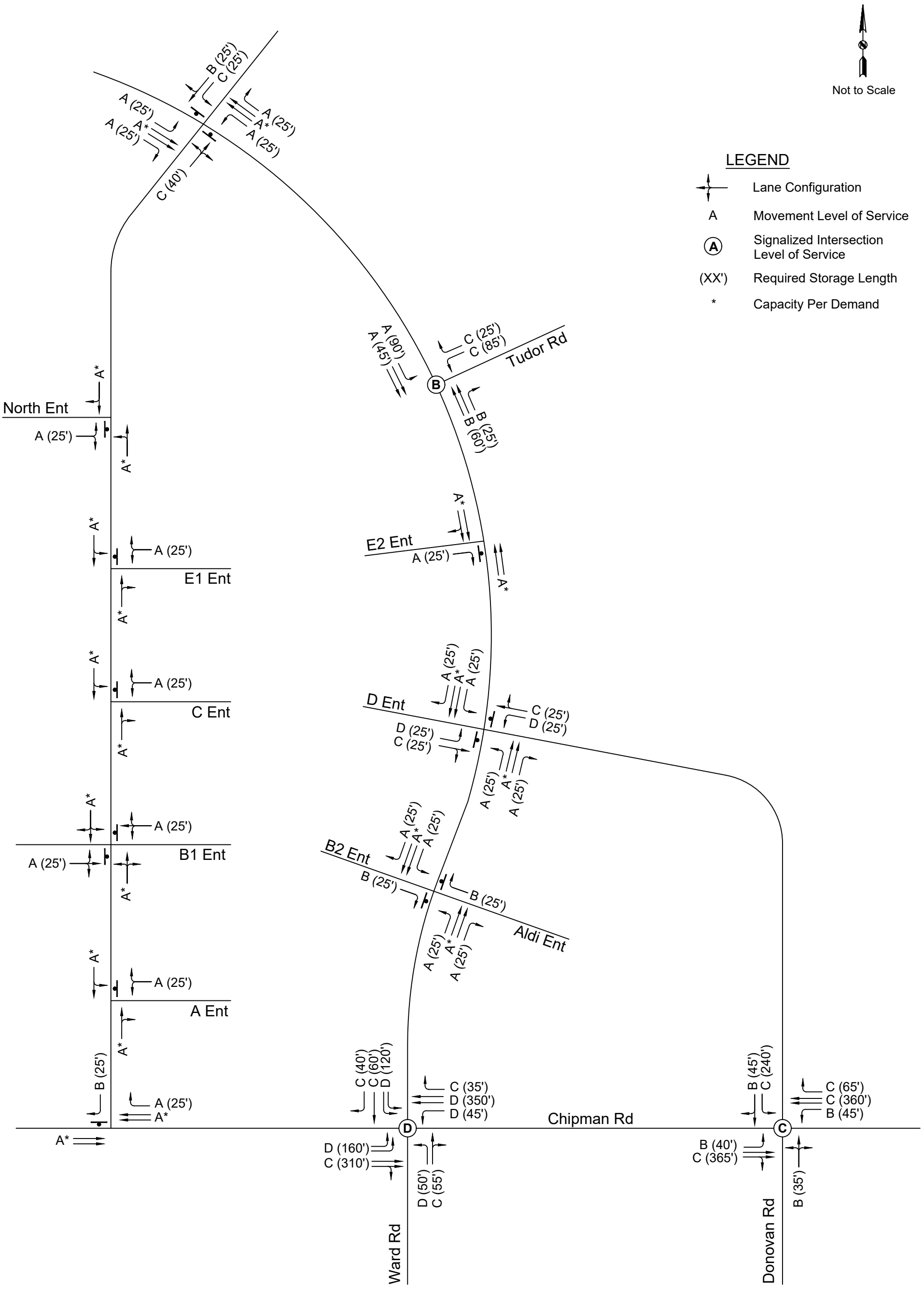


Figure 11 - Existing plus Phase I Site PM Level of Service (Commercial & Apartments)

Existing Plus Phase I & II Site Conditions

Signal timings were optimized to account for the additional traffic.

Chipman Road and Ward Road

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS D or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Chipman Road and Outerview Road

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS B or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Chipman Road and Donovan Road

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS C or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Aldi Entrance/B2 Entrance

All approaches operate at a LOS B for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

The northbound left-turn lane into the site will continue to have sufficient queuing with 50 feet of storage.

Ward Road and Donovan Road

There is no significant change in the operation of this intersection from the phase I conditions. The westbound left-turn lane continues to operate at a LOS F and the eastbound left-turn lane at a LOS E.

Ward Road and E2 (RIRO) Entrance

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS A or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Tudor Road

There is no significant change in the operations of this intersection from the phase I conditions. All approaches operate at a LOS D or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and G2 (RIRO) Entrance

All approaches operate at a LOS B for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Outerview Road

The northeast movement continues to operate at a LOS E. All other movements continue to operate at a LOS D or better and have sufficient capacity for queuing vehicles.

Outerview Road and A Entrance

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS A or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and South Entrance/B1 Entrance

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS A or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and C Entrance

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS A or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and E1 Entrance

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS A or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and North Entrance/F1 Entrance

There is no significant change in the operations of this intersection from the phase I conditions. All approaches continue to operate at a LOS A or better for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

Outerview Road and G1 Entrance

All approaches operate at a LOS A for the morning and afternoon peak periods and the intersection has sufficient capacity for queuing vehicles.

The results of the capacity analysis for the existing plus phase I & II morning and afternoon peak hour conditions along with lane configuration and queue lengths are shown on Figures 12 and 13.

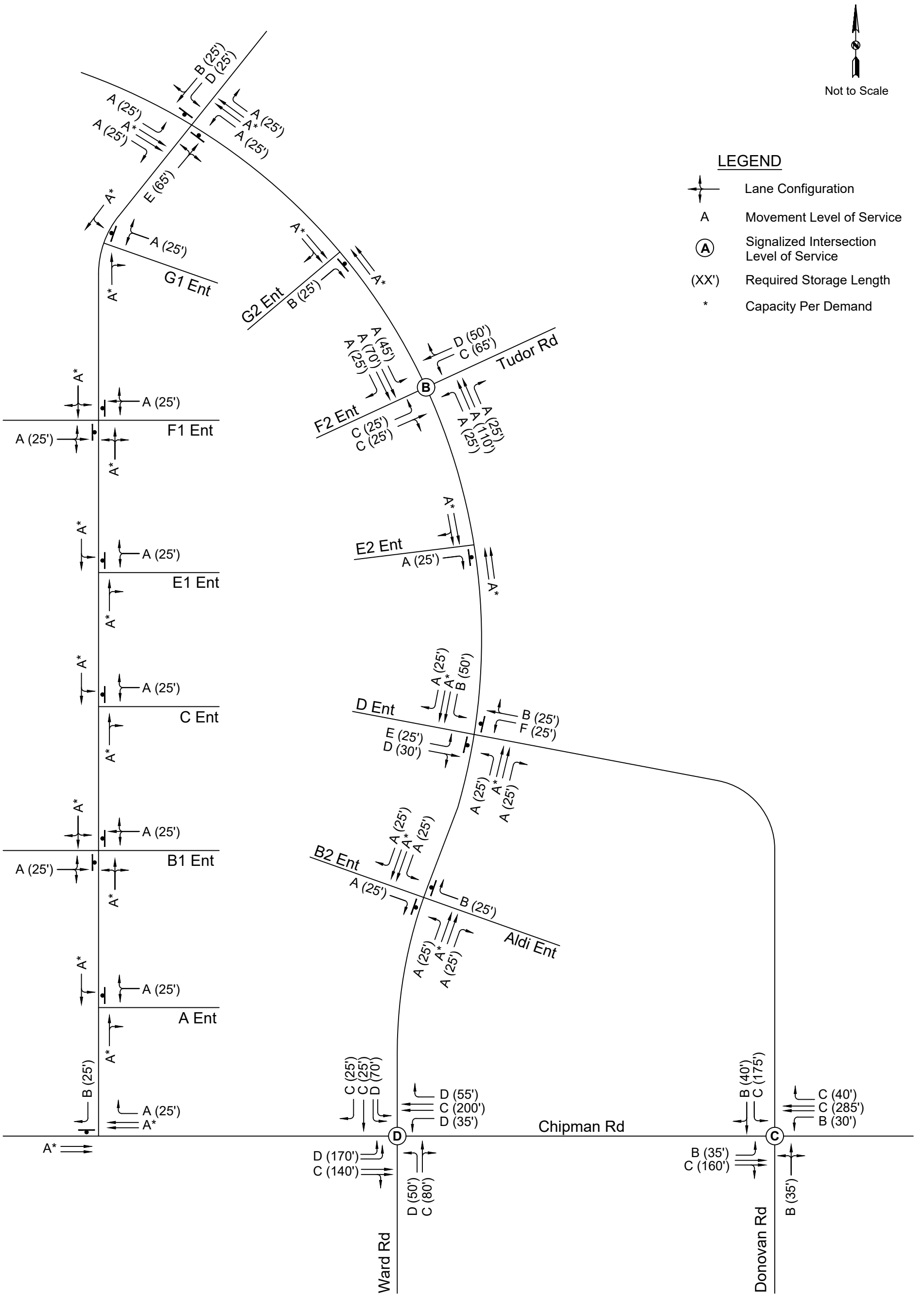


Figure 12 - Existing plus Phase I&II Site AM Level of Service (Full Build-Out)

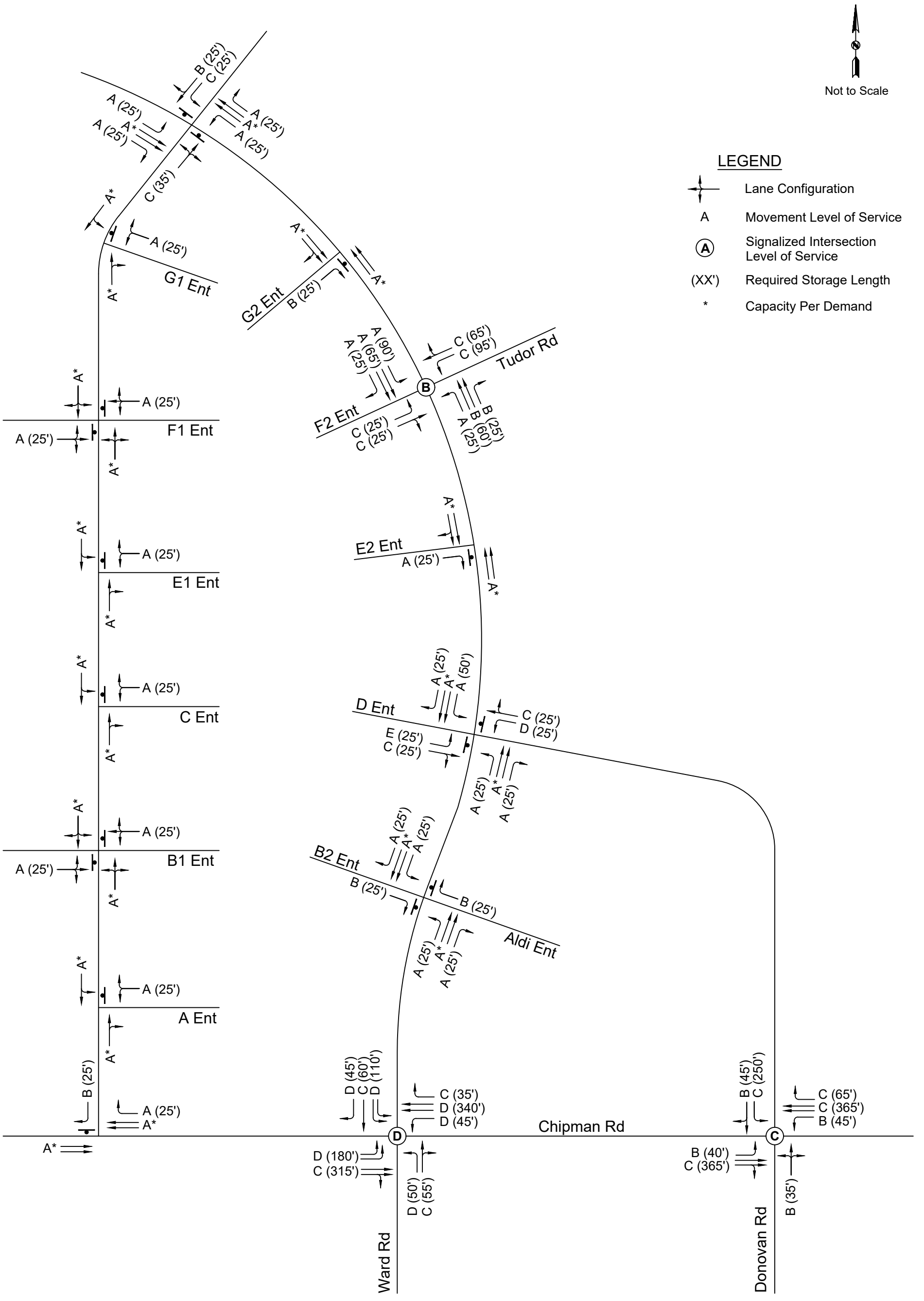


Figure 13- Existing plus Phase I&II Site PM Level of Service (Full Build-Out)

RECOMMENDATIONS

This study documents the findings of the traffic analysis of the expected traffic for the Summit Orchards West development in Lee's Summit, Missouri. The study includes an analysis of the existing conditions, existing plus Phase I site conditions, and existing plus Phase I & II site conditions.

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

- Install northbound left-turn lane (250 feet plus taper) at the intersection of Ward Road and Donovan Road.
- Restripe the northbound u-turn lane at Ward Road and Tudor Road to a left-turn lane and update signal as necessary for full access.
- Install a northbound left-turn lane (50 feet plus taper) at the intersection of Ward Road and Aldi/B2 Entrance with modifications to median and existing southbound left-turn lanes at Chipman Road.
- Install a southbound right-turn lane (200 feet plus taper) at the intersection of Ward Road and Aldi/B2 Entrance.
- The need for future roadway improvements should be reevaluated as additional development occurs.

APPENDIX

SUMMIT SQUARE III (LEE'S SUMMIT, MO)

TRAFFIC EXHIBIT

2022.07.25
SCALE 1:200

N

APPROXIMATE DWELLING UNITS	±323

NE TUDOR RD

EXISTING
RESIDENTIAL -
MULTIFAMILY USE

NW DONOVAN RD

EXISTING
COMMERCIAL USE

NW CHIPMAN RD

NW WARD RD

NW WARD RD

OUTERVIEW RD

G2

F2

E2

D

G1

F1

E1

C

B2

B1

A

WAREHOUSE
±50,000 SF

WAREHOUSE
±40,000 SF

COMMERCIAL USE
±10.07 ACRES

RESIDENTIAL -
MULTIFAMILY USE
±11.83 ACRES

DRIVE-THRU
RESTAURANT
±3,500 SF

COMMERCIAL USE
±2.79 ACRES

DRIVE - THRU
RESTAURANT
±8,800 SF

S:\01 PROJECTS\MULTI-FAMILY\4024 SUMMIT SQUARE 3\05 MASTER PLANS\PLANS\TRAFFIC STUDY EXHIBIT.DWG RACHEL BARTH

NorthPoint DEVELOPMENT

7/12/2022
Chipman & Ward Rd
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	3	13	1	17	7	17	6	30	1	6	8	15	3	6	1	10	72
7:15	7	15	2	24	8	29	12	49	6	20	8	34	7	5	2	14	121
7:30	5	26	4	35	4	25	9	38	3	18	7	28	5	7	7	19	120
7:45	5	29	2	36	12	31	7	50	3	22	15	40	9	10	2	21	147
8:00	9	34	4	47	7	27	5	39	6	24	9	39	2	7	6	15	140
8:15	5	38	0	43	11	33	8	52	8	23	18	49	6	12	5	23	167
8:30	4	27	4	35	5	35	9	49	4	17	18	39	4	16	8	28	151
8:45	14	39	1	54	10	30	4	44	5	18	12	35	6	10	6	22	155
Total	**52**	**221**	**18**	**291**	**64**	**227**	**60**	**351**	**36**	**148**	**95**	**279**	**42**	**73**	**37**	**152**	**1073**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total		WB Left	WB Thru	WB Right	WB Total		NB Left	NB Thru	NB Right	NB Total		SB Left	SB Thru	SB Right	SB Total		Int. Total
8:00	9	34	4	47	**0.83**	7	27	5	39	**0.88**	6	24	9	39	**0.83**	2	7	6	15	**0.79**	140
8:15	5	38	0	43		11	33	8	52		8	23	18	49		6	12	5	23		167
8:30	4	27	4	35		5	35	9	49		4	17	18	39		4	16	8	28		151
8:45	14	39	1	54		10	30	4	44		5	18	12	35		6	10	6	22		155
Total	32	138	9	179		33	125	26	184		23	82	57	162		18	45	25	88		613

Chipman & Donovan Rd
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	1	26	5	32	4	28	8	40	1	3	6	10	2	12	2	16	98
7:15	3	28	1	32	6	43	2	51	1	3	11	15	4	2	2	8	106
7:30	3	32	0	35	9	36	3	48	2	3	10	15	8	2	1	11	109
7:45	1	56	0	57	16	43	3	62	2	6	18	26	3	3	1	7	152
8:00	5	38	0	43	9	44	9	62	2	6	8	16	4	2	1	7	128
8:15	4	52	1	57	7	48	6	61	1	2	12	15	7	5	2	14	147
8:30	2	50	1	53	9	55	5	69	0	2	8	10	7	4	0	11	143
8:45	2	54	4	60	20	45	6	71	0	3	13	16	2	0	2	4	151
Total	**21**	**336**	**12**	**369**	**80**	**342**	**42**	**464**	**9**	**28**	**86**	**123**	**37**	**30**	**11**	**78**	**1034**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total		WB Left	WB Thru	WB Right	WB Total		NB Left	NB Thru	NB Right	NB Total		SB Left	SB Thru	SB Right	SB Total		Int. Total
8:00	5	38	0	43	**0.89**	9	44	9	62	**0.93**	2	6	8	16	**0.89**	4	2	1	7	**0.64**	128
8:15	4	52	1	57		7	48	6	61		1	2	12	15		7	5	2	14		147
8:30	2	50	1	53		9	55	5	69		0	2	8	10		7	4	0	11		143
8:45	2	54	4	60		20	45	6	71		0	3	13	16		2	0	2	4		151
Total	13	194	6	213		45	192	26	263		3	13	41	57		20	11	5	36		569

Ward & Tudor Rd
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	0	0	0	0	4	0	19	23	0	16	9	25	23	13	0	36	84
7:15	0	0	0	0	7	0	31	38	0	30	13	43	30	23	0	53	134
7:30	0	0	0	0	8	0	43	51	0	34	9	43	16	21	0	37	131
7:45	0	0	0	0	13	0	22	35	0	32	12	44	37	20	0	57	136
8:00	0	0	0	0	6	0	20	26	0	32	19	51	22	17	0	39	116
8:15	0	0	0	0	8	0	24	32	0	32	32	64	29	11	0	40	136
8:30	0	0	0	0	16	0	25	41	0	26	20	46	26	10	0	36	123
8:45	0	0	0	0	18	0	29	47	0	24	19	43	38	28	0	66	156
Total	**0**	**0**	**0**	**0**	**80**	**0**	**213**	**293**	**0**	**226**	**133**	**359**	**221**	**143**	**0**	**364**	**1016**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
8:00	0	0	0	0	#DIV/0!	6	0	20	26	0.78	0	32	19	51	0.8	22	17	0	39	0.69	116
8:15	0	0	0	0		8	0	24	32		0	32	32	64		29	11	0	40		136
8:30	0	0	0	0		16	0	25	41		0	26	20	46		26	10	0	36		123
8:45	0	0	0	0		18	0	29	47		0	24	19	43		38	28	0	66		156
Total	0	0	0	0		48	0	98	146		0	114	90	204		115	66	0	181		531

Ward & Outerview Rd
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	0	0	2	2	1	0	3	4	2	34	0	36	1	31	2	34	76
7:15	0	0	1	1	2	0	2	4	4	57	0	61	3	52	4	59	125
7:30	0	0	1	1	1	0	2	3	4	71	2	77	6	37	3	46	127
7:45	0	0	0	0	1	0	4	5	1	50	0	51	19	54	5	78	134
8:00	1	0	1	2	2	0	2	4	3	50	0	53	19	34	4	57	116
8:15	0	0	0	0	1	0	5	6	2	52	1	55	12	36	1	49	110
8:30	0	0	1	1	3	0	2	5	2	47	0	49	11	34	1	46	101
8:45	1	0	1	2	2	0	2	4	2	50	0	52	8	61	0	69	127
Total	**2**	**0**	**7**	**9**	**13**	**0**	**22**	**35**	**20**	**411**	**3**	**434**	**79**	**339**	**20**	**438**	**916**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
8:00	1	0	1	2	0.63	2	0	2	4	0.79	3	50	0	53	0.95	19	34	4	57	0.80	116
8:15	0	0	0	0		1	0	5	6		2	52	1	55		12	36	1	49		110
8:30	0	0	1	1		3	0	2	5		2	47	0	49		11	34	1	46		101
8:45	1	0	1	2		2	0	2	4		2	50	0	52		8	61	0	69		127
Total	2	0	3	5		8	0	11	19		9	199	1	209		50	165	6	221		454

Donovan & Ward Rd
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	0	0	0	0	0	0	17	17	0	0	1	1	6	0	0	6	24
7:15	0	0	0	0	0	0	11	11	0	0	2	2	7	0	0	7	20
7:30	0	0	0	0	0	0	24	24	1	0	1	2	9	0	0	9	35
7:45	0	0	0	0	4	0	15	19	0	0	3	3	6	0	0	6	28
8:00	0	0	0	0	4	0	15	19	0	0	0	0	1	0	0	1	20
8:15	0	0	0	0	5	0	11	16	0	0	0	0	3	0	0	3	19
8:30	0	0	0	0	2	0	15	17	0	0	3	3	6	0	0	6	26
8:45	0	0	0	0	1	0	1	2	0	0	1	1	8	0	0	8	11
Total	**0**	**0**	**0**	**0**	**16**	**0**	**109**	**125**	**1**	**0**	**11**	**12**	**46**	**0**	**0**	**46**	**183**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
8:00	0	0	0	0	#DIV/0!	4	0	15	19	0.71	0	0	0	0	0.33	1	0	0	1	0.56	20
8:15	0	0	0	0		5	0	11	16		0	0	0	0		3	0	0	3		19
8:30	0	0	0	0		2	0	15	17		0	0	3	3		6	0	0	6		26
8:45	0	0	0	0		1	0	1	2		0	0	1	1		8	0	0	8		11
Total	0	0	0	0		12	0	42	54		0	0	4	4		18	0	0	18		76

Chipman & Outerview Rd
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	0	0	0	0	0	0	6	6	0	0	0	0	0	0	0	0	6
7:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
7:30	0	0	0	0	0	0	2	2	0	0	0	0	0	0	1	1	3
7:45	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
8:00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
8:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2
8:30	0	0	0	0	0	0	3	3	0	0	0	0	0	0	1	1	4
8:45	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
Total	**0**	**0**	**0**	**0**	**0**	**0**	**18**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**21**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
8:00	0	0	0	0	#DIV/0!	0	0	1	1	0.67	0	0	0	0	#DIV/0!	0	0	0	0	0.50	1
8:15	0	0	0	0		0	0	1	1		0	0	0	0		0	0	1	1		2
8:30	0	0	0	0		0	0	3	3		0	0	0	0		0	0	1	1		4
8:45	0	0	0	0		0	0	3	3		0	0	0	0		0	0	0	0		3
Total	0	0	0	0		0	0	8	8		0	0	0	0		0	0	2	2		10

Ward & Aldi Entrance
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	0	0	1	1	0	0	#REF!	#REF!	0	0	0	0	0	0	0	0	#REF!
7:15	0	0	2	2	0	0	#REF!	#REF!	0	0	3	3	1	0	0	1	#REF!
7:30	0	0	3	3	0	0	#REF!	#REF!	0	0	1	1	1	0	0	1	#REF!
7:45	0	0	1	1	0	0	#REF!	#REF!	0	0	1	1	2	0	0	2	#REF!
8:00	0	0	4	4	0	0	#REF!	#REF!	0	0	2	2	5	0	0	5	#REF!
8:15	0	0	2	2	0	0	#REF!	#REF!	0	0	3	3	0	0	0	0	#REF!
8:30	0	0	4	4	0	0	#REF!	#REF!	0	0	7	7	1	0	0	1	#REF!
8:45	0	0	3	3	0	0	#REF!	#REF!	0	0	6	6	1	0	0	1	#REF!
Total	**0**	**0**	**20**	**20**	**0**	**0**	**#REF!**	**#REF!**	**0**	**0**	**23**	**23**	**11**	**0**	**0**	**11**	**#REF!**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total		WB Left	WB Thru	WB Right	WB Total		NB Left	NB Thru	NB Right	NB Total		SB Left	SB Thru	SB Right	SB Total		Int. Total
8:00	0	0	4	4	**0.81**	0	0	#REF!	#REF!	**#REF!**	0	0	2	2	**0.64**	5	0	0	5	**0.35**	#REF!
8:15	0	0	2	2		0	0	#REF!	#REF!		0	0	3	3		0	0	0	0		#REF!
8:30	0	0	4	4		0	0	#REF!	#REF!		0	0	7	7		1	0	0	1		#REF!
8:45	0	0	3	3		0	0	#REF!	#REF!		0	0	6	6		1	0	0	1		#REF!
Total	0	0	13	13		0	0	#REF!	#REF!		0	0	18	18		7	0	0	7		#REF!

Outerview Rd & South Entrance
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	1	3
7:15	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
7:45	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	2
8:00	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2	4
8:15	0	0	1	1	0	0	0	0	3	0	0	3	0	0	1	1	5
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**5**	**0**	**2**	**7**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**5**	**0**	**0**	**8**	**8**	**20**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total		WB Left	WB Thru	WB Right	WB Total		NB Left	NB Thru	NB Right	NB Total		SB Left	SB Thru	SB Right	SB Total		Int. Total
8:00	2	0	0	2	**0.38**	0	0	0	0	**#DIV/0!**	0	0	0	0	**0.25**	0	0	2	2	**0.63**	4
8:15	0	0	1	1		0	0	0	0		3	0	0	3		0	0	1	1		5
8:30	0	0	0	0		0	0	0	0		0	0	0	0		0	0	2	2		2
8:45	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total	2	0	1	3		0	0	0	0		3	0	0	3		0	0	5	5		11

Outerview Rd & North Entrance
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
7:00	1	0	1	2	0	0	0	0	0	0	0	0	0	0	1	1	3
7:15	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	2
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	1	1	0	0	0	0	1	0	0	1	0	0	1	1	3
8:00	1	0	0	1	0	0	0	0	1	0	0	1	0	0	1	1	3
8:15	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	2
8:30	1	0	2	3	0	0	0	0	1	0	0	1	0	0	1	1	5
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	**3**	**0**	**5**	**8**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**6**	**0**	**0**	**6**	**6**	**20**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
8:00	1	0	0	1	**0.33**	0	0	0	0	**#DIV/0!**	1	0	0	1	**0.5**	0	0	1	1	**0.50**	3
8:15	0	0	0	0		0	0	0	0		2	0	0	2		0	0	0	0		2
8:30	1	0	2	3		0	0	0	0		1	0	0	1		0	0	1	1		5
8:45	0	0	0	0		0	0	0	0		0	0	0	0		0	0	2	2		2
Total	2	0	2	4		0	0	0	0		4	0	0	4		0	0	4	4		12

7/12/2022
Chipman & Ward Rd
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	14	60	2	76	14	66	11	91	9	9	13	31	10	13	7	30	228
4:15	15	46	7	68	13	44	9	66	4	16	19	39	14	16	6	36	209
4:30	13	64	3	80	13	59	3	75	13	27	17	57	20	25	7	52	264
4:45	24	74	9	107	19	44	10	73	7	12	17	36	26	35	6	67	283
5:00	17	61	4	82	16	47	9	72	4	27	16	47	11	33	7	51	252
5:15	8	59	0	67	18	59	7	84	5	13	14	32	15	29	2	46	229
5:30	15	75	6	96	11	38	11	60	9	23	10	42	18	24	6	48	246
5:45	15	48	3	66	11	42	12	65	3	16	14	33	17	27	4	48	212
Total	**121**	**487**	**34**	**642**	**115**	**399**	**72**	**586**	**54**	**143**	**120**	**317**	**131**	**202**	**45**	**378**	**1923**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total		WB Left	WB Thru	WB Right	WB Total		NB Left	NB Thru	NB Right	NB Total		SB Left	SB Thru	SB Right	SB Total		Int. Total
5:00	17	61	4	82	**0.81**	16	47	9	72	**0.84**	4	27	16	47	**0.82**	11	33	7	51	**0.95**	252
5:15	8	59	0	67		18	59	7	84		5	13	14	32		15	29	2	46		229
5:30	15	75	6	96		11	38	11	60		9	23	10	42		18	24	6	48		246
5:45	15	48	3	66		11	42	12	65		3	16	14	33		17	27	4	48		212
Total	55	243	13	311		56	186	39	281		21	79	54	154		61	113	19	193		939

Chipman & Donovan Rd
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	4	82	3	89	20	87	11	118	1	4	17	22	19	8	1	28	257
4:15	6	77	2	85	12	56	23	91	3	3	6	12	17	6	3	26	214
4:30	5	85	6	96	15	71	11	97	1	2	10	13	15	4	1	20	226
4:45	4	98	3	105	11	75	17	103	0	4	15	19	16	6	3	25	252
5:00	4	89	3	96	22	79	18	119	2	5	11	18	24	4	1	29	262
5:15	6	80	4	90	18	84	15	117	1	5	13	19	20	4	2	26	252
5:30	5	91	1	97	12	52	13	77	0	3	10	13	11	7	5	23	210
5:45	5	72	3	80	16	67	17	100	0	3	11	14	15	7	2	24	218
Total	**39**	**674**	**25**	**738**	**126**	**571**	**125**	**822**	**8**	**29**	**93**	**130**	**137**	**46**	**18**	**201**	**1891**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total		WB Left	WB Thru	WB Right	WB Total		NB Left	NB Thru	NB Right	NB Total		SB Left	SB Thru	SB Right	SB Total		Int. Total
5:00	4	89	3	96	**0.94**	22	79	18	119	**0.87**	2	5	11	18	**0.84**	24	4	1	29	**0.88**	262
5:15	6	80	4	90		18	84	15	117		1	5	13	19		20	4	2	26		252
5:30	5	91	1	97		12	52	13	77		0	3	10	13		11	7	5	23		210
5:45	5	72	3	80		16	67	17	100		0	3	11	14		15	7	2	24		218
Total	20	332	11	363		68	282	63	413		3	16	45	64		70	22	10	102		942

Ward & Tudor Rd
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	0	0	0	0	19	0	48	67	0	35	24	59	60	38	0	98	224
4:15	0	0	0	0	28	0	40	68	0	26	16	42	57	42	0	99	209
4:30	0	0	0	0	26	0	51	77	0	51	29	80	49	56	0	105	262
4:45	0	0	0	0	24	0	46	70	0	41	28	69	59	66	0	125	264
5:00	0	0	0	0	20	0	55	75	0	45	21	66	77	63	0	140	281
5:15	0	0	0	0	28	0	61	89	1	36	14	51	58	63	0	121	261
5:30	0	0	0	0	17	0	48	65	2	45	21	68	47	57	0	104	237
5:45	0	0	0	0	12	0	34	46	2	43	16	61	54	47	0	101	208
Total	**0**	**0**	**0**	**0**	**174**	**0**	**383**	**557**	**5**	**322**	**169**	**496**	**461**	**432**	**0**	**893**	**1946**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
5:00	0	0	0	0	#DIV/0!	20	0	55	75	0.77	0	45	21	66	0.9	77	63	0	140	0.83	281
5:15	0	0	0	0		28	0	61	89		1	36	14	51		58	63	0	121		261
5:30	0	0	0	0		17	0	48	65		2	45	21	68		47	57	0	104		237
5:45	0	0	0	0		12	0	34	46		2	43	16	61		54	47	0	101		208
Total	0	0	0	0		77	0	198	275		5	169	72	246		236	230	0	466		987

Ward & Outerview Rd
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	4	0	2	6	0	0	8	8	0	81	2	83	3	100	0	103	200
4:15	1	0	3	4	0	0	3	3	1	63	1	65	4	88	1	93	165
4:30	6	0	4	10	1	0	2	3	0	100	3	103	8	96	0	104	220
4:45	4	1	6	11	0	0	3	3	1	85	0	86	5	126	0	131	231
5:00	3	0	4	7	1	0	6	7	1	97	1	99	3	126	0	129	242
5:15	2	0	3	5	2	0	20	22	1	96	1	98	7	113	1	121	246
5:30	2	0	2	4	0	0	9	9	0	89	2	91	2	109	0	111	215
5:45	0	0	0	0	0	0	3	3	0	76	1	77	12	97	0	109	189
Total	**22**	**1**	**24**	**47**	**4**	**0**	**54**	**58**	**4**	**687**	**11**	**702**	**44**	**855**	**2**	**901**	**1708**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
5:00	3	0	4	7	0.57	1	0	6	7	0.47	1	97	1	99	0.92	3	126	0	129	0.91	242
5:15	2	0	3	5		2	0	20	22		1	96	1	98		7	113	1	121		246
5:30	2	0	2	4		0	0	9	9		0	89	2	91		2	109	0	111		215
5:45	0	0	0	0		0	0	3	3		0	76	1	77		12	97	0	109		189
Total	7	0	9	16		3	0	38	41		2	358	5	365		24	445	1	470		892

Donovan & Ward Rd
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	0	0	0	0	4	0	18	22	0	0	4	4	28	0	0	28	54
4:15	0	0	0	0	7	0	25	32	0	0	2	2	20	0	1	21	55
4:30	0	0	0	0	7	0	18	25	0	1	2	3	31	0	0	31	59
4:45	0	0	0	0	10	0	22	32	0	0	3	3	33	0	0	33	68
5:00	0	1	0	1	3	0	23	26	0	0	0	0	35	0	0	35	62
5:15	0	0	0	0	6	0	20	26	0	0	1	1	36	0	0	36	63
5:30	0	0	0	0	7	0	19	26	0	0	0	0	28	0	0	28	54
5:45	0	0	0	0	2	0	7	9	0	0	3	3	11	0	0	11	23
Total	**0**	**1**	**0**	**1**	**46**	**0**	**152**	**198**	**0**	**1**	**15**	**16**	**222**	**0**	**1**	**223**	**438**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
5:00	0	1	0	1	**0.25**	3	0	23	26	**0.84**	0	0	0	0	**0.33**	35	0	0	35	**0.76**	62
5:15	0	0	0	0		6	0	20	26		0	0	1	1		36	0	0	36		63
5:30	0	0	0	0		7	0	19	26		0	0	0	0		28	0	0	28		54
5:45	0	0	0	0		2	0	7	9		0	0	3	3		11	0	0	11		23
Total	0	1	0	1		18	0	69	87		0	0	4	4		110	0	0	110		202

Chipman & Outerview Rd
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	1	1	0	0	0	0	0	0	3	3	4
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7
4:45	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	2
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1
Total	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**11**	**14**

	PHF																			
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
5:00	0	0	0	0	**#DIV/0!**	0	0	0	0	**0.25**	0	0	0	0	**#DIV/0!**	0	0	0	0	**#DIV/0!**	0
5:15	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
5:30	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
5:45	0	0	0	0		0	0	1	1		0	0	0	0		0	0	0	0		1
Total	0	0	0	0		0	0	1	1		0	0	0	0		0	0	0	0		1

Ward & Aldi Entrance
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	0	0	0	0	0	0	7	7	0	0	5	5	1	0	0	1	13
4:15	0	0	0	0	0	0	9	9	0	0	7	7	3	0	0	3	19
4:30	0	0	0	0	0	0	7	7	0	0	11	11	0	0	0	0	18
4:45	0	0	0	0	0	0	13	13	0	0	16	16	2	0	0	2	31
5:00	0	0	0	0	0	0	16	16	0	0	14	14	4	0	0	4	34
5:15	0	0	0	0	0	0	10	10	0	0	12	12	3	0	0	3	25
5:30	0	0	0	0	0	0	18	18	0	0	22	22	6	0	0	6	46
5:45	0	0	0	0	0	0	9	9	0	0	9	9	4	0	0	4	22
Total	**0**	**0**	**0**	**0**	**0**	**0**	**89**	**89**	**0**	**0**	**96**	**96**	**23**	**0**	**0**	**23**	**208**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
5:00	0	0	0	0	#DIV/0!	0	0	16	16	0.74	0	0	14	14	0.65	4	0	0	4	0.71	34
5:15	0	0	0	0		0	0	10	10		0	0	12	12		3	0	0	3		25
5:30	0	0	0	0		0	0	18	18		0	0	22	22		6	0	0	6		46
5:45	0	0	0	0		0	0	9	9		0	0	9	9		4	0	0	4		22
Total	0	0	0	0		0	0	53	53		0	0	57	57		17	0	0	17		127

Outerview Rd & South Entrance
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	2	0	0	2	0	0	0	0	2	0	0	2	0	0	0	0	4
4:15	3	0	3	6	0	0	0	0	0	0	0	0	0	0	2	2	8
4:30	4	0	1	5	0	0	0	0	4	0	0	4	0	0	1	1	10
4:45	5	0	2	7	0	0	0	0	2	0	0	2	0	0	0	0	9
5:00	2	0	4	6	0	0	0	0	1	0	0	1	0	0	0	0	7
5:15	3	0	0	3	0	0	0	0	1	0	0	1	0	0	3	3	7
5:30	1	0	0	1	0	0	0	0	3	0	0	3	0	0	1	1	5
5:45	0	0	2	2	0	0	0	0	1	0	0	1	0	0	2	2	5
Total	**20**	**0**	**12**	**32**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**14**	**0**	**0**	**9**	**9**	**55**

					PHF					PHF					PHF					PHF	
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
5:00	2	0	4	6	0.5	0	0	0	0	#DIV/0!	1	0	0	1	0.5	0	0	0	0	0.50	7
5:15	3	0	0	3		0	0	0	0		1	0	0	1		0	0	3	3		7
5:30	1	0	0	1		0	0	0	0		3	0	0	3		0	0	1	1		5
5:45	0	0	2	2		0	0	0	0		1	0	0	1		0	0	2	2		5
Total	6	0	6	12		0	0	0	0		6	0	0	6		0	0	6	6		24

Outerview Rd & North Entrance
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
4:00	1	0	0	1	0	0	0	0	3	0	0	3	0	0	2	2	6
4:15	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2	2	4
4:30	2	0	2	4	0	0	0	0	1	0	0	1	0	0	0	0	5
4:45	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2	3
5:00	1	0	3	4	0	0	0	0	0	0	0	0	0	0	1	1	5
5:15	1	0	0	1	0	0	0	0	1	0	0	1	0	0	2	2	4
5:30	2	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	1	2
Total	**7**	**0**	**9**	**16**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**6**	**0**	**0**	**10**	**10**	**32**

	PHF																				
Time	EB Left	EB Thru	EB Right	EB Total	PHF	WB Left	WB Thru	WB Right	WB Total	PHF	NB Left	NB Thru	NB Right	NB Total	PHF	SB Left	SB Thru	SB Right	SB Total	PHF	Int. Total
5:00	1	0	3	4	**0.5**	0	0	0	0	**#DIV/0!**	0	0	0	0	**0.5**	0	0	1	1	**0.50**	5
5:15	1	0	0	1		0	0	0	0		1	0	0	1		0	0	2	2		4
5:30	2	0	1	3		0	0	0	0		0	0	0	0		0	0	0	0		3
5:45	0	0	0	0		0	0	0	0		1	0	0	1		0	0	1	1		2
Total	4	0	4	8		0	0	0	0		2	0	0	2		0	0	4	4		14

City of Lee's Summit, MO

220 SE Green Street
Lee's Summit, Missouri 64063
Public Works Department

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : ChWa041918
Site Code : 00000000
Start Date : 4/19/2018
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

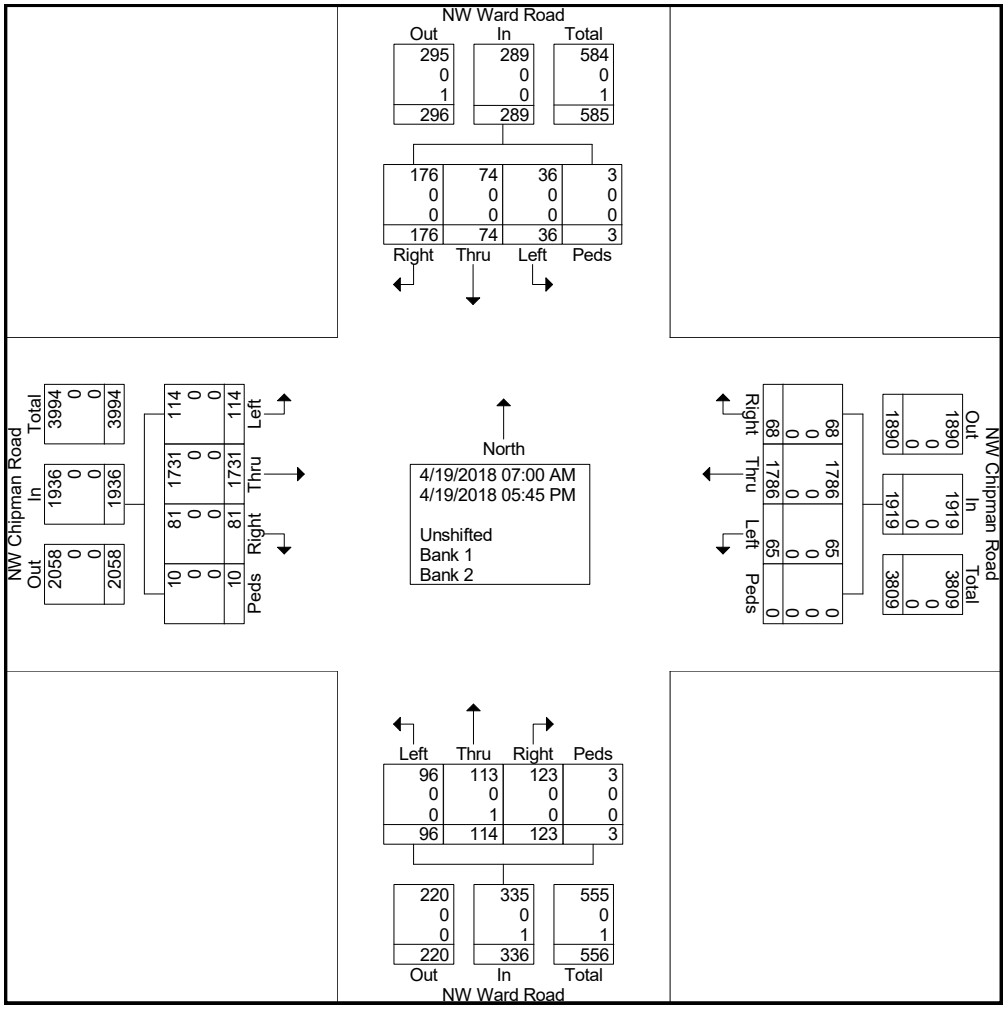
	NW Ward Road From North					NW Chipman Road From East					NW Ward Road From South					NW Chipman Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	12	3	0	1	16	5	97	2	0	104	10	7	7	0	24	3	99	13	1	116	260
07:15 AM	8	1	1	0	10	4	119	2	0	125	8	11	8	0	27	2	91	8	0	101	263
07:30 AM	18	5	1	0	24	6	116	5	0	127	8	15	6	0	29	5	107	23	0	135	315
07:45 AM	7	2	2	0	11	6	132	5	0	143	10	22	9	0	41	8	112	17	0	137	332
Total	45	11	4	1	61	21	464	14	0	499	36	55	30	0	121	18	409	61	1	489	1170
08:00 AM	11	3	2	0	16	4	108	2	0	114	11	11	6	0	28	2	95	10	0	107	265
08:15 AM	19	9	1	0	29	4	111	3	0	118	10	2	7	0	19	4	90	12	0	106	272
*** BREAK ***																					
Total	30	12	3	0	45	8	219	5	0	232	21	13	13	0	47	6	185	22	0	213	537
*** BREAK ***																					
04:30 PM	14	5	8	0	27	2	176	12	0	190	7	11	11	0	29	10	176	4	0	190	436
04:45 PM	22	15	2	0	39	0	201	6	0	207	14	11	10	0	35	10	160	6	0	176	457
Total	36	20	10	0	66	2	377	18	0	397	21	22	21	0	64	20	336	10	0	366	893
05:00 PM	16	11	6	0	33	18	160	5	0	183	10	1	9	0	20	7	186	5	1	199	435
05:15 PM	11	11	2	2	26	2	218	8	0	228	15	7	7	2	31	20	181	5	6	212	497
05:30 PM	15	4	7	0	26	15	161	7	0	183	10	6	12	1	29	5	221	4	1	231	469
05:45 PM	23	5	4	0	32	2	187	8	0	197	10	10	4	0	24	5	213	7	1	226	479
Total	65	31	19	2	117	37	726	28	0	791	45	24	32	3	104	37	801	21	9	868	1880
Grand Total	176	74	36	3	289	68	1786	65	0	1919	123	114	96	3	336	81	1731	114	10	1936	4480
Apprch %	60.9	25.6	12.5	1		3.5	93.1	3.4	0		36.6	33.9	28.6	0.9		4.2	89.4	5.9	0.5		
Total %	3.9	1.7	0.8	0.1	6.5	1.5	39.9	1.5	0	42.8	2.7	2.5	2.1	0.1	7.5	1.8	38.6	2.5	0.2	43.2	
Unshifted	176	74	36	3	289	68	1786	65	0	1919	123	113	96	3	335	81	1731	114	10	1936	4479
% Unshifted	100	100	100	100	100	100	100	100	0	100	100	99.1	100	100	99.7	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0.9	0	0	0.3	0	0	0	0	0	0

