Lot 10-A Preliminary Plan
Traffic Impact Study
LEE'S SUMMIT, MISSOURI

March 13th, 2026

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 Lot 10-A Preliminary Plan development on the northwest corner of the intersection of Tudor Road and Ward 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.

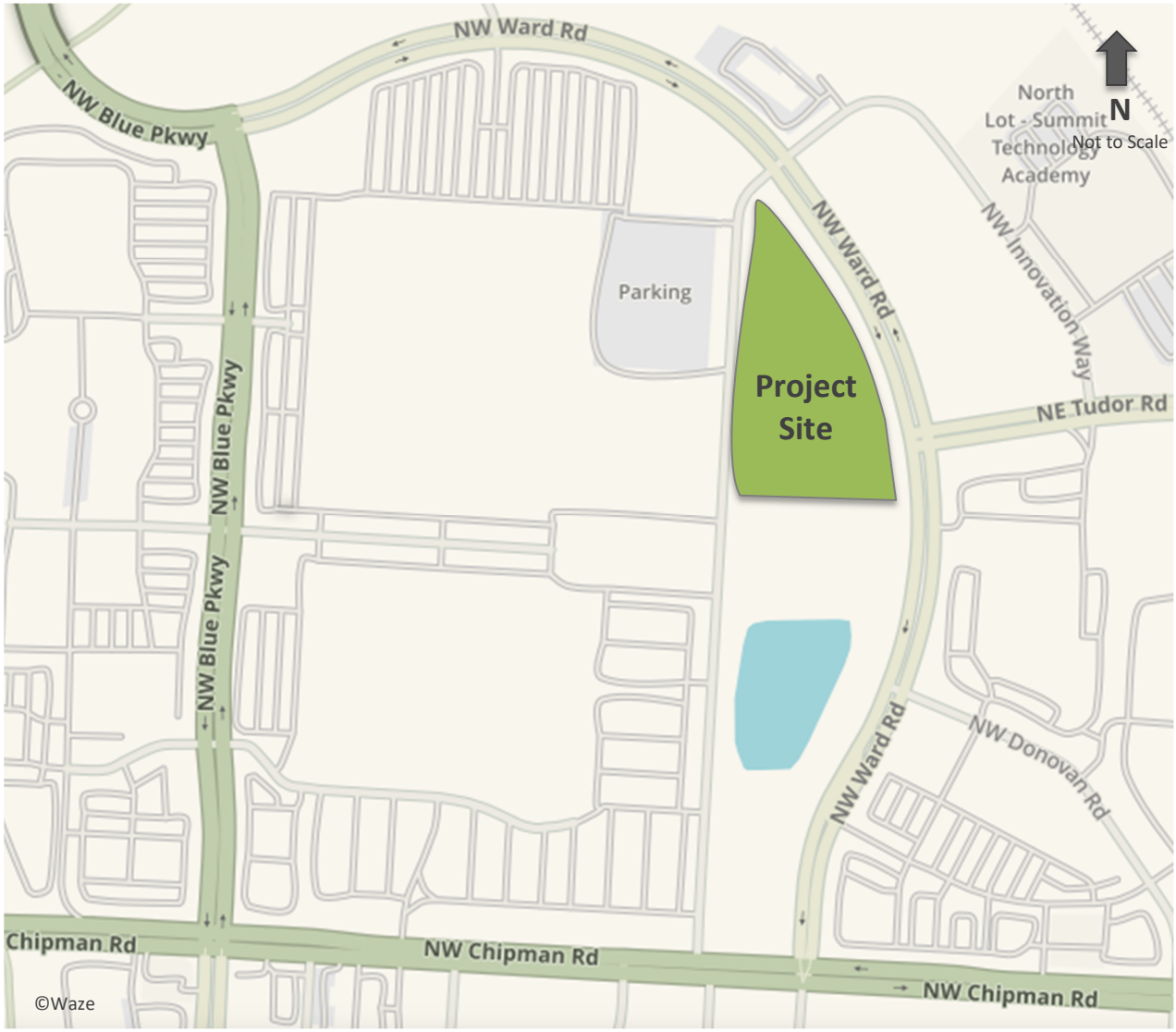


Figure 1 – Development Location

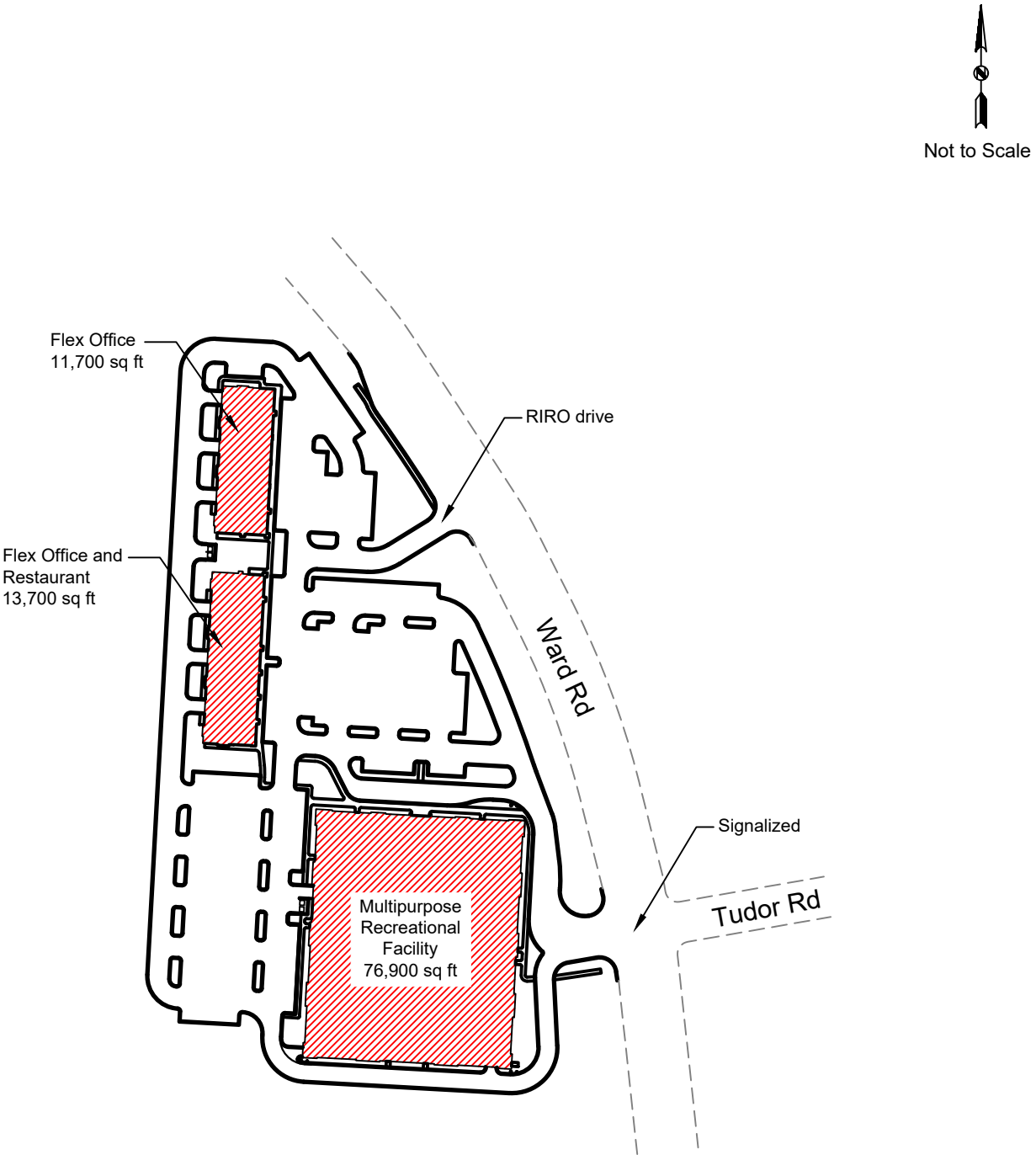


Figure 2 - Site Plan

EXISTING CONDITIONS

The site is in Lee's Summit, Missouri, on the northwest quadrant of the intersection of Tudor Road and Ward Road. The land use of the surrounding area is undeveloped to the northeast, light industrial to the west, commercial/retail/multi-family housing to the east, and the Summit Orchard West mixed use development 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.

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 Hwy 50.

Outerview Road/Innovation Parkway is a two-lane unmarked north-south private drive with no posted speed limit. 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.

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:

- Ward Road and Tudor Road
- Ward Road and Innovation Parkway/Outerview Road

The turning movement traffic counts were completed on Wednesday, January 7th, 2026 and Tuesday, February 24th, 2026 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 7:00 AM until 8:00 AM and the afternoon peak period was determined to be from 4:30 PM until 5:30 PM.

For both the Ward Road and Innovation Parkway/Outerview Road intersection and the Ward Road and Tudor Road intersection, trips from the *Summit Orchard North* Traffic Impact Study (McCurdy Engineers, January 2024) were added to the existing morning peak hour and afternoon peak hour traffic scenarios to create the existing plus site conditions for analysis as these sites are approved and under construction.

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

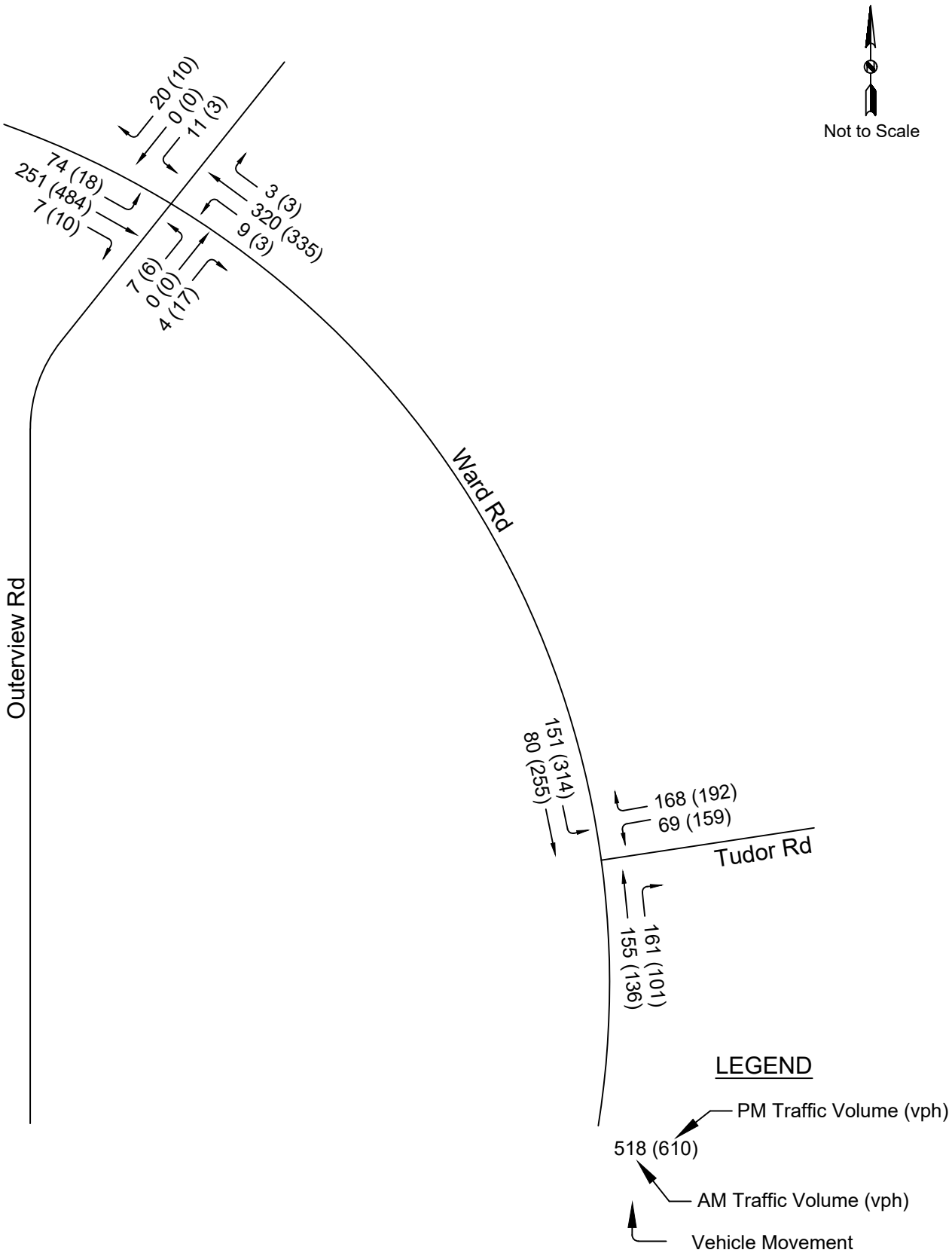


Figure 3 - Existing Traffic Volumes

PROPOSED CONDITIONS

Lot 10-A Preliminary Plan is expected to be constructed in two phases. The first phase will be on the south side of the site and will be a 76,900 square feet multipurpose recreational facility. The second phase will be on the north/west side of the development and will include two buildings totaling 25,400 square feet—3,900 square feet of restaurant and 21,500 square feet of flex office.

Access Plan

The site will be accessed at two locations from Ward Road—1) construction of the west leg of the signalized Tudor Road intersection and 2) construction of a right-in/right-out (RIRO) only access north of Tudor Road.

There are no plans for access to the site from Outerview Road or interconnectivity with the site to the south.