City of Lee's Summit, MO

220 SE Green Street
Lee's Summit, Missouri 64063
Public Works Department

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : ChWa041918
Site Code : 00000000
Start Date : 4/19/2018
Page No : 2

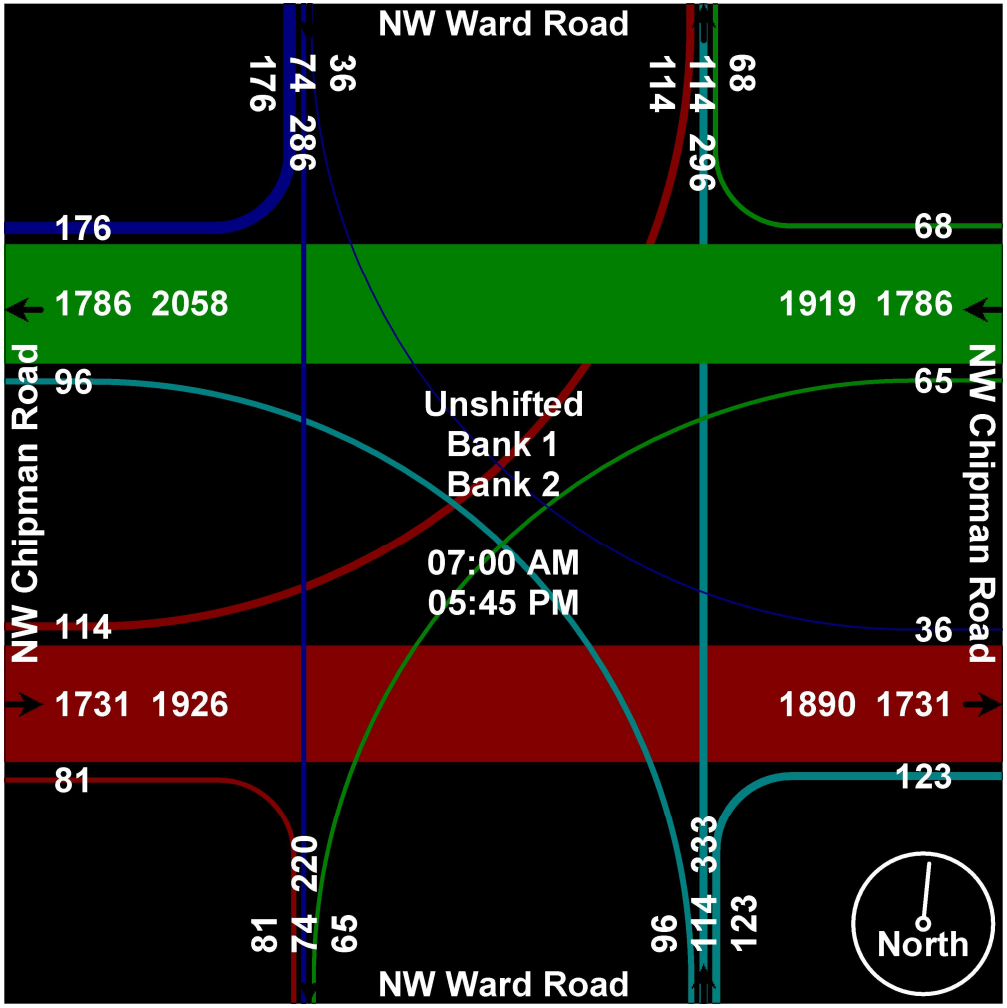


City of Lee's Summit, MO

220 SE Green Street
Lee's Summit, Missouri 64063
Public Works Department

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : ChWa041918
Site Code : 00000000
Start Date : 4/19/2018
Page No : 3

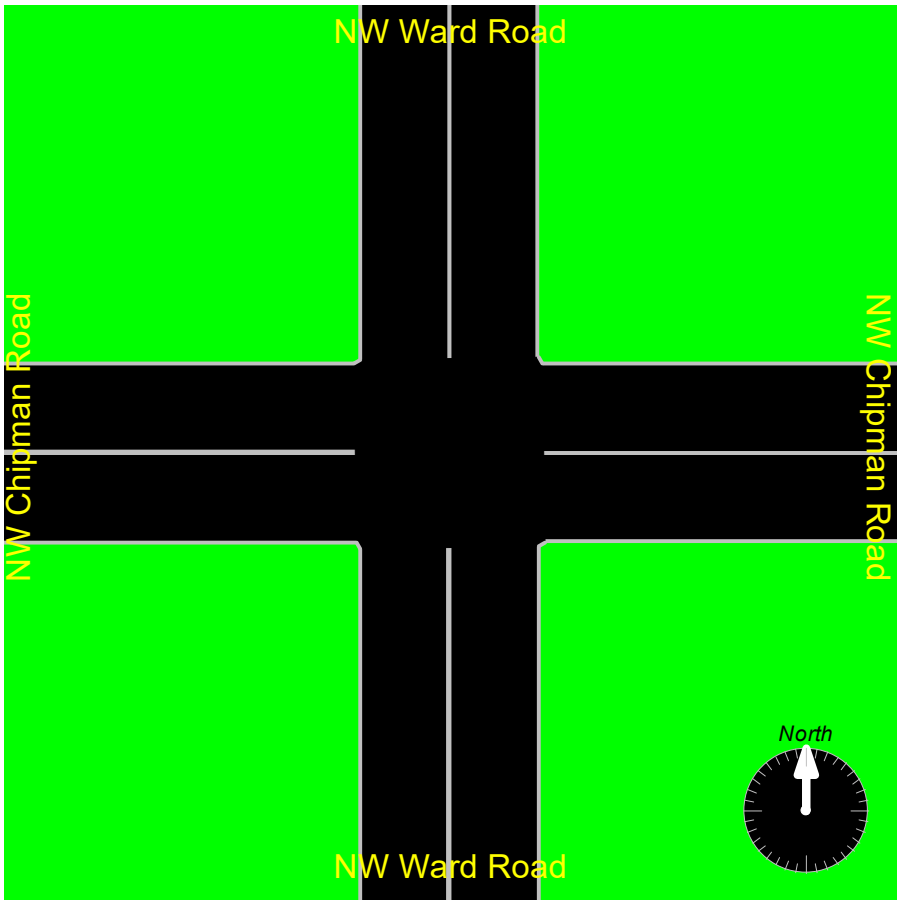


City of Lee's Summit, MO

220 SE Green Street
Lee's Summit, Missouri 64063
Public Works Department

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : ChWa041918
Site Code : 00000000
Start Date : 4/19/2018
Page No : 4



7/12/2022
Chipman & Ward Rd
AM

	Eastbound				Westbound				Northbound				Southbound				
Time	**Left**	**Thru**	**Right**	**Total**	**Left**	**Thru**	**Right**	**Total**	**Left**	**Thru**	**Right**	**Total**	**Left**	**Thru**	**Right**	**Total**	**Int. Total**
7:00	3	13	1	17	7	17	6	30	1	6	8	15	3	6	1	10	72
7:15	7	15	2	24	8	29	12	49	6	20	8	34	7	5	2	14	121
7:30	5	26	4	35	4	25	9	38	3	18	7	28	5	7	7	19	120
7:45	5	29	2	36	12	31	7	50	3	22	15	40	9	10	2	21	147
8:00	9	34	4	47	7	27	5	39	6	24	9	39	2	7	6	15	140
8:15	5	38	0	43	11	33	8	52	8	23	18	49	6	12	5	23	167
8:30	4	27	4	35	5	35	9	49	4	17	18	39	4	16	8	28	151
8:45	14	39	1	54	10	30	4	44	5	18	12	35	6	10	6	22	155
Total	**52**	**221**	**18**	**291**	**64**	**227**	**60**	**351**	**36**	**148**	**95**	**279**	**42**	**73**	**37**	**152**	**1073**

Time	**EB Left**	**EB Thru**	**EB Right**	**EB Total**	**WB Left**	**WB Thru**	**WB Right**	**WB Total**	**NB Left**	**NB Thru**	**NB Right**	**NB Total**	**SB Left**	**SB Thru**	**SB Right**	**SB Total**	**Int. Total**
8:00	9	34	4	47	7	27	5	39	6	24	9	39	2	7	6	15	140
8:15	5	38	0	43	11	33	8	52	8	23	18	49	6	12	5	23	167
8:30	4	27	4	35	5	35	9	49	4	17	18	39	4	16	8	28	151
8:45	14	39	1	54	10	30	4	44	5	18	12	35	6	10	6	22	155
Total	32	138	9	179	33	125	26	184	23	82	57	162	18	45	25	88	613

4/19/2018
Chipman & Ward Rd
AM

Time	**EB Left**	**EB Thru**	**EB Right**	**EB Total**	**WB Left**	**WB Thru**	**WB Right**	**WB Total**	**NB Left**	**NB Thru**	**NB Right**	**NB Total**	**SB Left**	**SB Thru**	**SB Right**	**SB Total**	**Int. Total**
7:30	23	107	5	135	5	116	6	127	6	15	8	29	1	5	18	24	315
7:45	17	112	8	137	5	132	6	143	9	22	10	41	2	2	7	11	332
8:00	10	95	2	107	2	108	4	114	6	11	11	28	2	3	11	16	265
8:15	12	90	4	106	3	111	4	118	7	2	10	19	1	9	19	29	272
Total	62	404	19	485	15	467	20	502	28	50	39	117	6	19	55	80	1184

	EB Left	**EB Thru**	**EB Right**	**EB Total**	**WB Left**	**WB Thru**	**WB Right**	**WB Total**	**NB Left**	**NB Thru**	**NB Right**	**NB Total**	**SB Left**	**SB Thru**	**SB Right**	**SB Total**
2022 Summary	32	138	9	179	33	125	26	184	23	82	57	162	18	45	25	88
2018 Summary	62	404	19	485	15	467	20	502	28	50	39	117	6	19	55	80
Numerical Diff	-30	-266	-10	-306	18	-342	6	-318	-5	32	18	45	12	26	-30	8

2018 vs 2018 w 1% over 4 years																
2018 Summary	62	404	19	485	15	467	20	502	28	50	39	117	6	19	55	80
2018 w 1% 4 yrs	65	420	20	505	16	486	21	522	29	52	41	122	6	20	57	83
Numerical Diff	-3	-16	-1	-20	-1	-19	-1	-20	-1	-2	-2	-5	0	-1	-2	-3

7/12/2022
Chipman & Ward Rd
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	**Left**	**Thru**	**Right**	**Total**	**Left**	**Thru**	**Right**	**Total**	**Left**	**Thru**	**Right**	**Total**	**Left**	**Thru**	**Right**	**Total**	**Int. Total**
4:00	14	60	2	76	14	66	11	91	9	9	13	31	10	13	7	30	228
4:15	15	46	7	68	13	44	9	66	4	16	19	39	14	16	6	36	209
4:30	13	64	3	80	13	59	3	75	13	27	17	57	20	25	7	52	264
4:45	24	74	9	107	19	44	10	73	7	12	17	36	26	35	6	67	283
5:00	17	61	4	82	16	47	9	72	4	27	16	47	11	33	7	51	252
5:15	8	59	0	67	18	59	7	84	5	13	14	32	15	29	2	46	229
5:30	15	75	6	96	11	38	11	60	9	23	10	42	18	24	6	48	246
5:45	15	48	3	66	11	42	12	65	3	16	14	33	17	27	4	48	212
Total	**121**	**487**	**34**	**642**	**115**	**399**	**72**	**586**	**54**	**143**	**120**	**317**	**131**	**202**	**45**	**378**	**1923**

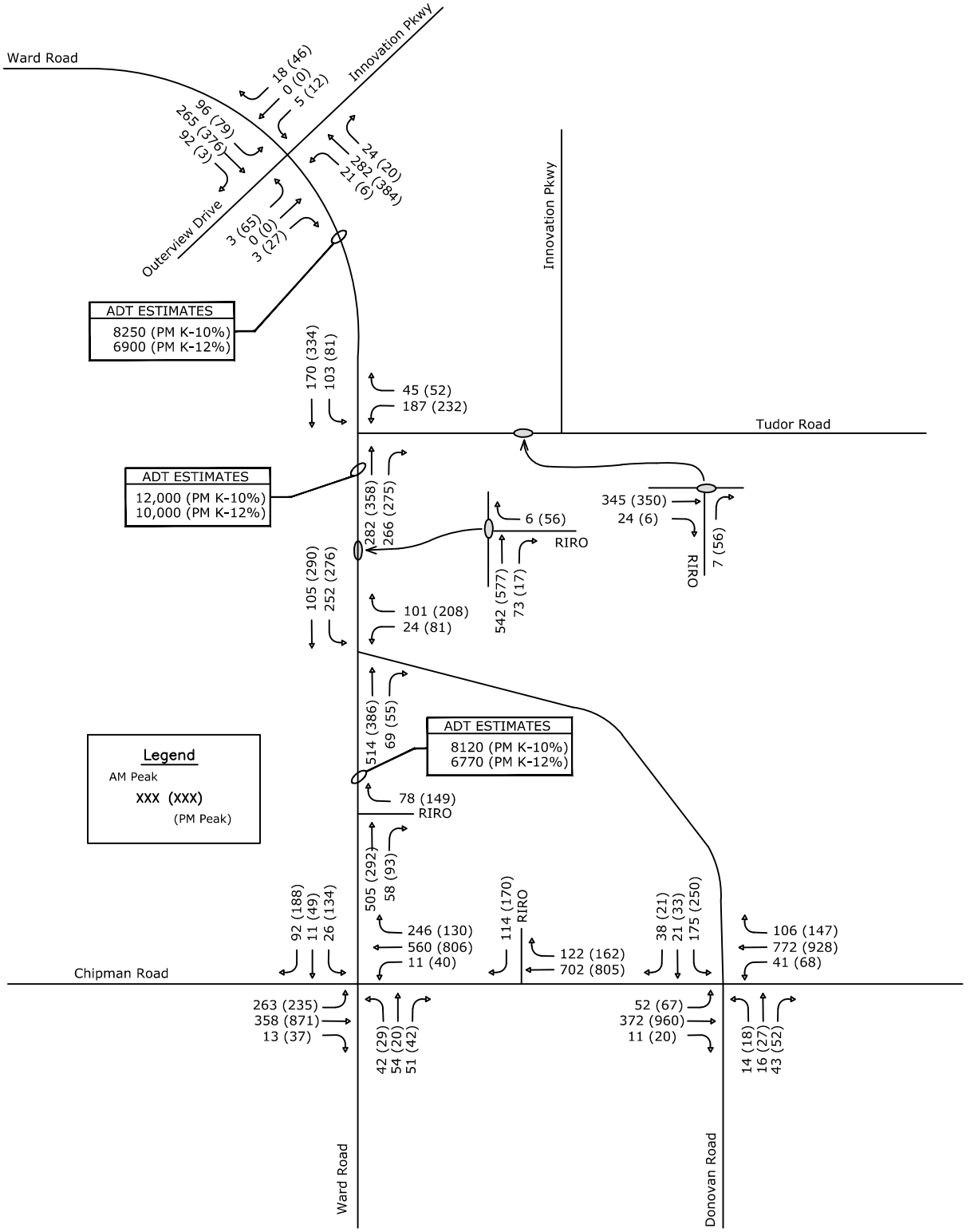
Time	**EB Left**	**EB Thru**	**EB Right**	**EB Total**	**WB Left**	**WB Thru**	**WB Right**	**WB Total**	**NB Left**	**NB Thru**	**NB Right**	**NB Total**	**SB Left**	**SB Thru**	**SB Right**	**SB Total**	**Int. Total**
5:00	17	61	4	82	16	47	9	72	4	27	16	47	11	33	7	51	252
5:15	8	59	0	67	18	59	7	84	5	13	14	32	15	29	2	46	229
5:30	15	75	6	96	11	38	11	60	9	23	10	42	18	24	6	48	246
5:45	15	48	3	66	11	42	12	65	3	16	14	33	17	27	4	48	212
Total	55	243	13	311	56	186	39	281	21	79	54	154	61	113	19	193	939

4/19/2018
Chipman & Ward Rd
PM

Time	**EB Left**	**EB Thru**	**EB Right**	**EB Total**	**WB Left**	**WB Thru**	**WB Right**	**WB Total**	**NB Left**	**NB Thru**	**NB Right**	**NB Total**	**SB Left**	**SB Thru**	**SB Right**	**SB Total**	**Int. Total**
5:00	5	186	7	198	5	160	18	183	9	1	10	20	6	11	16	33	434
5:15	5	181	20	206	8	218	2	228	7	7	15	29	2	11	11	24	487
5:30	4	221	5	230	7	161	15	183	12	6	10	28	7	4	15	26	467
5:45	7	213	5	225	8	187	2	197	4	10	10	24	4	5	23	32	478
Total	21	801	37	859	28	726	37	791	32	24	45	101	19	31	65	115	1866

	EB Left	**EB Thru**	**EB Right**	**EB Total**	**WB Left**	**WB Thru**	**WB Right**	**WB Total**	**NB Left**	**NB Thru**	**NB Right**	**NB Total**	**SB Left**	**SB Thru**	**SB Right**	**SB Total**
2022 Summary	55	243	13	311	56	186	39	281	21	79	54	154	61	113	19	193
2018 Summary	21	801	37	859	28	726	37	791	32	24	45	101	19	31	65	115
Numerical Diff	34	-558	-24	-548	28	-540	2	-510	-11	55	9	53	42	82	-46	78

2018 vs 2018 w 1% over 4 years																
2018 Summary	21	801	37	859	28	726	37	791	32	24	45	101	19	31	65	115
2018 w 1% 4 yrs	22	834	39	894	29	755	39	823	33	25	47	105	20	32	68	120
Numerical Diff	-1	-33	-2	-35	-1	-29	-2	-32	-1	-1	-2	-4	-1	-1	-3	-5



McCLURE ENGINEERING Co.
building strong communities.

Projected Volumes, Phases 1 & 2 & 3
Apartments, Commercial, Offices, Summit Orchards
Traffic Impact Study
Lee's Summit, MO

NORTH

FIGURE 2

Existing plus Approved Development Conditions
Peak Hour Volumes

Tudor Road Development
Lee's Summit, MO

LEGEND

AM (PM) Peak Hour Volume

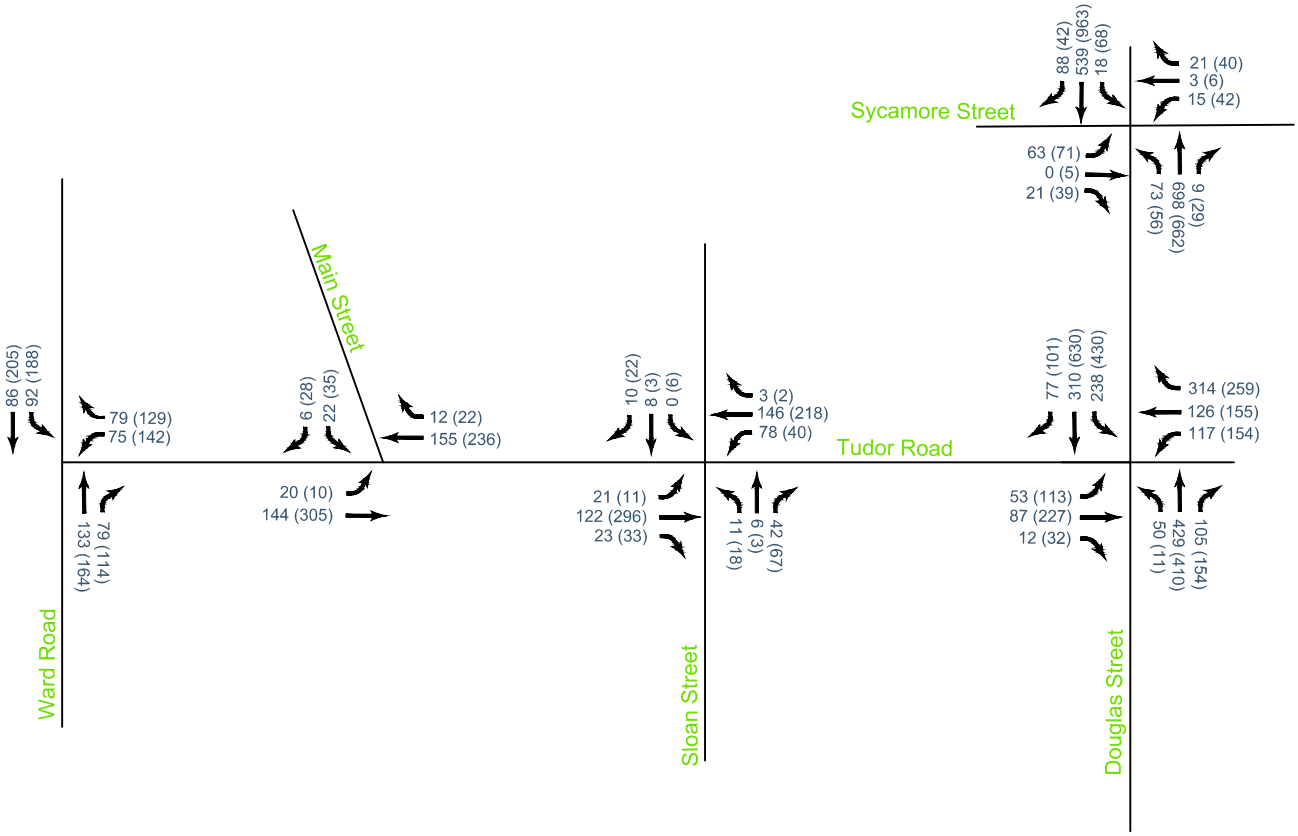


FIGURE 6

Phase 1
Trip Distribution
Tudor Road Development
Lee's Summit, MO

olsson

LEGEND

AM (PM) Peak Hour Vehicle Trips (Car)

[AM (PM)] Peak Hour Vehicle Trips (Truck)

XX% AM/PM Car Trip Distribution Percentages

XX% AM/PM Truck Trip Distribution Percentages

FIGURE 10

Phase 2
Trip Distribution
Tudor Road Development
Lee's Summit, MO

olsson

LEGEND

AM (PM) — AM (PM) Peak Hour Car Trips

[AM (PM)] — AM (PM) Peak Hour Truck Trips

XX% — AM/PM Car Trip Distribution Percentages

XX% — AM/PM Truck Trip Distribution Percentages

Summit Orchard West Trip Generation

ITE Trip Generation Manual - 11th Edition

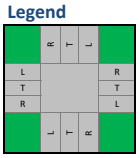
Highlighted text indicates trips used in Synchro and Warrant Analysis

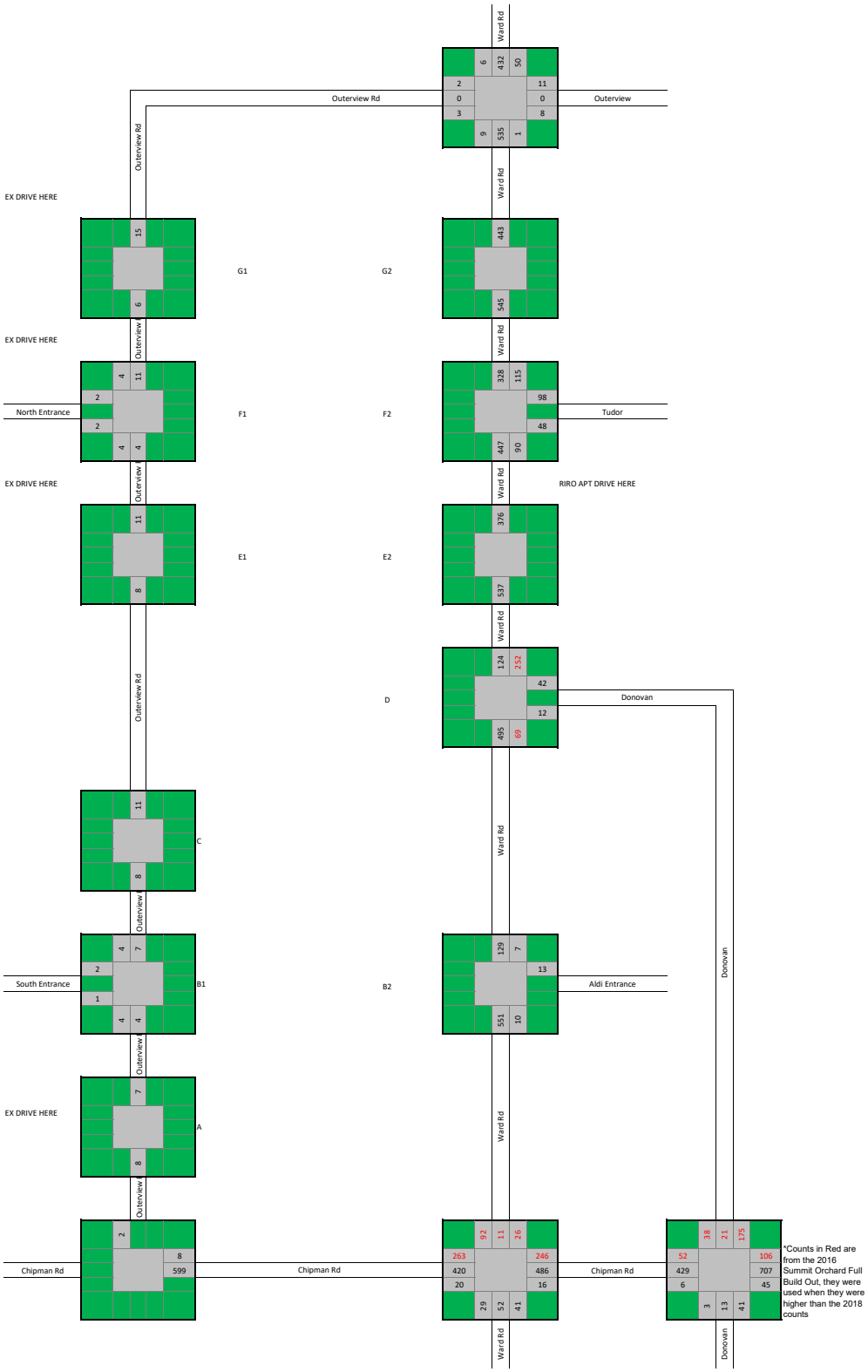
														Primary		Pass-by	
Land Use	**ITE Code**	**Size**	**Units**	**Equation**	**Trips (Eq.)**	**Av. Rate**	**Trips (Av. Rate)**	**In%**	**Out%**	**Trips In**	**Trips Out**	**Primary%**	**Passby%**	**Trips In**	**Trips Out**	**Trips In**	**Trips Out**
PHASE I																	
Multifamily Housing (Low-Rise) **(Weekday)**	220	323	Dwelling Units	T=6.41(X)+75.31	2146	6.74	2177	50%	50%	1073	1073						
Fast-Food Restaurant with Drive-Through Window	934	12.3	1000 Sq Ft	n/a	n/a	467.48	5750	50%	50%	2875	2875						
										3948	3948						
Multifamily Housing (Low-Rise) **(AM)**	220	323	Dwelling Units	T=0.31(X)+22.85	123	0.4	129	24%	76%	30	93						
Fast-Food Restaurant with Drive-Through Window **(AM)**	934	12.3	1000 Sq Ft	n/a	n/a	44.61	549	51%	49%	280	269	51%	49%	143	137	137	132
										310	362						
Multifamily Housing (Low-Rise) **(PM)**	220	323	Dwelling Units	T=0.43(X)+20.55	159	0.51	165	63%	37%	100	59						
Fast-Food Restaurant with Drive-Through Window **(PM)**	934	12.3	1000 Sq Ft	n/a	n/a	33.03	406	52%	48%	211	195	50%	50%	106	98	105	97
										311	254						
PHASE II																	
Warehousing **(Weekday)**	150	123	1000 Sq Ft	T=1.58(X)+38.29	233	1.71	210	50%	50%	117	116						
Warehousing **(AM)**	150	123	1000 Sq Ft	T=0.12(X)+23.62	38	0.17	21	77%	23%	29	9						
Warehousing **(PM)**	150	123	1000 Sq Ft	T=0.12(X)+26.48	41	0.18	22	28%	72%	11	30						
Summit Orchard Trip Gen																	
Drive-In Bank **(Weekday)**	912	5	1000 Sq Ft	n/a	n/a	100.35	502	50%	50%	251	251						
Fine Dining Restaurant	931	5	1000 Sq Ft	n/a	n/a	83.84	419	50%	50%	210	209						
High-Turnover (Sit-Down) Restaurant	932	4.5	1000 Sq Ft	n/a	n/a	107.2	482	50%	50%	241	241						
Coffee/Donut Shop with Drive-Through Window	937	1.4	1000 Sq Ft	n/a	n/a	533.57	747	50%	50%	374	373						
										1076	1074						
Drive-In Bank **(AM)**	912	5	1000 Sq Ft	n/a	n/a	9.95	50	50%	50%	25	25						
High-Turnover (Sit-Down) Restaurant	932	4.5	1000 Sq Ft	n/a	n/a	11.61	52	55%	45%	29	23						
Coffee/Donut Shop with Drive-Through Window	937	1.4	1000 Sq Ft	n/a	n/a	85.88	120	51%	49%	61	59						
										115	107						
Drive-In Bank **(PM)**	912	5	1000 Sq Ft	n/a	n/a	21.01	105	50%	50%	53	52						
Fine Dining Restaurant	931	5	1000 Sq Ft	n/a	n/a	7.8	39	67%	33%	26	13						
High-Turnover (Sit-Down) Restaurant	932	4.5	1000 Sq Ft	n/a	n/a	6.81	31	61%	39%	19	12						
Coffee/Donut Shop with Drive-Through Window	937	1.4	1000 Sq Ft	n/a	n/a	38.99	55	50%	50%	28	27						
										126	104						

AM Peak Hour Traffic

2022 Counts plus increased 2018 counts at Chipman and Ward, intersections balanced

Legend



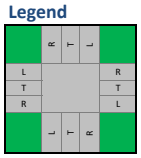


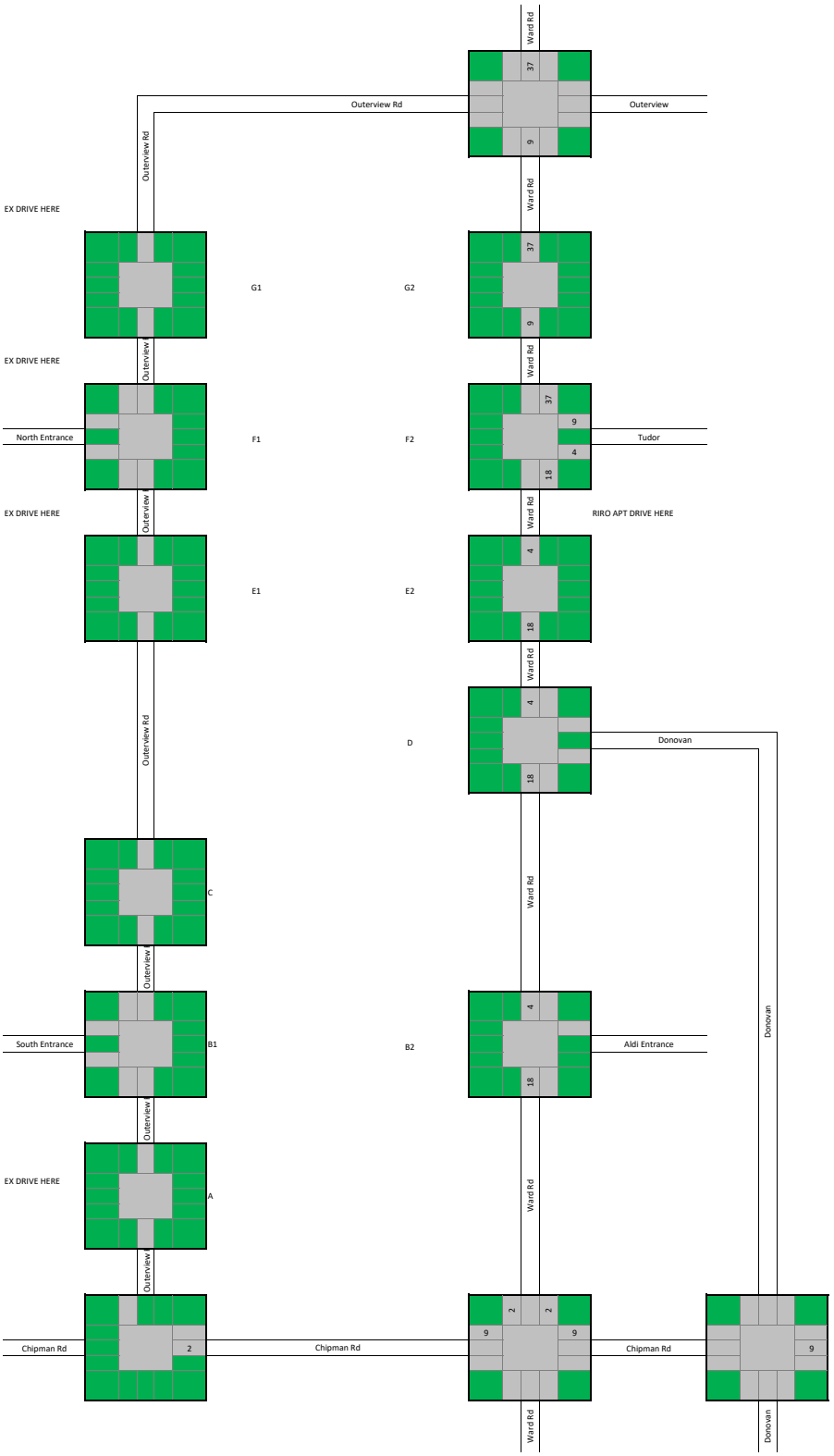
*Counts in Red are from the 2016 Summit Orchard Full Build Out, they were used when they were higher than the 2018 counts