Sight Distance

Sight distance was measured at the proposed RIRO access using the methodology recommended by the American Association of State Highway and Transportation Engineers (AASHTO) for the 35 mph speed limit on Ward Road.

For 35 mph, AASHTO requires a minimum intersection sight distance of 390 feet and a stopping sight distance of 250 feet. Based on field measurements at the RIRO access, the available intersection and stopping sight distance is greater than 400 feet and meets the AASHTO requirements.

Driveway Spacing

Adequate spacing between access points is important for traffic safety and operation. Per City of Lee's Summit *Access Management Code*, March 2018, the minimum spacing standard for a full median opening along a major arterial is ¼ mile between access points. For a three-quarter access or right-in/right-out access, the intersection should not be located within the functional area of another intersection or in a location where sight distance is inadequate.

The proposed centerline-to-centerline spacing along Ward Road is:

- 490 feet between Outerview Road/Innovation Park and RIRO Drive
- 550 feet between RIRO Drive and Tudor Road

The proposed right-in/right-out drive has adequate sight distance and is located outside the functional area of both adjacent intersections.

Crash Analysis

Crashes at the study intersections were analyzed over a three-year period (2023-current) from City of Lee's Summit Police Department data to identify existing crash patterns. There were a total of nine crashes reported within the project corridor during the crash study time period. There were no fatal crashes within the study area.

Ward Road between Innovation Parkway/Outerview Road and Tudor Road

The one reported crash, during the study time period, was a Property Damage Only (PDO), lost control/fixed object crash where the driver struck the median.

Ward Road and Tudor Road

There were five reported crashes at the intersection during the study period—four lost control/fixed object crashes and one angle crash.

Two of the lost control/fixed object crashes were attributed to snowy/icy conditions, while the other two occurred when drivers failed to complete the turning movement. The angle crash was attributed to a failure to stop at a red traffic signal.

All reported crashes resulted in property damage only (PDO).

Ward Road and Innovation Parkway/Outerview Road

During the study period, three crashes were reported at the intersection.

Two of the crashes involved lost control/fixed object. One of these occurred under snowy/icy conditions (one reported injury), while the other occurred when a driver lost control of the vehicle (PDO). The third crash was a rear-end collision at the stop sign, which resulted in one injury and was attributed to the following driver following too closely.

No correctable crash patterns emerged as a result of the study and no recommendations are made to alter the study intersections based on crash data.

Detailed crash summaries are included in the Appendix.

Throat Length Analysis

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

Throat lengths for entrances onto Ward Road are provided in Table 1.

Table 1 – Driveway Throat Depths

Intersection	Recommended Throat Length (feet)	Site Plan Measured Throat Length (feet)
Ward Road and RIRO Drive	75	130
Ward Road and Tudor Road	75	190

All accesses onto Ward Road meet or exceed the recommended throat lengths.

Trip Generation

The expected trip generation for the development was estimated using the 12th 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.

The multipurpose recreational facility is not expected to generate a morning peak hour, as it does not open until 10:00 AM. In addition, the Trip Generation Handbook does not provide weekday morning peak hour trip generation data for this land use.

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

Table 2 – Trip Generation					
	Weekday	**A.M.**		**P.M.**	
ITE Land Use Code Units	**Trips (vpd)**	**Trips In (vph)**	**Trips Out (vph)**	**Trips In (vph)**	**Trips Out (vph)**
210-Multipurpose Recreational Facility 76,900 sq ft	n/a	0	0	144	113
Phase 1 Total	**n/a**	**0**	**0**	**144**	**113**
710-General Office Building 25,400 sq ft	341	39	5	8	44
932-High-Turnover (Sit-Down) Restaurant 3,900 sq ft	405	19	16	22	14
Phase 2 Total	**746**	**58**	**21**	**30**	**58**
Phase 1 & 2 Total	**n/a**	**58**	**21**	**174**	**171**

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:

- 45% to and 40% from the north
- 25% to and 30% from the south
- 30% to and from the east

Trip distribution during the afternoon peak period:

- 35% to and 50% from the north
- 30% to and 25% from the south
- 35% to and 25% from the east

Existing Plus Site Traffic Volumes

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

Future Traffic Volumes

Future traffic volumes were generated at a rate of 2% annual growth over a twenty-year period. The calculated traffic volumes were added to the existing plus site traffic. The volumes for the future morning and afternoon peak hours are shown on Figure 7.