AM Lee's Summit Logistics Traffic

2021 Lee's Summit Logistics TIS (includes Phase I and Phase II)

Legend

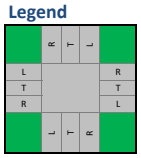


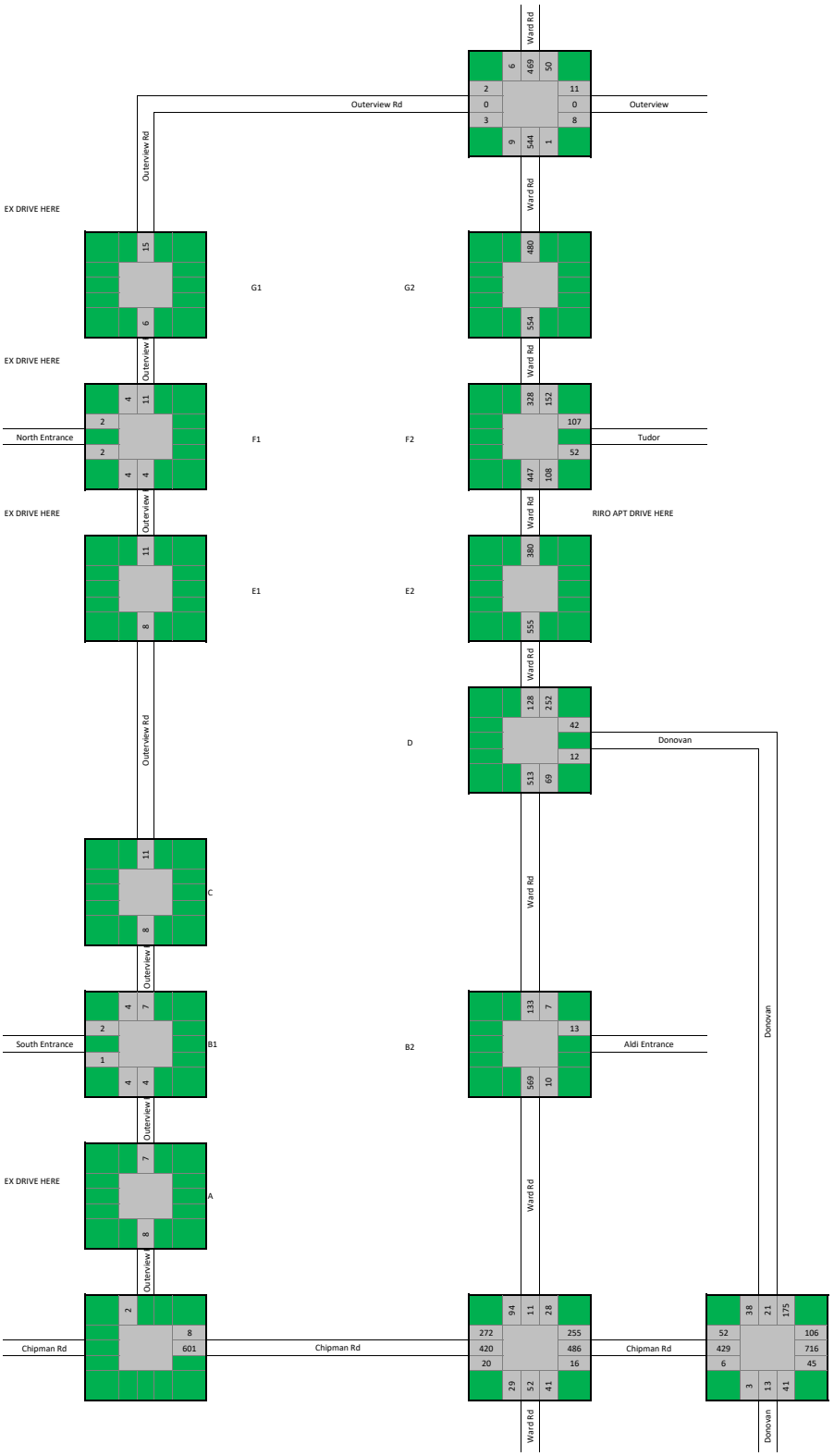


AM Peak Hour Traffic Trips + Approved Developments

Includes 2022, 2018 with 1% increase, Lee's Summit Logistics, and Summit Orchard

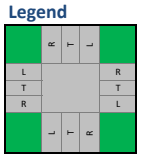
Legend

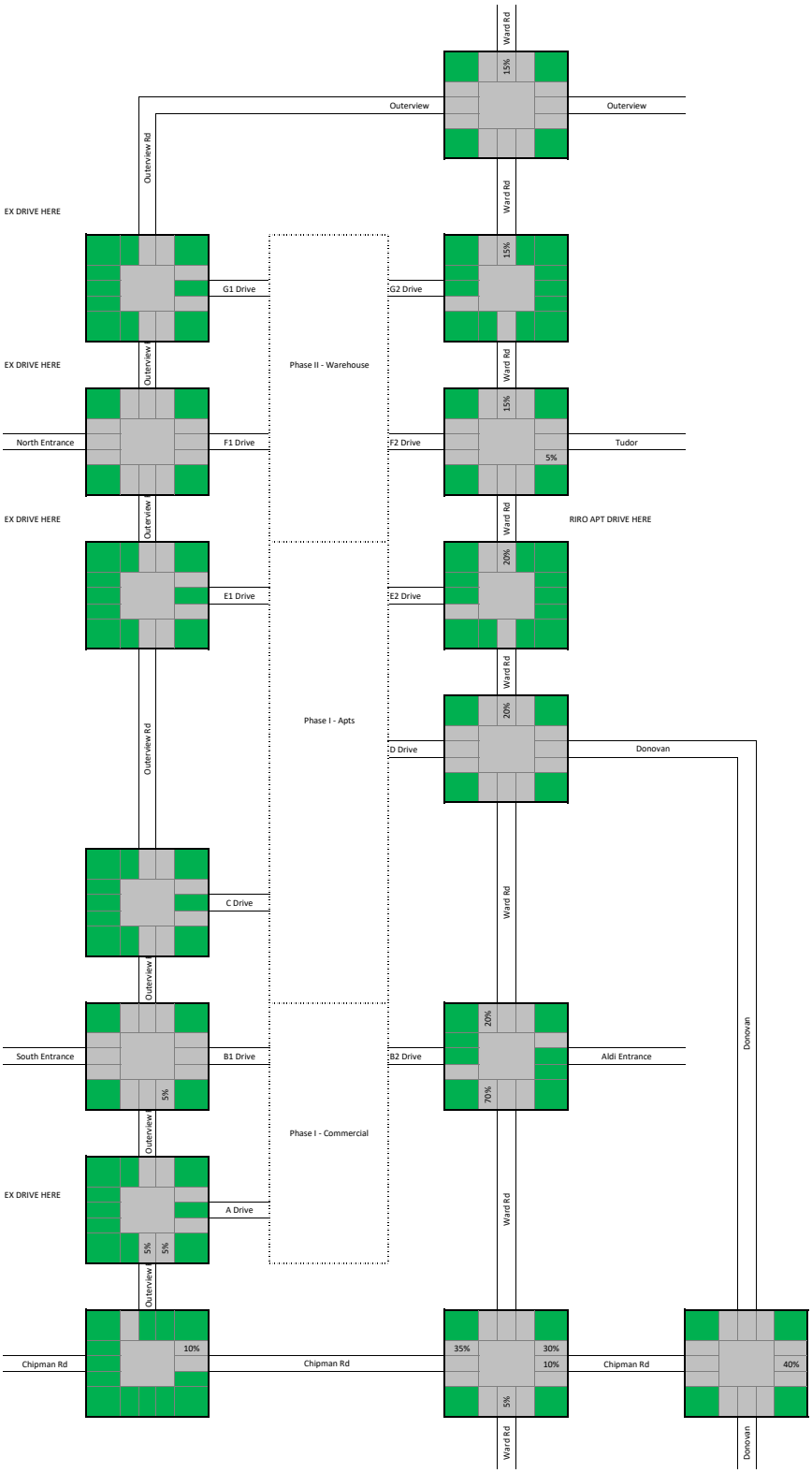




AM Distribution In - Commercial (Phase I) PRIMARY

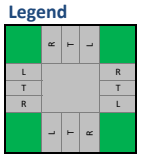
Legend

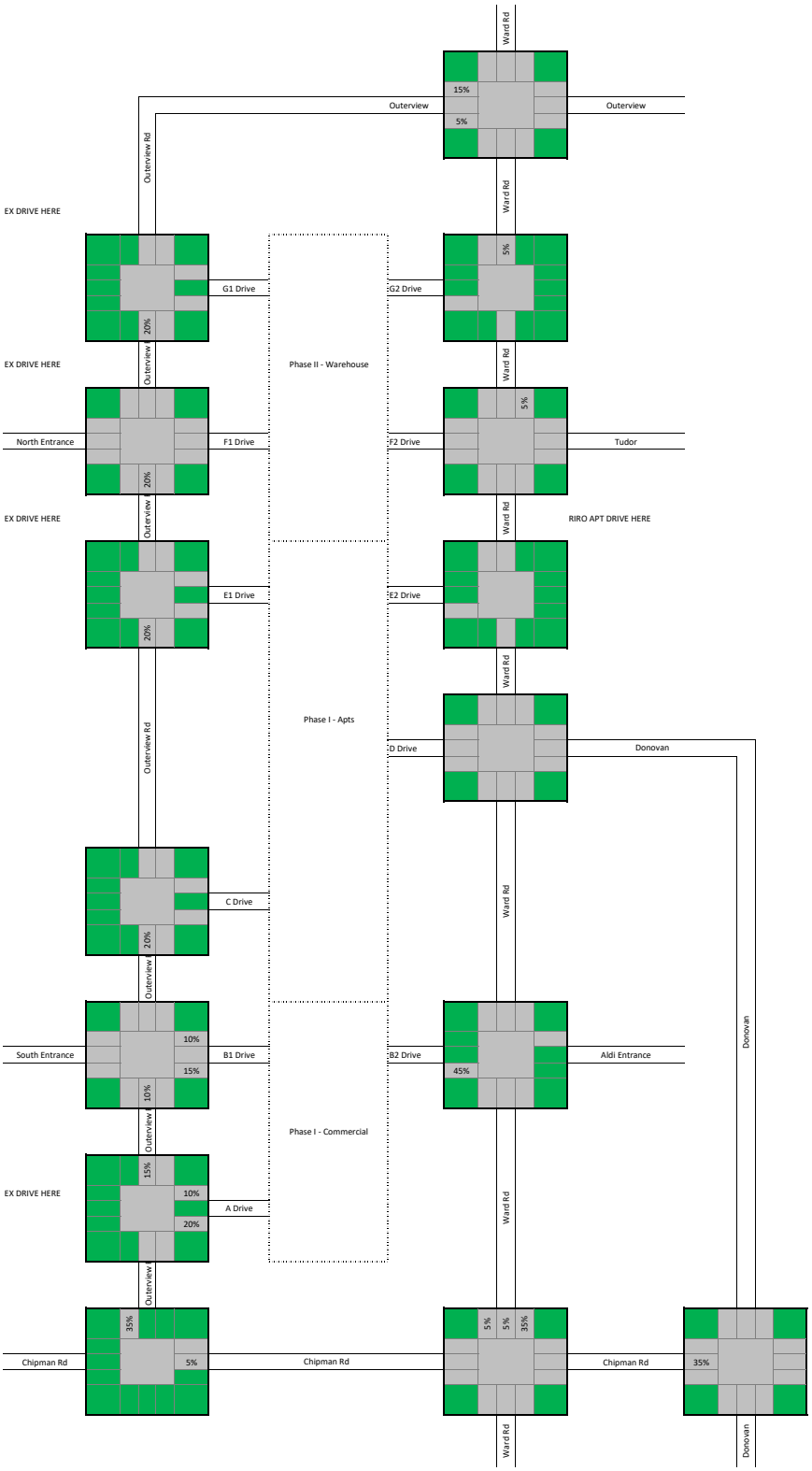




AM Distribution Out - Commercial (Phase I) PRIMARY

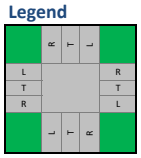
Legend

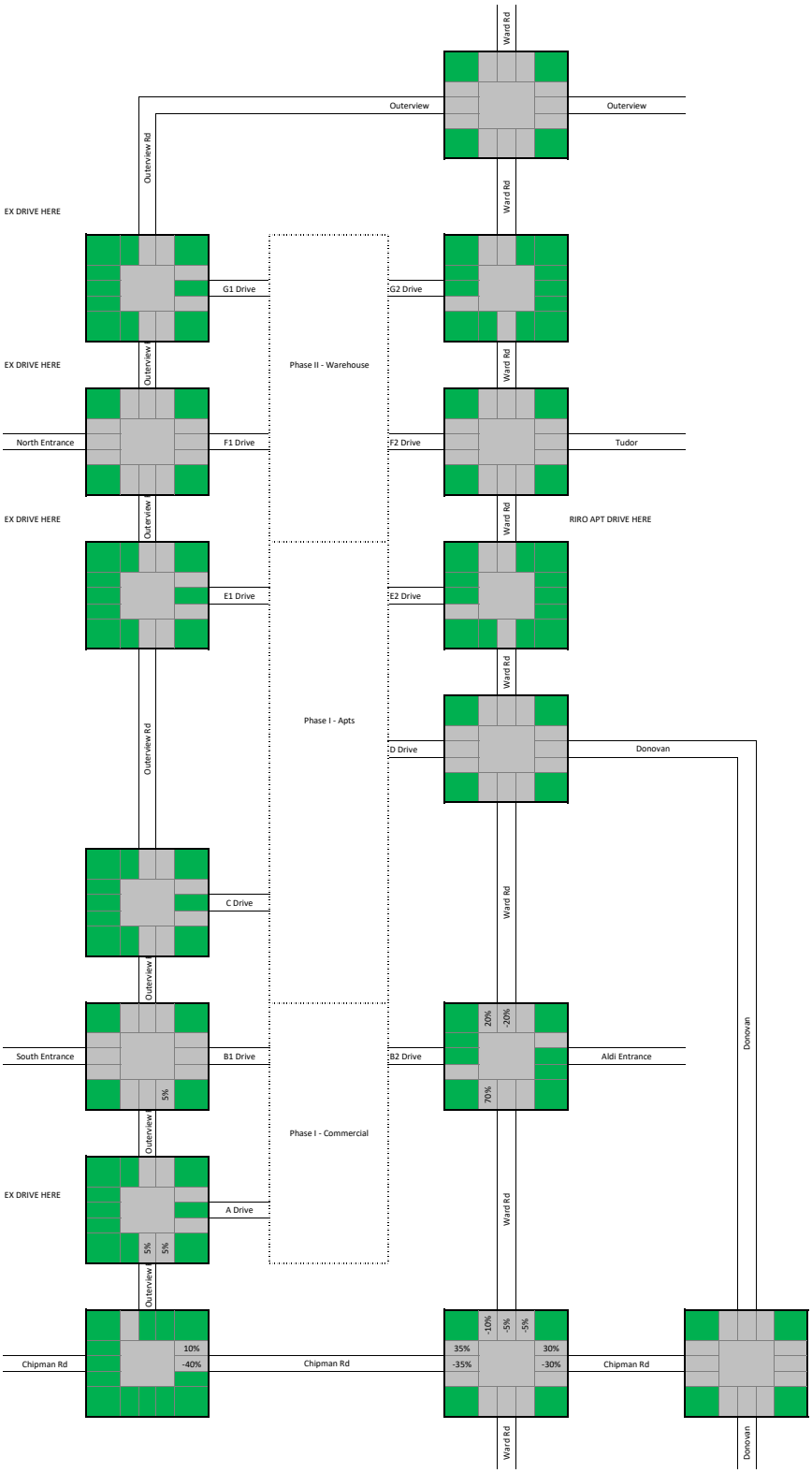




AM Distribution In - Commercial (Phase I) PASS-BY

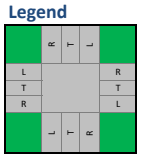
Legend

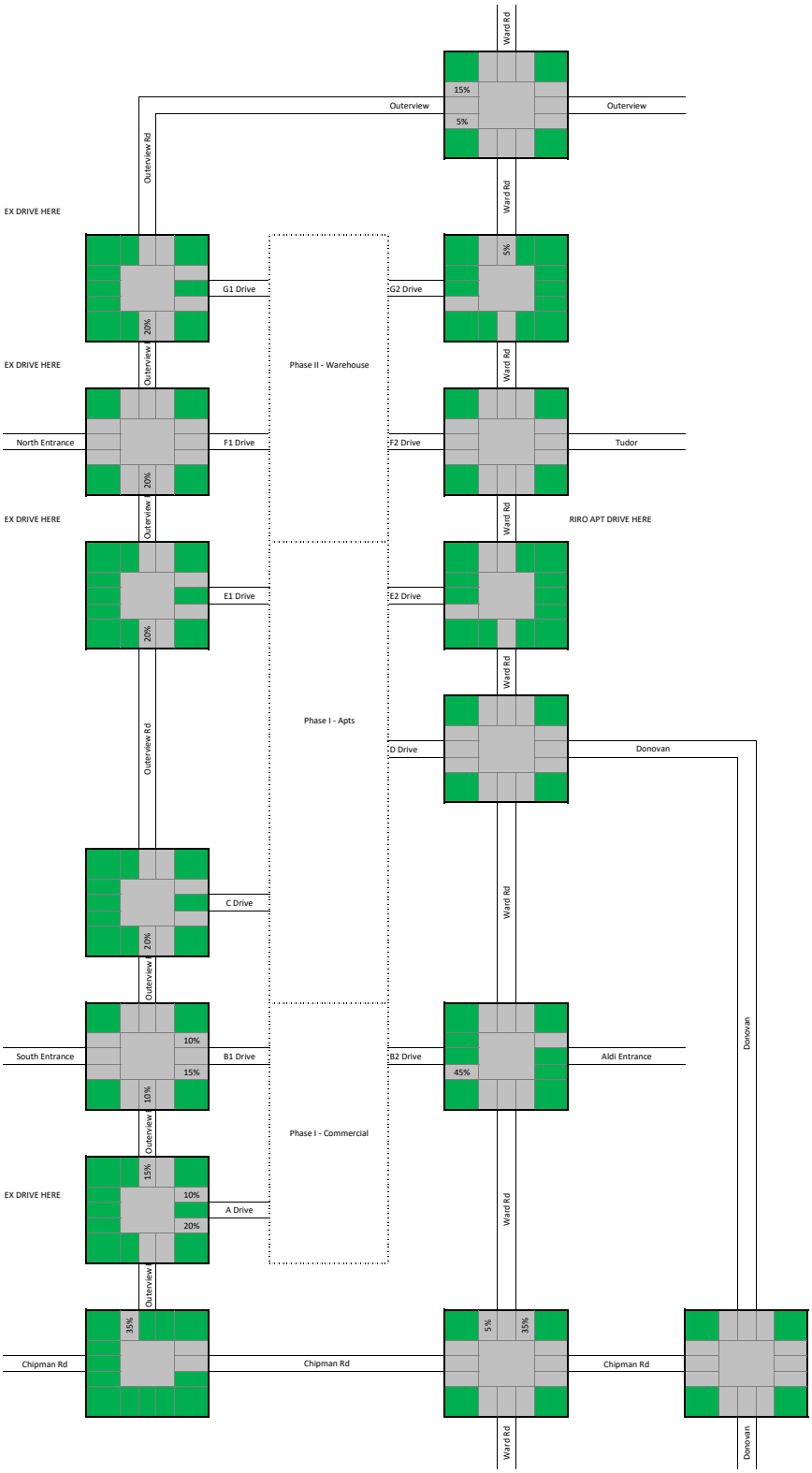




AM Distribution Out - Commercial (Phase I) PASS-BY

Legend

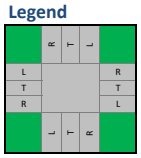


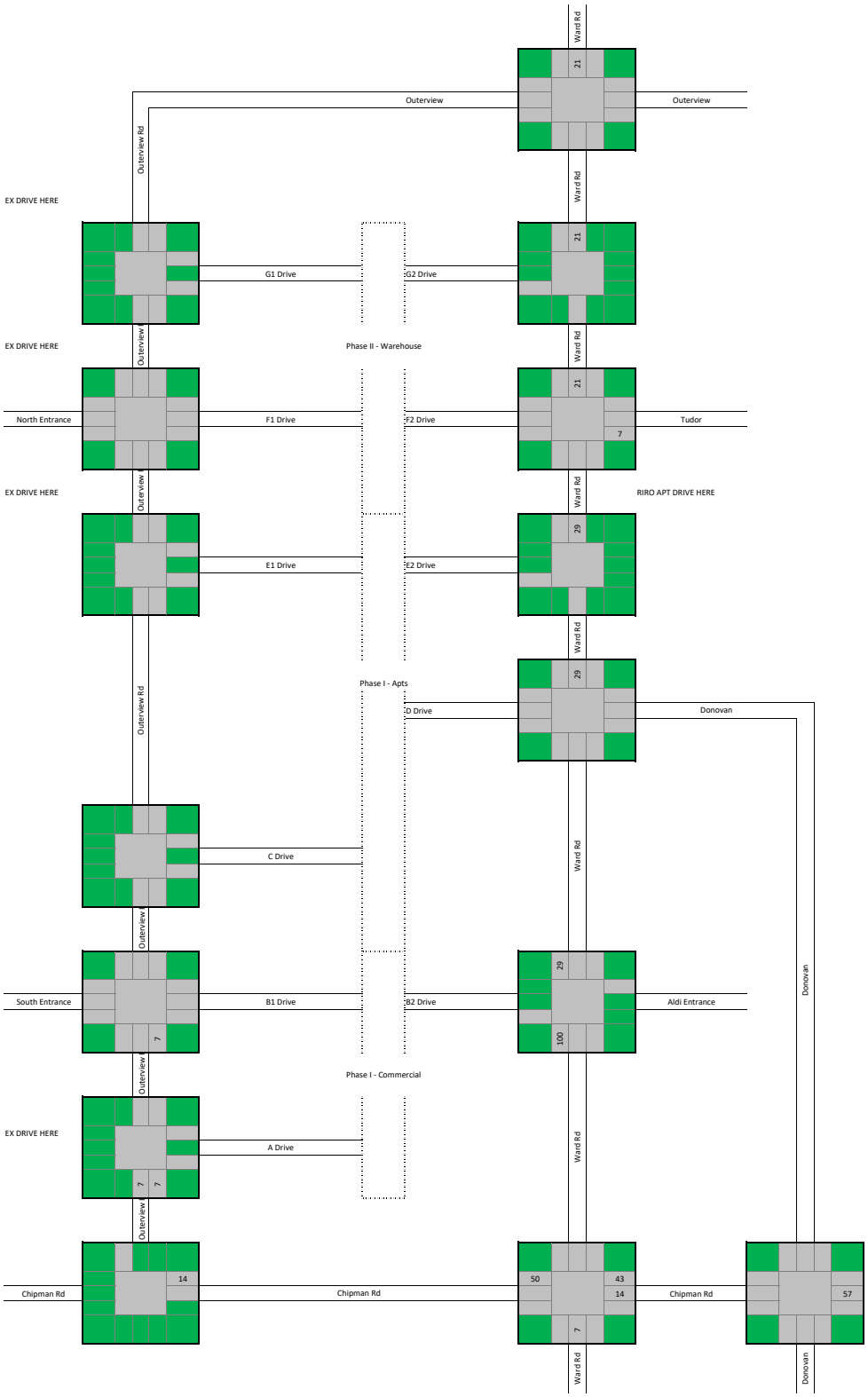


AM Trips In - Commercial (Phase I)
PRIMARY

Trips
143

Legend

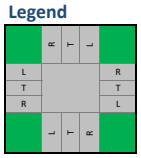


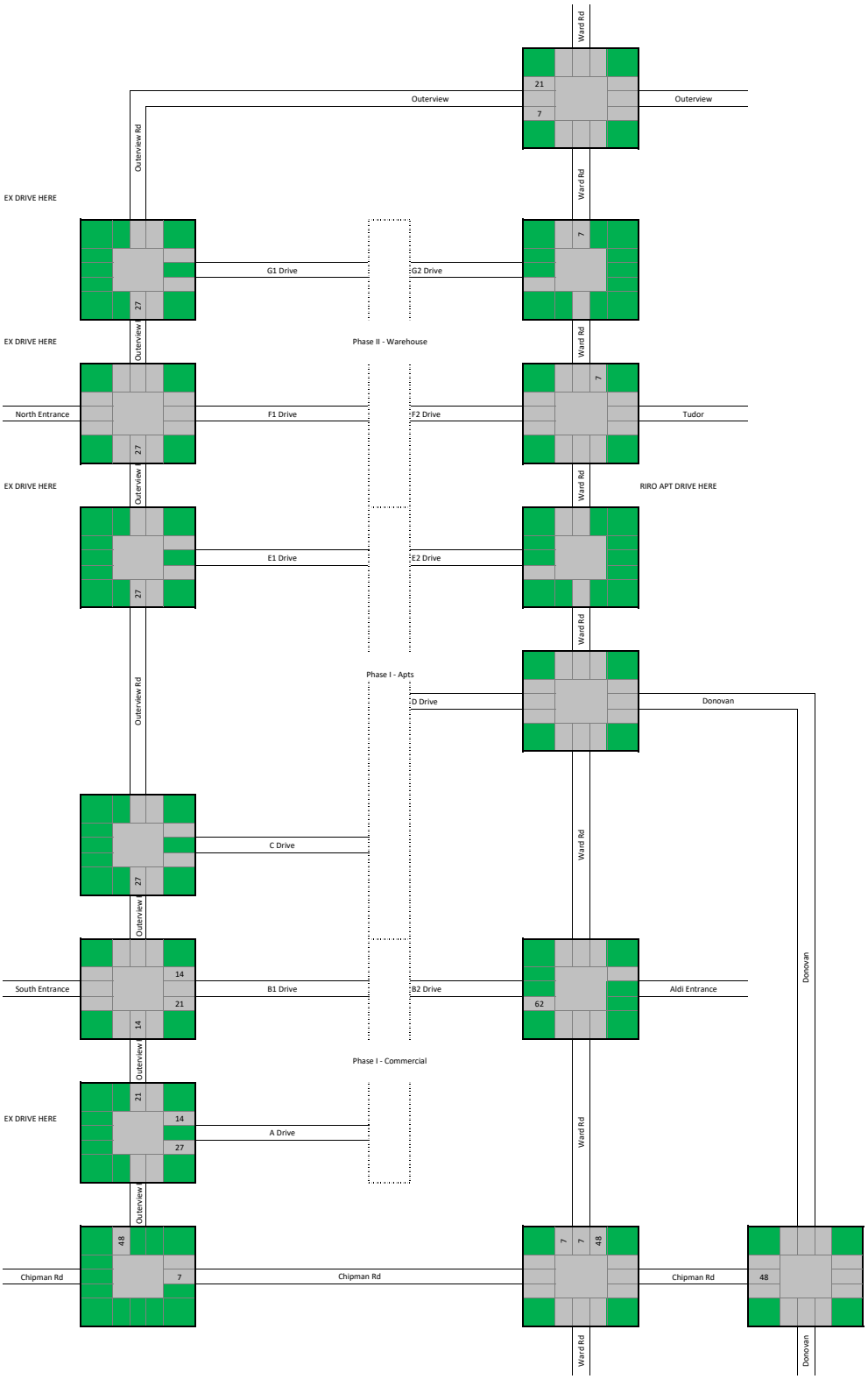


AM Trips Out - Commercial (Phase I)
PRIMARY

Trips
137

Legend

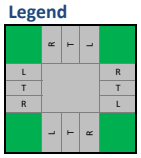


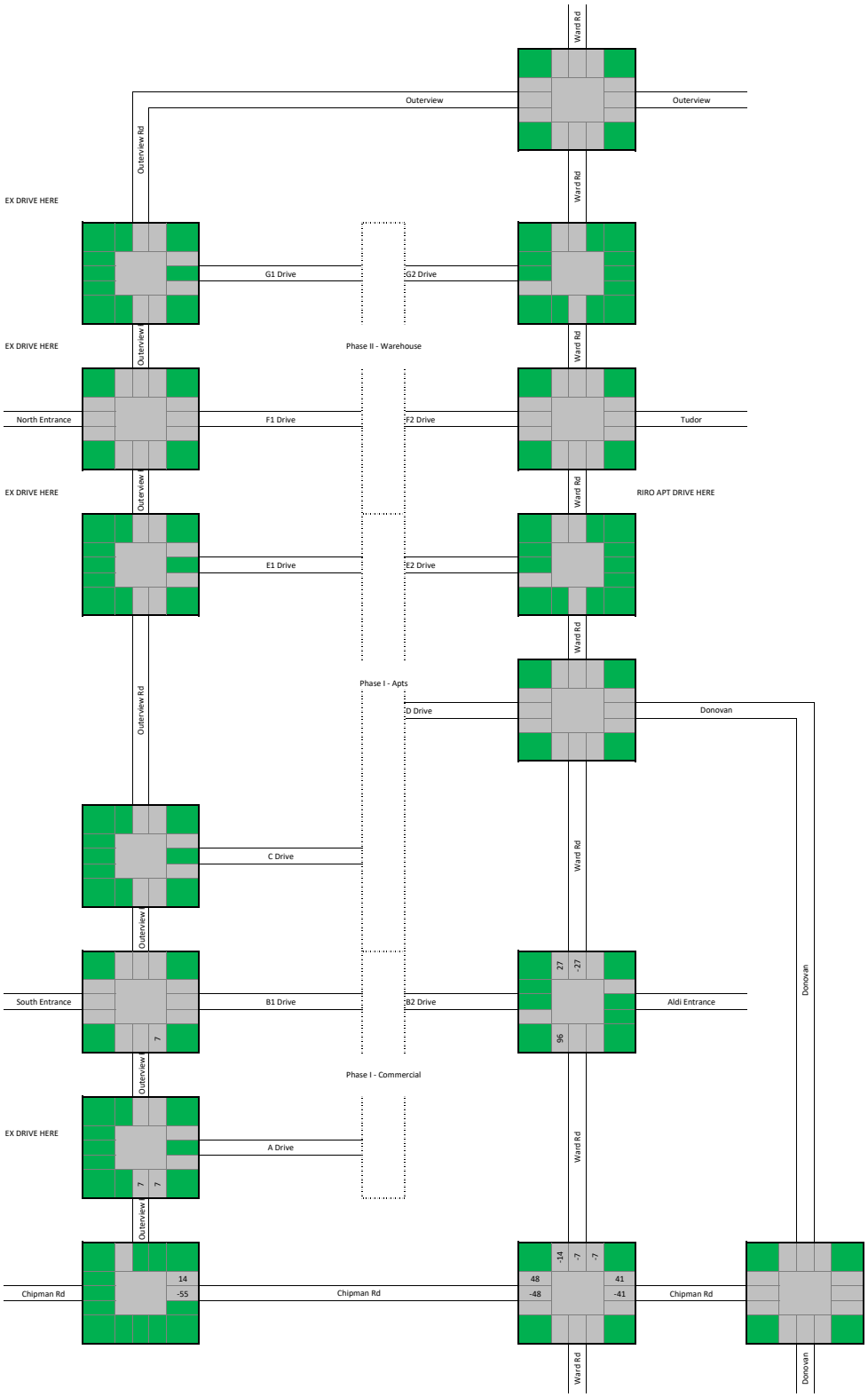


AM Trips In - Commercial (Phase I)
PASS-BY

Trips
137

Legend

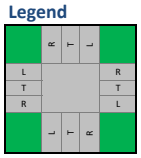


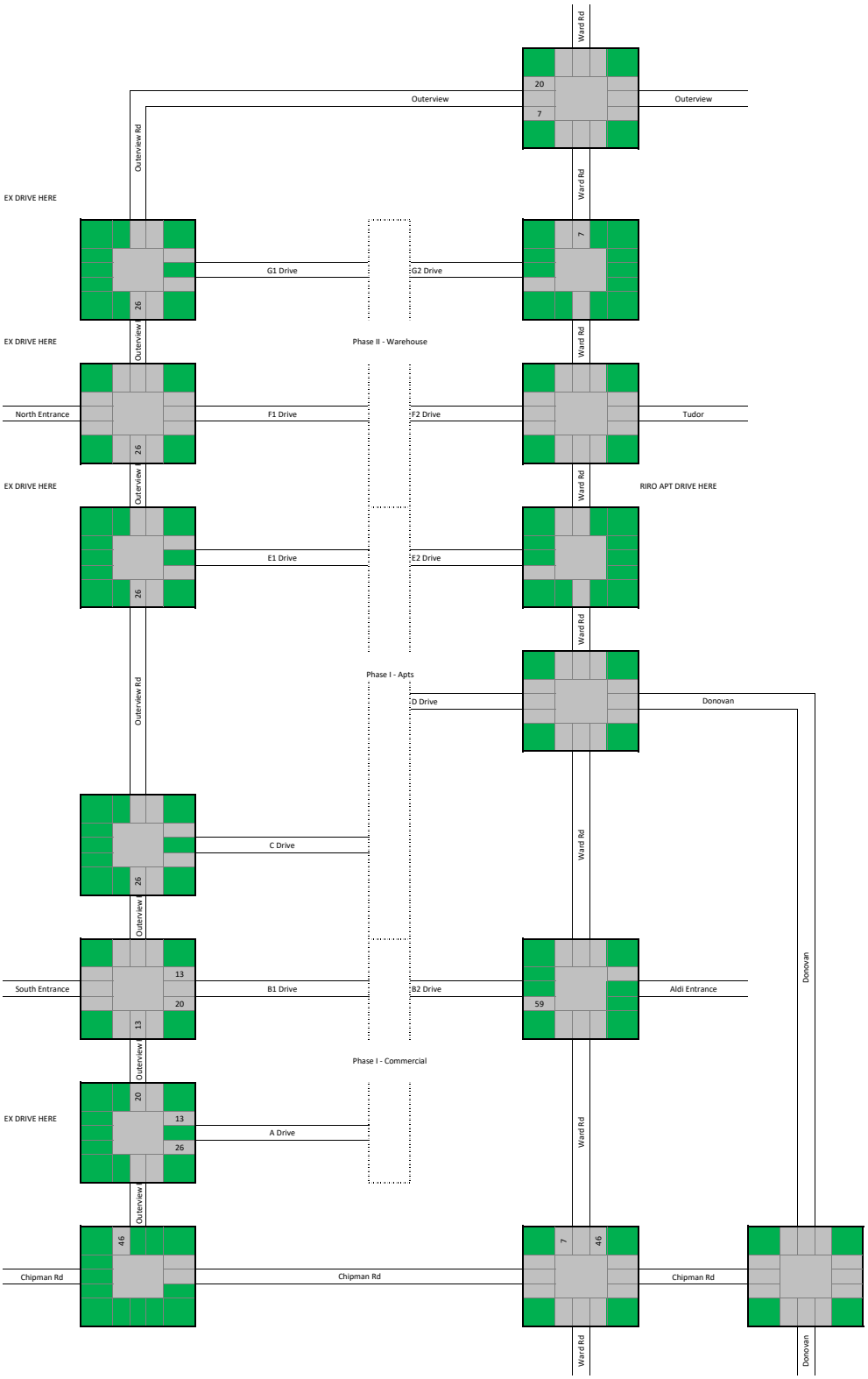


AM Trips Out - Commercial (Phase I)
PASS-BY

Trips
132

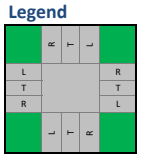
Legend

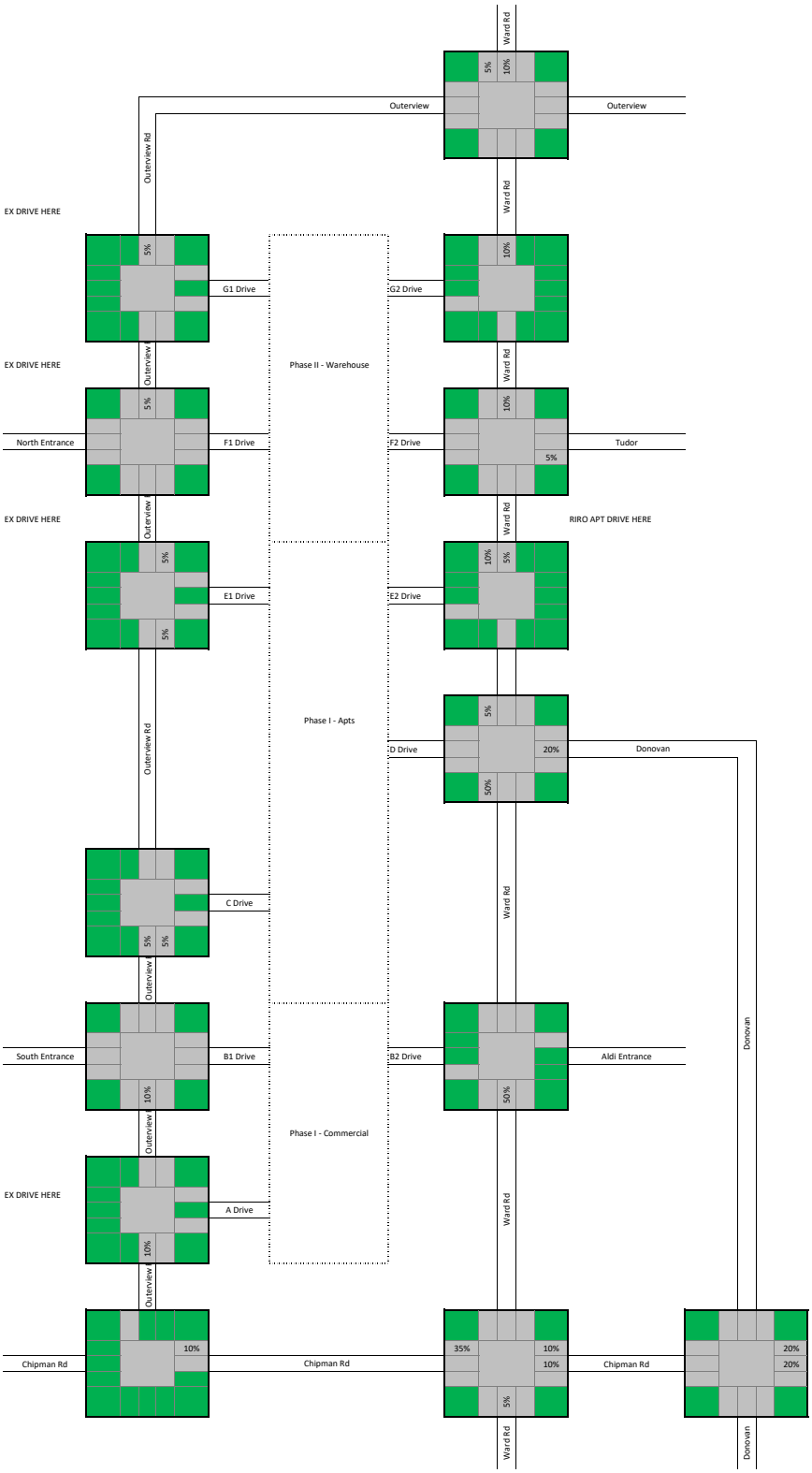




AM Distribution In - Residential (Phase I)

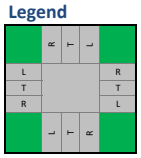
Legend

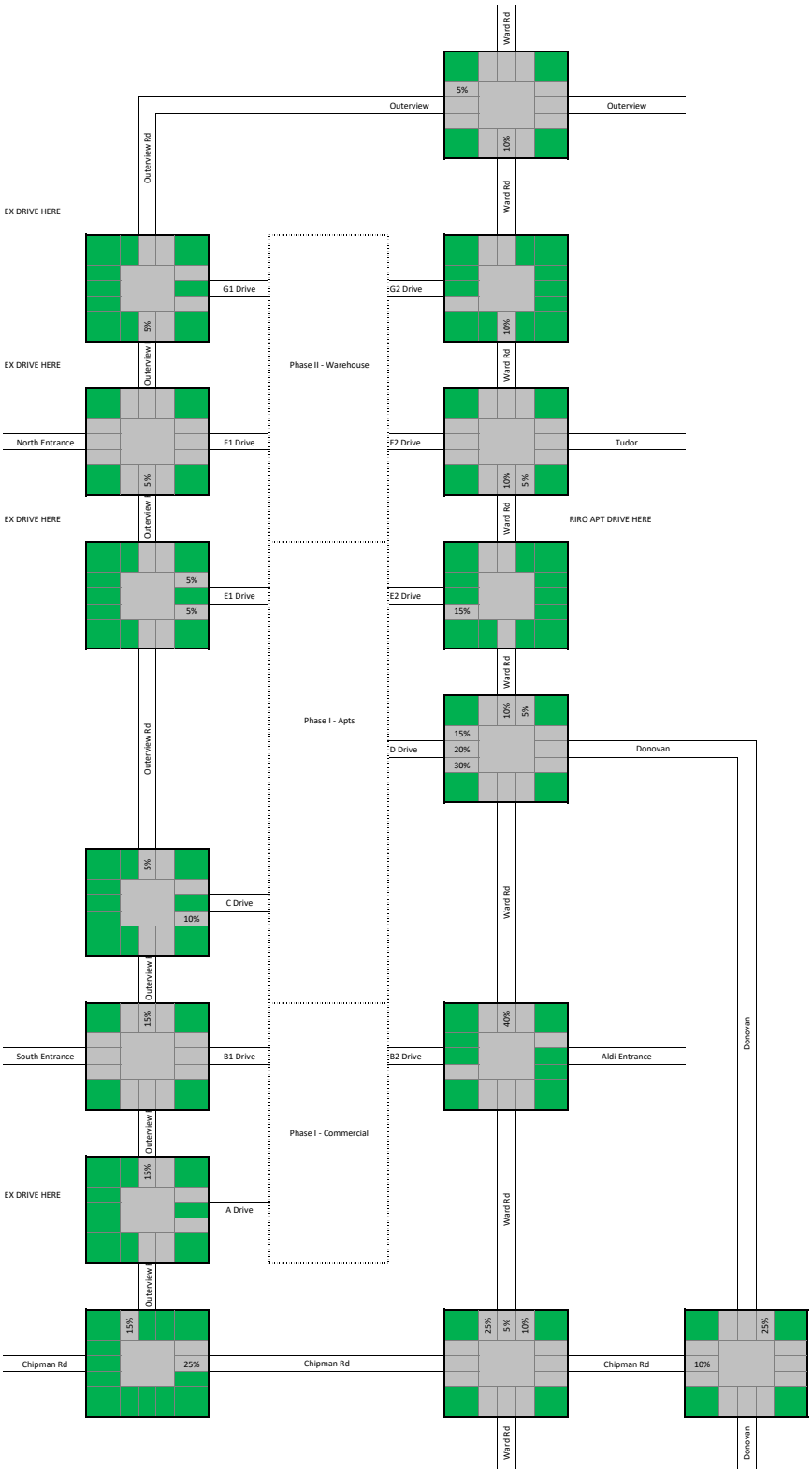




AM Distribution Out - Residential (Phase I)

Legend

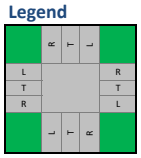


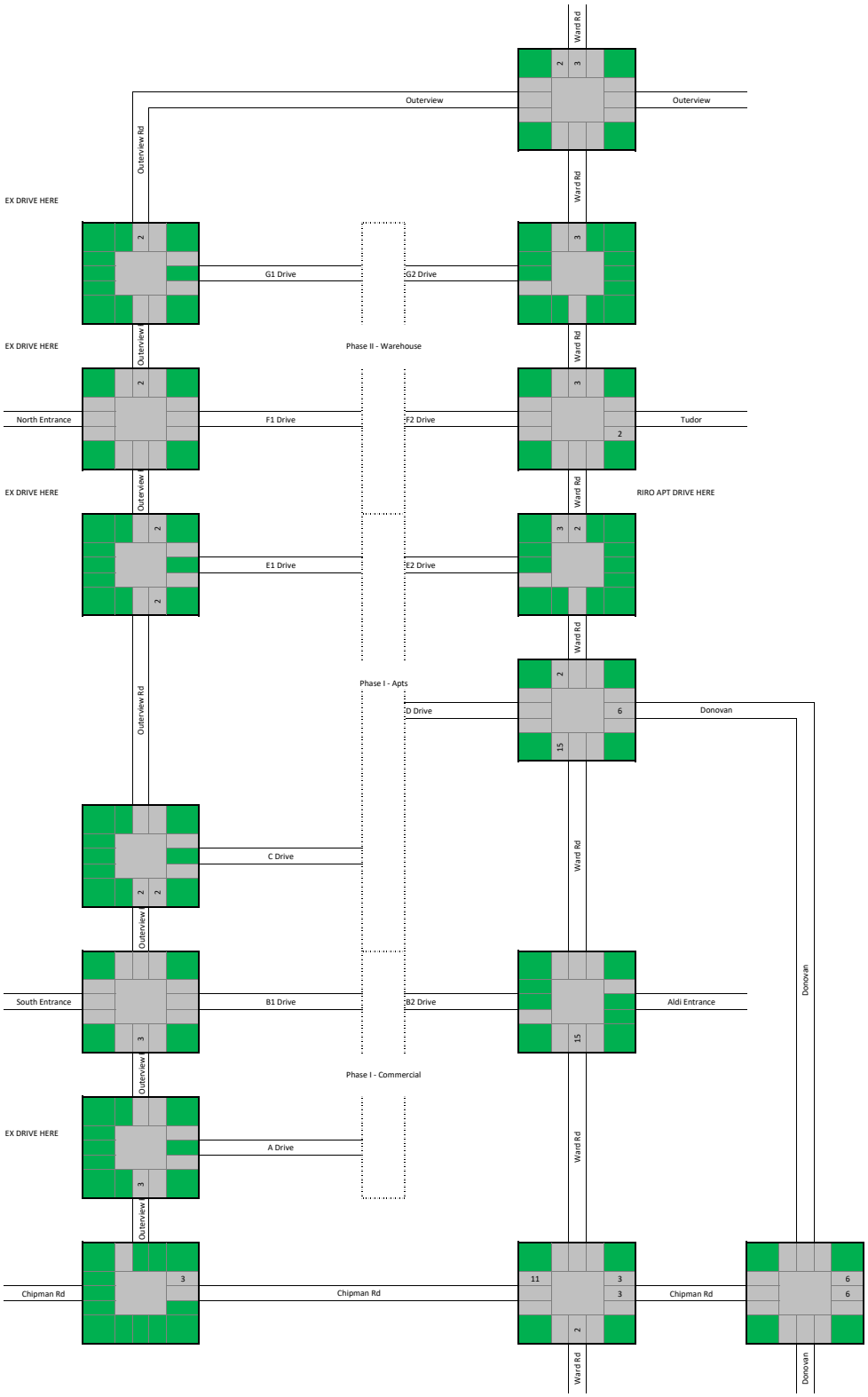


AM Trips In - Residential (Phase I)

Trips
30

Legend

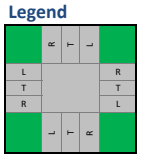


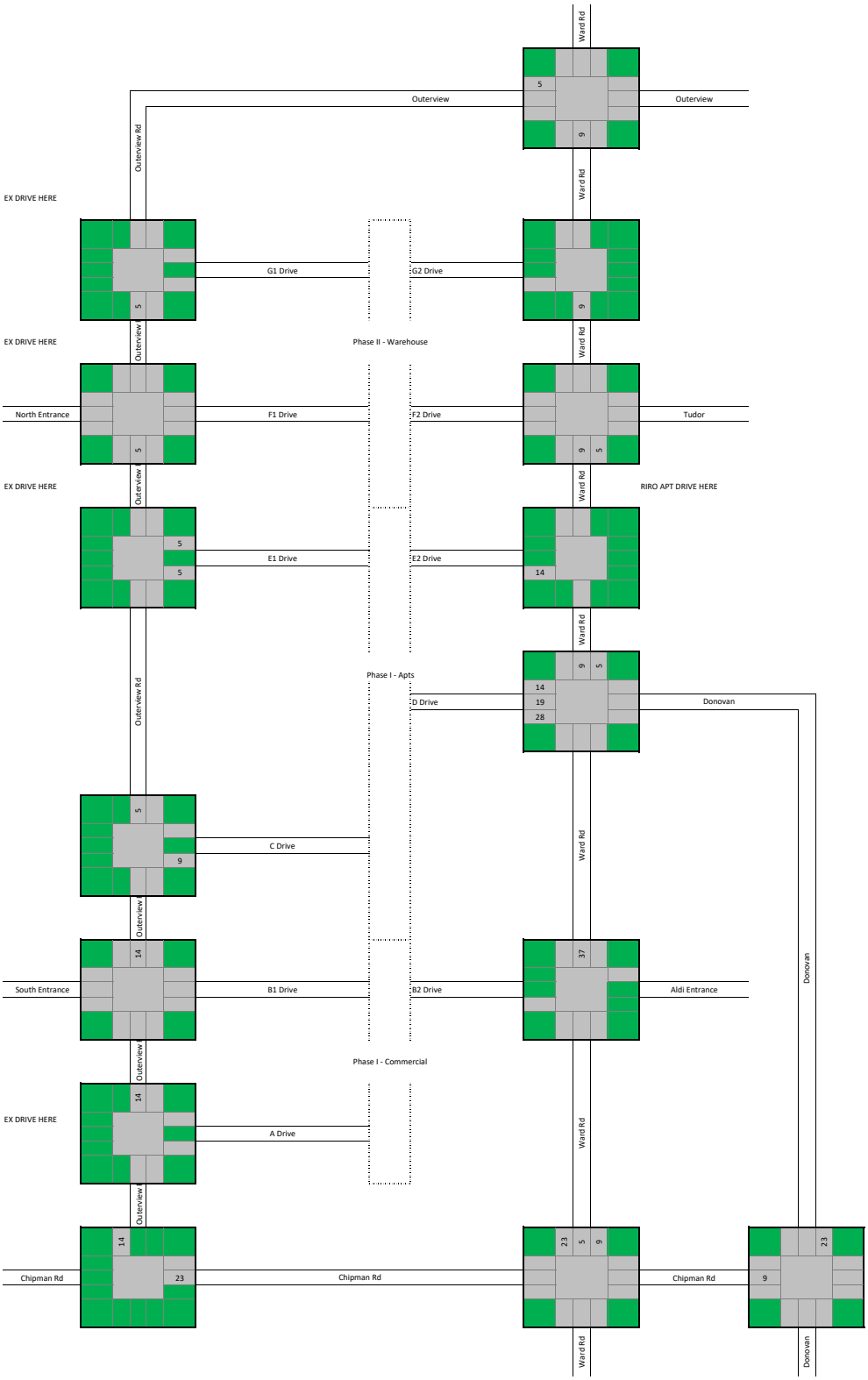


AM Trips Out - Residential (Phase I)

Trips
93

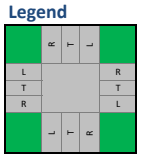
Legend

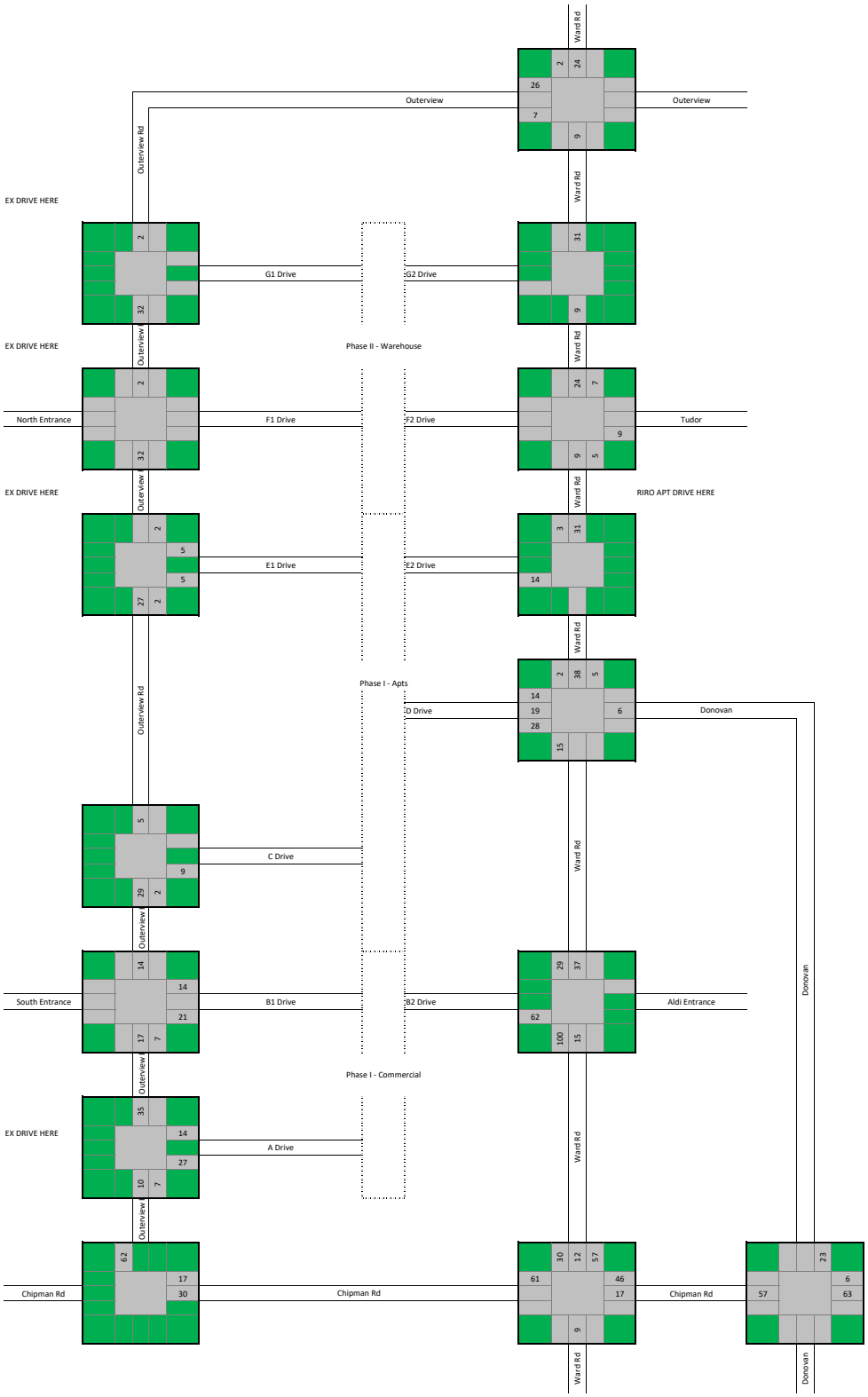




AM Trips (Phase I)
PRIMARY

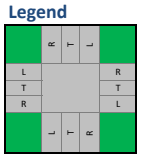
Legend

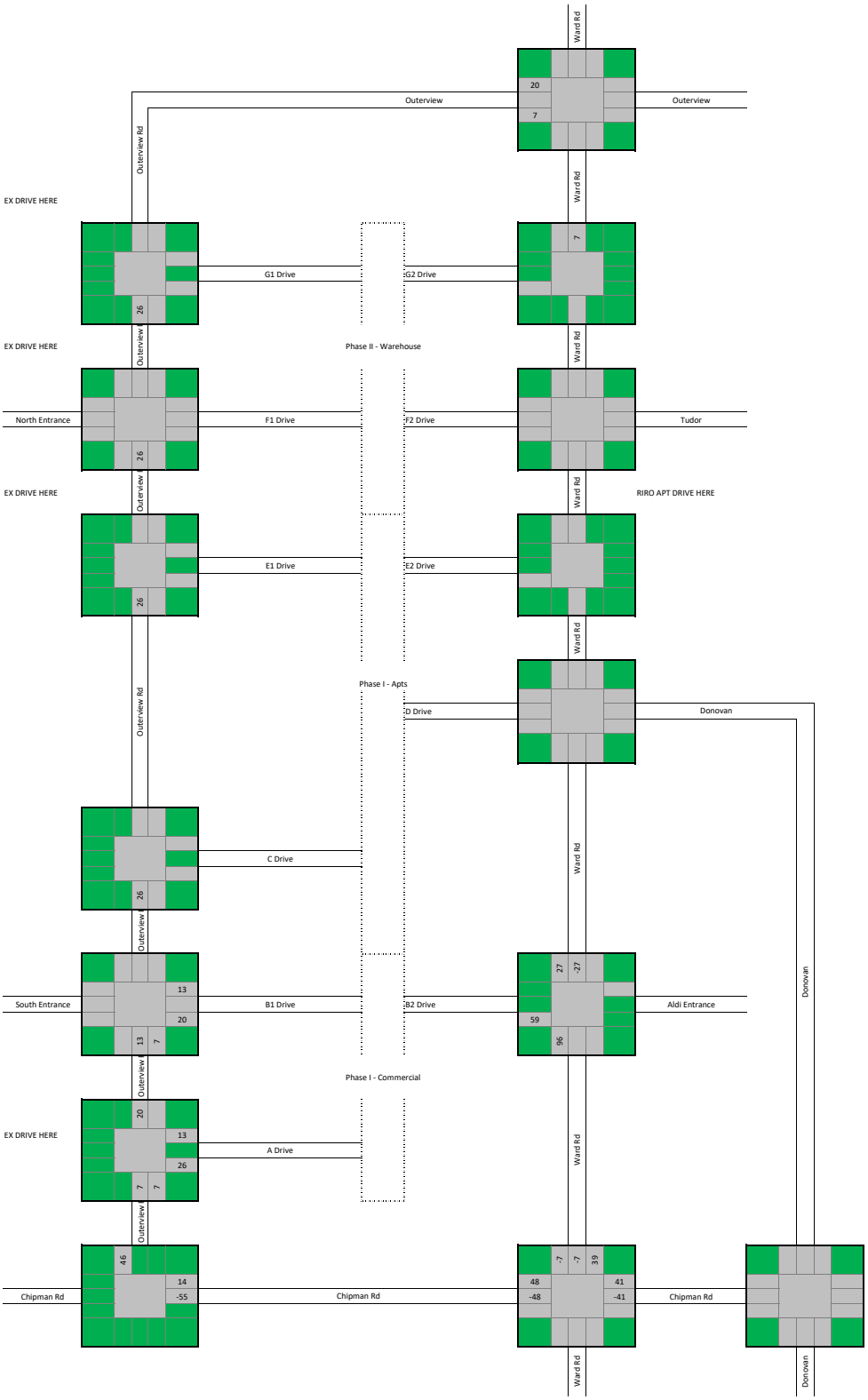




AM Trips (Phase I)
PASS-BY

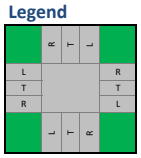
Legend

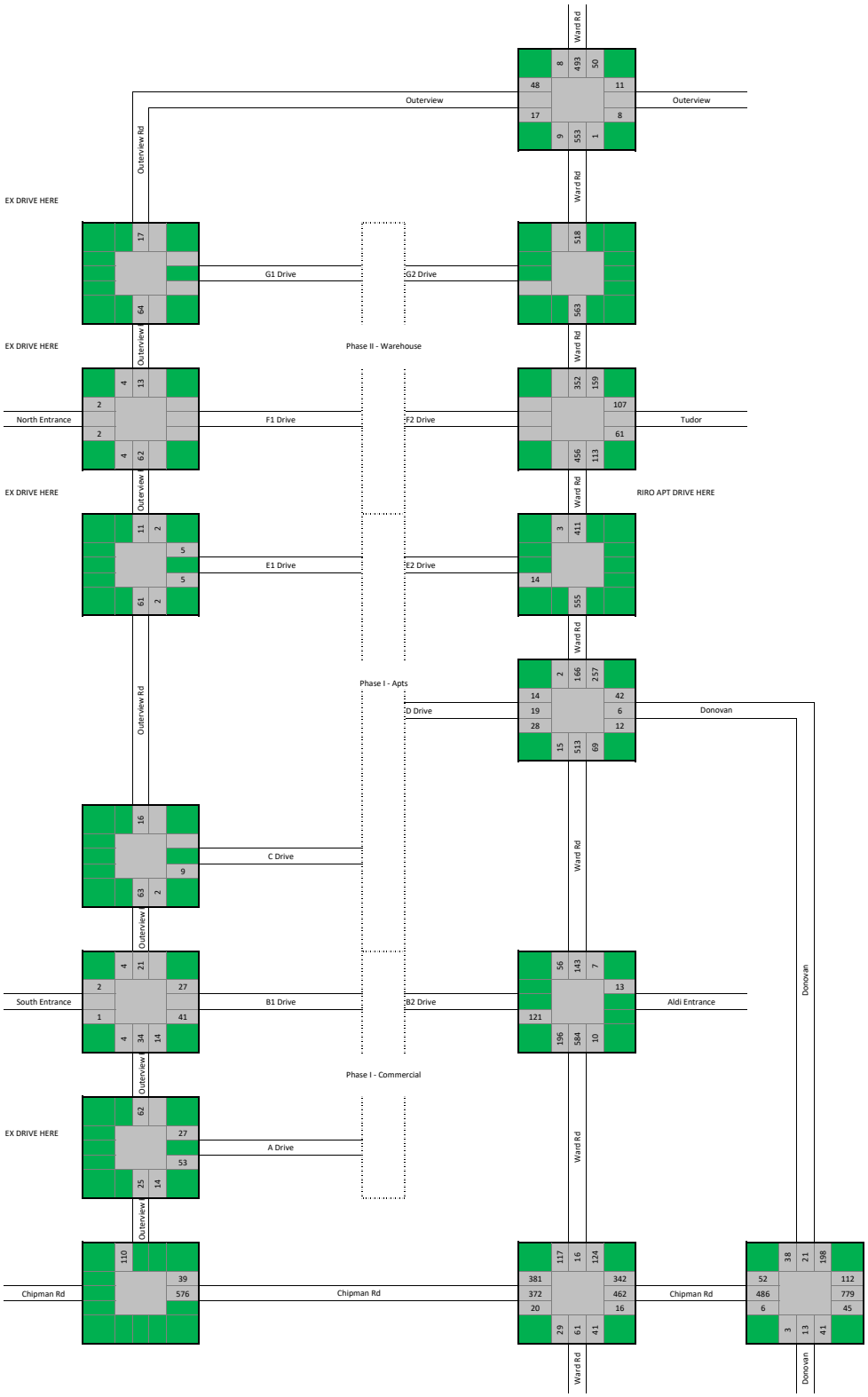




AM Existing + Approved + Phase I Trips

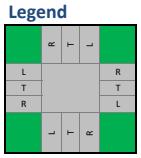
Legend

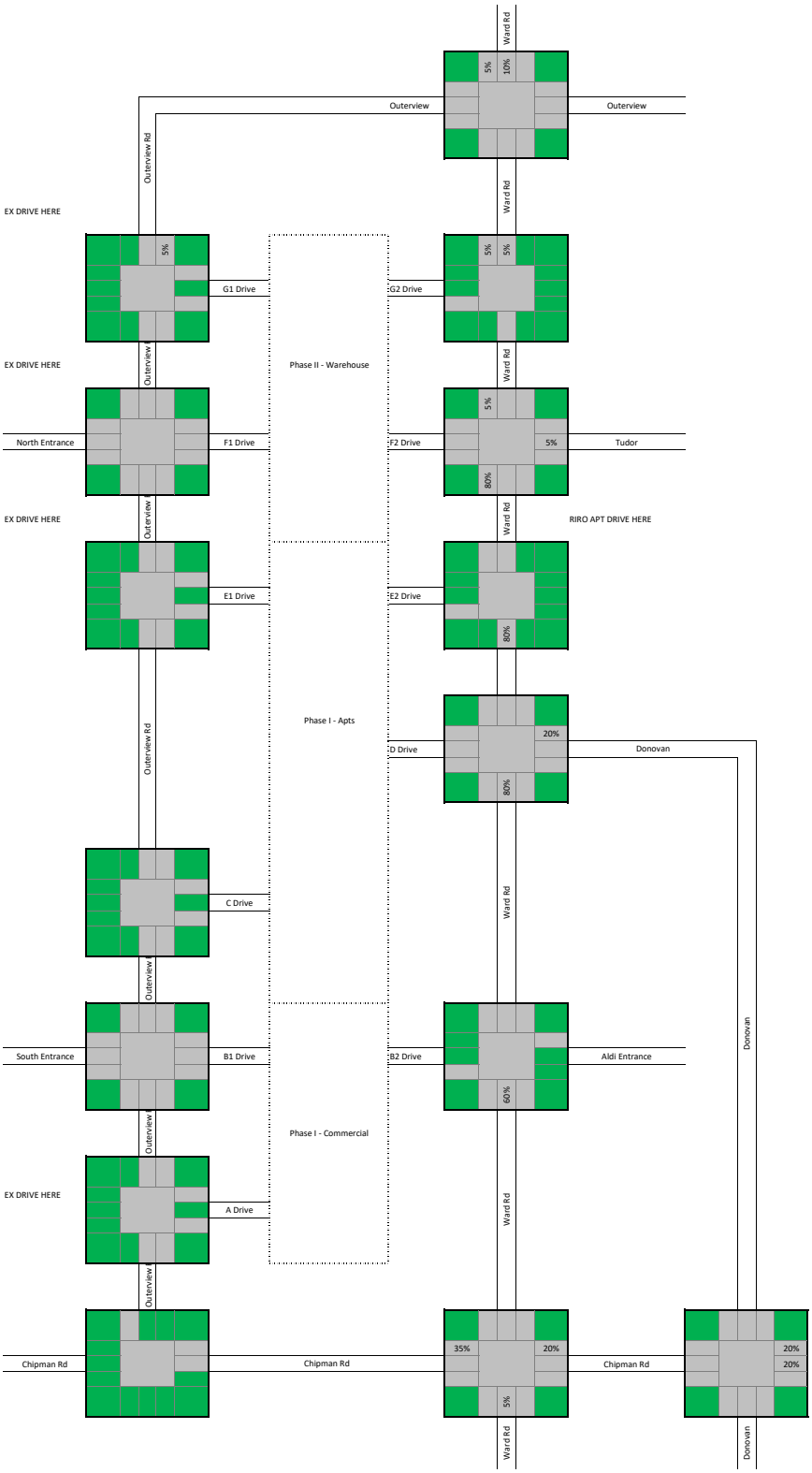




AM Distribution In - Warehouse (Phase II)

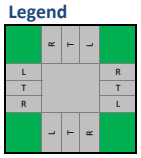
Legend

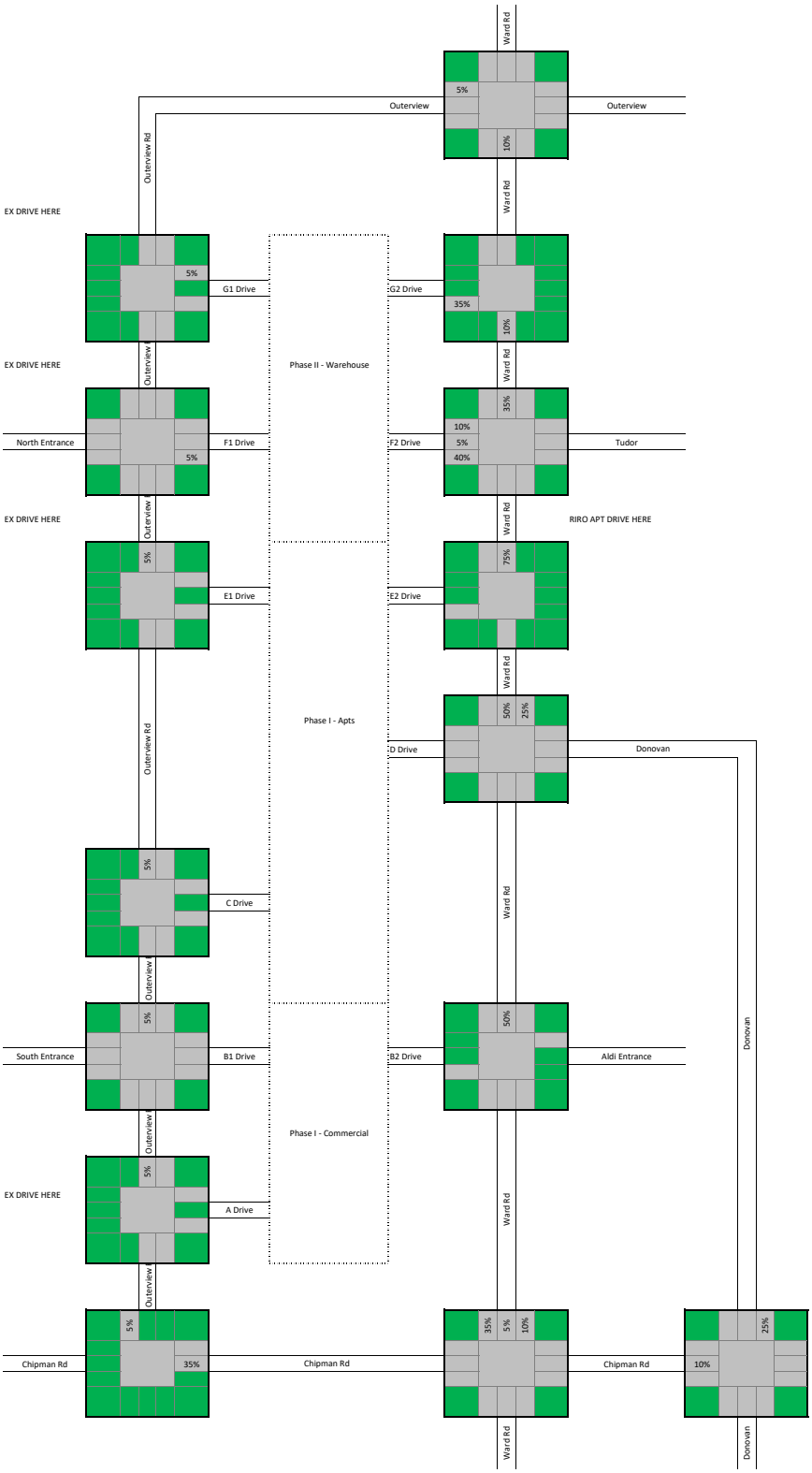




AM Distribution Out - Warehouse (Phase II)

Legend

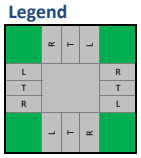


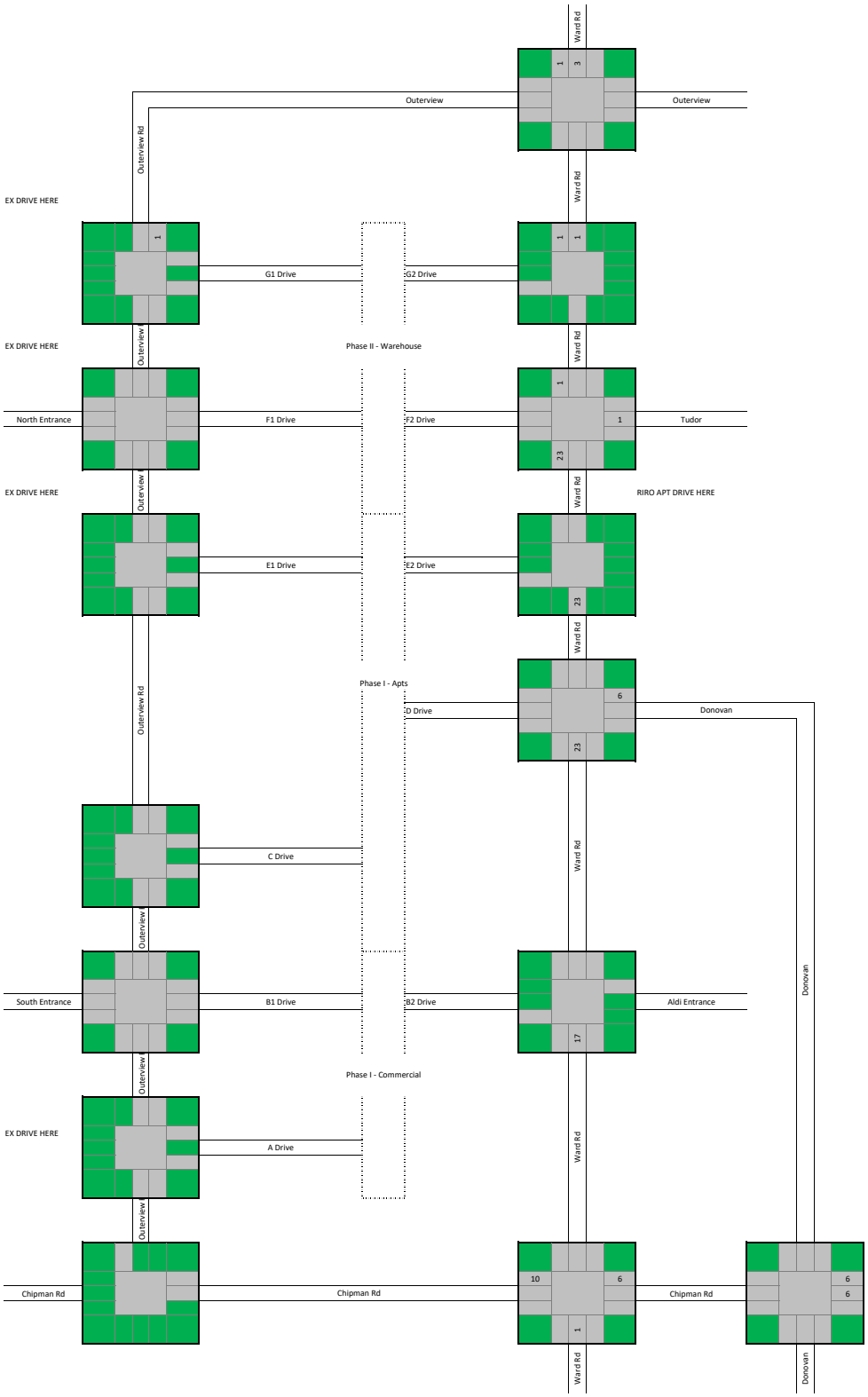


AM Trips In - Warehouse (Phase 2)

Trips 29

Legend

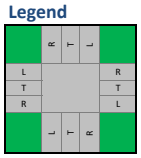


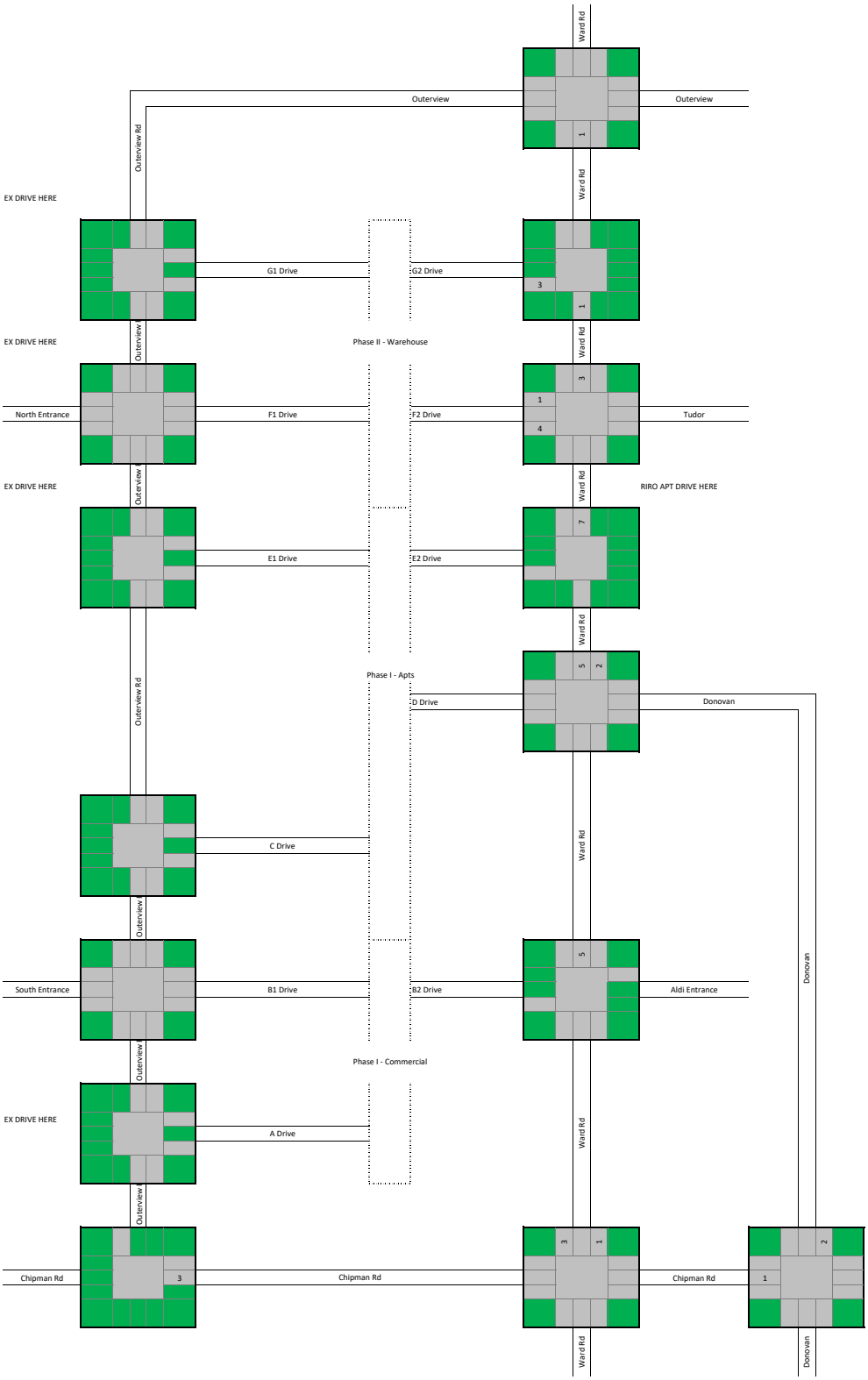


AM Trips Out - Warehouse (Phase 2)

Trips
9

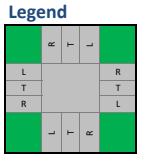
Legend

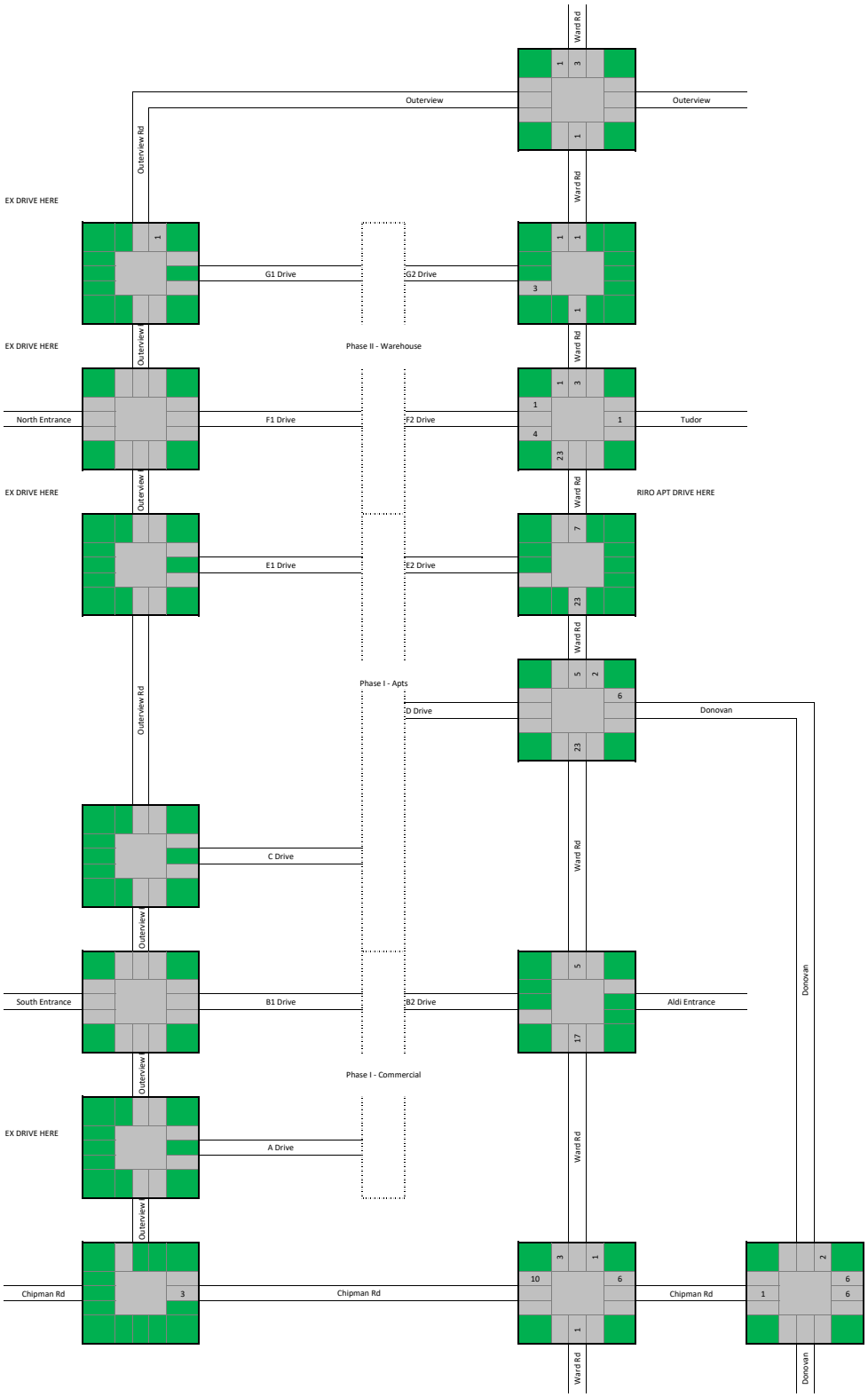




AM Trips (Phase 2)