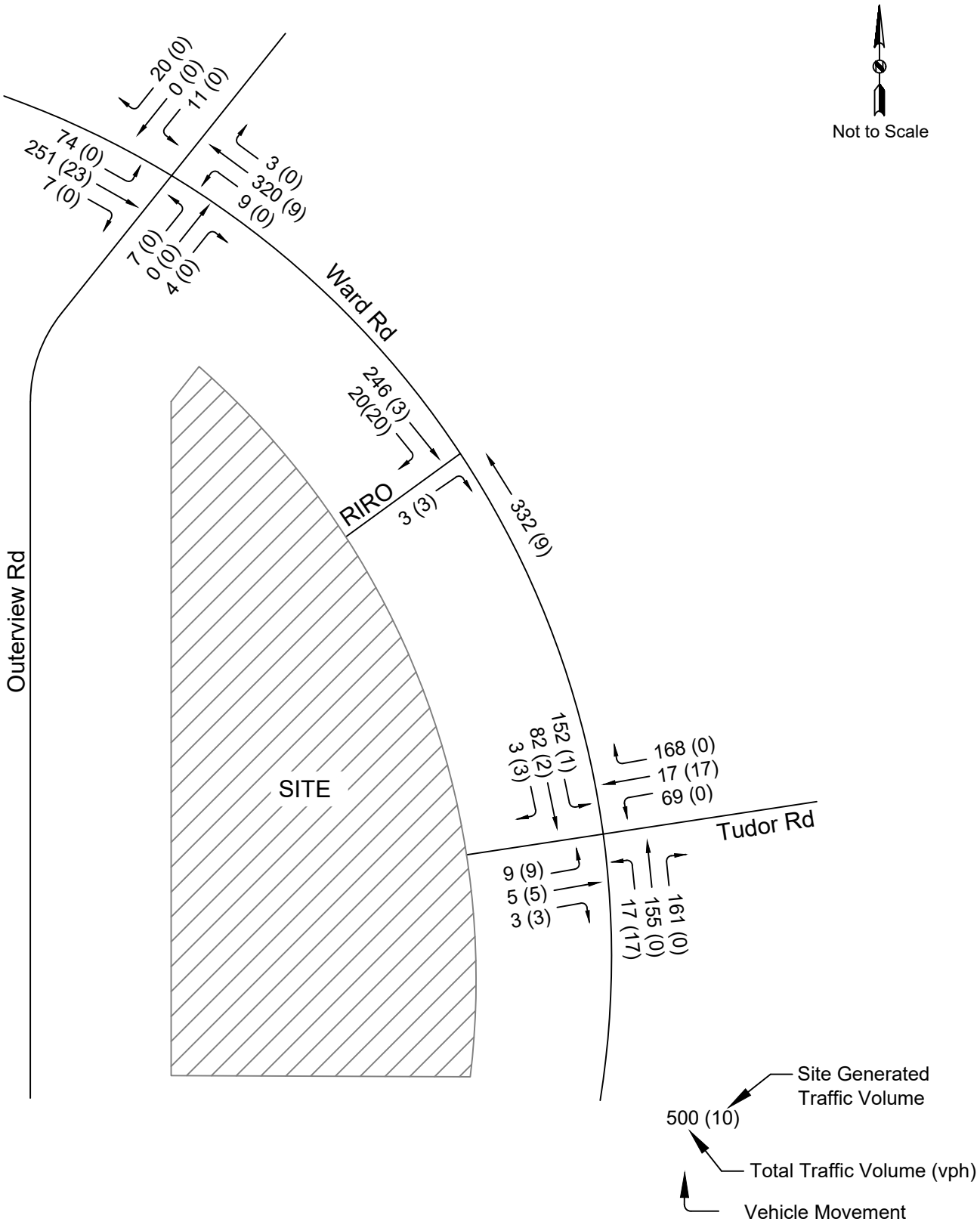


Figure 4 - Existing plus Site (Phase 1 & 2) AM Peak Hour Volumes

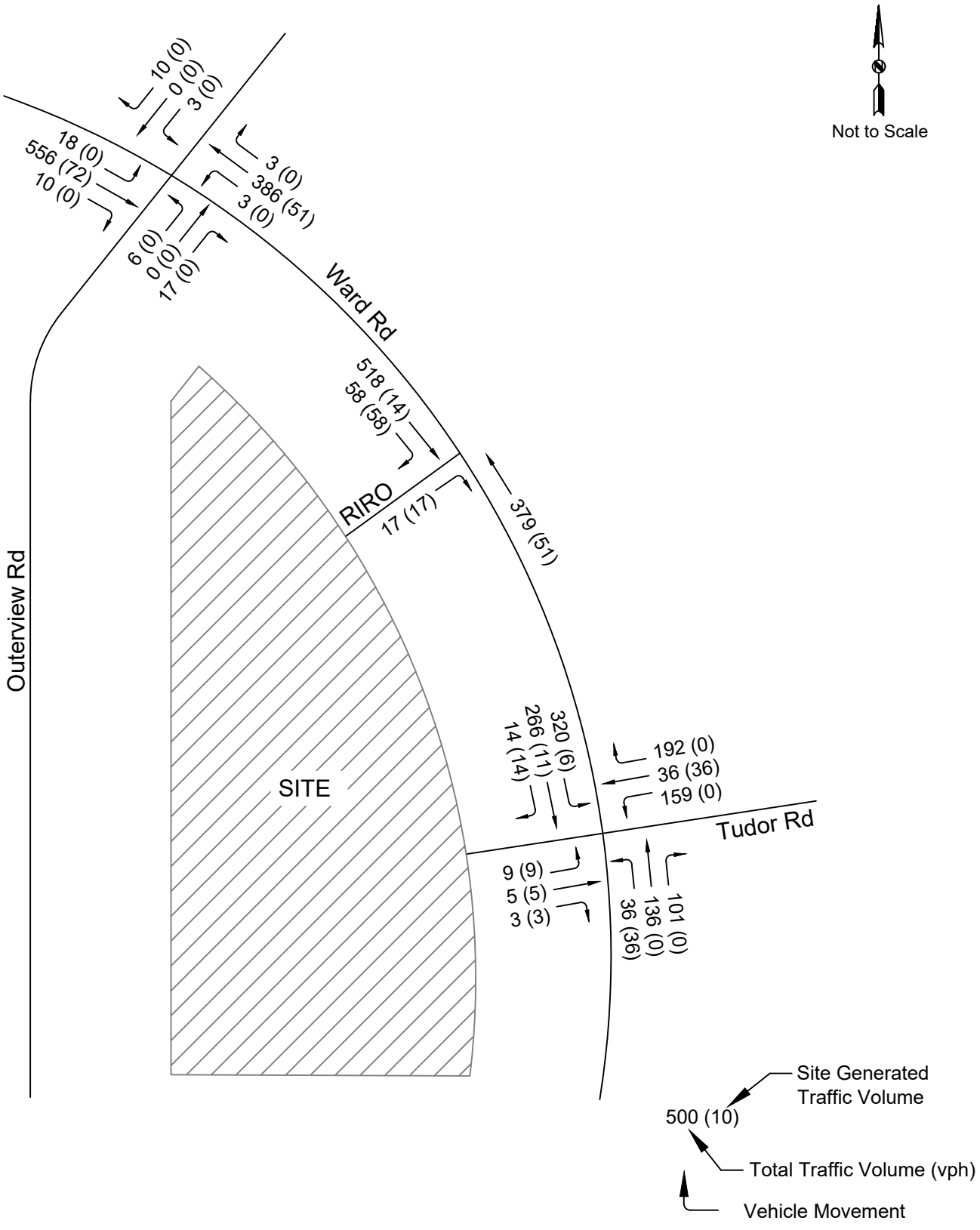


Figure 5 - Existing plus Site (Phase 1) PM Peak Hour Volumes

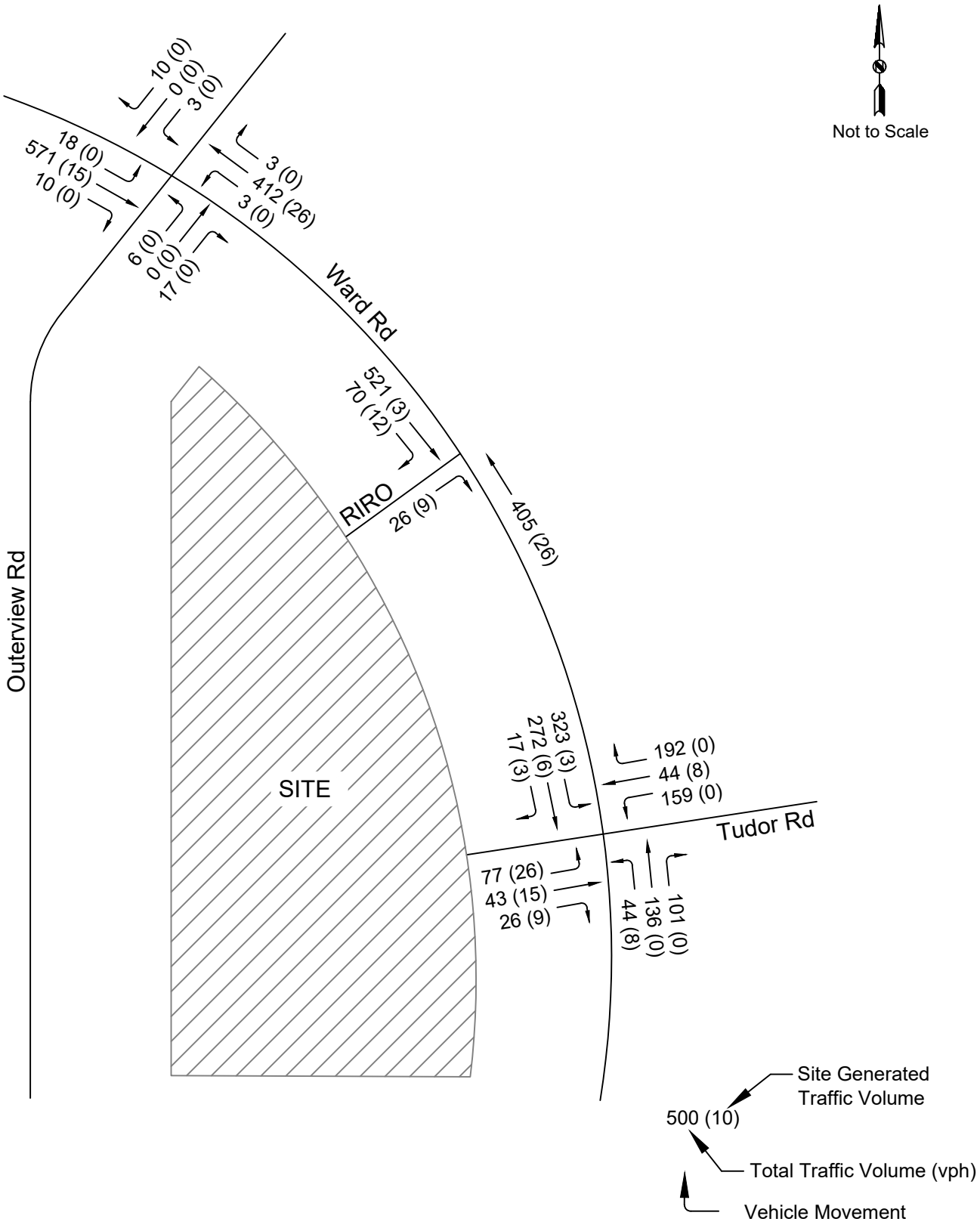


Figure 6 - Existing plus Site (Phase 1 & 2) PM Peak Hour Volumes

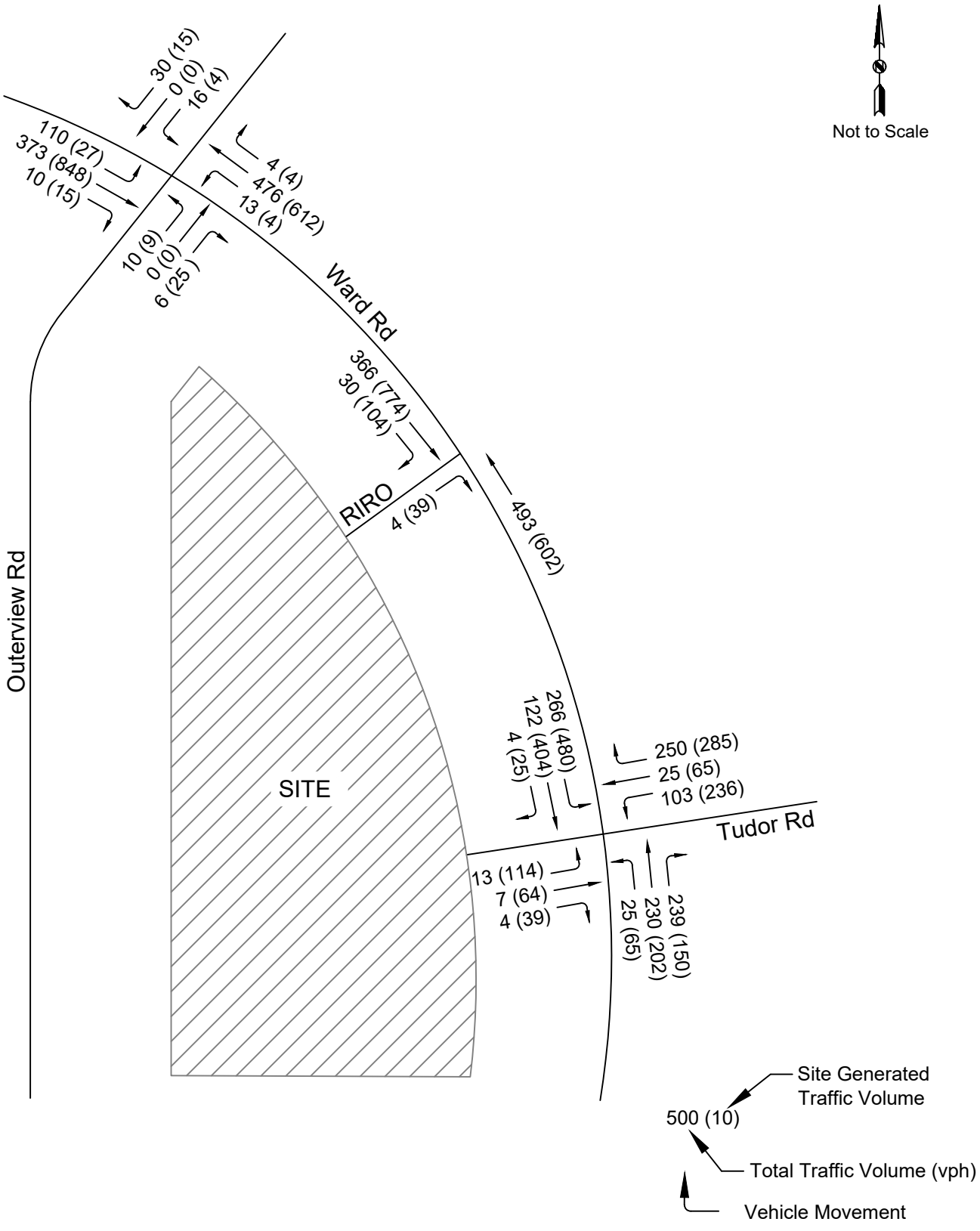


Figure 7 - Future AM & PM Peak Hour Volumes

Signal Warrant Study

A traffic signal warrant study was not included in this report because the intersection of Ward Road and Tudor Road is already signalized, and the proposed right-in/right-out access would not meet the criteria for installation of a traffic signal.

Right-Turn and Left-Turn Lane Warrants

The need for right and left-turn lanes into the site entrances was evaluated using the City of Lee's Summit *Access Management Code*, March 2018 turning lane guidelines as part of this study for the existing plus site (Phase 1 & 2) condition.