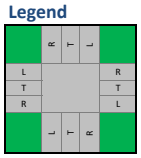
Legend

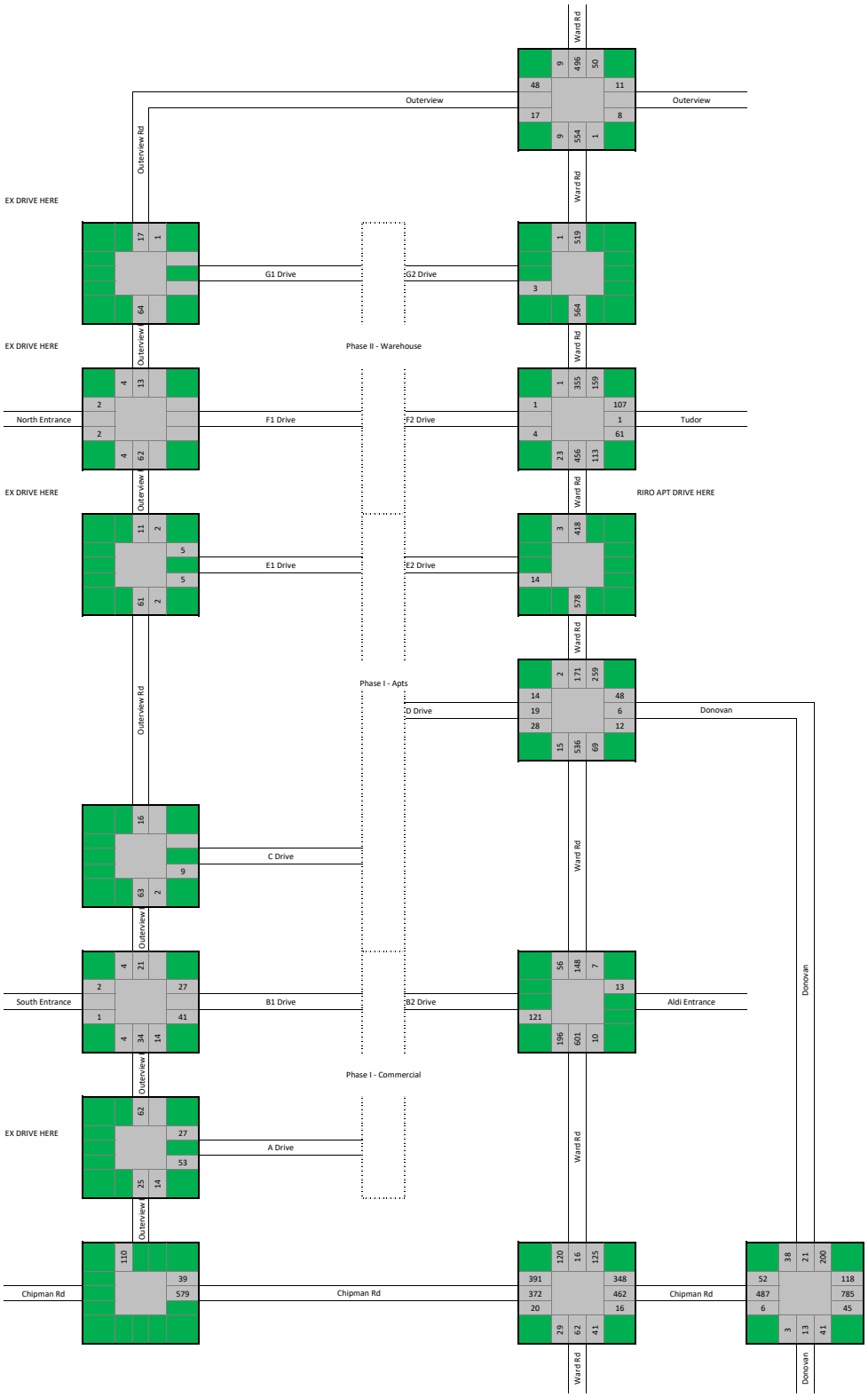




AM Existing + Approved + Phase I&II Trips

Legend

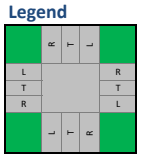


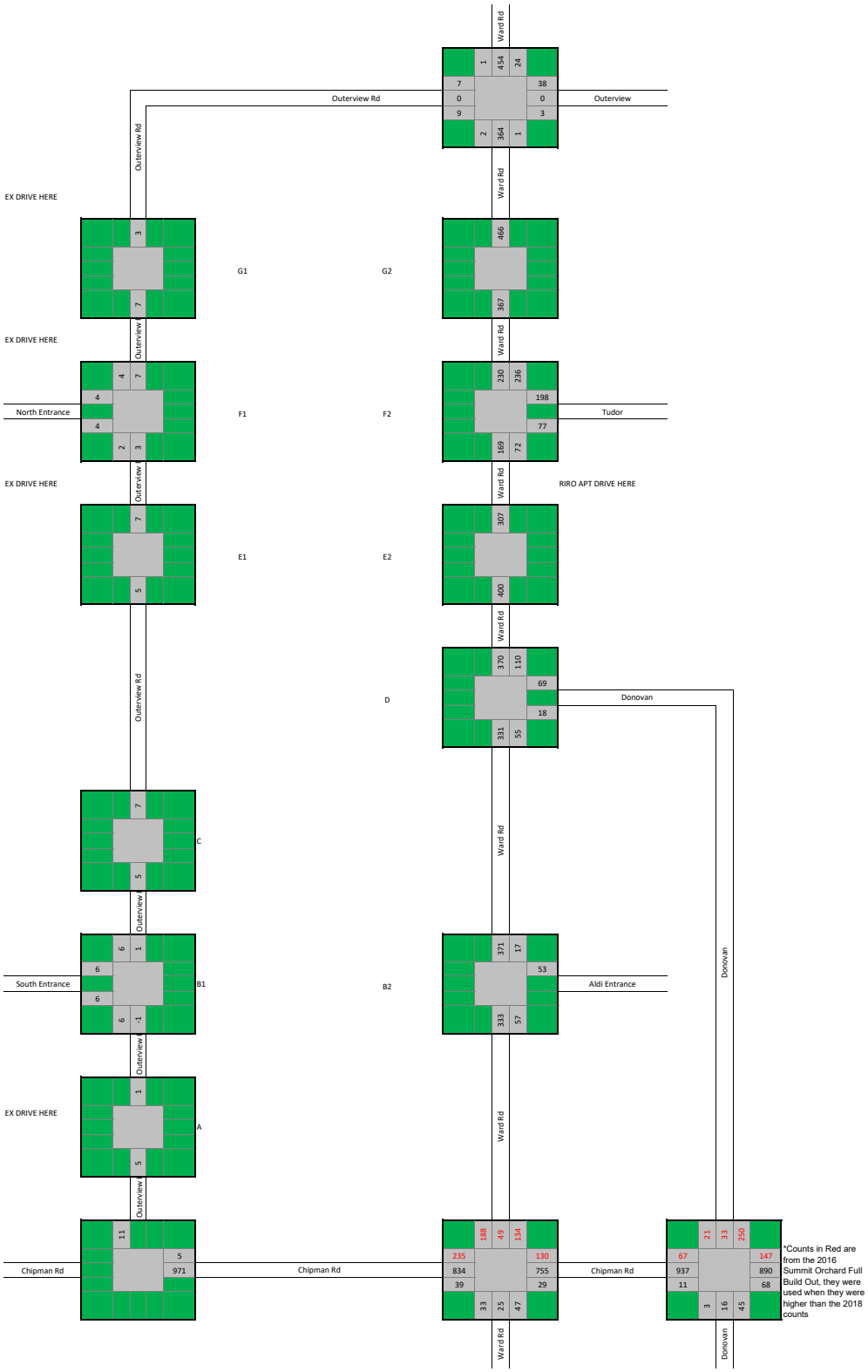


PM Peak Hour Traffic

2022 Counts plus increased 2018 counts at Chipman and Ward, intersections balanced

Legend

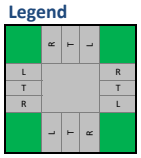


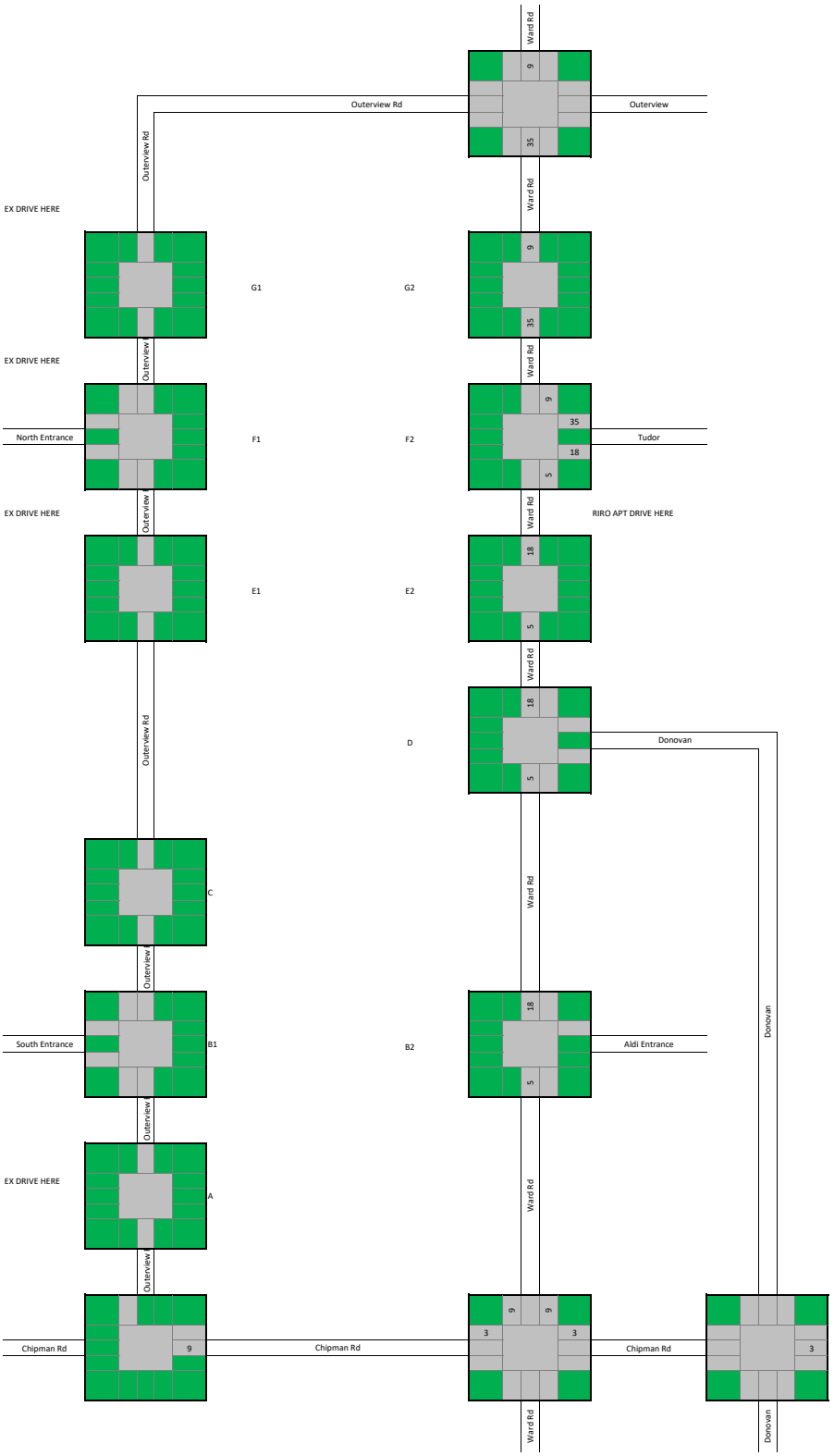


PM Lee's Summit Logistics Traffic

2021 Lee's Summit Logistics TIS (includes Phase I and Phase II)

Legend

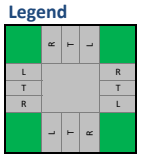


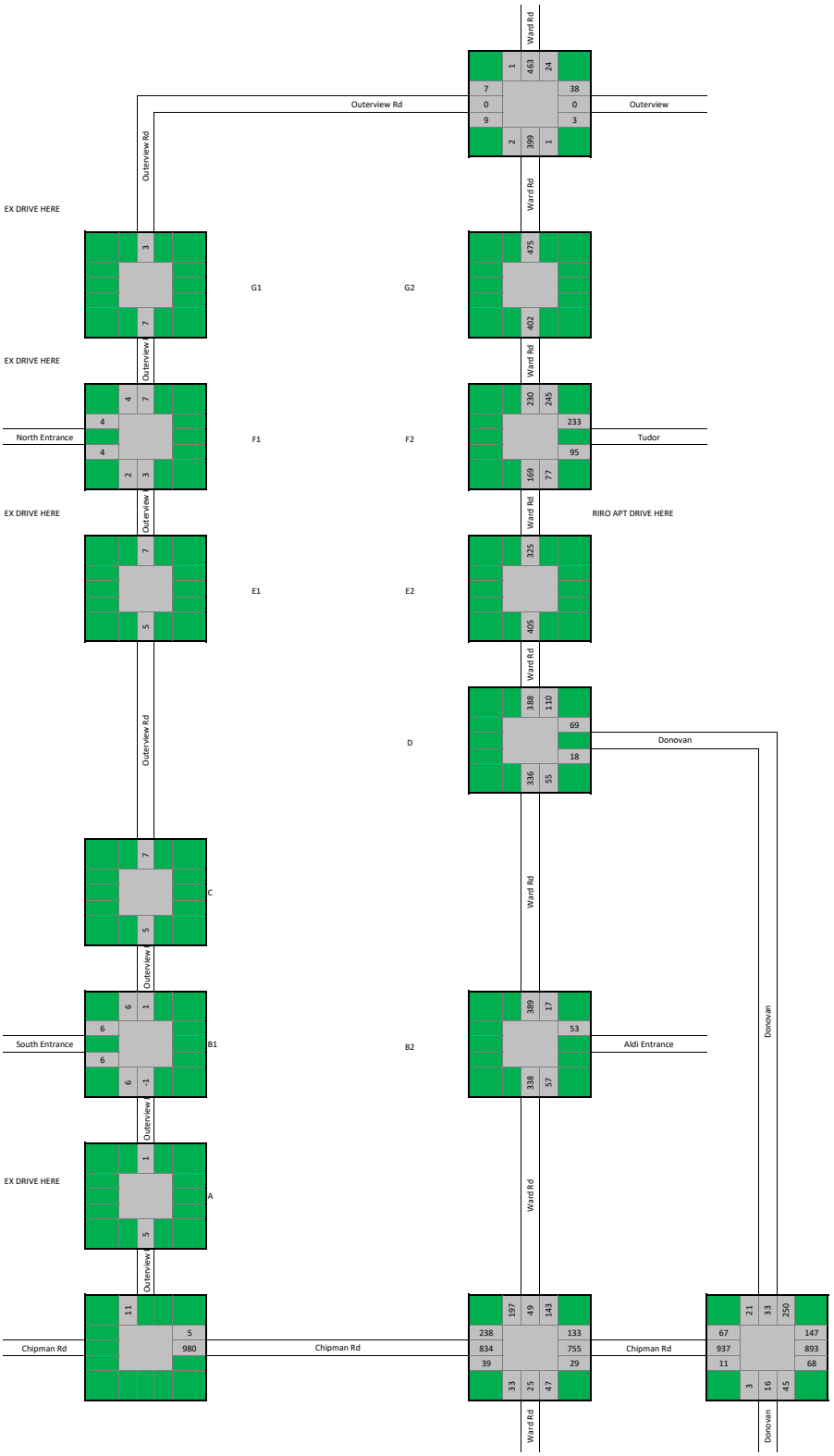


PM Peak Hour Traffic Trips + Approved Developments

Includes 2022, 2018 with 1% increase, Lee's Summit Logistics, and Summit Orchard

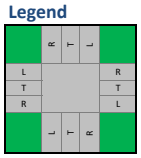
Legend

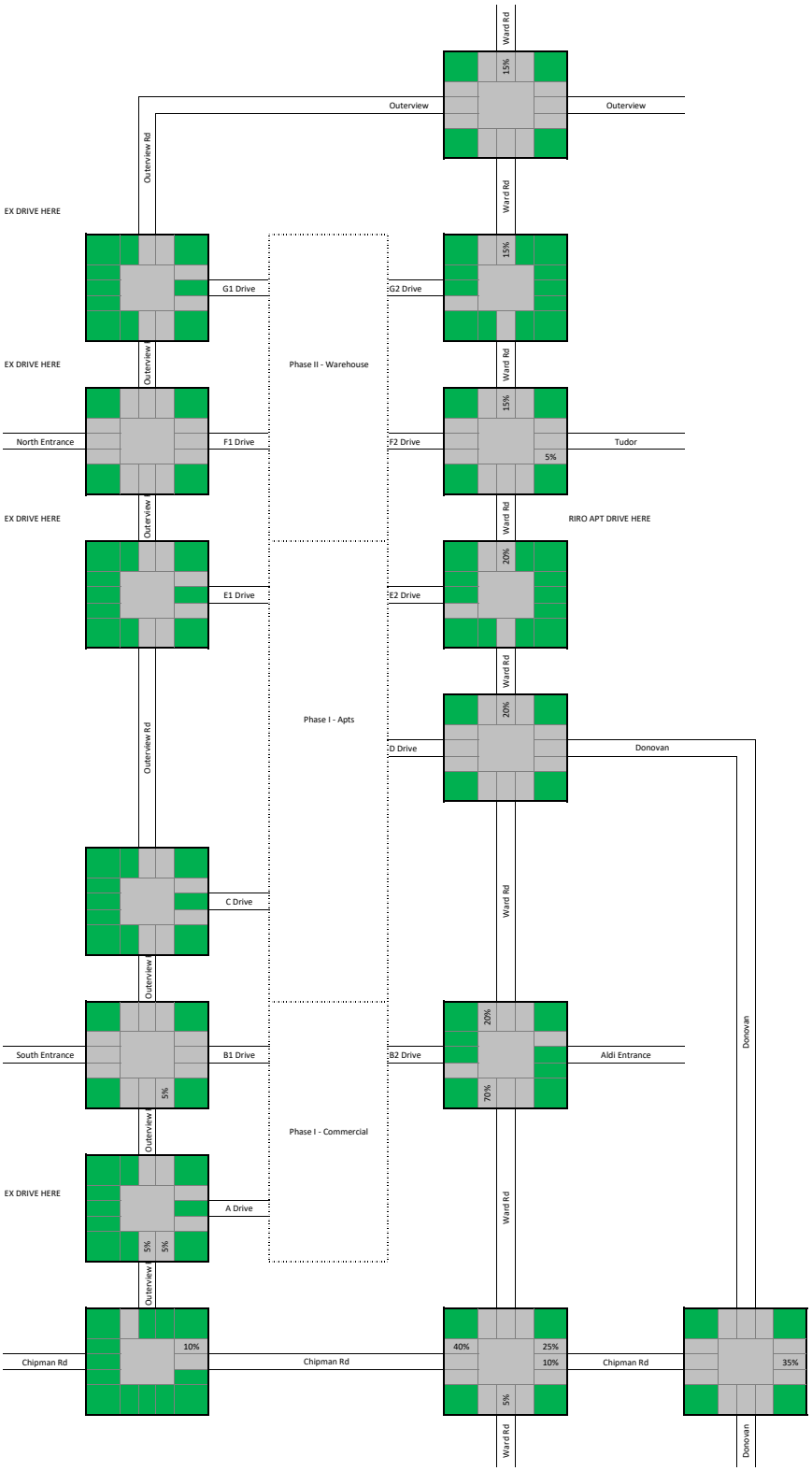




PM Distribution In - Commercial (Phase I) PRIMARY

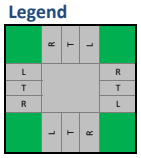
Legend

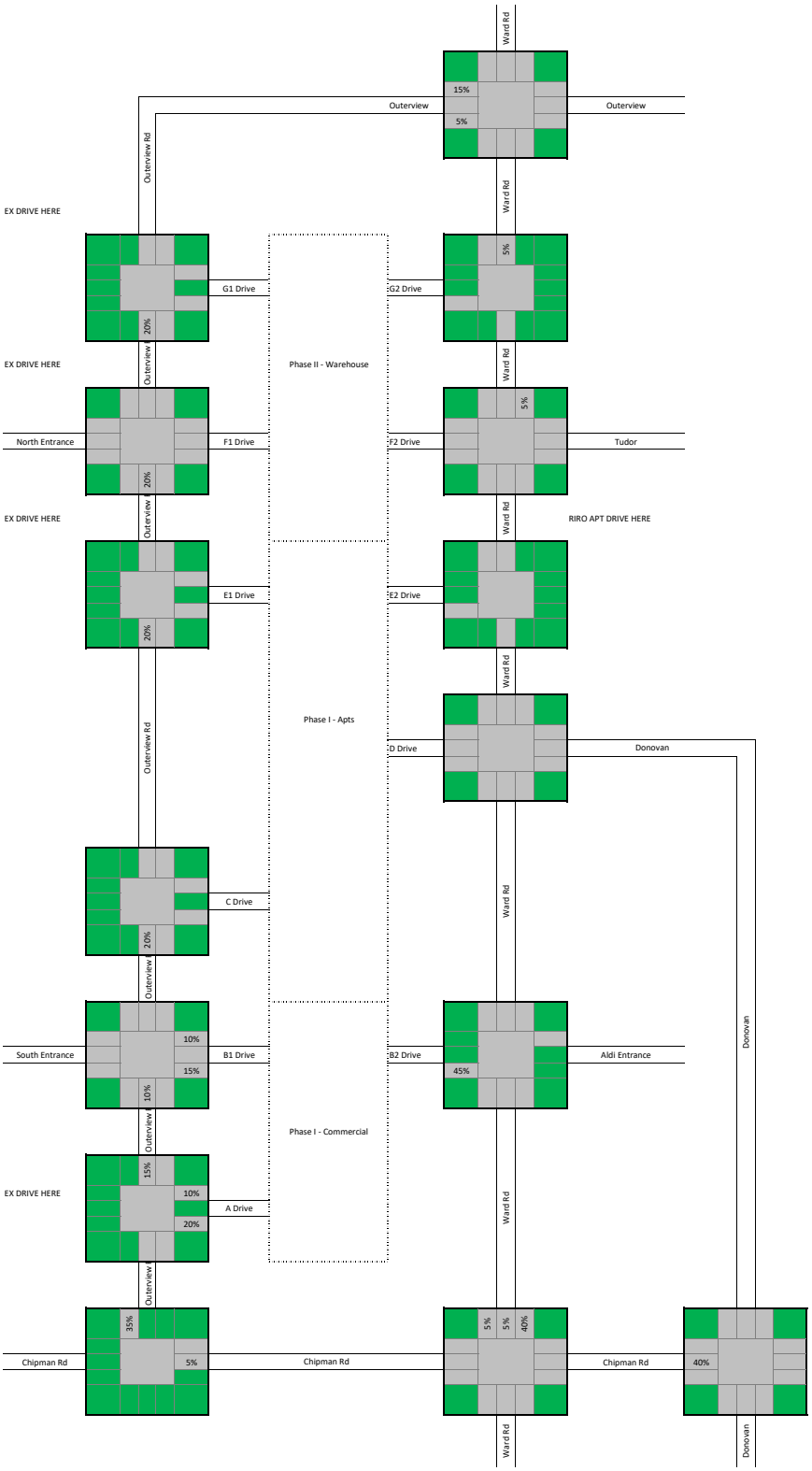




PM Distribution Out - Commercial (Phase I) PRIMARY

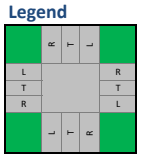
Legend

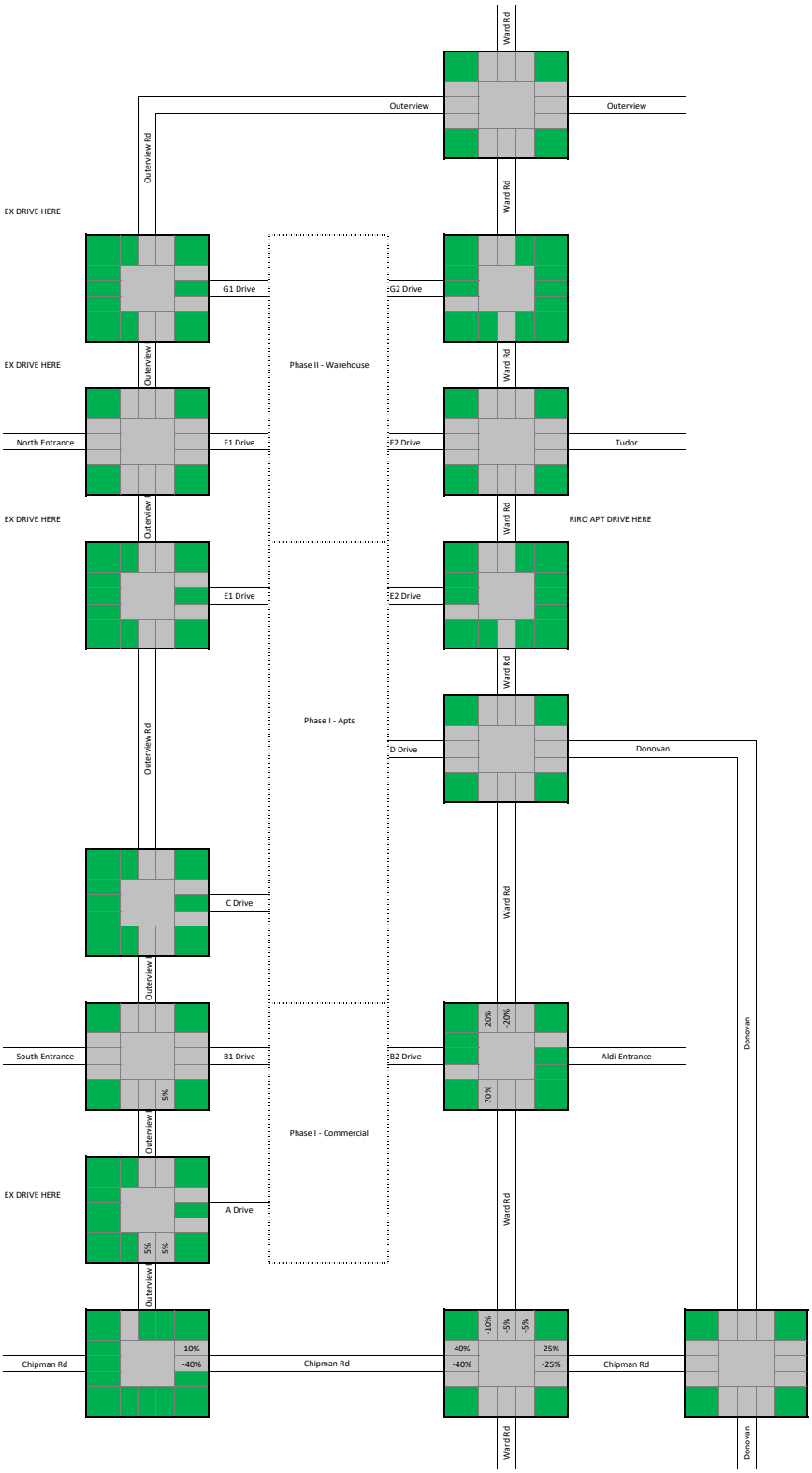




PM Distribution In - Commercial (Phase I) PASS-BY

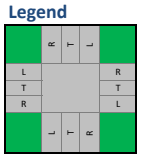
Legend

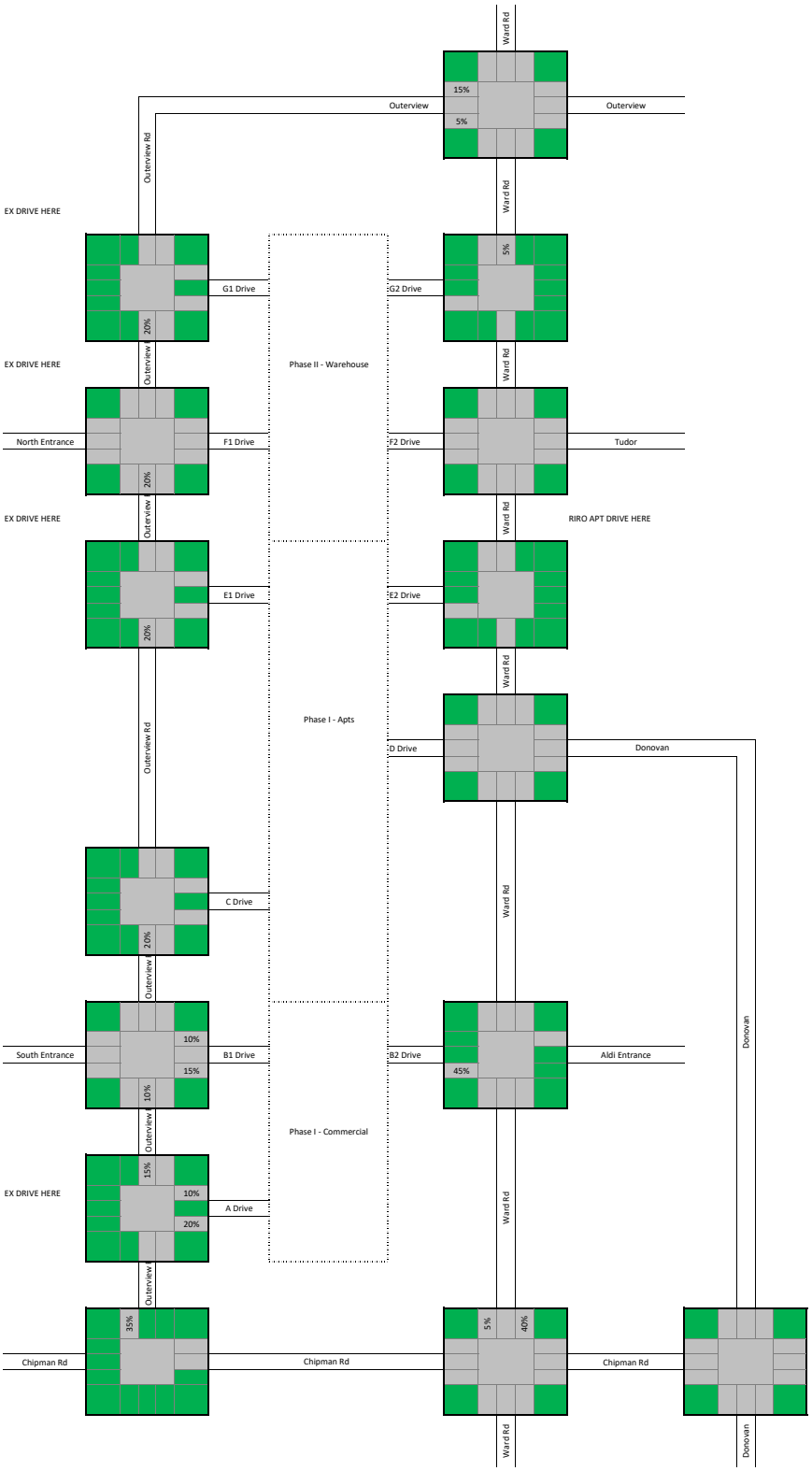




PM Distribution Out - Commercial (Phase I) PASS-BY

Legend

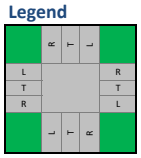


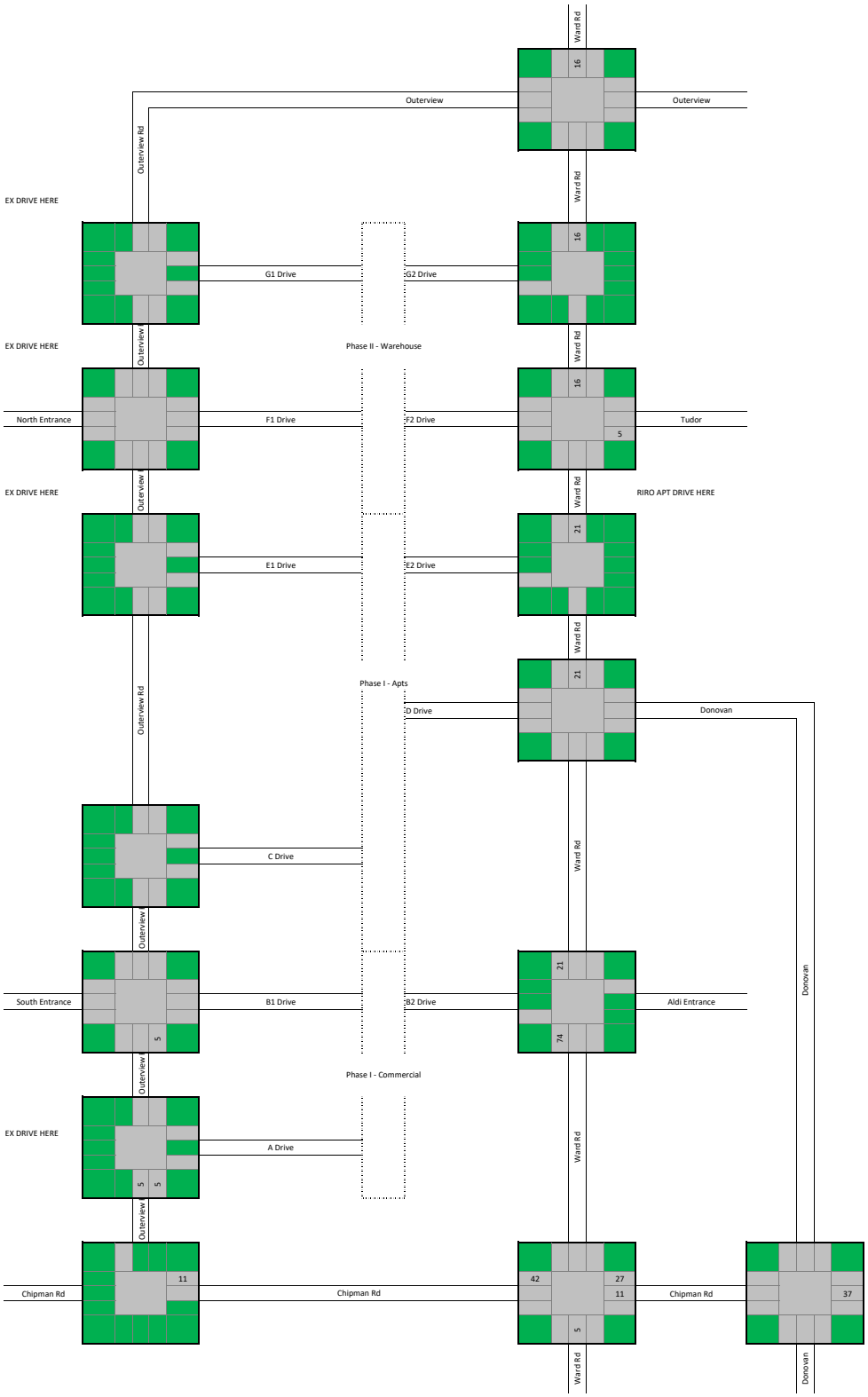


PM Trips In - Commercial (Phase I)
PRIMARY

Trips
106

Legend

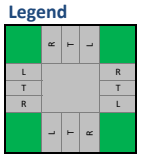


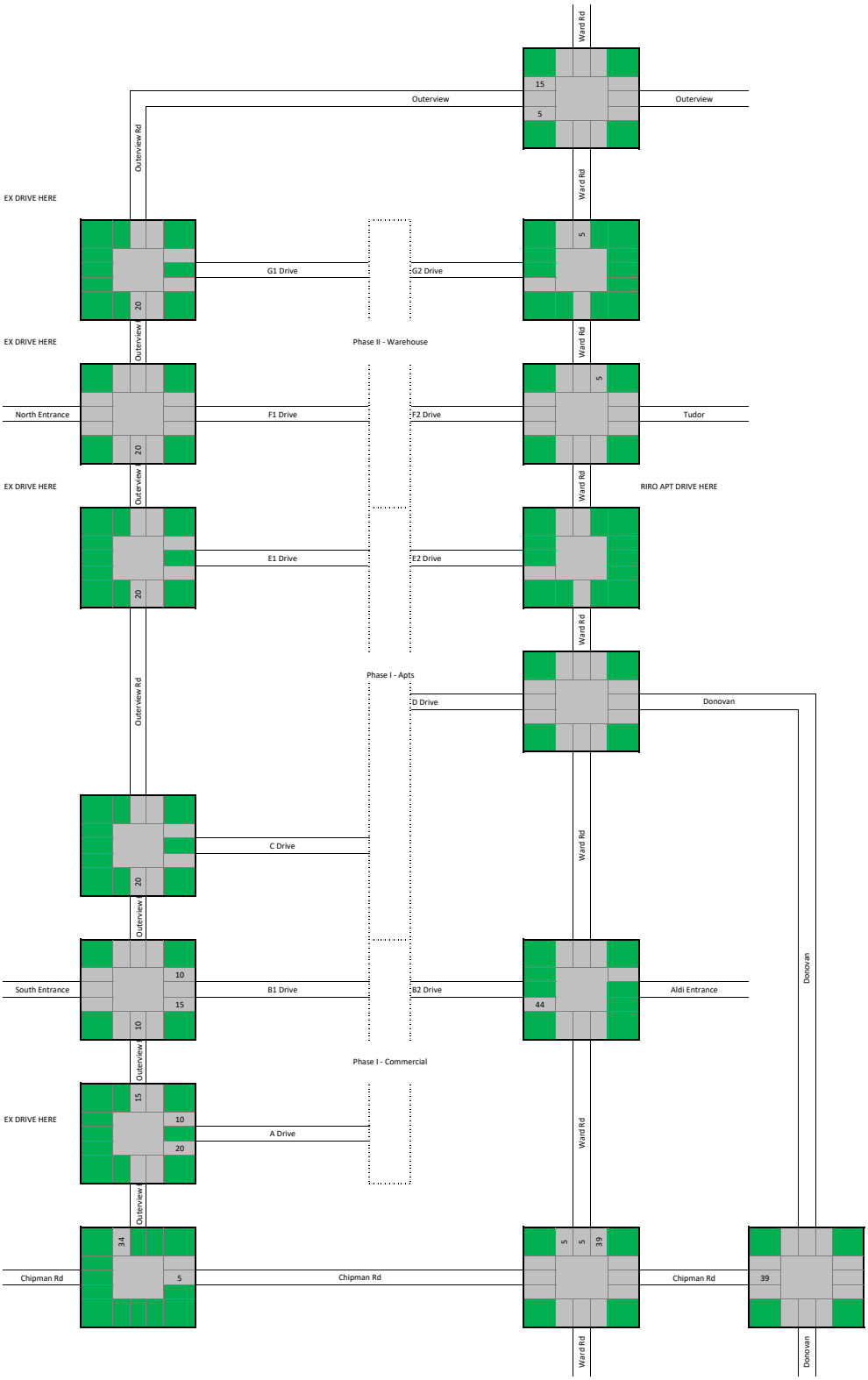


PM Trips Out - Commercial (Phase I)
PRIMARY

Trips
98

Legend

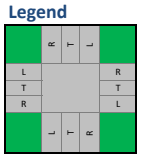


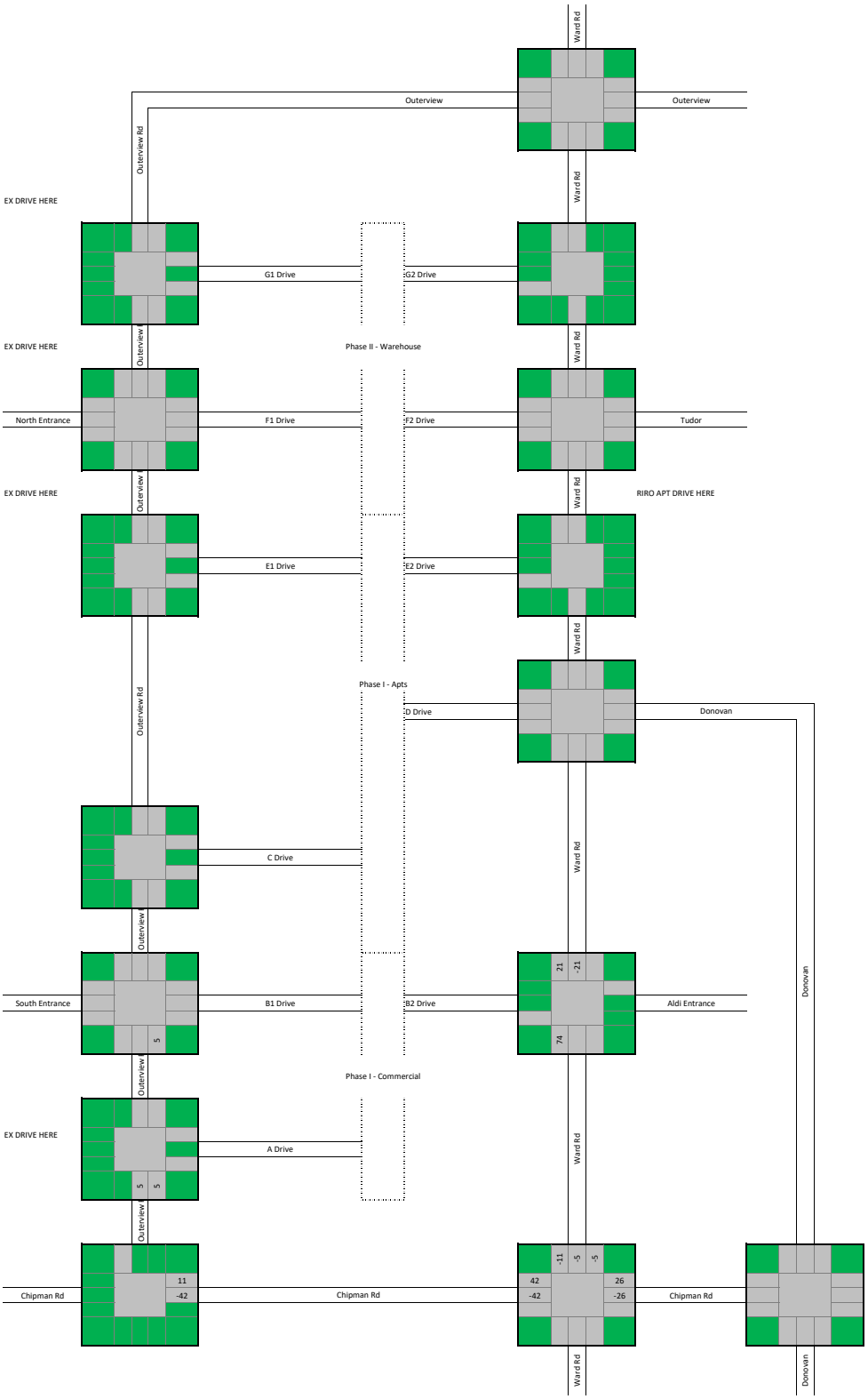


PM Trips In - Commercial (Phase I)
PASS-BY

Trips
105

Legend

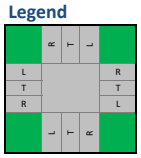


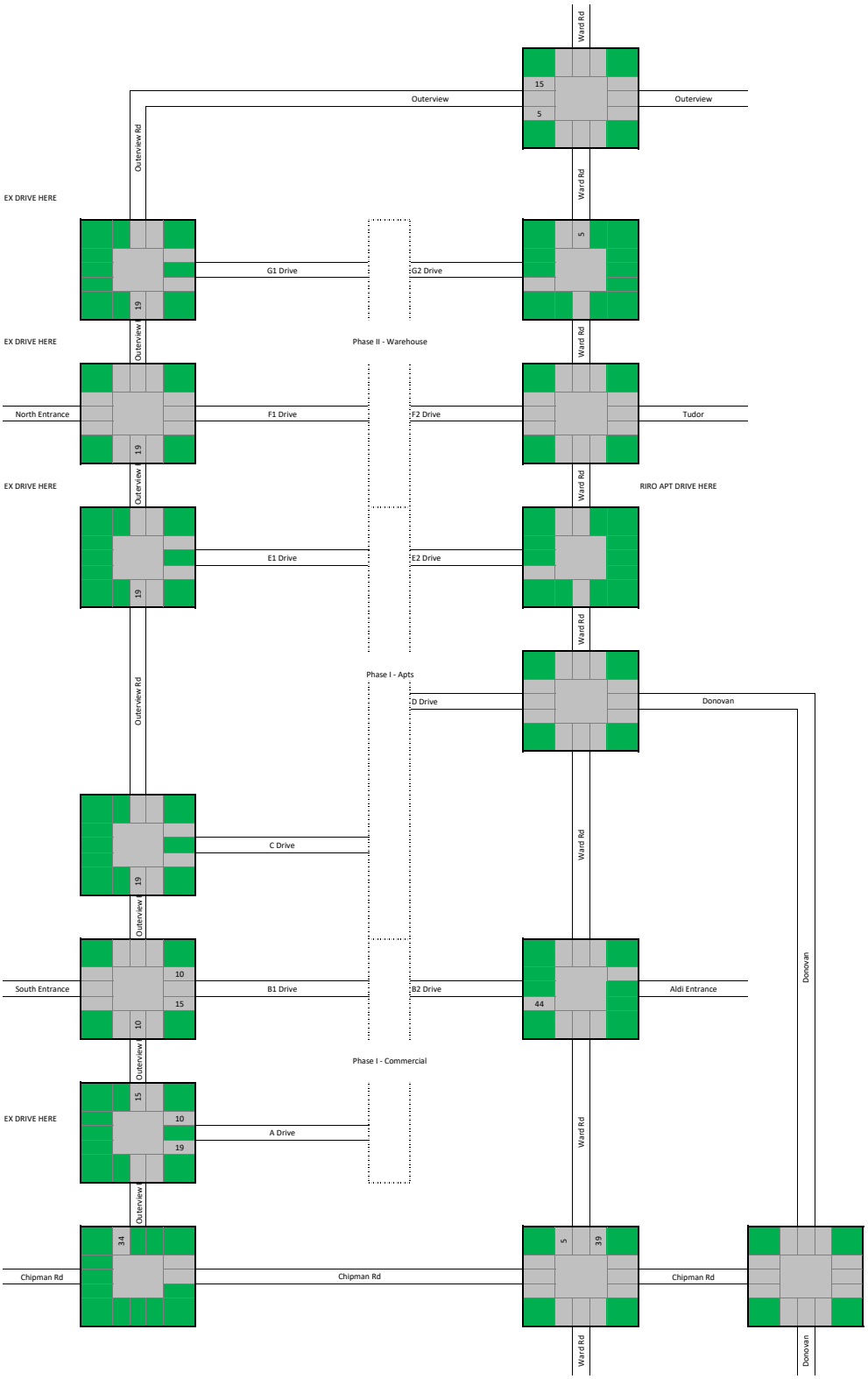


PM Trips Out - Commercial (Phase I)
PASS-BY

Trips
97

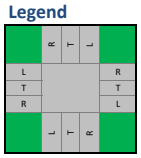
Legend

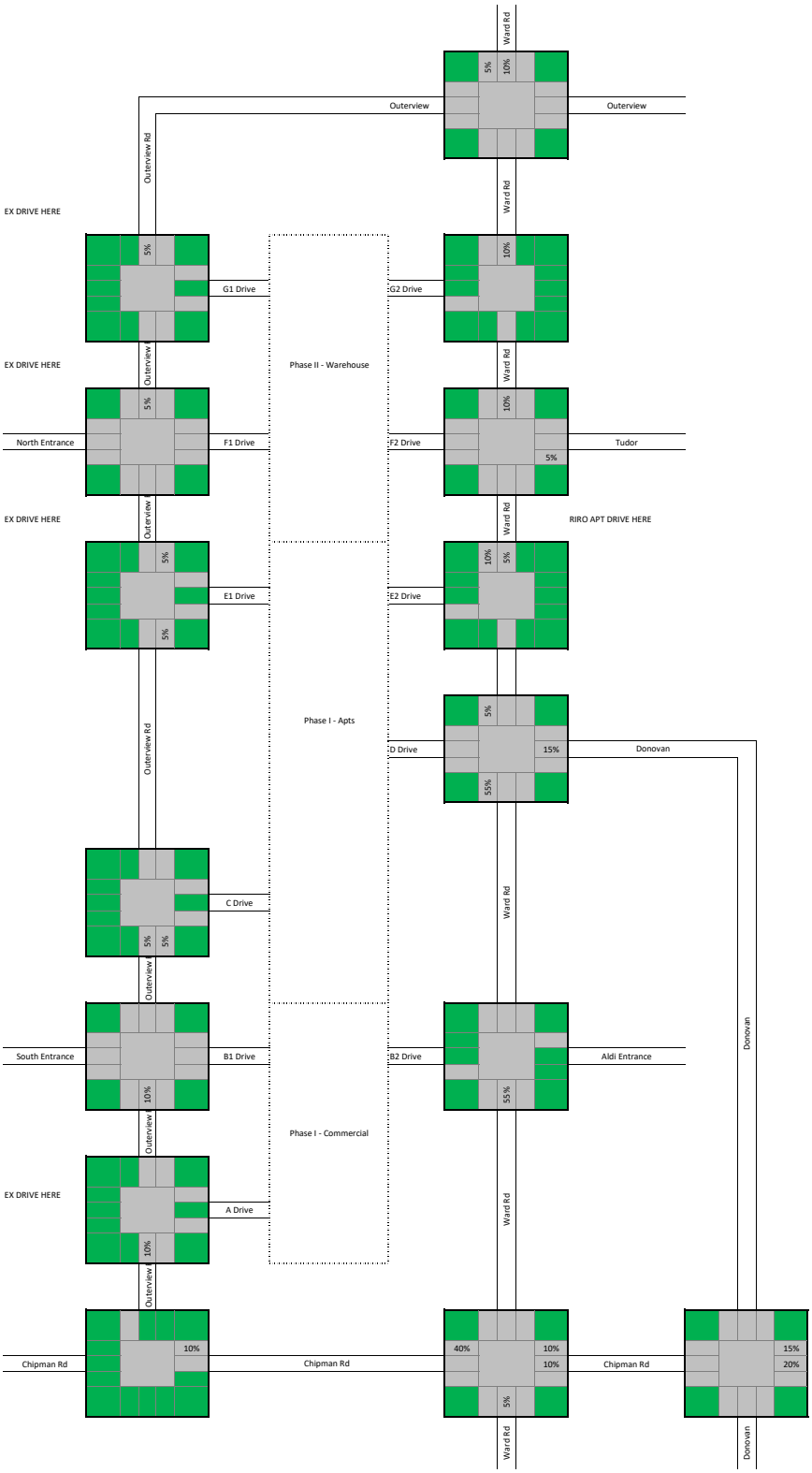




PM Distribution In - Residential (Phase I)

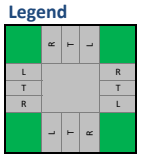
Legend

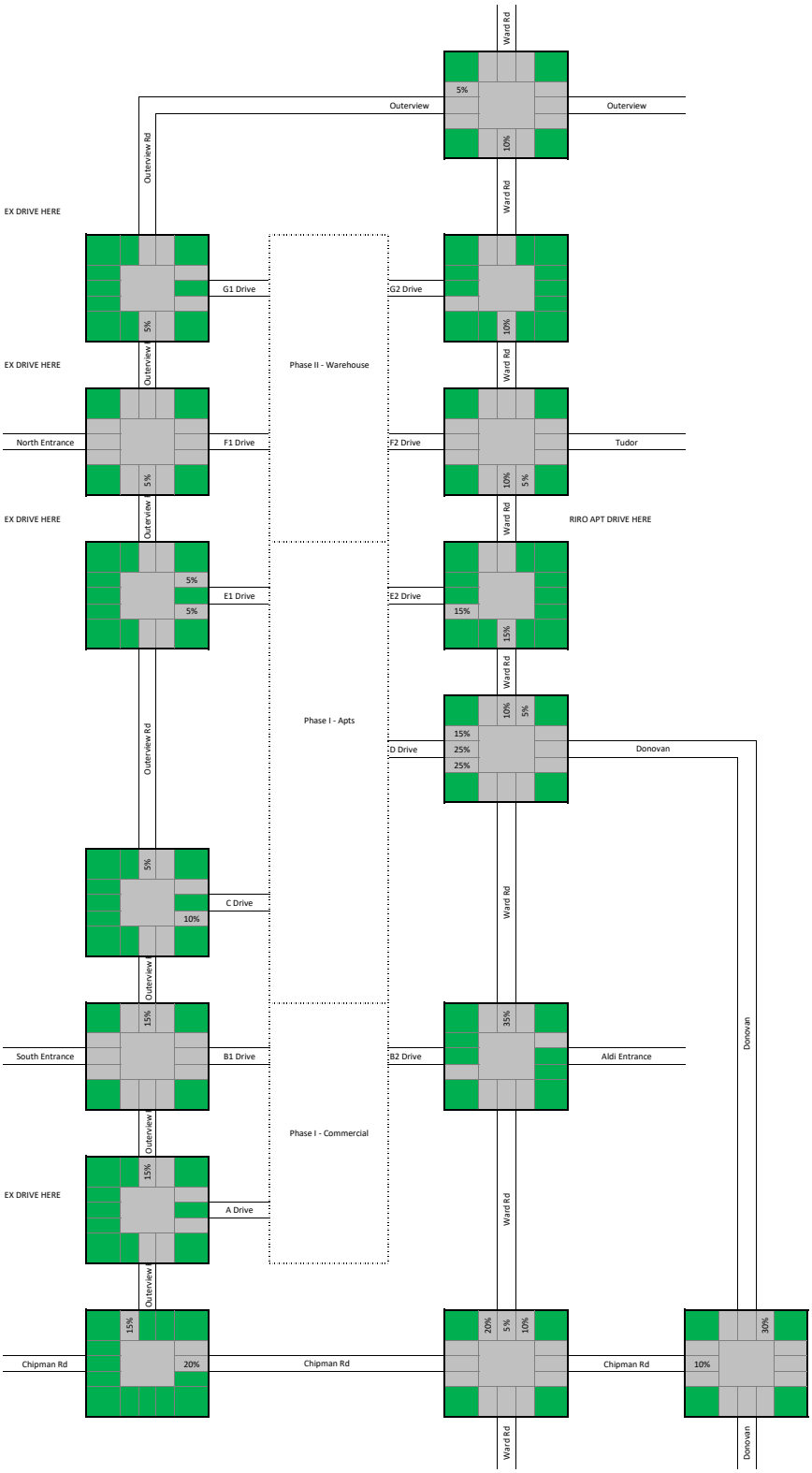




PM Distribution Out - Residential (Phase I)

Legend

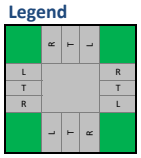


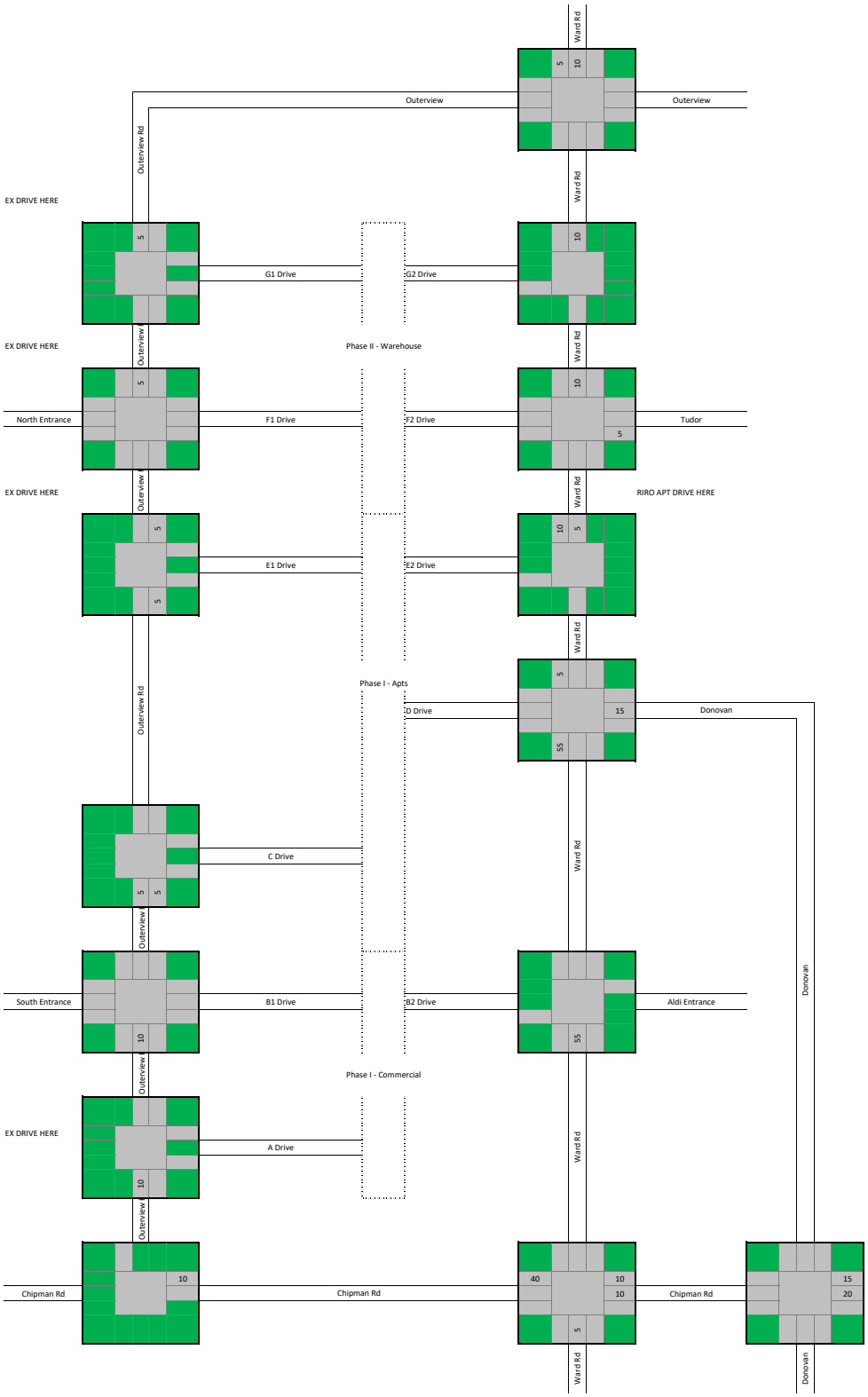


PM Trips In - Residential (Phase I)

Trips
100

Legend

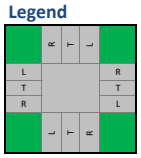


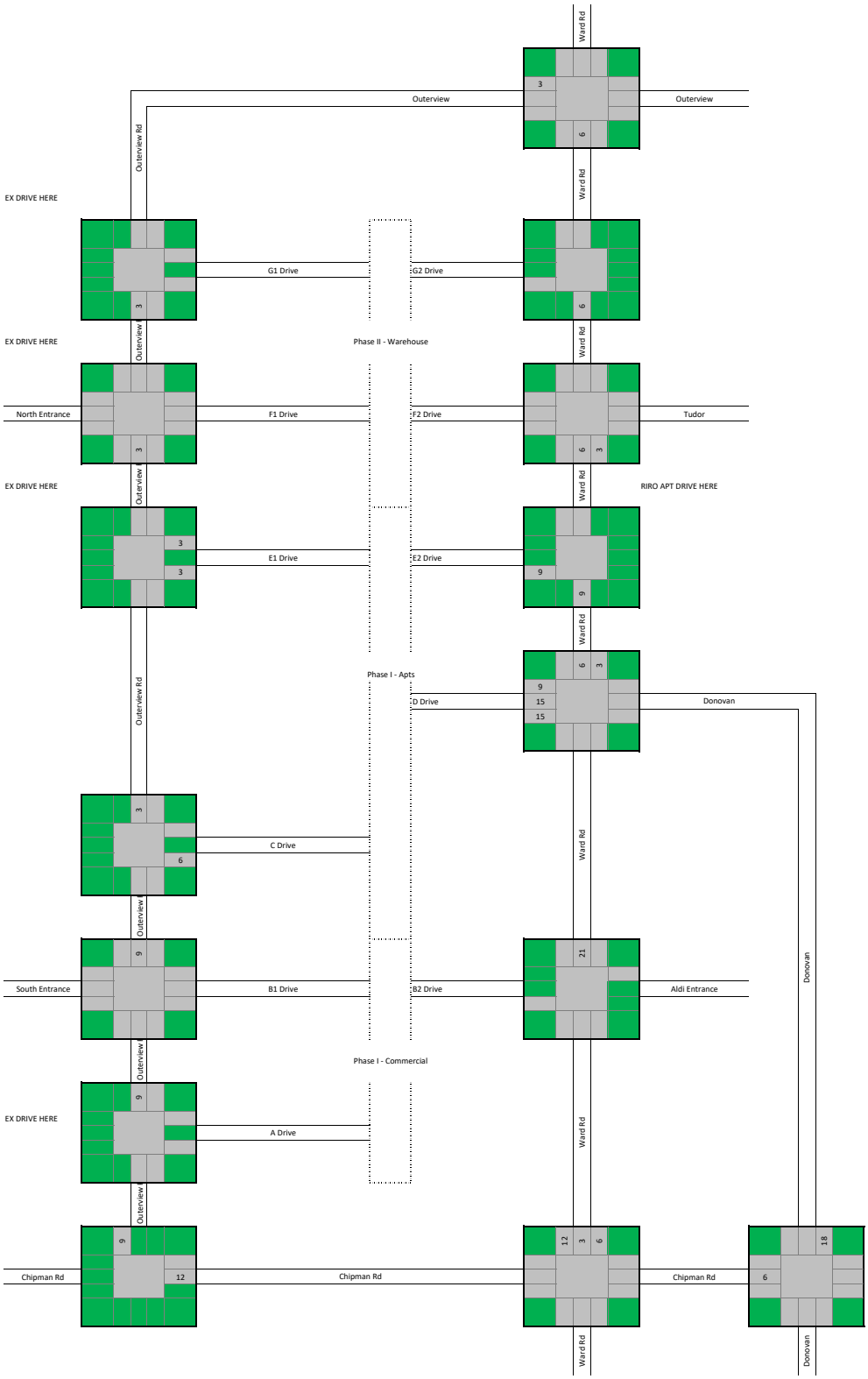


PM Trips Out - Residential (Phase I)

Trips 59

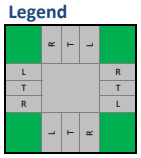
Legend

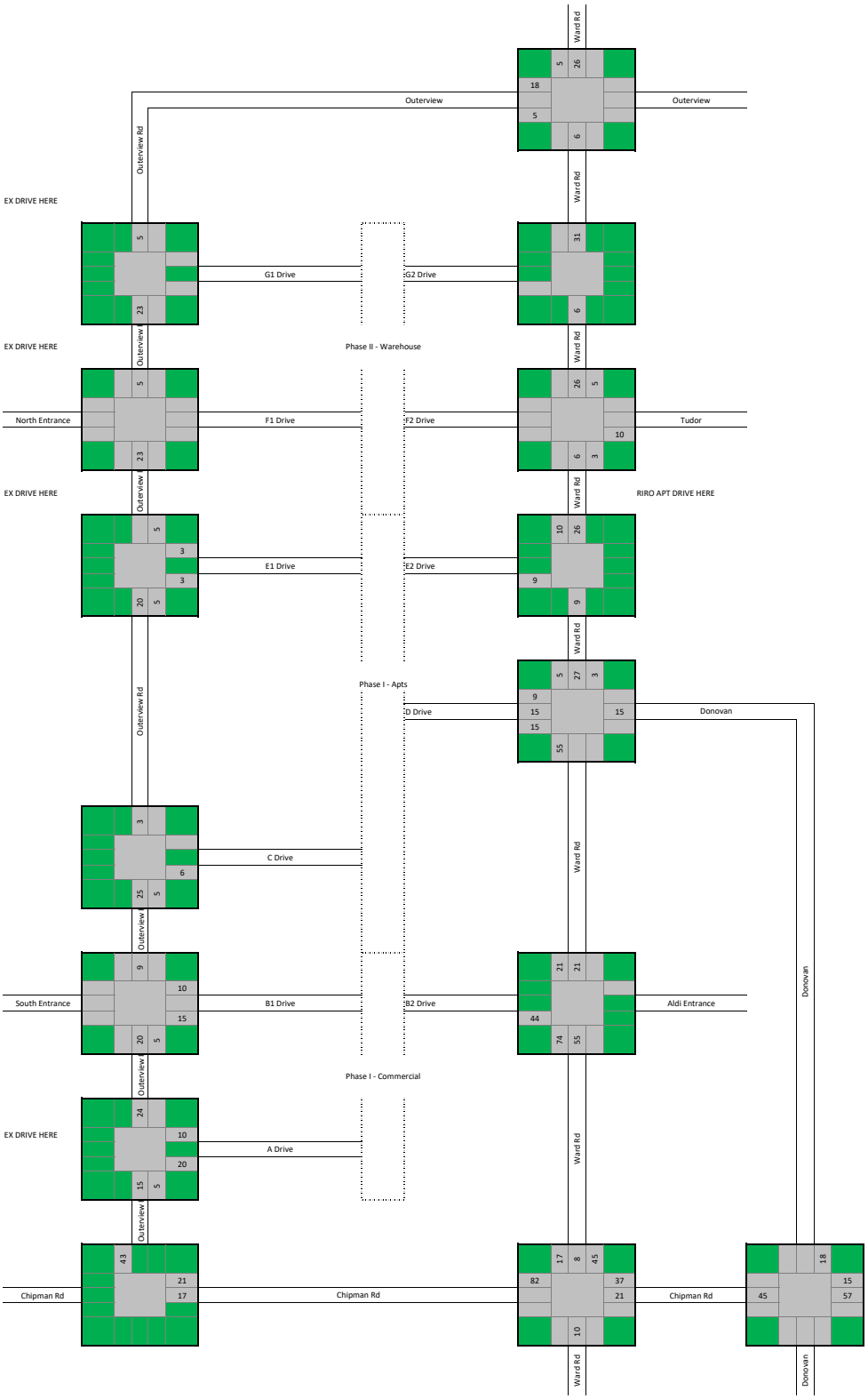




PM Trips (Phase I)
PRIMARY

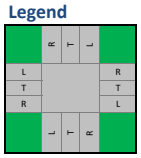
Legend

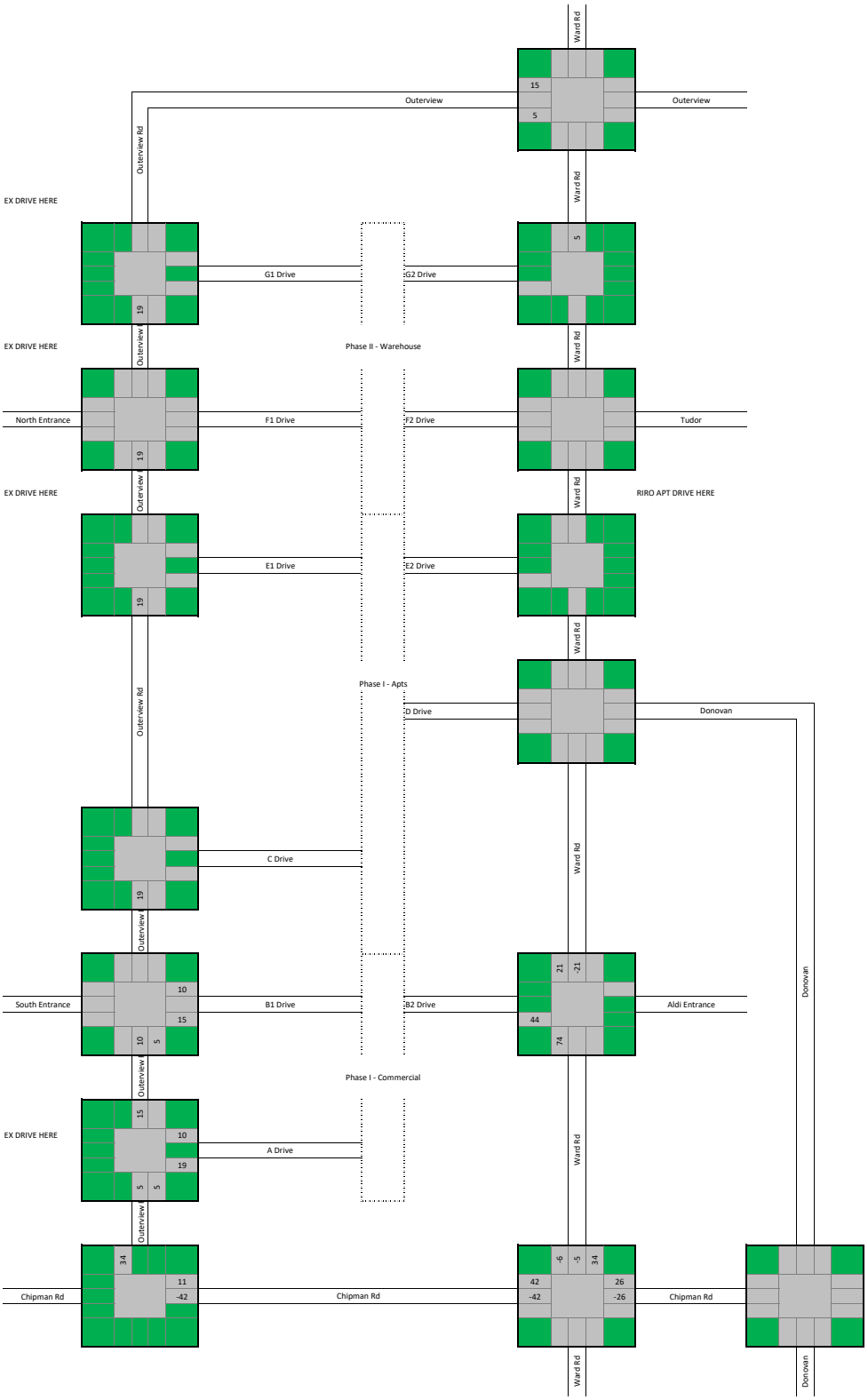




PM Trips (Phase I)
PASS-BY

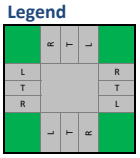
Legend

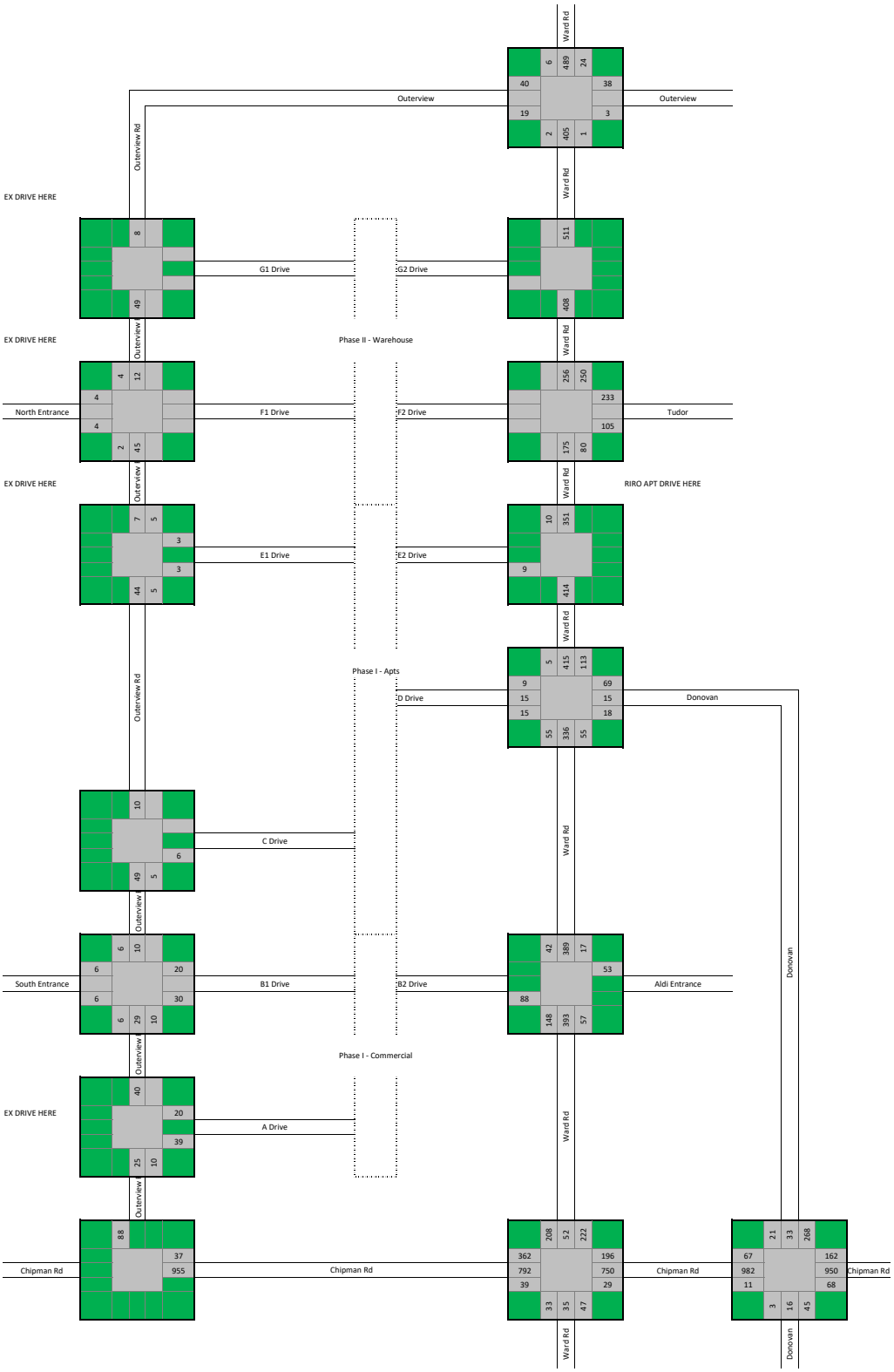




PM Existing + Approved + Phase I Trips

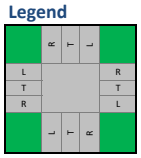
Legend

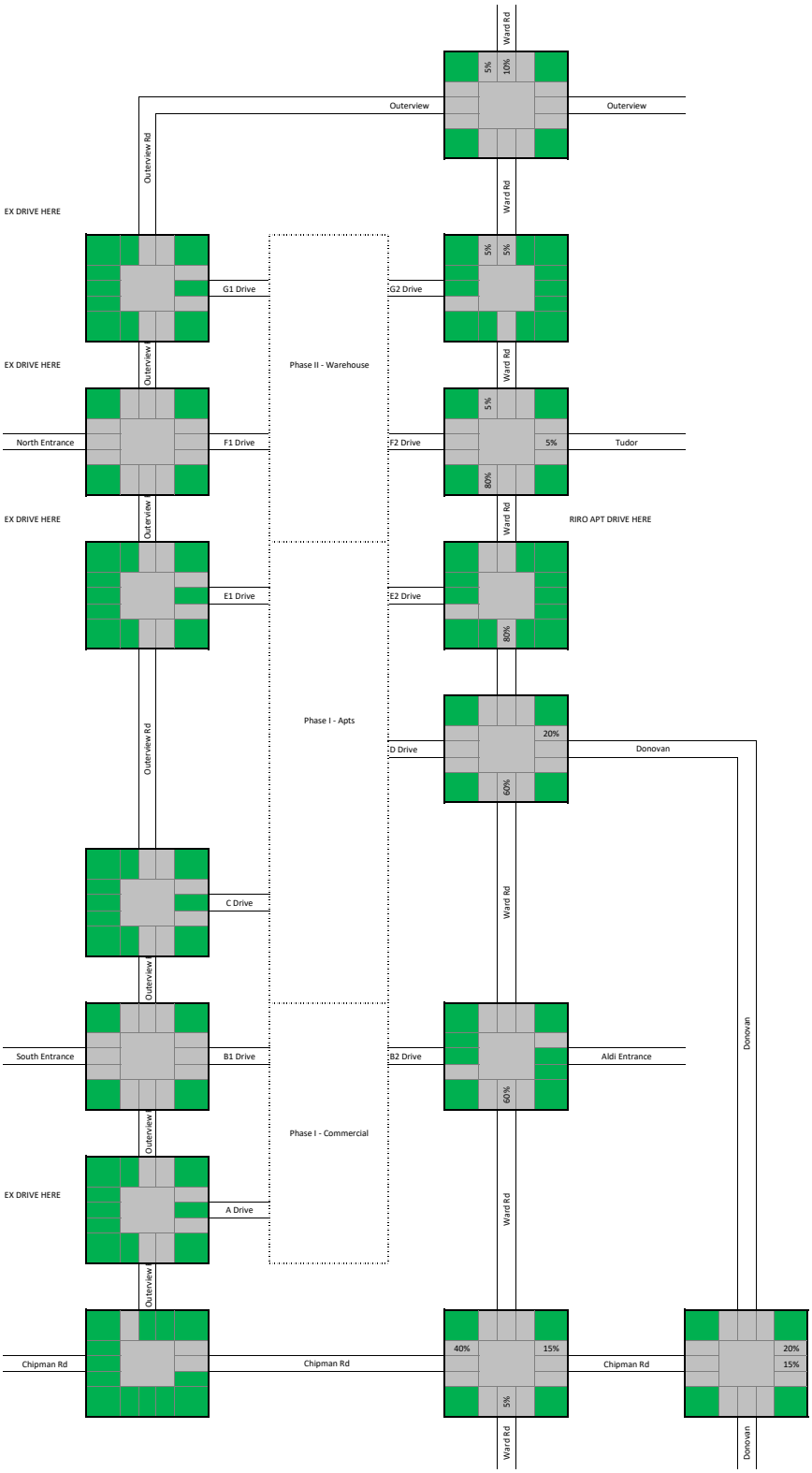




PM Distribution In - Warehouse (Phase II)

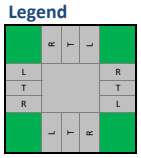
Legend

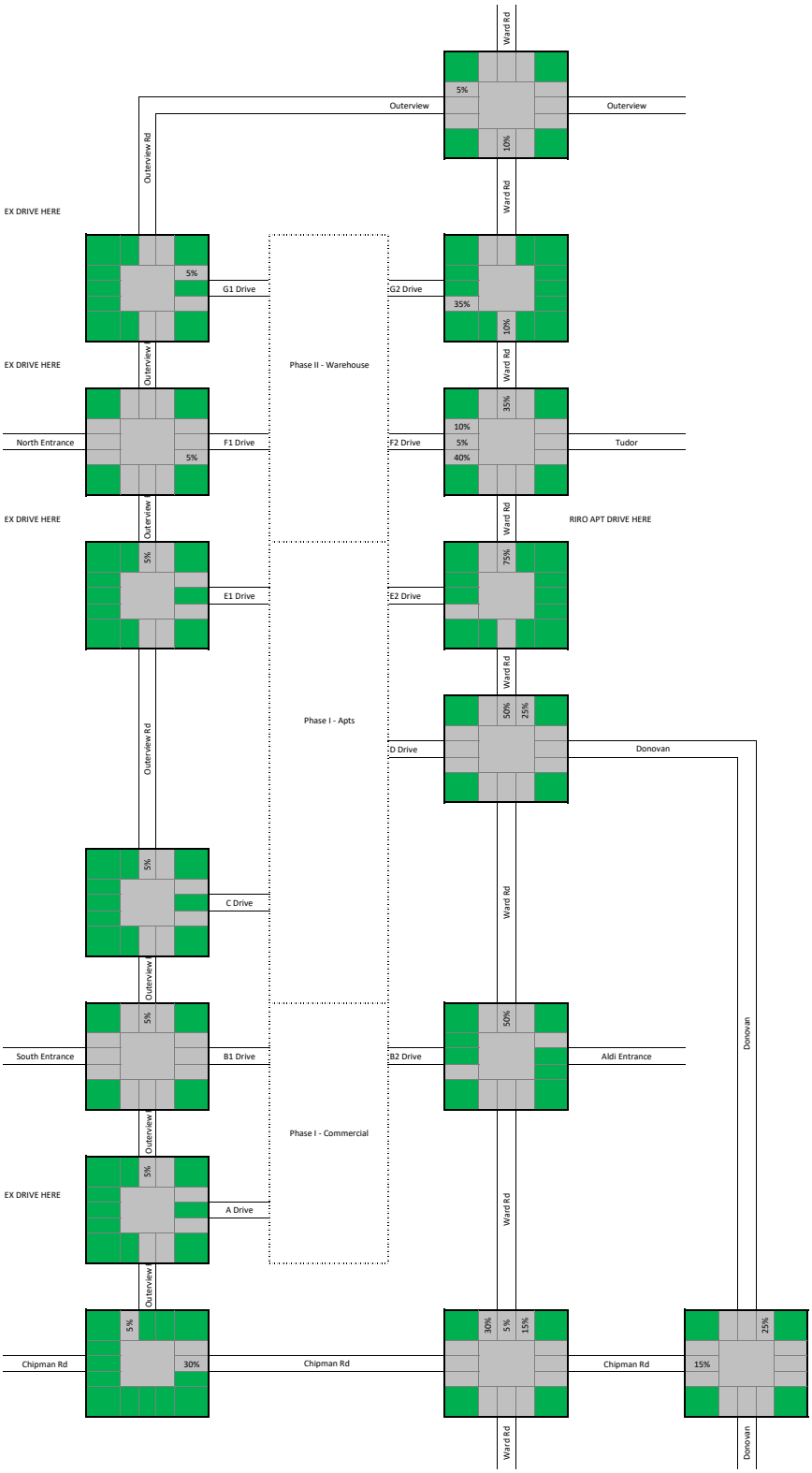




PM Distribution Out - Warehouse (Phase II)

Legend

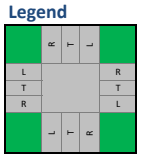


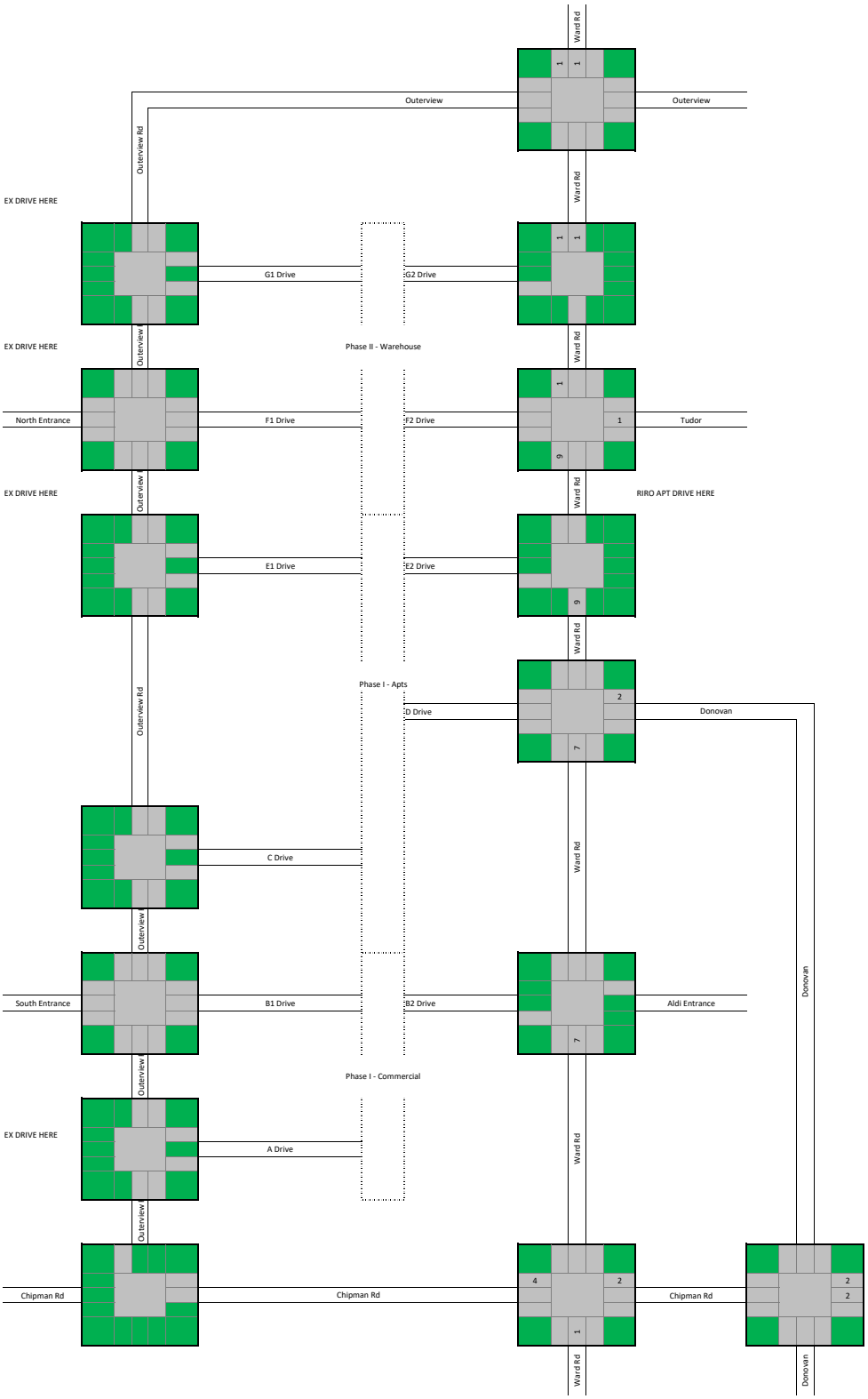


PM Trips In - Warehouse (Phase 2)

Trips
11

Legend

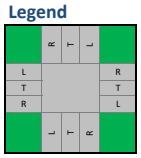


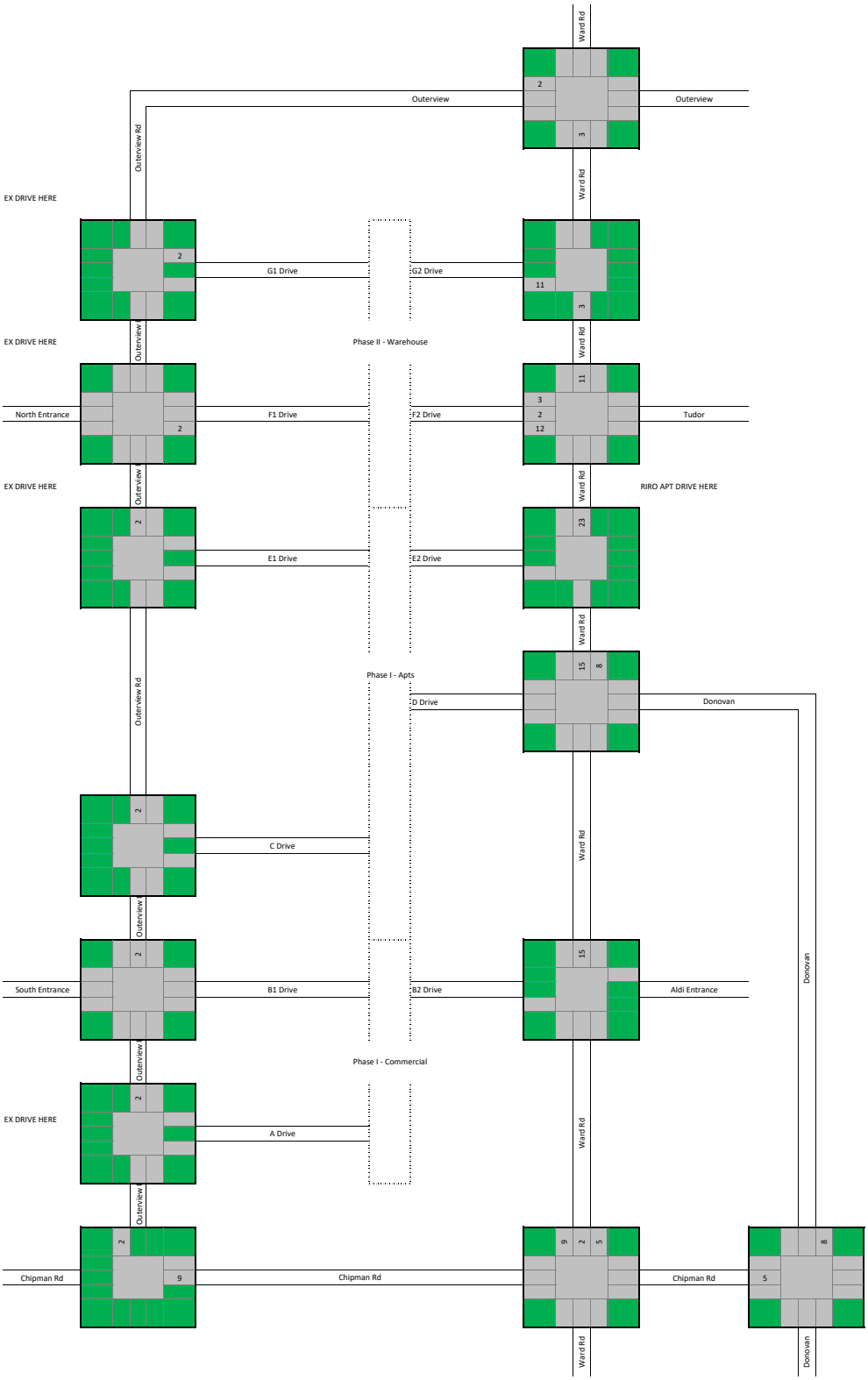


PM Trips Out - Warehouse (Phase 2)

Trips
30

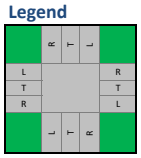
Legend

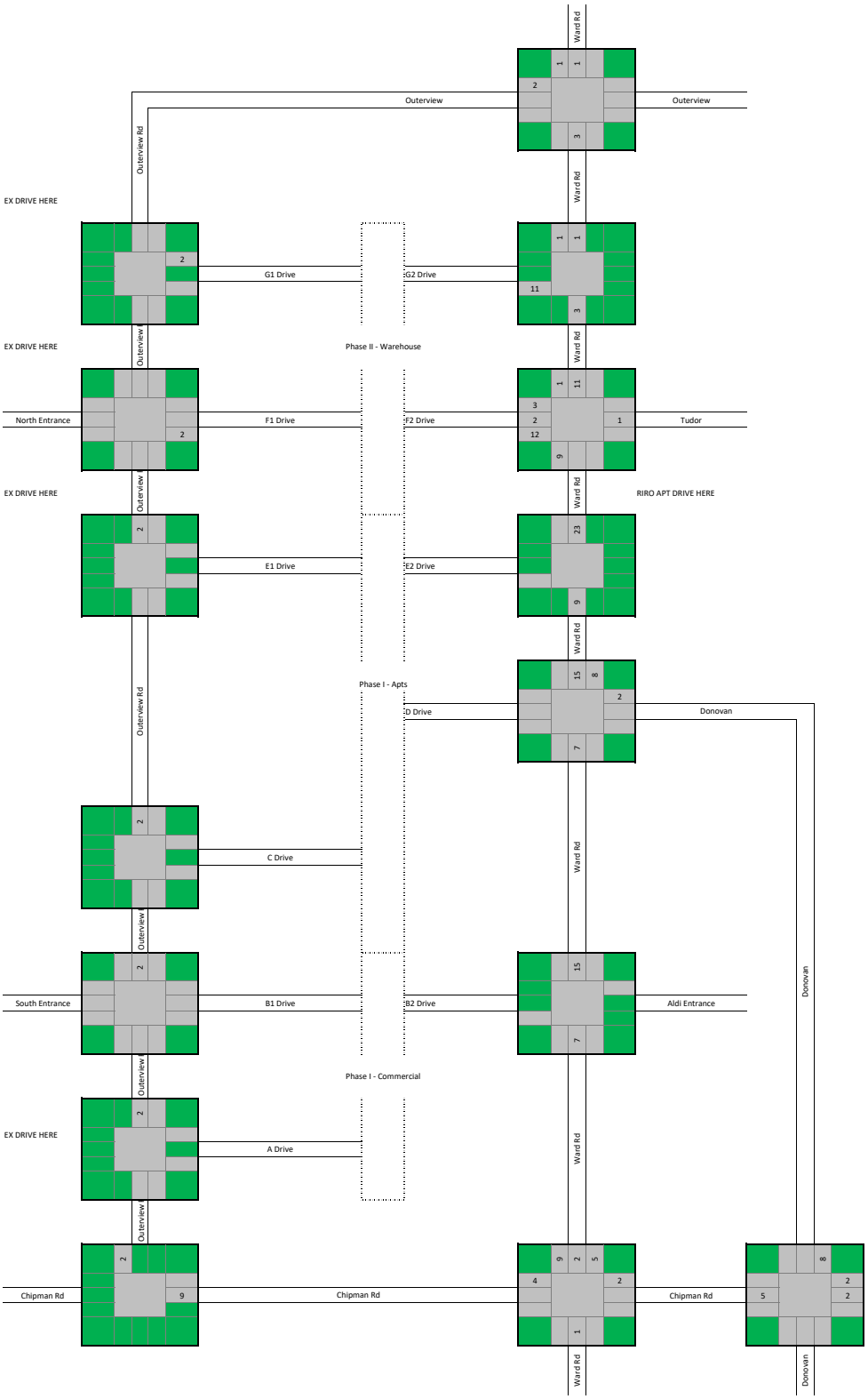




PM Trips (Phase 2)

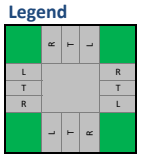
Legend

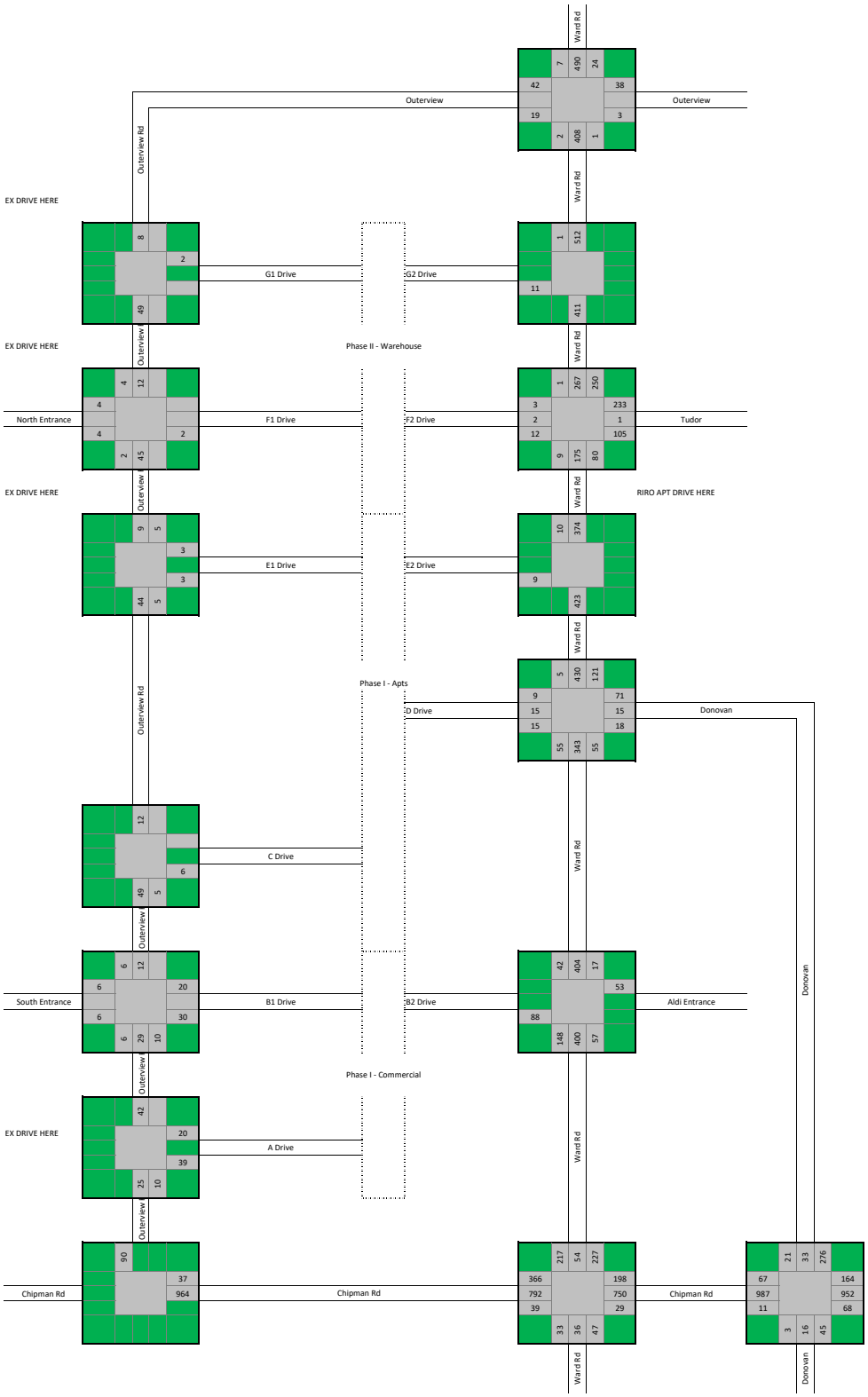




PM Existing + Approved + Phase I&II Trips

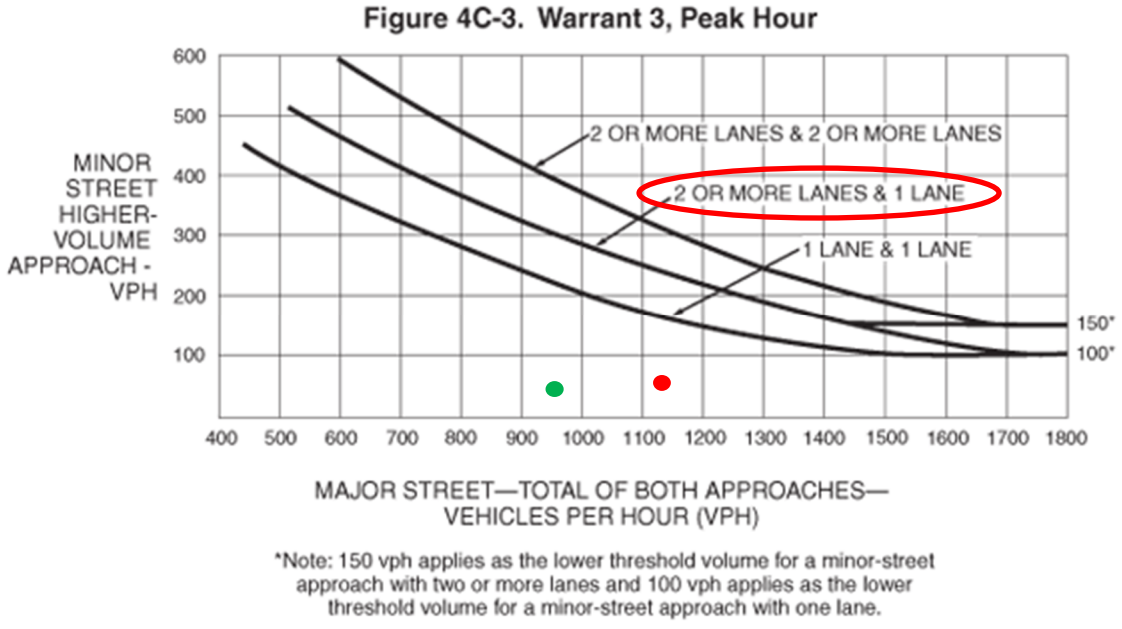
Legend





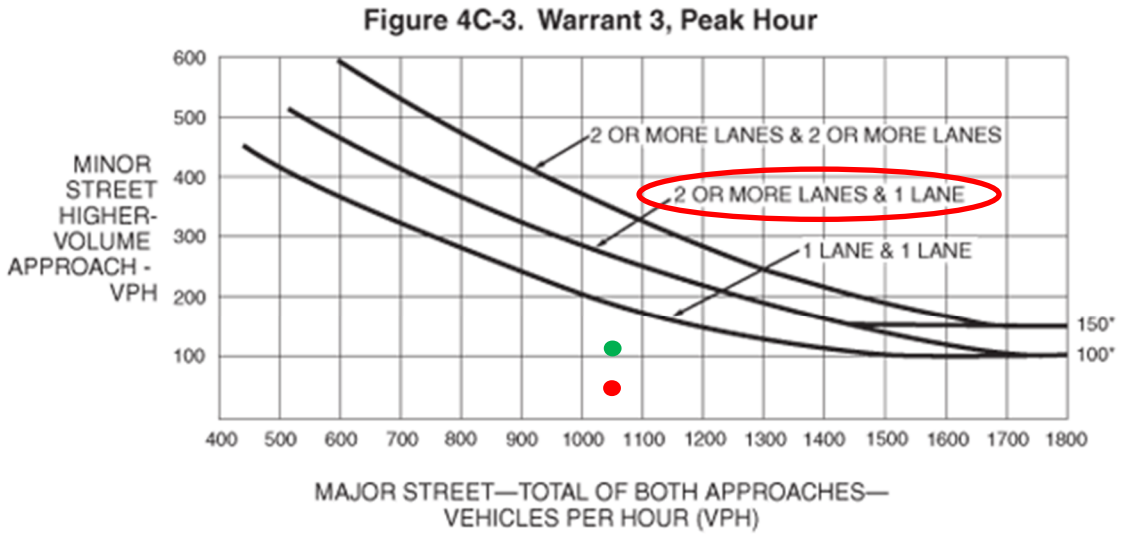
EXISTING PLUS SITE

Ward Road and Outerview Road – AM & PM

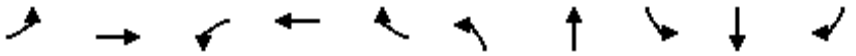


*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Ward Road and Donovan Road – AM & PM



*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.



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	328	530	18	552	290	35	112	35	14	119
v/c Ratio	0.60	0.36	0.13	0.68	0.49	0.25	0.24	0.13	0.03	0.19
Control Delay	37.2	18.3	41.4	33.3	6.7	43.6	20.6	39.7	28.0	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	18.3	41.4	33.3	6.7	43.6	20.6	39.7	28.0	0.7
Queue Length 50th (ft)	87	90	9	143	0	18	32	9	6	0
Queue Length 95th (ft)	120	149	31	197	55	46	70	22	19	0
Internal Link Dist (ft)		424		1156			2315		414	
Turn Bay Length (ft)	310		270		300	140		310		310
Base Capacity (vph)	685	1532	141	1028	667	141	475	270	479	625
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.35	0.13	0.54	0.43	0.25	0.24	0.13	0.03	0.19

Intersection Summary

HCM 6th Signalized Intersection Summary
3: Ward Rd & Chipman Rd

AM Existing

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	272	420	20	16	486	255	29	52	41	28	11	94
Future Volume (veh/h)	272	420	20	16	486	255	29	52	41	28	11	94
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	328	506	24	18	552	290	35	63	49	35	14	119
Peak Hour Factor	0.83	0.83	0.83	0.88	0.88	0.88	0.83	0.83	0.83	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	433	1136	54	44	817	364	73	247	192	142	467	396
Arrive On Green	0.13	0.33	0.33	0.02	0.23	0.23	0.04	0.25	0.25	0.04	0.25	0.25
Sat Flow, veh/h	3456	3454	164	1781	3554	1585	1781	975	759	3456	1870	1585
Grp Volume(v), veh/h	328	260	270	18	552	290	35	0	112	35	14	119
Grp Sat Flow(s),veh/h/ln	1728	1777	1841	1781	1777	1585	1781	0	1734	1728	1870	1585
Q Serve(g_s), s	7.1	8.9	9.0	0.8	11.0	13.4	1.5	0.0	4.0	0.8	0.4	4.7
Cycle Q Clear(g_c), s	7.1	8.9	9.0	0.8	11.0	13.4	1.5	0.0	4.0	0.8	0.4	4.7
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.44	1.00		1.00
Lane Grp Cap(c), veh/h	433	584	606	44	817	364	73	0	440	142	467	396
V/C Ratio(X)	0.76	0.44	0.45	0.41	0.68	0.80	0.48	0.00	0.25	0.25	0.03	0.30
Avail Cap(c_a), veh/h	676	714	740	140	1011	451	140	0	440	267	467	396
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	20.5	20.5	37.3	27.3	28.2	36.4	0.0	23.1	36.1	22.0	23.6
Incr Delay (d2), s/veh	2.7	0.5	0.5	5.9	1.3	7.8	4.8	0.0	1.4	0.9	0.1	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	3.1	3.6	3.8	0.4	4.4	5.4	0.7	0.0	1.7	0.3	0.2	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	21.0	21.0	43.2	28.6	36.0	41.2	0.0	24.5	37.0	22.1	25.6
LnGrp LOS	D	C	C	D	C	D	D	A	C	D	C	C
Approach Vol, veh/h		858			860			147			168	
Approach Delay, s/veh		26.6			31.4			28.5			27.7	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	26.6	8.8	32.4	10.1	26.3	16.5	24.7
Change Period (Y+Rc), s	* 6.6	6.9	* 6.9	* 6.9	6.9	* 6.9	* 6.8	* 6.9
Max Green Setting (Gmax), s	* 6	19.5	* 6.1	* 31	6.1	* 19	* 15	* 22
Max Q Clear Time (g_c+I1), s	2.8	6.0	2.8	11.0	3.5	6.7	9.1	15.4
Green Ext Time (p_c), s	0.0	0.4	0.0	3.1	0.0	0.3	0.6	2.5

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	712	601	8	0	2
Future Vol, veh/h	0	712	601	8	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	110	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	88	88	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	858	683	9	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	342
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	654
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	654
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	654
HCM Lane V/C Ratio	-	-	-	0.003
HCM Control Delay (s)	-	-	-	10.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0

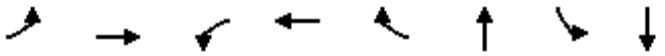
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	4	4	7	4
Future Vol, veh/h	2	1	4	4	7	4
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	2	1	4	4	8	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	22	10	12	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	12	-	-	-	-	-
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	995	1071	1607	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1071	1607	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1607	-	1018	-	-
HCM Lane V/C Ratio	0.003	-	0.003	-	-
HCM Control Delay (s)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

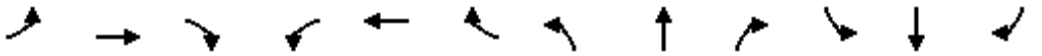


Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	55	462	52	823	122	68	199	67
v/c Ratio	0.19	0.40	0.12	0.72	0.21	0.10	0.38	0.10
Control Delay	12.7	21.1	11.9	26.9	5.0	9.7	23.0	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	21.1	11.9	26.9	5.0	9.7	23.0	10.7
Queue Length 50th (ft)	14	96	13	196	0	6	77	8
Queue Length 95th (ft)	32	136	29	250	31	32	151	37
Internal Link Dist (ft)		1156		2871		1038		1471
Turn Bay Length (ft)	210		170		130		100	
Base Capacity (vph)	307	1645	418	1604	784	690	527	694
Starvation Cap Reductn	0	0	0	0	0	0	0	0
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	0.18	0.28	0.12	0.51	0.16	0.10	0.38	0.10

Intersection Summary

HCM 6th Signalized Intersection Summary
9: Donovan Rd & Chipman Rd

AM Existing



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	429	6	45	716	106	3	13	41	175	21	38
Future Volume (veh/h)	52	429	6	45	716	106	3	13	41	175	21	38
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	55	456	6	52	823	122	4	15	49	199	24	43
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	1093	14	407	1069	477	62	160	445	609	226	405
Arrive On Green	0.07	0.30	0.30	0.07	0.30	0.30	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1781	3591	47	1781	3554	1585	34	425	1184	1338	601	1076
Grp Volume(v), veh/h	55	225	237	52	823	122	68	0	0	199	0	67
Grp Sat Flow(s),veh/h/ln	1781	1777	1862	1781	1777	1585	1644	0	0	1338	0	1677
Q Serve(g_s), s	1.5	7.8	7.8	1.5	16.2	4.5	0.0	0.0	0.0	5.5	0.0	2.0
Cycle Q Clear(g_c), s	1.5	7.8	7.8	1.5	16.2	4.5	2.1	0.0	0.0	7.6	0.0	2.0
Prop In Lane	1.00		0.03	1.00		1.00	0.06		0.72	1.00		0.64
Lane Grp Cap(c), veh/h	275	541	566	407	1069	477	668	0	0	609	0	631
V/C Ratio(X)	0.20	0.42	0.42	0.13	0.77	0.26	0.10	0.00	0.00	0.33	0.00	0.11
Avail Cap(c_a), veh/h	353	784	821	468	1526	681	668	0	0	609	0	631
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	21.3	21.3	16.1	24.4	20.3	15.6	0.0	0.0	17.2	0.0	15.6
Incr Delay (d2), s/veh	0.4	0.5	0.5	0.1	1.5	0.3	0.3	0.0	0.0	1.4	0.0	0.3
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	3.2	3.3	0.5	6.3	1.5	0.8	0.0	0.0	2.6	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	21.8	21.8	16.2	26.0	20.6	15.9	0.0	0.0	18.6	0.0	15.9
LnGrp LOS	B	C	C	B	C	C	B	A	A	B	A	B
Approach Vol, veh/h		517			997			68			266	
Approach Delay, s/veh		21.4			24.8			15.9			17.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		36.0	11.4	29.5		36.0	11.6	29.2				
Change Period (Y+Rc), s		7.1	* 6	* 6.1		7.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s		28.9	* 8	* 34		28.9	* 8.9	* 33				
Max Q Clear Time (g_c+I1), s		4.1	3.5	9.8		9.6	3.5	18.2				
Green Ext Time (p_c), s		0.3	0.0	2.8		0.9	0.0	4.9				

Intersection Summary												
HCM 6th Ctrl Delay			22.5									
HCM 6th LOS			C									

Notes

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

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	569	10	7	133
Future Vol, veh/h	0	13	569	10	7	133
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	-	140	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	16	632	11	8	148

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	316	0	0	643	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	680	-	-	938	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	680	-	-	938	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	938	-
HCM Lane V/C Ratio	-	-	0.024	0.008	-
HCM Control Delay (s)	-	-	10.4	8.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	12	42	513	69	252	128
Future Vol, veh/h	12	42	513	69	252	128
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	85	0	-	230	210	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	59	570	77	280	142

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1201	285	0	0	647	0
Stage 1	570	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	177	712	-	-	934	-
Stage 1	529	-	-	-	-	-
Stage 2	492	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	124	712	-	-	934	-
Mov Cap-2 Maneuver	124	-	-	-	-	-
Stage 1	529	-	-	-	-	-
Stage 2	344	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	124	712	934	-
HCM Lane V/C Ratio	-	-	0.136	0.083	0.3	-
HCM Control Delay (s)	-	-	38.6	10.5	10.5	-
HCM Lane LOS	-	-	E	B	B	-
HCM 95th %tile Q(veh)	-	-	0.5	0.3	1.3	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	67	137	559	135	220	475
v/c Ratio	0.33	0.45	0.29	0.14	0.34	0.18
Control Delay	35.5	11.2	9.9	2.5	4.9	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	11.2	9.9	2.5	4.9	3.3
Queue Length 50th (ft)	30	0	65	1	23	26
Queue Length 95th (ft)	57	32	95	19	35	33
Internal Link Dist (ft)	1567		790			1216
Turn Bay Length (ft)				90	150	
Base Capacity (vph)	520	562	1956	934	826	2617
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.24	0.29	0.14	0.27	0.18

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	52	107	447	108	152	328
Future Volume (veh/h)	52	107	447	108	152	328
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	137	559	135	220	475
Peak Hour Factor	0.78	0.78	0.80	0.80	0.69	0.69
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	205	182	2007	895	642	2633
Arrive On Green	0.11	0.11	0.56	0.56	0.10	0.74
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	67	137	559	135	220	475
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.6	6.4	6.2	3.1	3.6	3.0
Cycle Q Clear(g_c), s	2.6	6.4	6.2	3.1	3.6	3.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	205	182	2007	895	642	2633
V/C Ratio(X)	0.33	0.75	0.28	0.15	0.34	0.18
Avail Cap(c_a), veh/h	526	468	2007	895	889	2633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.0	32.7	8.6	7.9	5.1	3.0
Incr Delay (d2), s/veh	0.9	6.2	0.3	0.4	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	2.7	2.2	1.0	1.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.0	38.9	8.9	8.2	5.4	3.1
LnGrp LOS	C	D	A	A	A	A
Approach Vol, veh/h	204		694			695
Approach Delay, s/veh	36.6		8.8			3.8
Approach LOS	D		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.4	48.6			62.0	14.3
Change Period (Y+Rc), s	5.5	5.5			5.5	5.5
Max Green Setting (Gmax), s	18.5	32.5			56.5	22.5
Max Q Clear Time (g_c+I1), s	5.6	8.2			5.0	8.4
Green Ext Time (p_c), s	0.5	4.4			3.4	0.5

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	50	469	6	9	544	1	2	0	3	8	0	11
Future Vol, veh/h	50	469	6	9	544	1	2	0	3	8	0	11
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	190	-	190	200	-	145	-	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	95	95	95	63	63	63	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	586	8	9	573	1	3	0	5	10	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	574	0	0	594	0	0	1017	1304	293	1010	1311	287
Stage 1	-	-	-	-	-	-	712	712	-	591	591	-
Stage 2	-	-	-	-	-	-	305	592	-	419	720	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	995	-	-	978	-	-	192	159	703	194	158	710
Stage 1	-	-	-	-	-	-	389	434	-	460	493	-
Stage 2	-	-	-	-	-	-	680	492	-	582	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	995	-	-	978	-	-	178	148	703	182	147	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	148	-	182	147	-
Stage 1	-	-	-	-	-	-	364	407	-	431	489	-
Stage 2	-	-	-	-	-	-	661	488	-	541	403	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.8	0.1	16.4	16.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	323	978	-	-	995	-	-	182	710
HCM Lane V/C Ratio	0.025	0.01	-	-	0.063	-	-	0.056	0.02
HCM Control Delay (s)	16.4	8.7	-	-	8.9	-	-	25.9	10.2
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.2	0.1

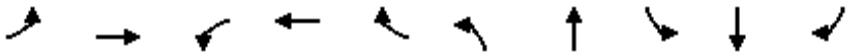
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2	4	4	11	4
Future Vol, veh/h	2	2	4	4	11	4
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	2	2	4	4	12	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	26	14	16	0	-	0
Stage 1	14	-	-	-	-	-
Stage 2	12	-	-	-	-	-
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	989	1066	1602	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	986	1066	1602	-	-	-
Mov Cap-2 Maneuver	986	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.6	0
HCM LOS	A		

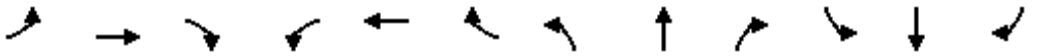
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1024	-	-
HCM Lane V/C Ratio	0.003	-	0.004	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	294	1078	35	899	158	40	87	151	52	207
v/c Ratio	0.75	0.77	0.29	0.86	0.26	0.33	0.21	0.63	0.10	0.35
Control Delay	51.6	28.8	46.7	39.6	2.4	47.8	14.6	53.2	28.6	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.6	28.8	46.7	39.6	2.4	47.8	14.6	53.2	28.6	6.2
Queue Length 50th (ft)	85	295	19	250	0	22	14	43	24	0
Queue Length 95th (ft)	113	325	46	295	13	50	45	#81	55	53
Internal Link Dist (ft)		424		1156			2315		414	
Turn Bay Length (ft)	310		270		300	140		310		310
Base Capacity (vph)	399	1409	120	1091	634	121	405	240	513	589
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.77	0.29	0.82	0.25	0.33	0.21	0.63	0.10	0.35

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)	238	834	39	29	755	133	33	25	47	143	49	197
Future Volume (veh/h)	238	834	39	29	755	133	33	25	47	143	49	197
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	294	1030	48	35	899	158	40	30	57	151	52	207
Peak Hour Factor	0.81	0.81	0.81	0.84	0.84	0.84	0.82	0.82	0.82	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	1238	58	70	1035	462	76	127	241	233	450	381
Arrive On Green	0.11	0.36	0.36	0.04	0.29	0.29	0.04	0.22	0.22	0.07	0.24	0.24
Sat Flow, veh/h	3456	3457	161	1781	3554	1585	1781	577	1096	3456	1870	1585
Grp Volume(v), veh/h	294	529	549	35	899	158	40	0	87	151	52	207
Grp Sat Flow(s),veh/h/ln	1728	1777	1841	1781	1777	1585	1781	0	1673	1728	1870	1585
Q Serve(g_s), s	7.2	23.6	23.6	1.7	20.8	6.8	1.9	0.0	3.7	3.7	1.9	9.9
Cycle Q Clear(g_c), s	7.2	23.6	23.6	1.7	20.8	6.8	1.9	0.0	3.7	3.7	1.9	9.9
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	371	636	660	70	1035	462	76	0	367	233	450	381
V/C Ratio(X)	0.79	0.83	0.83	0.50	0.87	0.34	0.52	0.00	0.24	0.65	0.12	0.54
Avail Cap(c_a), veh/h	411	649	672	123	1121	500	126	0	367	248	450	381
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.7	25.4	25.4	40.7	29.1	24.1	40.6	0.0	27.8	39.4	25.7	28.7
Incr Delay (d2), s/veh	9.3	8.9	8.6	5.4	7.1	0.4	5.5	0.0	1.5	5.3	0.5	5.5
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	3.5	11.0	11.4	0.8	9.1	2.4	0.9	0.0	1.6	1.7	0.9	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.0	34.3	34.0	46.1	36.2	24.6	46.0	0.0	29.3	44.7	26.2	34.2
LnGrp LOS	D	C	C	D	D	C	D	A	C	D	C	C
Approach Vol, veh/h		1372			1092			127			410	
Approach Delay, s/veh		36.9			34.8			34.6			37.0	
Approach LOS		D			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	25.9	10.3	37.9	10.6	27.7	16.1	32.1
Change Period (Y+Rc), s	* 6.6	6.9	* 6.9	* 6.9	6.9	* 6.9	* 6.8	* 6.9
Max Green Setting (Gmax), s	* 6.2	19.0	* 6	* 32	6.1	* 19	* 10	* 27
Max Q Clear Time (g_c+I1), s	5.7	5.7	3.7	25.6	3.9	11.9	9.2	22.8
Green Ext Time (p_c), s	0.0	0.3	0.0	3.4	0.0	0.5	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1111	980	5	0	11
Future Vol, veh/h	0	1111	980	5	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	110	-	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	0	1208	1065	5	0	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	533
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	491
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	491
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	491
HCM Lane V/C Ratio	-	-	-	0.024
HCM Control Delay (s)	-	-	-	12.5
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

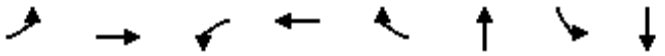
Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	6	6	1	1	6
Future Vol, veh/h	6	6	6	1	1	6
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	7	7	7	1	1	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	20	5	8	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	15	-	-	-	-	-
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	997	1078	1612	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1008	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1078	1612	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	6.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1612	-	1034	-	-
HCM Lane V/C Ratio	0.004	-	0.013	-	-
HCM Control Delay (s)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

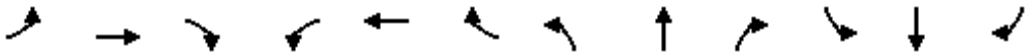


Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	71	1009	78	1026	169	77	284	62
v/c Ratio	0.28	0.81	0.31	0.82	0.27	0.12	0.60	0.10
Control Delay	14.0	31.0	14.5	31.6	7.9	9.8	30.7	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	31.0	14.5	31.6	7.9	9.8	30.7	14.8
Queue Length 50th (ft)	19	263	21	269	17	9	136	15
Queue Length 95th (ft)	40	340	42	330	55	35	220	41
Internal Link Dist (ft)		1156		2871		1038		1471
Turn Bay Length (ft)	210		170		130		100	
Base Capacity (vph)	254	1416	254	1418	708	638	476	650
Starvation Cap Reductn	0	0	0	0	0	0	0	0
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	0.28	0.71	0.31	0.72	0.24	0.12	0.60	0.10

Intersection Summary

HCM 6th Signalized Intersection Summary
9: Donovan Rd & Chipman Rd

PM Existing



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	937	11	68	893	147	3	16	45	250	33	21
Future Volume (veh/h)	67	937	11	68	893	147	3	16	45	250	33	21
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	71	997	12	78	1026	169	4	19	54	284	38	24
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	1227	15	276	1218	543	55	164	408	567	378	238
Arrive On Green	0.08	0.34	0.34	0.08	0.34	0.34	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3596	43	1781	3554	1585	28	465	1158	1327	1072	677
Grp Volume(v), veh/h	71	493	516	78	1026	169	77	0	0	284	0	62
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1585	1651	0	0	1327	0	1749
Q Serve(g_s), s	2.0	21.4	21.4	2.2	22.6	6.6	0.0	0.0	0.0	11.1	0.0	2.0
Cycle Q Clear(g_c), s	2.0	21.4	21.4	2.2	22.6	6.6	2.7	0.0	0.0	13.8	0.0	2.0
Prop In Lane	1.00		0.02	1.00		1.00	0.05		0.70	1.00		0.39
Lane Grp Cap(c), veh/h	257	606	636	276	1218	543	626	0	0	567	0	616
V/C Ratio(X)	0.28	0.81	0.81	0.28	0.84	0.31	0.12	0.00	0.00	0.50	0.00	0.10
Avail Cap(c_a), veh/h	289	693	727	303	1386	618	626	0	0	567	0	616
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	25.4	25.4	18.0	25.7	20.4	18.6	0.0	0.0	21.9	0.0	18.4
Incr Delay (d2), s/veh	0.6	6.5	6.2	0.6	4.4	0.3	0.4	0.0	0.0	3.1	0.0	0.3
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	9.7	10.1	0.9	9.3	2.3	1.1	0.0	0.0	4.9	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.0	31.9	31.6	18.5	30.1	20.8	19.0	0.0	0.0	25.1	0.0	18.7
LnGrp LOS	B	C	C	B	C	C	B	A	A	C	A	B
Approach Vol, veh/h		1080			1273			77			346	
Approach Delay, s/veh		30.9			28.1			19.0			23.9	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	36.9	12.7	35.0	36.9	12.6	35.1
Change Period (Y+Rc), s	7.1	* 6	* 6.1	7.1	* 6.1	* 6.1
Max Green Setting (Gmax), s	29.8	* 8	* 33	29.8	* 8	* 33
Max Q Clear Time (g_c+I1), s	4.7	4.2	23.4	15.8	4.0	24.6
Green Ext Time (p_c), s	0.4	0.0	4.5	1.1	0.0	4.4

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

Notes

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

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	53	338	57	17	389
Future Vol, veh/h	0	53	338	57	17	389
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	-	140	160	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	72	376	63	19	432

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	188	0	0	439	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	822	-	-	1117	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	822	-	-	1117	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	822	1117	-
HCM Lane V/C Ratio	-	-	0.087	0.017	-
HCM Control Delay (s)	-	-	9.8	8.3	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	69	336	55	110	388
Future Vol, veh/h	18	69	336	55	110	388
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	85	0	-	230	210	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	82	373	61	122	431

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	833	187	0	0	434	0
Stage 1	373	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	307	823	-	-	1122	-
Stage 1	666	-	-	-	-	-
Stage 2	602	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	274	823	-	-	1122	-
Mov Cap-2 Maneuver	274	-	-	-	-	-
Stage 1	666	-	-	-	-	-
Stage 2	536	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	274	823	1122	-
HCM Lane V/C Ratio	-	-	0.078	0.1	0.109	-
HCM Control Delay (s)	-	-	19.3	9.9	8.6	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0.3	0.4	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	123	303	188	86	295	277
v/c Ratio	0.48	0.62	0.11	0.10	0.36	0.11
Control Delay	35.2	9.9	11.3	3.7	5.8	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.2	9.9	11.3	3.7	5.8	3.9
Queue Length 50th (ft)	52	0	22	0	38	16
Queue Length 95th (ft)	84	34	47	24	71	30
Internal Link Dist (ft)	1567		790			1216
Turn Bay Length (ft)				90	150	
Base Capacity (vph)	665	784	1736	820	1012	2493
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.39	0.11	0.10	0.29	0.11

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	95	233	169	77	245	230
Future Volume (veh/h)	95	233	169	77	245	230
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	303	188	86	295	277
Peak Hour Factor	0.77	0.77	0.90	0.90	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	396	352	1613	720	769	2278
Arrive On Green	0.22	0.22	0.45	0.45	0.12	0.64
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	123	303	188	86	295	277
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	4.6	14.8	2.5	2.5	6.8	2.4
Cycle Q Clear(g_c), s	4.6	14.8	2.5	2.5	6.8	2.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	396	352	1613	720	769	2278
V/C Ratio(X)	0.31	0.86	0.12	0.12	0.38	0.12
Avail Cap(c_a), veh/h	610	542	1613	720	1056	2278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	30.1	12.6	12.7	8.9	5.6
Incr Delay (d2), s/veh	0.4	8.5	0.1	0.3	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	6.2	1.0	0.9	2.3	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.6	38.6	12.8	13.0	9.2	5.7
LnGrp LOS	C	D	B	B	A	A
Approach Vol, veh/h	426		274			572
Approach Delay, s/veh	35.1		12.9			7.5
Approach LOS	D		B			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	15.0	42.0			57.0	23.4
Change Period (Y+Rc), s	5.5	5.5			5.5	5.5
Max Green Setting (Gmax), s	22.5	23.5			51.5	27.5
Max Q Clear Time (g_c+I1), s	8.8	4.5			4.4	16.8
Green Ext Time (p_c), s	0.7	1.3			1.9	1.1

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	1.4

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	463	1	2	399	1	7	0	9	3	0	38
Future Vol, veh/h	24	463	1	2	399	1	7	0	9	3	0	38
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	190	-	190	200	-	145	-	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	92	92	92	57	57	57	47	47	47
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	509	1	2	434	1	12	0	16	6	0	81

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	435	0	0	510	0	0	782	1000	255	745	1000	217
Stage 1	-	-	-	-	-	-	561	561	-	438	438	-
Stage 2	-	-	-	-	-	-	221	439	-	307	562	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1121	-	-	1051	-	-	284	242	744	302	242	787
Stage 1	-	-	-	-	-	-	480	508	-	567	577	-
Stage 2	-	-	-	-	-	-	761	576	-	678	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1121	-	-	1051	-	-	250	236	744	290	236	787
Mov Cap-2 Maneuver	-	-	-	-	-	-	250	236	-	290	236	-
Stage 1	-	-	-	-	-	-	469	496	-	554	576	-
Stage 2	-	-	-	-	-	-	682	575	-	648	496	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.4	0	14.7	10.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	399	1051	-	-	1121	-	-	290	787
HCM Lane V/C Ratio	0.07	0.002	-	-	0.024	-	-	0.022	0.103
HCM Control Delay (s)	14.7	8.4	-	-	8.3	-	-	17.7	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1	0.3

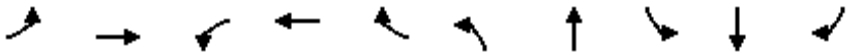
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	4	2	3	7	4
Future Vol, veh/h	4	4	2	3	7	4
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	4	4	2	3	8	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	17	10	12	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	7	-	-	-	-	-
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	1001	1071	1607	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1000	1071	1607	-	-	-
Mov Cap-2 Maneuver	1000	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	2.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1607	-	1034	-	-
HCM Lane V/C Ratio	0.001	-	0.008	-	-
HCM Control Delay (s)	7.2	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

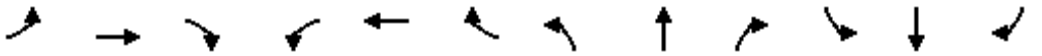


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	459	472	18	525	389	35	122	157	20	148
v/c Ratio	0.81	0.36	0.15	0.78	0.48	0.29	0.26	0.54	0.03	0.21
Control Delay	47.8	21.7	42.6	43.1	4.4	46.4	21.5	46.7	24.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.8	21.7	42.6	43.1	4.4	46.4	21.5	46.7	24.8	0.6
Queue Length 50th (ft)	130	86	10	148	0	19	40	44	8	0
Queue Length 95th (ft)	167	142	31	199	52	46	77	66	23	0
Internal Link Dist (ft)		424		1156			2315		414	
Turn Bay Length (ft)	310		270		300	140		310		310
Base Capacity (vph)	594	1327	121	730	812	121	463	297	608	716
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.36	0.15	0.72	0.48	0.29	0.26	0.53	0.03	0.21

Intersection Summary

HCM 6th Signalized Intersection Summary
3: Ward Rd & Chipman Rd

AM Existing plus Site (Phase 1)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	381	372	20	16	462	342	29	61	41	124	16	117
Future Volume (veh/h)	381	372	20	16	462	342	29	61	41	124	16	117
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	459	448	24	18	525	389	35	73	49	157	20	148
Peak Hour Factor	0.83	0.83	0.83	0.88	0.88	0.88	0.83	0.83	0.83	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	542	1167	62	43	742	438	70	264	177	234	519	440
Arrive On Green	0.16	0.34	0.34	0.02	0.21	0.21	0.04	0.25	0.25	0.07	0.28	0.28
Sat Flow, veh/h	3456	3431	183	1781	3554	1585	1781	1044	701	3456	1870	1585
Grp Volume(v), veh/h	459	231	241	18	525	389	35	0	122	157	20	148
Grp Sat Flow(s),veh/h/ln	1728	1777	1837	1781	1777	1585	1781	0	1744	1728	1870	1585
Q Serve(g_s), s	11.2	8.6	8.6	0.9	11.9	18.1	1.7	0.0	4.9	3.8	0.7	6.4
Cycle Q Clear(g_c), s	11.2	8.6	8.6	0.9	11.9	18.1	1.7	0.0	4.9	3.8	0.7	6.4
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	542	604	625	43	742	438	70	0	441	234	519	440
V/C Ratio(X)	0.85	0.38	0.38	0.42	0.71	0.89	0.50	0.00	0.28	0.67	0.04	0.34
Avail Cap(c_a), veh/h	606	604	625	123	742	438	123	0	441	303	519	440
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	21.7	21.7	41.7	31.8	30.0	40.8	0.0	26.0	39.4	22.9	24.9
Incr Delay (d2), s/veh	10.0	0.4	0.4	6.2	3.1	19.3	5.4	0.0	1.6	3.7	0.1	2.1
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	5.4	3.5	3.7	0.4	5.1	9.5	0.8	0.0	2.1	1.7	0.3	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.5	22.1	22.1	47.9	34.9	49.3	46.1	0.0	27.6	43.2	23.0	27.0
LnGrp LOS	D	C	C	D	C	D	D	A	C	D	C	C
Approach Vol, veh/h		931			932			157			325	
Approach Delay, s/veh		33.6			41.2			31.7			34.6	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	28.8	9.0	36.4	10.3	30.9	20.4	25.0
Change Period (Y+Rc), s	* 6.6	6.9	* 6.9	* 6.9	6.9	* 6.9	* 6.8	* 6.9
Max Green Setting (Gmax), s	* 7.6	21.9	* 6	* 27	6.0	* 24	* 15	* 18
Max Q Clear Time (g_c+I1), s	5.8	6.9	2.9	10.6	3.7	8.4	13.2	20.1
Green Ext Time (p_c), s	0.1	0.5	0.0	2.6	0.0	0.4	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	773	576	39	0	110
Future Vol, veh/h	0	773	576	39	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	110	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	88	88	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	931	655	44	0	120

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	328
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	668
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	668
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	668
HCM Lane V/C Ratio	-	-	-	0.179
HCM Control Delay (s)	-	-	-	11.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.6

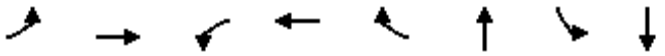
Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	41	0	27	4	34	14	0	21	4
Future Vol, veh/h	2	0	1	41	0	27	4	34	14	0	21	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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	1	45	0	29	4	37	15	0	23	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	92	85	25	79	80	45	27	0	0	52	0	0
Stage 1	25	25	-	53	53	-	-	-	-	-	-	-
Stage 2	67	60	-	26	27	-	-	-	-	-	-	-
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	892	805	1051	910	810	1025	1587	-	-	1554	-	-
Stage 1	993	874	-	960	851	-	-	-	-	-	-	-
Stage 2	943	845	-	992	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	864	803	1051	907	808	1025	1587	-	-	1554	-	-
Mov Cap-2 Maneuver	864	803	-	907	808	-	-	-	-	-	-	-
Stage 1	990	874	-	957	848	-	-	-	-	-	-	-
Stage 2	913	842	-	991	873	-	-	-	-	-	-	-

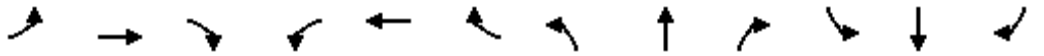
Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	9.1	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	918	950	1554	-	-
HCM Lane V/C Ratio	0.003	-	-	0.004	0.078	-	-	-
HCM Control Delay (s)	7.3	0	-	8.9	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	55	523	52	895	129	68	225	67
v/c Ratio	0.20	0.44	0.13	0.76	0.21	0.10	0.43	0.10
Control Delay	13.1	21.6	12.0	28.0	5.5	9.7	24.4	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.1	21.6	12.0	28.0	5.5	9.7	24.4	10.7
Queue Length 50th (ft)	15	113	14	222	3	7	94	8
Queue Length 95th (ft)	33	157	30	278	35	32	170	36
Internal Link Dist (ft)		1156		2871		1038		1471
Turn Bay Length (ft)	210		170		130		100	
Base Capacity (vph)	277	1571	398	1559	765	685	523	689
Starvation Cap Reductn	0	0	0	0	0	0	0	0
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	0.20	0.33	0.13	0.57	0.17	0.10	0.43	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	486	6	45	779	112	3	13	41	198	21	38
Future Volume (veh/h)	52	486	6	45	779	112	3	13	41	198	21	38
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	55	517	6	52	895	129	4	15	49	225	24	43
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	264	1153	13	394	1127	503	60	157	438	597	222	398
Arrive On Green	0.07	0.32	0.32	0.07	0.32	0.32	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	3598	42	1781	3554	1585	34	425	1184	1338	601	1076
Grp Volume(v), veh/h	55	255	268	52	895	129	68	0	0	225	0	67
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1585	1643	0	0	1338	0	1677
Q Serve(g_s), s	1.6	9.1	9.1	1.5	18.3	4.8	0.0	0.0	0.0	7.1	0.0	2.1
Cycle Q Clear(g_c), s	1.6	9.1	9.1	1.5	18.3	4.8	2.2	0.0	0.0	9.3	0.0	2.1
Prop In Lane	1.00		0.02	1.00		1.00	0.06		0.72	1.00		0.64
Lane Grp Cap(c), veh/h	264	569	597	394	1127	503	656	0	0	597	0	620
V/C Ratio(X)	0.21	0.45	0.45	0.13	0.79	0.26	0.10	0.00	0.00	0.38	0.00	0.11
Avail Cap(c_a), veh/h	324	742	778	451	1471	656	656	0	0	597	0	620
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	21.5	21.5	16.0	24.8	20.2	16.5	0.0	0.0	18.6	0.0	16.5
Incr Delay (d2), s/veh	0.4	0.6	0.5	0.1	2.3	0.3	0.3	0.0	0.0	1.8	0.0	0.4
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	3.7	3.9	0.6	7.3	1.7	0.8	0.0	0.0	3.2	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.1	22.0	22.0	16.2	27.2	20.5	16.8	0.0	0.0	20.4	0.0	16.8
LnGrp LOS	B	C	C	B	C	C	B	A	A	C	A	B
Approach Vol, veh/h		578			1076			68			292	
Approach Delay, s/veh		21.7			25.8			16.8			19.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	36.6	11.5	31.7	36.6	11.7	31.4
Change Period (Y+Rc), s	7.1	* 6	* 6.1	7.1	* 6.1	* 6.1
Max Green Setting (Gmax), s	29.5	* 8	* 33	29.5	* 8.3	* 33
Max Q Clear Time (g_c+I1), s	4.2	3.5	11.1	11.3	3.6	20.3
Green Ext Time (p_c), s	0.3	0.0	3.2	1.0	0.0	5.0

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	121	0	0	13	196	584	10	7	143	56
Future Vol, veh/h	0	0	121	0	0	13	196	584	10	7	143	56
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	-	-	0	-	-	0	160	-	140	160	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	81	92	81	92	90	90	90	90	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	132	0	0	16	213	649	11	8	159	61

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	80	-	-	325	220	0	0	660	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	964	0	0	671	1346	-	-	924	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	964	-	-	671	1346	-	-	924	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.5	2	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1346	-	-	964	671	924	-	-
HCM Lane V/C Ratio	0.158	-	-	0.136	0.024	0.008	-	-
HCM Control Delay (s)	8.2	-	-	9.3	10.5	8.9	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	19	28	12	6	42	15	513	69	257	166	2
Future Vol, veh/h	14	19	28	12	6	42	15	513	69	257	166	2
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	100	-	-	85	-	-	200	-	230	210	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	71	92	71	92	90	90	90	90	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	21	30	17	7	59	16	570	77	286	184	2

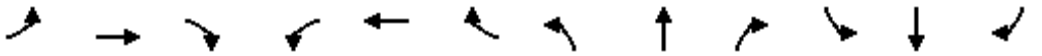
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1077	1435	92	1277	1360	285	186	0	0	647	0	0
Stage 1	756	756	-	602	602	-	-	-	-	-	-	-
Stage 2	321	679	-	675	758	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	173	133	947	123	147	712	1386	-	-	934	-	-
Stage 1	366	414	-	453	487	-	-	-	-	-	-	-
Stage 2	665	449	-	410	413	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	114	91	947	75	101	712	1386	-	-	934	-	-
Mov Cap-2 Maneuver	114	91	-	75	101	-	-	-	-	-	-	-
Stage 1	362	287	-	448	481	-	-	-	-	-	-	-
Stage 2	595	444	-	256	287	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.3	25.1	0.2	6.4
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1386	-	-	114	197	75	445	934	-	-
HCM Lane V/C Ratio	0.012	-	-	0.133	0.259	0.225	0.148	0.306	-	-
HCM Control Delay (s)	7.6	-	-	41.4	29.6	66.4	14.5	10.5	-	-
HCM Lane LOS	A	-	-	E	D	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	1	0.8	0.5	1.3	-	-

Lane Group	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	78	137	570	141	230	510
v/c Ratio	0.39	0.23	0.34	0.17	0.38	0.21
Control Delay	32.6	0.9	12.2	2.6	6.1	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.6	0.9	12.2	2.6	6.1	4.1
Queue Length 50th (ft)	30	0	70	0	26	30
Queue Length 95th (ft)	59	0	107	18	42	41
Internal Link Dist (ft)		1567	312			650
Turn Bay Length (ft)				90	150	
Base Capacity (vph)	468	808	1697	838	810	2458
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.17	0.34	0.17	0.28	0.21

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	61	0	107	0	456	113	159	352	0
Future Volume (veh/h)	0	0	0	61	0	107	0	456	113	159	352	0
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	0	0	0	78	0	137	0	570	141	230	510	0
Peak Hour Factor	0.92	0.92	0.92	0.78	0.92	0.78	0.92	0.80	0.80	0.69	0.69	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	111	231	0	331	0	196	559	1780	794	626	2512	1120
Arrive On Green	0.00	0.00	0.00	0.12	0.00	0.12	0.00	0.50	0.50	0.12	0.71	0.00
Sat Flow, veh/h	1252	1870	0	1781	0	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	0	0	0	78	0	137	0	570	141	230	510	0
Grp Sat Flow(s),veh/h/ln	1252	1870	0	1781	0	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	5.4	0.0	6.2	3.2	3.6	3.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.6	0.0	5.4	0.0	6.2	3.2	3.6	3.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	111	231	0	331	0	196	559	1780	794	626	2512	1120
V/C Ratio(X)	0.00	0.00	0.00	0.24	0.00	0.70	0.00	0.32	0.18	0.37	0.20	0.00
Avail Cap(c_a), veh/h	410	677	0	729	0	550	735	1780	794	918	2512	1120
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)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	26.1	0.0	27.3	0.0	9.6	8.9	5.7	3.3	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.4	0.0	4.5	0.0	0.5	0.5	0.4	0.2	0.0
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	0.0	0.0	0.0	1.1	0.0	2.1	0.0	2.2	1.1	1.0	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	26.4	0.0	31.7	0.0	10.1	9.4	6.1	3.4	0.0
LnGrp LOS	A	A	A	C	A	C	A	B	A	A	A	A
Approach Vol, veh/h		0			215			711			740	
Approach Delay, s/veh		0.0			29.8			10.0			4.3	
Approach LOS					C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.4	38.0		13.5	0.0	51.4		13.5				
Change Period (Y+Rc), s	5.5	5.5		* 5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	18.5	32.5		* 24	6.5	45.5		22.5				
Max Q Clear Time (g_c+I1), s	5.6	8.2		0.0	0.0	5.2		7.4				
Green Ext Time (p_c), s	0.5	4.5		0.0	0.0	3.7		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	10.0
HCM 6th LOS	A

Notes

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

Intersection	
Int Delay, s/veh	3.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	50	493	8	9	553	1	48	0	17	8	0	11
Future Vol, veh/h	50	493	8	9	553	1	48	0	17	8	0	11
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	190	-	190	200	-	145	-	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	95	95	95	63	63	63	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	616	10	9	582	1	76	0	27	10	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	583	0	0	626	0	0	1051	1343	308	1034	1352	291
Stage 1	-	-	-	-	-	-	742	742	-	600	600	-
Stage 2	-	-	-	-	-	-	309	601	-	434	752	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	987	-	-	952	-	-	181	151	688	186	149	706
Stage 1	-	-	-	-	-	-	374	420	-	455	488	-
Stage 2	-	-	-	-	-	-	676	488	-	570	416	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	987	-	-	952	-	-	168	140	688	169	138	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	168	140	-	169	138	-
Stage 1	-	-	-	-	-	-	350	393	-	426	484	-
Stage 2	-	-	-	-	-	-	656	484	-	513	389	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.8	0.1	37.9	17.6
HCM LOS			E	C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	209	952	-	-	987	-	-	169	706
HCM Lane V/C Ratio	0.494	0.01	-	-	0.063	-	-	0.06	0.02
HCM Control Delay (s)	37.9	8.8	-	-	8.9	-	-	27.7	10.2
HCM Lane LOS	E	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	2.5	0	-	-	0.2	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	2	0	0	0	4	62	0	0	13	4
Future Vol, veh/h	2	0	2	0	0	0	4	62	0	0	13	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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	2	0	0	0	4	67	0	0	14	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	91	91	16	92	93	67	18	0	0	67	0	0
Stage 1	16	16	-	75	75	-	-	-	-	-	-	-
Stage 2	75	75	-	17	18	-	-	-	-	-	-	-
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	893	799	1063	892	797	997	1599	-	-	1535	-	-
Stage 1	1004	882	-	934	833	-	-	-	-	-	-	-
Stage 2	934	833	-	1002	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	891	797	1063	888	795	997	1599	-	-	1535	-	-
Mov Cap-2 Maneuver	891	797	-	888	795	-	-	-	-	-	-	-
Stage 1	1001	882	-	931	831	-	-	-	-	-	-	-
Stage 2	931	831	-	1000	880	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	969	-	1535	-	-
HCM Lane V/C Ratio	0.003	-	-	0.004	-	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	555	411	3
Future Vol, veh/h	0	14	0	555	411	3
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	0	15	0	603	447	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	225	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	778	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	778	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	778	-	-
HCM Lane V/C Ratio	-	0.02	-	-
HCM Control Delay (s)	-	9.7	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	5	61	2	2	11
Future Vol, veh/h	5	5	61	2	2	11
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	5	5	66	2	2	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	83	67	0	0	68	0
Stage 1	67	-	-	-	-	-
Stage 2	16	-	-	-	-	-
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	919	997	-	-	1533	-
Stage 1	956	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	918	997	-	-	1533	-
Mov Cap-2 Maneuver	918	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	1006	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	956	1533	-
HCM Lane V/C Ratio	-	-	0.011	0.001	-
HCM Control Delay (s)	-	-	8.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	0	63	2	0	16
Future Vol, veh/h	9	0	63	2	0	16
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	10	0	68	2	0	17

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	86	69	0	0	70	0
Stage 1	69	-	-	-	-	-
Stage 2	17	-	-	-	-	-
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	915	994	-	-	1531	-
Stage 1	954	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	915	994	-	-	1531	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	1006	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	915	1531	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

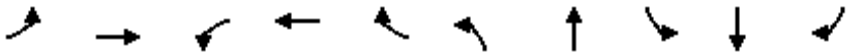
Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	27	25	14	0	62
Future Vol, veh/h	53	27	25	14	0	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	58	29	27	15	0	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	35	0	0	42	0
Stage 1	35	-	-	-	-	-
Stage 2	67	-	-	-	-	-
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	896	1038	-	-	1567	-
Stage 1	987	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	896	1038	-	-	1567	-
Mov Cap-2 Maneuver	896	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	956	-	-	-	-	-

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

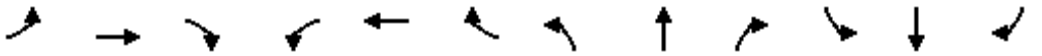
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	939	1567	-
HCM Lane V/C Ratio	-	-	0.093	-	-
HCM Control Delay (s)	-	-	9.2	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	447	1026	35	893	233	40	100	234	55	219
v/c Ratio	0.83	0.73	0.27	0.97	0.29	0.33	0.25	0.73	0.10	0.34
Control Delay	50.8	28.2	44.4	56.6	3.4	47.4	16.5	54.0	27.1	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	28.2	44.4	56.6	3.4	47.4	16.5	54.0	27.1	3.9
Queue Length 50th (ft)	127	280	19	264	0	22	20	68	25	0
Queue Length 95th (ft)	159	310	45	#346	33	49	53	#119	56	37
Internal Link Dist (ft)		424		1156			2315		414	
Turn Bay Length (ft)	310		270		300	140		310		310
Base Capacity (vph)	555	1400	140	924	799	124	403	321	546	644
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.73	0.25	0.97	0.29	0.32	0.25	0.73	0.10	0.34

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)	362	792	39	29	750	196	33	35	47	222	52	208
Future Volume (veh/h)	362	792	39	29	750	196	33	35	47	222	52	208
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	447	978	48	35	893	233	40	43	57	234	55	219
Peak Hour Factor	0.81	0.81	0.81	0.84	0.84	0.84	0.82	0.82	0.82	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	524	1289	63	70	941	561	76	156	207	308	481	407
Arrive On Green	0.15	0.37	0.37	0.04	0.26	0.26	0.04	0.21	0.21	0.09	0.26	0.26
Sat Flow, veh/h	3456	3448	169	1781	3554	1585	1781	729	967	3456	1870	1585
Grp Volume(v), veh/h	447	504	522	35	893	233	40	0	100	234	55	219
Grp Sat Flow(s),veh/h/ln	1728	1777	1840	1781	1777	1585	1781	0	1696	1728	1870	1585
Q Serve(g_s), s	11.1	21.9	21.9	1.7	21.8	9.8	1.9	0.0	4.4	5.8	2.0	10.5
Cycle Q Clear(g_c), s	11.1	21.9	21.9	1.7	21.8	9.8	1.9	0.0	4.4	5.8	2.0	10.5
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.57	1.00		1.00
Lane Grp Cap(c), veh/h	524	664	688	70	941	561	76	0	363	308	481	407
V/C Ratio(X)	0.85	0.76	0.76	0.50	0.95	0.42	0.53	0.00	0.28	0.76	0.11	0.54
Avail Cap(c_a), veh/h	567	664	688	143	941	561	127	0	363	328	481	407
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.5	24.2	24.2	41.6	31.9	21.6	41.4	0.0	29.0	39.3	25.1	28.3
Incr Delay (d2), s/veh	11.4	5.1	4.9	5.5	18.2	0.5	5.6	0.0	1.9	9.4	0.5	5.0
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	5.4	9.7	10.0	0.8	11.0	3.4	1.0	0.0	1.9	2.8	0.9	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	29.2	29.1	47.1	50.1	22.1	47.1	0.0	30.9	48.7	25.6	33.3
LnGrp LOS	D	C	C	D	D	C	D	A	C	D	C	C
Approach Vol, veh/h		1473			1161			140			508	
Approach Delay, s/veh		34.8			44.4			35.5			39.6	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	25.8	9.3	38.8	10.7	29.6	18.9	29.2
Change Period (Y+Rc), s	* 6.6	6.9	* 5.8	* 5.8	6.9	* 6.9	5.5	* 5.8
Max Green Setting (Gmax), s	* 8.4	18.9	* 7.1	* 31	6.3	* 21	14.5	* 23
Max Q Clear Time (g_c+I1), s	7.8	6.4	3.7	23.9	3.9	12.5	13.1	23.8
Green Ext Time (p_c), s	0.0	0.3	0.0	3.6	0.0	0.6	0.3	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1197	955	37	0	88
Future Vol, veh/h	0	1197	955	37	0	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	110	-	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	0	1301	1038	40	0	96

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	519
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	502
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	502
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	502
HCM Lane V/C Ratio	-	-	-	0.191
HCM Control Delay (s)	-	-	-	13.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.7

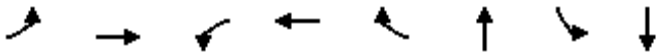
Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	6	30	0	20	6	29	10	0	10	6
Future Vol, veh/h	6	0	6	30	0	20	6	29	10	0	10	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	7	0	7	33	0	22	7	32	11	0	11	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	78	72	15	70	70	38	18	0	0	43	0	0
Stage 1	15	15	-	52	52	-	-	-	-	-	-	-
Stage 2	63	57	-	18	18	-	-	-	-	-	-	-
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	911	818	1065	922	821	1034	1599	-	-	1566	-	-
Stage 1	1005	883	-	961	852	-	-	-	-	-	-	-
Stage 2	948	847	-	1001	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	889	815	1065	914	818	1034	1599	-	-	1566	-	-
Mov Cap-2 Maneuver	889	815	-	914	818	-	-	-	-	-	-	-
Stage 1	1001	883	-	957	849	-	-	-	-	-	-	-
Stage 2	924	844	-	995	880	-	-	-	-	-	-	-

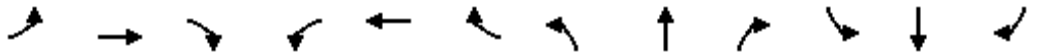
Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9	1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	969	958	1566	-	-
HCM Lane V/C Ratio	0.004	-	-	0.013	0.057	-	-	-
HCM Control Delay (s)	7.3	0	-	8.8	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	71	1057	78	1092	186	77	305	62
v/c Ratio	0.28	0.83	0.31	0.86	0.29	0.12	0.65	0.10
Control Delay	14.1	31.9	14.5	33.5	8.6	9.8	33.1	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	31.9	14.5	33.5	8.6	9.8	33.1	14.9
Queue Length 50th (ft)	19	281	21	294	22	9	149	15
Queue Length 95th (ft)	40	363	42	360	62	35	240	41
Internal Link Dist (ft)		1156		2871		1038		1471
Turn Bay Length (ft)	210		170		130		100	
Base Capacity (vph)	251	1396	251	1398	702	630	470	642
Starvation Cap Reductn	0	0	0	0	0	0	0	0
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	0.28	0.76	0.31	0.78	0.26	0.12	0.65	0.10

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	982	11	68	950	162	3	16	45	268	33	21
Future Volume (veh/h)	67	982	11	68	950	162	3	16	45	268	33	21
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	71	1045	12	78	1092	186	4	19	54	305	38	24
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1268	15	270	1257	561	54	161	401	557	371	234
Arrive On Green	0.08	0.35	0.35	0.08	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3598	41	1781	3554	1585	28	465	1158	1327	1072	677
Grp Volume(v), veh/h	71	516	541	78	1092	186	77	0	0	305	0	62
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1585	1651	0	0	1327	0	1749
Q Serve(g_s), s	2.0	22.8	22.8	2.2	24.7	7.4	0.0	0.0	0.0	12.8	0.0	2.1
Cycle Q Clear(g_c), s	2.0	22.8	22.8	2.2	24.7	7.4	2.7	0.0	0.0	15.6	0.0	2.1
Prop In Lane	1.00		0.02	1.00		1.00	0.05		0.70	1.00		0.39
Lane Grp Cap(c), veh/h	248	626	656	270	1257	561	615	0	0	557	0	605
V/C Ratio(X)	0.29	0.82	0.82	0.29	0.87	0.33	0.13	0.00	0.00	0.55	0.00	0.10
Avail Cap(c_a), veh/h	278	681	714	296	1362	608	615	0	0	557	0	605
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.8	25.4	25.4	18.1	26.0	20.4	19.3	0.0	0.0	23.2	0.0	19.1
Incr Delay (d2), s/veh	0.6	7.6	7.3	0.6	5.9	0.3	0.4	0.0	0.0	3.8	0.0	0.3
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	10.5	10.9	0.9	10.4	2.6	1.1	0.0	0.0	5.5	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	33.1	32.8	18.7	31.9	20.7	19.7	0.0	0.0	27.0	0.0	19.4
LnGrp LOS	B	C	C	B	C	C	B	A	A	C	A	B
Approach Vol, veh/h		1128			1356			77			367	
Approach Delay, s/veh		32.1			29.6			19.7			25.7	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	36.9	12.8	36.4	36.9	12.6	36.6
Change Period (Y+Rc), s	7.1	* 6	* 6.1	7.1	* 6.1	* 6.1
Max Green Setting (Gmax), s	29.8	* 8	* 33	29.8	* 8	* 33
Max Q Clear Time (g_c+I1), s	4.7	4.2	24.8	17.6	4.0	26.7
Green Ext Time (p_c), s	0.4	0.0	4.2	1.1	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	29.8
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	88	0	0	53	148	393	57	17	389	42
Future Vol, veh/h	0	0	88	0	0	53	148	393	57	17	389	42
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	-	-	0	-	-	0	160	-	140	160	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	74	74	74	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	0	0	72	164	437	63	19	432	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	216	-	-	219	479	0	0	500	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	789	0	0	785	1080	-	-	1060	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	789	-	-	785	1080	-	-	1060	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	10	2.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1080	-	-	789	785	1060	-	-
HCM Lane V/C Ratio	0.152	-	-	0.121	0.091	0.018	-	-
HCM Control Delay (s)	8.9	-	-	10.2	10	8.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.4	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	15	15	18	15	69	55	336	55	113	415	5
Future Vol, veh/h	9	15	15	18	15	69	55	336	55	113	415	5
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	100	-	-	85	-	-	200	-	230	210	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	84	84	84	92	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	16	16	21	18	82	60	373	61	126	461	6

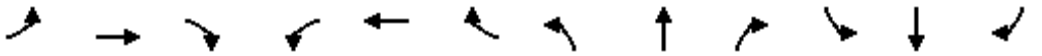
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1029	1267	231	984	1212	187	467	0	0	434	0	0
Stage 1	713	713	-	493	493	-	-	-	-	-	-	-
Stage 2	316	554	-	491	719	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	188	168	771	203	181	823	1091	-	-	1122	-	-
Stage 1	389	434	-	526	545	-	-	-	-	-	-	-
Stage 2	670	512	-	528	431	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	135	141	771	159	152	823	1091	-	-	1122	-	-
Mov Cap-2 Maneuver	135	141	-	159	152	-	-	-	-	-	-	-
Stage 1	368	385	-	497	515	-	-	-	-	-	-	-
Stage 2	550	484	-	439	383	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.1	17.8	1	1.8
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1091	-	-	135	238	159	460	1122	-	-
HCM Lane V/C Ratio	0.055	-	-	0.072	0.137	0.135	0.217	0.112	-	-
HCM Control Delay (s)	8.5	-	-	33.7	22.5	31.1	15	8.6	-	-
HCM Lane LOS	A	-	-	D	C	D	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.5	0.5	0.8	0.4	-	-

Lane Group	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	136	303	194	89	301	319
v/c Ratio	0.52	0.34	0.14	0.12	0.40	0.14
Control Delay	31.4	1.1	14.9	1.2	7.6	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	1.1	14.9	1.2	7.6	5.2
Queue Length 50th (ft)	49	0	24	0	41	21
Queue Length 95th (ft)	84	0	56	8	88	42
Internal Link Dist (ft)		1567	312			650
Turn Bay Length (ft)				90	150	
Base Capacity (vph)	573	1070	1397	717	972	2283
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.24	0.28	0.14	0.12	0.31	0.14

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	105	0	233	0	175	80	250	265	0
Future Volume (veh/h)	0	0	0	105	0	233	0	175	80	250	265	0
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	0	0	0	136	0	303	0	194	89	301	319	0
Peak Hour Factor	0.92	0.92	0.92	0.77	0.92	0.77	0.92	0.90	0.90	0.83	0.83	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	105	441	0	525	0	374	706	1376	614	734	2146	957
Arrive On Green	0.00	0.00	0.00	0.24	0.00	0.24	0.00	0.39	0.39	0.14	0.60	0.00
Sat Flow, veh/h	1076	1870	0	1781	0	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	0	0	0	136	0	303	0	194	89	301	319	0
Grp Sat Flow(s),veh/h/ln	1076	1870	0	1781	0	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.0	0.0	0.0	4.3	0.0	12.4	0.0	2.4	2.5	6.7	2.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.3	0.0	12.4	0.0	2.4	2.5	6.7	2.7	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	105	441	0	525	0	374	706	1376	614	734	2146	957
V/C Ratio(X)	0.00	0.00	0.00	0.26	0.00	0.81	0.00	0.14	0.14	0.41	0.15	0.00
Avail Cap(c_a), veh/h	266	721	0	792	0	611	872	1376	614	1100	2146	957
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)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	21.7	0.0	24.8	0.0	13.6	13.7	9.4	5.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	4.2	0.0	0.2	0.5	0.4	0.1	0.0
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	0.0	0.0	0.0	1.7	0.0	4.7	0.0	0.9	0.9	2.2	0.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	22.0	0.0	29.0	0.0	13.9	14.2	9.8	6.1	0.0
LnGrp LOS	A	A	A	C	A	C	A	B	B	A	A	A
Approach Vol, veh/h		0			439			283			620	
Approach Delay, s/veh		0.0			26.8			14.0			7.9	
Approach LOS					C			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.9	32.1		21.7	0.0	47.0		21.7				
Change Period (Y+Rc), s	5.5	5.5		5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	23.5	23.5		26.5	6.5	41.5		26.5				
Max Q Clear Time (g_c+I1), s	8.7	4.5		0.0	0.0	4.7		14.4				
Green Ext Time (p_c), s	0.8	1.4		0.0	0.0	2.2		1.8				

Intersection Summary			
HCM 6th Ctrl Delay		15.4	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	2.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	489	6	2	405	1	40	0	19	3	0	38
Future Vol, veh/h	24	489	6	2	405	1	40	0	19	3	0	38
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	190	-	190	200	-	145	-	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	92	92	92	57	57	57	47	47	47
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	537	7	2	440	1	70	0	33	6	0	81

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	441	0	0	544	0	0	813	1034	269	765	1040	220
Stage 1	-	-	-	-	-	-	589	589	-	444	444	-
Stage 2	-	-	-	-	-	-	224	445	-	321	596	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1115	-	-	1021	-	-	270	231	729	293	229	784
Stage 1	-	-	-	-	-	-	461	494	-	563	574	-
Stage 2	-	-	-	-	-	-	758	573	-	665	490	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1115	-	-	1021	-	-	238	225	729	274	223	784
Mov Cap-2 Maneuver	-	-	-	-	-	-	238	225	-	274	223	-
Stage 1	-	-	-	-	-	-	450	483	-	550	573	-
Stage 2	-	-	-	-	-	-	678	572	-	620	479	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.4	0	22.8	10.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	304	1021	-	-	1115	-	-	274	784
HCM Lane V/C Ratio	0.34	0.002	-	-	0.024	-	-	0.023	0.103
HCM Control Delay (s)	22.8	8.5	-	-	8.3	-	-	18.5	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.5	0	-	-	0.1	-	-	0.1	0.3

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	4	0	0	0	2	45	0	0	12	4
Future Vol, veh/h	4	0	4	0	0	0	2	45	0	0	12	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	-	-	-	-	-	-	-	-	-	-	-	-
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	4	0	4	0	0	0	2	49	0	0	13	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	68	68	15	70	70	49	17	0	0	49	0	0
Stage 1	15	15	-	53	53	-	-	-	-	-	-	-
Stage 2	53	53	-	17	17	-	-	-	-	-	-	-
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	925	823	1065	922	821	1020	1600	-	-	1558	-	-
Stage 1	1005	883	-	960	851	-	-	-	-	-	-	-
Stage 2	960	851	-	1002	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	924	822	1065	917	820	1020	1600	-	-	1558	-	-
Mov Cap-2 Maneuver	924	822	-	917	820	-	-	-	-	-	-	-
Stage 1	1004	883	-	959	850	-	-	-	-	-	-	-
Stage 2	959	850	-	998	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	0.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	990	-	1558	-	-
HCM Lane V/C Ratio	0.001	-	-	0.009	-	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	0	414	351	10
Future Vol, veh/h	0	9	0	414	351	10
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	0	10	0	450	382	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	197	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	811	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	811	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	811	-	-
HCM Lane V/C Ratio	-	0.012	-	-
HCM Control Delay (s)	-	9.5	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	3	44	5	5	7
Future Vol, veh/h	3	3	44	5	5	7
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	3	48	5	5	8

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	69	51	0	0	53	0
Stage 1	51	-	-	-	-	-
Stage 2	18	-	-	-	-	-
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	936	1017	-	-	1553	-
Stage 1	971	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	933	1017	-	-	1553	-
Mov Cap-2 Maneuver	933	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	1002	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	3.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	973	1553	-
HCM Lane V/C Ratio	-	-	0.007	0.003	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	0	49	5	0	10
Future Vol, veh/h	6	0	49	5	0	10
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	7	0	53	5	0	11

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	67	56	0	0	58	0
Stage 1	56	-	-	-	-	-
Stage 2	11	-	-	-	-	-
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	938	1011	-	-	1546	-
Stage 1	967	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	938	1011	-	-	1546	-
Mov Cap-2 Maneuver	938	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	938	1546	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

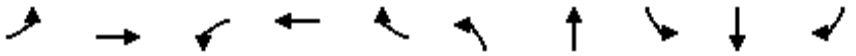
Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	20	25	10	40	0
Future Vol, veh/h	39	20	25	10	40	0
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	42	22	27	11	43	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	119	33	0	0	38	0
Stage 1	33	-	-	-	-	-
Stage 2	86	-	-	-	-	-
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	877	1041	-	-	1572	-
Stage 1	989	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	853	1041	-	-	1572	-
Mov Cap-2 Maneuver	853	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	912	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	7.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	909	1572	-
HCM Lane V/C Ratio	-	-	0.071	0.028	-
HCM Control Delay (s)	-	-	9.3	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

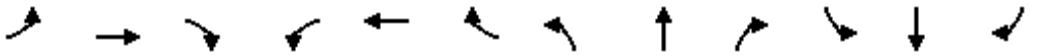


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	471	472	18	525	395	35	124	158	20	152
v/c Ratio	0.79	0.35	0.15	0.78	0.48	0.29	0.28	0.54	0.03	0.22
Control Delay	45.5	20.9	42.6	42.9	4.4	46.3	22.5	46.6	25.6	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	45.5	20.9	42.6	42.9	4.4	46.3	22.5	46.6	25.6	0.7
Queue Length 50th (ft)	132	84	10	148	0	19	42	45	9	0
Queue Length 95th (ft)	169	139	31	199	53	46	80	67	23	0
Internal Link Dist (ft)		424		1156			2315		414	
Turn Bay Length (ft)	310		270		300	140		310		310
Base Capacity (vph)	636	1358	121	733	818	121	445	298	590	704
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.35	0.15	0.72	0.48	0.29	0.28	0.53	0.03	0.22

Intersection Summary

HCM 6th Signalized Intersection Summary
3: Ward Rd & Chipman Rd

AM Existing plus Site (Full Build Out)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	391	372	20	16	462	348	29	62	41	125	16	120
Future Volume (veh/h)	391	372	20	16	462	348	29	62	41	125	16	120
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	471	448	24	18	525	395	35	75	49	158	20	152
Peak Hour Factor	0.83	0.83	0.83	0.88	0.88	0.88	0.83	0.83	0.83	0.79	0.79	0.79
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	559	1190	64	43	748	442	70	257	168	236	502	425
Arrive On Green	0.16	0.35	0.35	0.02	0.21	0.21	0.04	0.24	0.24	0.07	0.27	0.27
Sat Flow, veh/h	3456	3431	183	1781	3554	1585	1781	1056	690	3456	1870	1585
Grp Volume(v), veh/h	471	231	241	18	525	395	35	0	124	158	20	152
Grp Sat Flow(s),veh/h/ln	1728	1777	1837	1781	1777	1585	1781	0	1746	1728	1870	1585
Q Serve(g_s), s	11.4	8.4	8.5	0.9	11.8	18.1	1.7	0.0	5.0	3.8	0.7	6.7
Cycle Q Clear(g_c), s	11.4	8.4	8.5	0.9	11.8	18.1	1.7	0.0	5.0	3.8	0.7	6.7
Prop In Lane	1.00		0.10	1.00		1.00	1.00		0.40	1.00		1.00
Lane Grp Cap(c), veh/h	559	616	637	43	748	442	70	0	424	236	502	425
V/C Ratio(X)	0.84	0.38	0.38	0.41	0.70	0.89	0.50	0.00	0.29	0.67	0.04	0.36
Avail Cap(c_a), veh/h	651	616	637	124	748	442	124	0	424	305	502	425
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	21.1	21.1	41.3	31.4	29.8	40.4	0.0	26.5	39.1	23.3	25.5
Incr Delay (d2), s/veh	8.7	0.4	0.4	6.2	2.9	20.2	5.3	0.0	1.7	3.7	0.1	2.3
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	5.3	3.4	3.6	0.4	5.0	9.7	0.8	0.0	2.2	1.7	0.3	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	21.5	21.5	47.5	34.4	49.9	45.8	0.0	28.3	42.8	23.4	27.8
LnGrp LOS	D	C	C	D	C	D	D	A	C	D	C	C
Approach Vol, veh/h		943			938			159			330	
Approach Delay, s/veh		32.5			41.2			32.1			34.7	
Approach LOS		C			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	27.8	9.0	36.7	10.3	30.0	20.7	25.0
Change Period (Y+Rc), s	* 6.6	6.9	* 6.9	* 6.9	6.9	* 6.9	* 6.8	* 6.9
Max Green Setting (Gmax), s	* 7.6	20.9	* 6	* 28	6.0	* 23	* 16	* 18
Max Q Clear Time (g_c+I1), s	5.8	7.0	2.9	10.5	3.7	8.7	13.4	20.1
Green Ext Time (p_c), s	0.1	0.5	0.0	2.6	0.0	0.4	0.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	782	579	39	0	110
Future Vol, veh/h	0	782	579	39	0	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	110	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	88	88	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	942	658	44	0	120

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	329
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	667
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	667
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	667
HCM Lane V/C Ratio	-	-	-	0.179
HCM Control Delay (s)	-	-	-	11.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.6

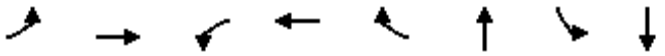
Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	41	0	27	4	34	14	0	21	4
Future Vol, veh/h	2	0	1	41	0	27	4	34	14	0	21	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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	1	45	0	29	4	37	15	0	23	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	92	85	25	79	80	45	27	0	0	52	0	0
Stage 1	25	25	-	53	53	-	-	-	-	-	-	-
Stage 2	67	60	-	26	27	-	-	-	-	-	-	-
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	892	805	1051	910	810	1025	1587	-	-	1554	-	-
Stage 1	993	874	-	960	851	-	-	-	-	-	-	-
Stage 2	943	845	-	992	873	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	864	803	1051	907	808	1025	1587	-	-	1554	-	-
Mov Cap-2 Maneuver	864	803	-	907	808	-	-	-	-	-	-	-
Stage 1	990	874	-	957	848	-	-	-	-	-	-	-
Stage 2	913	842	-	991	873	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.9	9.1	0.6	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1587	-	-	918	950	1554	-	-
HCM Lane V/C Ratio	0.003	-	-	0.004	0.078	-	-	-
HCM Control Delay (s)	7.3	0	-	8.9	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

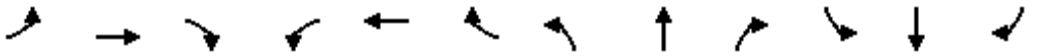


Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	55	524	52	902	136	68	227	67
v/c Ratio	0.20	0.44	0.13	0.76	0.22	0.10	0.43	0.10
Control Delay	13.2	21.7	12.0	28.1	6.0	9.7	24.4	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	21.7	12.0	28.1	6.0	9.7	24.4	10.7
Queue Length 50th (ft)	15	114	14	225	5	7	95	9
Queue Length 95th (ft)	33	157	30	281	39	32	171	36
Internal Link Dist (ft)		1156		2871		1038		1471
Turn Bay Length (ft)	210		170		130		100	
Base Capacity (vph)	271	1553	397	1551	762	686	524	690
Starvation Cap Reductn	0	0	0	0	0	0	0	0
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	0.20	0.34	0.13	0.58	0.18	0.10	0.43	0.10

Intersection Summary

HCM 6th Signalized Intersection Summary
9: Donovan Rd & Chipman Rd

AM Existing plus Site (Full Build Out)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	487	6	45	785	118	3	13	41	200	21	38
Future Volume (veh/h)	52	487	6	45	785	118	3	13	41	200	21	38
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	55	518	6	52	902	136	4	15	49	227	24	43
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	1158	13	394	1132	505	60	157	439	597	222	398
Arrive On Green	0.07	0.32	0.32	0.07	0.32	0.32	0.37	0.37	0.37	0.37	0.37	0.37
Sat Flow, veh/h	1781	3598	42	1781	3554	1585	34	425	1184	1338	601	1076
Grp Volume(v), veh/h	55	256	268	52	902	136	68	0	0	227	0	67
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1585	1643	0	0	1338	0	1677
Q Serve(g_s), s	1.6	9.1	9.2	1.5	18.6	5.1	0.0	0.0	0.0	7.3	0.0	2.1
Cycle Q Clear(g_c), s	1.6	9.1	9.2	1.5	18.6	5.1	2.2	0.0	0.0	9.5	0.0	2.1
Prop In Lane	1.00		0.02	1.00		1.00	0.06		0.72	1.00		0.64
Lane Grp Cap(c), veh/h	262	572	600	394	1132	505	656	0	0	597	0	621
V/C Ratio(X)	0.21	0.45	0.45	0.13	0.80	0.27	0.10	0.00	0.00	0.38	0.00	0.11
Avail Cap(c_a), veh/h	317	733	769	450	1462	652	656	0	0	597	0	621
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	21.5	21.5	16.0	25.0	20.4	16.6	0.0	0.0	18.7	0.0	16.6
Incr Delay (d2), s/veh	0.4	0.5	0.5	0.1	2.4	0.3	0.3	0.0	0.0	1.8	0.0	0.4
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	3.7	3.9	0.6	7.4	1.8	0.8	0.0	0.0	3.3	0.0	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.2	22.1	22.1	16.2	27.4	20.7	16.9	0.0	0.0	20.5	0.0	16.9
LnGrp LOS	B	C	C	B	C	C	B	A	A	C	A	B
Approach Vol, veh/h		579			1090			68			294	
Approach Delay, s/veh		21.7			26.0			16.9			19.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		36.8	11.5	31.9		36.8	11.8	31.7				
Change Period (Y+Rc), s		7.1	* 6	* 6.1		7.1	* 6.1	* 6.1				
Max Green Setting (Gmax), s		29.7	* 8	* 33		29.7	* 8.1	* 33				
Max Q Clear Time (g_c+I1), s		4.2	3.5	11.2		11.5	3.6	20.6				
Green Ext Time (p_c), s		0.3	0.0	3.1		1.0	0.0	5.0				

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	121	0	0	13	196	601	10	7	148	56
Future Vol, veh/h	0	0	121	0	0	13	196	601	10	7	148	56
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	-	-	0	-	-	0	160	-	140	160	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	81	92	81	92	90	90	90	90	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	132	0	0	16	213	668	11	8	164	61

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	82	-	-	334	225	0	0	679	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	961	0	0	662	1341	-	-	909	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	961	-	-	662	1341	-	-	909	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.6	2	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1341	-	-	961	662	909	-	-
HCM Lane V/C Ratio	0.159	-	-	0.137	0.024	0.009	-	-
HCM Control Delay (s)	8.2	-	-	9.3	10.6	9	-	-
HCM Lane LOS	A	-	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.6	-	-	0.5	0.1	0	-	-

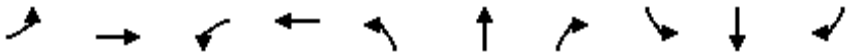
Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	19	28	12	6	48	15	536	69	259	171	2
Future Vol, veh/h	14	19	28	12	6	48	15	536	69	259	171	2
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	100	-	-	85	-	-	200	-	230	210	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	71	92	71	92	90	90	90	90	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	21	30	17	7	68	16	596	77	288	190	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1100	1471	95	1310	1396	298	192	0	0	673	0	0
Stage 1	766	766	-	628	628	-	-	-	-	-	-	-
Stage 2	334	705	-	682	768	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	167	126	943	117	140	698	1379	-	-	914	-	-
Stage 1	361	410	-	437	474	-	-	-	-	-	-	-
Stage 2	653	437	-	406	409	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	108	85	943	70	95	698	1379	-	-	914	-	-
Mov Cap-2 Maneuver	108	85	-	70	95	-	-	-	-	-	-	-
Stage 1	357	281	-	432	468	-	-	-	-	-	-	-
Stage 2	575	432	-	249	280	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.3	25.3	0.2	6.4
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1379	-	-	108	186	70	448	914	-	-
HCM Lane V/C Ratio	0.012	-	-	0.141	0.275	0.241	0.165	0.315	-	-
HCM Control Delay (s)	7.6	-	-	43.7	31.5	72.1	14.6	10.7	-	-
HCM Lane LOS	A	-	-	E	D	F	B	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	1.1	0.8	0.6	1.4	-	-

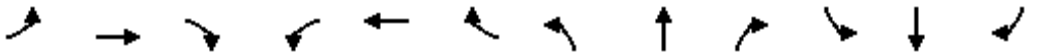


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	1	4	78	138	25	570	141	230	514	1
v/c Ratio	0.01	0.01	0.40	0.41	0.04	0.32	0.16	0.37	0.22	0.00
Control Delay	27.0	0.0	35.7	10.1	4.0	11.6	2.3	5.9	6.5	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	0.0	35.7	10.1	4.0	11.6	2.3	5.9	6.5	0.0
Queue Length 50th (ft)	0	0	30	0	2	70	0	26	31	0
Queue Length 95th (ft)	5	0	65	47	9	107	17	42	67	0
Internal Link Dist (ft)		211		1567		312			650	
Turn Bay Length (ft)					200		90	150		200
Base Capacity (vph)	414	795	448	598	605	1767	866	810	2302	1059
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.00	0.01	0.17	0.23	0.04	0.32	0.16	0.28	0.22	0.00

Intersection Summary

HCM 6th Signalized Intersection Summary
15: Ward Rd & Tudor Rd

AM Existing plus Site (Full Build Out)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	4	61	1	107	23	456	113	159	355	1
Future Volume (veh/h)	1	0	4	61	1	107	23	456	113	159	355	1
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	1	0	4	78	1	137	25	570	141	230	514	1
Peak Hour Factor	0.92	0.92	0.92	0.78	0.92	0.78	0.92	0.80	0.80	0.69	0.69	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	148	0	192	269	1	191	626	1911	853	629	2256	1006
Arrive On Green	0.12	0.00	0.12	0.12	0.12	0.12	0.03	0.54	0.54	0.11	0.63	0.63
Sat Flow, veh/h	1251	0	1585	1412	11	1575	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	1	0	4	78	0	138	25	570	141	230	514	1
Grp Sat Flow(s),veh/h/ln	1251	0	1585	1412	0	1587	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.1	0.0	0.2	3.7	0.0	6.0	0.4	6.3	3.2	3.7	4.4	0.0
Cycle Q Clear(g_c), s	6.1	0.0	0.2	3.8	0.0	6.0	0.4	6.3	3.2	3.7	4.4	0.0
Prop In Lane	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	0	192	269	0	193	626	1911	853	629	2256	1006
V/C Ratio(X)	0.01	0.00	0.02	0.29	0.00	0.72	0.04	0.30	0.17	0.37	0.23	0.00
Avail Cap(c_a), veh/h	406	0	520	541	0	498	739	1911	853	892	2256	1006
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.2	0.0	27.7	29.4	0.0	30.3	6.9	9.1	8.4	5.5	5.6	4.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	4.9	0.0	0.4	0.4	0.4	0.2	0.0
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	0.0	0.0	0.1	1.2	0.0	2.4	0.1	2.3	1.1	1.1	1.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	0.0	27.8	30.0	0.0	35.2	6.9	9.5	8.8	5.8	5.8	4.8
LnGrp LOS	C	A	C	C	A	D	A	A	A	A	A	A
Approach Vol, veh/h		5			216			736			745	
Approach Delay, s/veh		28.9			33.3			9.3			5.8	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.4	44.0		14.2	6.5	51.0		14.2				
Change Period (Y+Rc), s	5.5	5.5		* 5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	18.5	32.5		* 24	6.5	45.5		22.5				
Max Q Clear Time (g_c+I1), s	5.7	8.3		8.1	2.4	6.4		8.0				
Green Ext Time (p_c), s	0.5	4.5		0.0	0.0	3.7		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

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

Intersection	
Int Delay, s/veh	3.5

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	50	496	9	9	554	1	48	0	17	8	0	11
Future Vol, veh/h	50	496	9	9	554	1	48	0	17	8	0	11
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	190	-	190	200	-	145	-	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	95	95	95	63	63	63	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	63	620	11	9	583	1	76	0	27	10	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	584	0	0	631	0	0	1056	1348	310	1037	1358	292
Stage 1	-	-	-	-	-	-	746	746	-	601	601	-
Stage 2	-	-	-	-	-	-	310	602	-	436	757	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	987	-	-	947	-	-	180	150	686	185	148	704
Stage 1	-	-	-	-	-	-	372	419	-	454	488	-
Stage 2	-	-	-	-	-	-	675	487	-	569	414	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	987	-	-	947	-	-	167	139	686	168	137	704
Mov Cap-2 Maneuver	-	-	-	-	-	-	167	139	-	168	137	-
Stage 1	-	-	-	-	-	-	348	392	-	425	483	-
Stage 2	-	-	-	-	-	-	655	482	-	512	388	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.8	0.1	38.2	17.6
HCM LOS			E	C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	208	947	-	-	987	-	-	168	704
HCM Lane V/C Ratio	0.496	0.01	-	-	0.063	-	-	0.06	0.02
HCM Control Delay (s)	38.2	8.8	-	-	8.9	-	-	27.8	10.2
HCM Lane LOS	E	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	2.5	0	-	-	0.2	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	2	0	2	0	0	0	4	62	0	0	13	4
Future Vol, veh/h	2	0	2	0	0	0	4	62	0	0	13	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	-	-	-	-	-	-	-	-	-	-	-	-
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	0	2	0	0	0	4	67	0	0	14	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	91	91	16	92	93	67	18	0	0	67	0	0
Stage 1	16	16	-	75	75	-	-	-	-	-	-	-
Stage 2	75	75	-	17	18	-	-	-	-	-	-	-
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	893	799	1063	892	797	997	1599	-	-	1535	-	-
Stage 1	1004	882	-	934	833	-	-	-	-	-	-	-
Stage 2	934	833	-	1002	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	891	797	1063	888	795	997	1599	-	-	1535	-	-
Mov Cap-2 Maneuver	891	797	-	888	795	-	-	-	-	-	-	-
Stage 1	1001	882	-	931	831	-	-	-	-	-	-	-
Stage 2	931	831	-	1000	880	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	0	0.4	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1599	-	-	969	-	1535	-	-
HCM Lane V/C Ratio	0.003	-	-	0.004	-	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	14	0	578	418	3
Future Vol, veh/h	0	14	0	578	418	3
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	0	15	0	628	454	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	229	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	774	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	774	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	774	-	-
HCM Lane V/C Ratio	-	0.02	-	-
HCM Control Delay (s)	-	9.7	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	564	519	1
Future Vol, veh/h	0	3	0	564	519	1
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	0	3	0	613	564	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	283	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	714	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	714	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	714	-	-
HCM Lane V/C Ratio	-	0.005	-	-
HCM Control Delay (s)	-	10.1	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	64	0	1	17
Future Vol, veh/h	0	0	64	0	1	17
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	0	0	70	0	1	18

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	90	70	0	0	70	0
Stage 1	70	-	-	-	-	-
Stage 2	20	-	-	-	-	-
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	910	993	-	-	1531	-
Stage 1	953	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	909	993	-	-	1531	-
Mov Cap-2 Maneuver	909	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	1002	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1531	-
HCM Lane V/C Ratio	-	-	-	0.001	-
HCM Control Delay (s)	-	-	0	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	5	61	2	2	11
Future Vol, veh/h	5	5	61	2	2	11
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	5	5	66	2	2	12

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	83	67	0	0	68	0
Stage 1	67	-	-	-	-	-
Stage 2	16	-	-	-	-	-
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	919	997	-	-	1533	-
Stage 1	956	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	918	997	-	-	1533	-
Mov Cap-2 Maneuver	918	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	1006	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	956	1533	-
HCM Lane V/C Ratio	-	-	0.011	0.001	-
HCM Control Delay (s)	-	-	8.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	0	63	2	0	16
Future Vol, veh/h	9	0	63	2	0	16
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	10	0	68	2	0	17

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	86	69	0	0	70	0
Stage 1	69	-	-	-	-	-
Stage 2	17	-	-	-	-	-
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	915	994	-	-	1531	-
Stage 1	954	-	-	-	-	-
Stage 2	1006	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	915	994	-	-	1531	-
Mov Cap-2 Maneuver	915	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	1006	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	915	1531	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

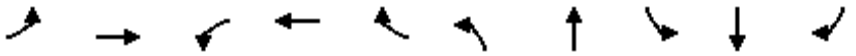
Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	27	25	14	0	62
Future Vol, veh/h	53	27	25	14	0	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	58	29	27	15	0	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	35	0	0	42	0
Stage 1	35	-	-	-	-	-
Stage 2	67	-	-	-	-	-
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	896	1038	-	-	1567	-
Stage 1	987	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	896	1038	-	-	1567	-
Mov Cap-2 Maneuver	896	-	-	-	-	-
Stage 1	987	-	-	-	-	-
Stage 2	956	-	-	-	-	-

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)	-	-	939	1567	-
HCM Lane V/C Ratio	-	-	0.093	-	-
HCM Control Delay (s)	-	-	9.2	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-



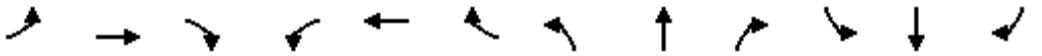
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	452	1026	35	893	236	40	101	239	57	228
v/c Ratio	0.88	0.73	0.27	0.94	0.29	0.33	0.26	0.68	0.10	0.35
Control Delay	57.1	28.2	44.5	50.5	3.2	47.4	17.1	49.6	26.9	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.1	28.2	44.5	50.5	3.2	47.4	17.1	49.6	26.9	4.4
Queue Length 50th (ft)	131	281	19	261	0	22	21	68	26	0
Queue Length 95th (ft)	#177	311	45	#336	32	49	55	#108	57	43
Internal Link Dist (ft)		424		1156			2315		414	
Turn Bay Length (ft)	310		270		300	140		310		310
Base Capacity (vph)	515	1403	139	953	826	123	389	359	545	643
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.73	0.25	0.94	0.29	0.33	0.26	0.67	0.10	0.35

Intersection Summary

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

HCM 6th Signalized Intersection Summary
3: Ward Rd & Chipman Rd

PM Existing plus Site (Full Build Out)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	366	792	39	29	750	198	33	36	47	227	54	217
Future Volume (veh/h)	366	792	39	29	750	198	33	36	47	227	54	217
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	452	978	48	35	893	236	40	44	57	239	57	228
Peak Hour Factor	0.81	0.81	0.81	0.84	0.84	0.84	0.82	0.82	0.82	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	522	1311	64	70	966	575	76	152	197	315	468	397
Arrive On Green	0.15	0.38	0.38	0.04	0.27	0.27	0.04	0.21	0.21	0.09	0.25	0.25
Sat Flow, veh/h	3456	3448	169	1781	3554	1585	1781	740	958	3456	1870	1585
Grp Volume(v), veh/h	452	504	522	35	893	236	40	0	101	239	57	228
Grp Sat Flow(s),veh/h/ln	1728	1777	1840	1781	1777	1585	1781	0	1698	1728	1870	1585
Q Serve(g_s), s	11.3	21.7	21.7	1.7	21.6	9.8	1.9	0.0	4.4	6.0	2.1	11.1
Cycle Q Clear(g_c), s	11.3	21.7	21.7	1.7	21.6	9.8	1.9	0.0	4.4	6.0	2.1	11.1
Prop In Lane	1.00		0.09	1.00		1.00	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	522	675	699	70	966	575	76	0	348	315	468	397
V/C Ratio(X)	0.87	0.75	0.75	0.50	0.92	0.41	0.53	0.00	0.29	0.76	0.12	0.57
Avail Cap(c_a), veh/h	529	675	699	143	974	579	127	0	348	368	468	397
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	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.6	23.7	23.7	41.6	31.3	21.0	41.4	0.0	29.7	39.2	25.6	29.0
Incr Delay (d2), s/veh	14.0	4.5	4.4	5.5	14.1	0.5	5.6	0.0	2.1	7.5	0.5	5.9
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	5.7	9.5	9.8	0.8	10.4	3.4	1.0	0.0	2.0	2.8	1.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.6	28.2	28.1	47.0	45.3	21.5	47.0	0.0	31.7	46.7	26.1	34.9
LnGrp LOS	D	C	C	D	D	C	D	A	C	D	C	C
Approach Vol, veh/h		1478			1164			141			524	
Approach Delay, s/veh		35.0			40.6			36.1			39.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	25.0	9.3	39.4	10.6	29.0	18.8	29.8
Change Period (Y+Rc), s	* 6.6	6.9	* 5.8	* 5.8	6.9	* 6.9	5.5	* 5.8
Max Green Setting (Gmax), s	* 9.4	18.1	* 7.1	* 31	6.3	* 21	13.5	* 24
Max Q Clear Time (g_c+I1), s	8.0	6.4	3.7	23.7	3.9	13.1	13.3	23.6
Green Ext Time (p_c), s	0.1	0.3	0.0	3.6	0.0	0.6	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	37.7
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↱		↱
Traffic Vol, veh/h	0	1197	964	37	0	90
Future Vol, veh/h	0	1197	964	37	0	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	110	-	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	0	1301	1048	40	0	98

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	524
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	498
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	498
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	498
HCM Lane V/C Ratio	-	-	-	0.196
HCM Control Delay (s)	-	-	-	14
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.7

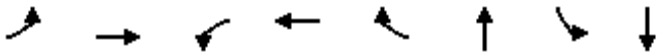
Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	6	30	0	20	6	29	10	0	12	6
Future Vol, veh/h	6	0	6	30	0	20	6	29	10	0	12	6
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	-	-	-	-	-	-	-	-	-	-	-	-
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	7	0	7	33	0	22	7	32	11	0	13	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	80	74	17	72	72	38	20	0	0	43	0	0
Stage 1	17	17	-	52	52	-	-	-	-	-	-	-
Stage 2	63	57	-	20	20	-	-	-	-	-	-	-
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	908	816	1062	919	818	1034	1596	-	-	1566	-	-
Stage 1	1002	881	-	961	852	-	-	-	-	-	-	-
Stage 2	948	847	-	999	879	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	886	813	1062	911	815	1034	1596	-	-	1566	-	-
Mov Cap-2 Maneuver	886	813	-	911	815	-	-	-	-	-	-	-
Stage 1	998	881	-	957	849	-	-	-	-	-	-	-
Stage 2	924	844	-	993	879	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9	1	0
HCM LOS	A	A		

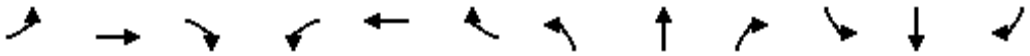
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1596	-	-	966	957	1566	-	-
HCM Lane V/C Ratio	0.004	-	-	0.014	0.057	-	-	-
HCM Control Delay (s)	7.3	0	-	8.8	9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	71	1062	78	1094	189	77	314	62
v/c Ratio	0.28	0.83	0.31	0.86	0.29	0.12	0.67	0.10
Control Delay	14.1	32.1	14.5	33.5	8.7	9.8	34.0	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	32.1	14.5	33.5	8.7	9.8	34.0	14.9
Queue Length 50th (ft)	19	283	21	295	22	9	155	15
Queue Length 95th (ft)	40	365	42	361	63	35	#249	41
Internal Link Dist (ft)		1156		2871		1038		1471
Turn Bay Length (ft)	210		170		130		100	
Base Capacity (vph)	251	1395	251	1397	702	629	469	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0
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	0.28	0.76	0.31	0.78	0.27	0.12	0.67	0.10

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)	67	987	11	68	952	164	3	16	45	276	33	21
Future Volume (veh/h)	67	987	11	68	952	164	3	16	45	276	33	21
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	71	1050	12	78	1094	189	4	19	54	314	38	24
Peak Hour Factor	0.94	0.94	0.94	0.87	0.87	0.87	0.84	0.84	0.84	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1269	15	269	1258	561	54	161	401	557	371	234
Arrive On Green	0.08	0.35	0.35	0.08	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1781	3599	41	1781	3554	1585	28	465	1158	1327	1072	677
Grp Volume(v), veh/h	71	518	544	78	1094	189	77	0	0	314	0	62
Grp Sat Flow(s),veh/h/ln	1781	1777	1863	1781	1777	1585	1651	0	0	1327	0	1749
Q Serve(g_s), s	2.0	23.0	23.0	2.2	24.7	7.5	0.0	0.0	0.0	13.5	0.0	2.1
Cycle Q Clear(g_c), s	2.0	23.0	23.0	2.2	24.7	7.5	2.7	0.0	0.0	16.2	0.0	2.1
Prop In Lane	1.00		0.02	1.00		1.00	0.05		0.70	1.00		0.39
Lane Grp Cap(c), veh/h	248	627	657	269	1258	561	615	0	0	557	0	605
V/C Ratio(X)	0.29	0.83	0.83	0.29	0.87	0.34	0.13	0.00	0.00	0.56	0.00	0.10
Avail Cap(c_a), veh/h	278	681	714	295	1361	607	615	0	0	557	0	605
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	1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.9	25.5	25.5	18.2	26.0	20.4	19.3	0.0	0.0	23.4	0.0	19.1
Incr Delay (d2), s/veh	0.6	7.8	7.5	0.6	6.0	0.4	0.4	0.0	0.0	4.1	0.0	0.3
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	10.6	11.0	0.9	10.4	2.6	1.1	0.0	0.0	5.8	0.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	33.3	33.0	18.8	31.9	20.8	19.7	0.0	0.0	27.5	0.0	19.4
LnGrp LOS	B	C	C	B	C	C	B	A	A	C	A	B
Approach Vol, veh/h		1133			1361			77			376	
Approach Delay, s/veh		32.3			29.6			19.7			26.2	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	36.9	12.8	36.5	36.9	12.6	36.6
Change Period (Y+Rc), s	7.1	* 6	* 6.1	7.1	* 6.1	* 6.1
Max Green Setting (Gmax), s	29.8	* 8	* 33	29.8	* 8	* 33
Max Q Clear Time (g_c+I1), s	4.7	4.2	25.0	18.2	4.0	26.7
Green Ext Time (p_c), s	0.4	0.0	4.1	1.1	0.0	3.8

Intersection Summary	
HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	88	0	0	53	148	400	57	17	404	42
Future Vol, veh/h	0	0	88	0	0	53	148	400	57	17	404	42
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	-	-	0	-	-	0	160	-	140	160	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	74	74	74	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	0	0	72	164	444	63	19	449	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	225	-	-	222	496	0	0	507	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.94	-	-	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.32	-	-	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	0	0	778	0	0	782	1064	-	-	1054	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	778	-	-	782	1064	-	-	1054	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	10.1	2.2	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1064	-	-	778	782	1054	-	-
HCM Lane V/C Ratio	0.155	-	-	0.123	0.092	0.018	-	-
HCM Control Delay (s)	9	-	-	10.3	10.1	8.5	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.4	0.3	0.1	-	-

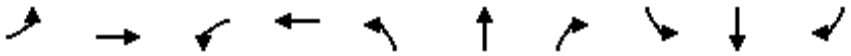
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	15	15	18	15	71	55	343	55	121	430	5
Future Vol, veh/h	9	15	15	18	15	71	55	343	55	121	430	5
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	100	-	-	85	-	-	200	-	230	210	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	84	84	84	92	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	16	16	21	18	85	60	381	61	134	478	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1066	1308	239	1016	1253	191	484	0	0	442	0	0
Stage 1	746	746	-	501	501	-	-	-	-	-	-	-
Stage 2	320	562	-	515	752	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	177	158	762	192	171	818	1075	-	-	1114	-	-
Stage 1	372	419	-	521	541	-	-	-	-	-	-	-
Stage 2	666	508	-	511	416	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	131	762	148	142	818	1075	-	-	1114	-	-
Mov Cap-2 Maneuver	125	131	-	148	142	-	-	-	-	-	-	-
Stage 1	351	369	-	492	511	-	-	-	-	-	-	-
Stage 2	544	480	-	420	366	-	-	-	-	-	-	-

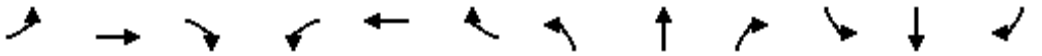
Approach	EB	WB	NB	SB
HCM Control Delay, s	26.7	18.5	1	1.9
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1075	-	-	125	224	148	447	1114	-	-
HCM Lane V/C Ratio	0.056	-	-	0.078	0.146	0.145	0.229	0.121	-	-
HCM Control Delay (s)	8.5	-	-	36.2	23.8	33.4	15.4	8.7	-	-
HCM Lane LOS	A	-	-	E	C	D	C	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.5	0.5	0.9	0.4	-	-



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	3	15	136	304	10	194	89	301	322	1
v/c Ratio	0.03	0.05	0.53	0.56	0.01	0.14	0.12	0.40	0.15	0.00
Control Delay	23.7	13.8	33.2	8.0	5.0	14.5	1.0	7.5	6.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	13.8	33.2	8.0	5.0	14.5	1.0	7.5	6.8	0.0
Queue Length 50th (ft)	1	1	49	0	1	24	0	42	21	0
Queue Length 95th (ft)	8	15	94	61	7	56	6	90	62	0
Internal Link Dist (ft)		211		1567		312			650	
Turn Bay Length (ft)					200		90	150		200
Base Capacity (vph)	240	654	555	813	751	1436	732	974	2210	1020
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.25	0.37	0.01	0.14	0.12	0.31	0.15	0.00

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	12	105	1	233	9	175	80	250	267	1
Future Volume (veh/h)	3	2	12	105	1	233	9	175	80	250	267	1
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	2	13	136	1	303	10	194	89	301	322	1
Peak Hour Factor	0.92	0.92	0.92	0.77	0.92	0.77	0.92	0.90	0.90	0.83	0.83	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	149	50	325	409	1	366	652	1498	668	749	1956	872
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.01	0.42	0.42	0.13	0.55	0.55
Sat Flow, veh/h	1075	216	1402	1398	5	1581	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	3	0	15	136	0	304	10	194	89	301	322	1
Grp Sat Flow(s),veh/h/ln	1075	0	1618	1398	0	1586	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.2	0.0	0.5	6.3	0.0	13.7	0.2	2.5	2.6	6.9	3.4	0.0
Cycle Q Clear(g_c), s	13.9	0.0	0.5	6.8	0.0	13.7	0.2	2.5	2.6	6.9	3.4	0.0
Prop In Lane	1.00		0.87	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	149	0	375	409	0	367	652	1498	668	749	1956	872
V/C Ratio(X)	0.02	0.00	0.04	0.33	0.00	0.83	0.02	0.13	0.13	0.40	0.16	0.00
Avail Cap(c_a), veh/h	277	0	569	577	0	557	783	1498	668	1076	1956	872
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	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	22.5	25.1	0.0	27.5	7.3	13.3	13.4	9.3	8.4	7.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	6.3	0.0	0.2	0.4	0.3	0.2	0.0
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	0.1	0.0	0.2	2.0	0.0	5.5	0.1	1.0	0.9	2.4	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.2	0.0	22.5	25.6	0.0	33.8	7.3	13.5	13.8	9.6	8.6	7.6
LnGrp LOS	C	A	C	C	A	C	A	B	B	A	A	A
Approach Vol, veh/h		18			440			293			624	
Approach Delay, s/veh		24.5			31.3			13.4			9.1	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.1	37.3		23.0	5.4	47.0		23.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	23.5	23.5		26.5	6.5	41.5		26.5				
Max Q Clear Time (g_c+I1), s	8.9	4.6		15.9	2.2	5.4		15.7				
Green Ext Time (p_c), s	0.8	1.4		0.0	0.0	2.2		1.7				

Intersection Summary			
HCM 6th Ctrl Delay		17.3	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	24	490	7	2	408	1	42	0	19	3	0	38
Future Vol, veh/h	24	490	7	2	408	1	42	0	19	3	0	38
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	190	-	190	200	-	145	-	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	92	92	92	57	57	57	47	47	47
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	538	8	2	443	1	74	0	33	6	0	81

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	444	0	0	546	0	0	816	1038	269	768	1045	222
Stage 1	-	-	-	-	-	-	590	590	-	447	447	-
Stage 2	-	-	-	-	-	-	226	448	-	321	598	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1112	-	-	1019	-	-	269	229	729	291	227	782
Stage 1	-	-	-	-	-	-	461	493	-	560	572	-
Stage 2	-	-	-	-	-	-	756	571	-	665	489	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1112	-	-	1019	-	-	236	223	729	272	221	782
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	223	-	272	221	-
Stage 1	-	-	-	-	-	-	450	482	-	547	571	-
Stage 2	-	-	-	-	-	-	677	570	-	620	478	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.4	0	23.6	10.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	299	1019	-	-	1112	-	-	272	782
HCM Lane V/C Ratio	0.358	0.002	-	-	0.024	-	-	0.023	0.103
HCM Control Delay (s)	23.6	8.5	-	-	8.3	-	-	18.6	10.1
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	1.6	0	-	-	0.1	-	-	0.1	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	4	2	0	0	2	45	0	0	12	4
Future Vol, veh/h	4	0	4	2	0	0	2	45	0	0	12	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	-	-	-	-	-	-	-	-	-	-	-	-
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	4	0	4	2	0	0	2	49	0	0	13	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	68	68	15	70	70	49	17	0	0	49	0	0
Stage 1	15	15	-	53	53	-	-	-	-	-	-	-
Stage 2	53	53	-	17	17	-	-	-	-	-	-	-
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	925	823	1065	922	821	1020	1600	-	-	1558	-	-
Stage 1	1005	883	-	960	851	-	-	-	-	-	-	-
Stage 2	960	851	-	1002	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	924	822	1065	917	820	1020	1600	-	-	1558	-	-
Mov Cap-2 Maneuver	924	822	-	917	820	-	-	-	-	-	-	-
Stage 1	1004	883	-	959	850	-	-	-	-	-	-	-
Stage 2	959	850	-	998	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	8.9	0.3	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	990	917	1558	-	-
HCM Lane V/C Ratio	0.001	-	-	0.009	0.002	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7	8.9	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	9	0	423	374	10
Future Vol, veh/h	0	9	0	423	374	10
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	0	10	0	460	407	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	209	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	797	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	797	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	797	-	-
HCM Lane V/C Ratio	-	0.012	-	-
HCM Control Delay (s)	-	9.6	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	11	0	411	512	1
Future Vol, veh/h	0	11	0	411	512	1
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	0	12	0	447	557	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	279	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	718	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	718	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	718	-	-
HCM Lane V/C Ratio	-	0.017	-	-
HCM Control Delay (s)	-	10.1	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	49	0	0	8
Future Vol, veh/h	0	2	49	0	0	8
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	0	2	53	0	0	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	62	53	0	0	53	0
Stage 1	53	-	-	-	-	-
Stage 2	9	-	-	-	-	-
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	944	1014	-	-	1553	-
Stage 1	970	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	944	1014	-	-	1553	-
Mov Cap-2 Maneuver	944	-	-	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	1014	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1014	1553	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	-	-	8.6	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	3	44	5	5	9
Future Vol, veh/h	3	3	44	5	5	9
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	3	48	5	5	10

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	71	51	0	0	53	0
Stage 1	51	-	-	-	-	-
Stage 2	20	-	-	-	-	-
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	933	1017	-	-	1553	-
Stage 1	971	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	930	1017	-	-	1553	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	972	1553	-
HCM Lane V/C Ratio	-	-	0.007	0.003	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	0	49	5	0	12
Future Vol, veh/h	6	0	49	5	0	12
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	7	0	53	5	0	13

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	69	56	0	0	58	0
Stage 1	56	-	-	-	-	-
Stage 2	13	-	-	-	-	-
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	936	1011	-	-	1546	-
Stage 1	967	-	-	-	-	-
Stage 2	1010	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	936	1011	-	-	1546	-
Mov Cap-2 Maneuver	936	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	936	1546	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	6.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	20	25	10	42	0
Future Vol, veh/h	39	20	25	10	42	0
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	42	22	27	11	46	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	125	33	0	0	38	0
Stage 1	33	-	-	-	-	-
Stage 2	92	-	-	-	-	-
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	870	1041	-	-	1572	-
Stage 1	989	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	845	1041	-	-	1572	-
Mov Cap-2 Maneuver	845	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	7.4
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	903	1572	-
HCM Lane V/C Ratio	-	-	0.071	0.029	-
HCM Control Delay (s)	-	-	9.3	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-