Left-Turn Warrant

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

> 16.1.B. Left-turn lanes shall be provided on all arterial streets at the intersection with other arterial and collector streets. Left-turn lanes shall be provided on minor arterial streets at the intersection with any local street or driveway where the left-turn volume is at least 20 vehicles in any hour. On major arterial streets, left-turn lanes shall be at the intersection with all connectors (an exception may be granted for a singular, existing, residential lot).
>
> 16.1.E. Left-turn lanes shall be provided at all median openings on roadways with medians.
>
> 16.1.H. The minimum length of left-turn lane should be 250 feet plus taper on an arterial street intersecting another arterial street and 200 feet plus taper on an arterial street at other locations. The minimum length of left-turn lane on collectors should be 150 feet plus taper. The minimum length of left-turn lane on connectors should meet the driveway throat length requirements.

There is an existing northbound left-turn lane at the Tudor Road intersection with approximately 90 feet of storage. City guidelines require a minimum storage length of 200 feet for a left-turn lane on an 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 RIRO drive for the Phase I afternoon peak period. As Ward Road is a major arterial roadway, the right-turn lane will need to be a minimum of 150 feet. The right-turn lane criteria is not met for the southbound movement at Tudor Road.

The raw analysis data is included in the Appendix.

CAPACITY

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

- Existing (existing 2026 counts plus volumes from approved traffic impact studies)
- Existing plus Phase 1 and 2
- Future (20-year scenario)

Level of Service (LOS) is defined as the measure of the quality of traffic flow and is graded from A to F—with A being the best situation, F being the worst, and D being generally the minimum acceptable level of service. The criteria for determining level of service for signalized and unsignalized study intersections and access points are based on the average vehicle delay and is outlined in Table 3.

Table 3 – Intersection Level of Service

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

Existing Conditions

Analysis was completed for existing conditions with existing roadway and lane configurations.

Tudor Road and Ward 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. The overall LOS for the intersection is a LOS B during the morning and afternoon peak period.

Outerview Road/Innovation Parkway and Ward Road

The through movements of Ward Road are not stop-controlled and are therefore operating in a free-flow condition. The northeast and southwest movements all operate at a LOS C or better and have sufficient capacity for queuing vehicles.

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

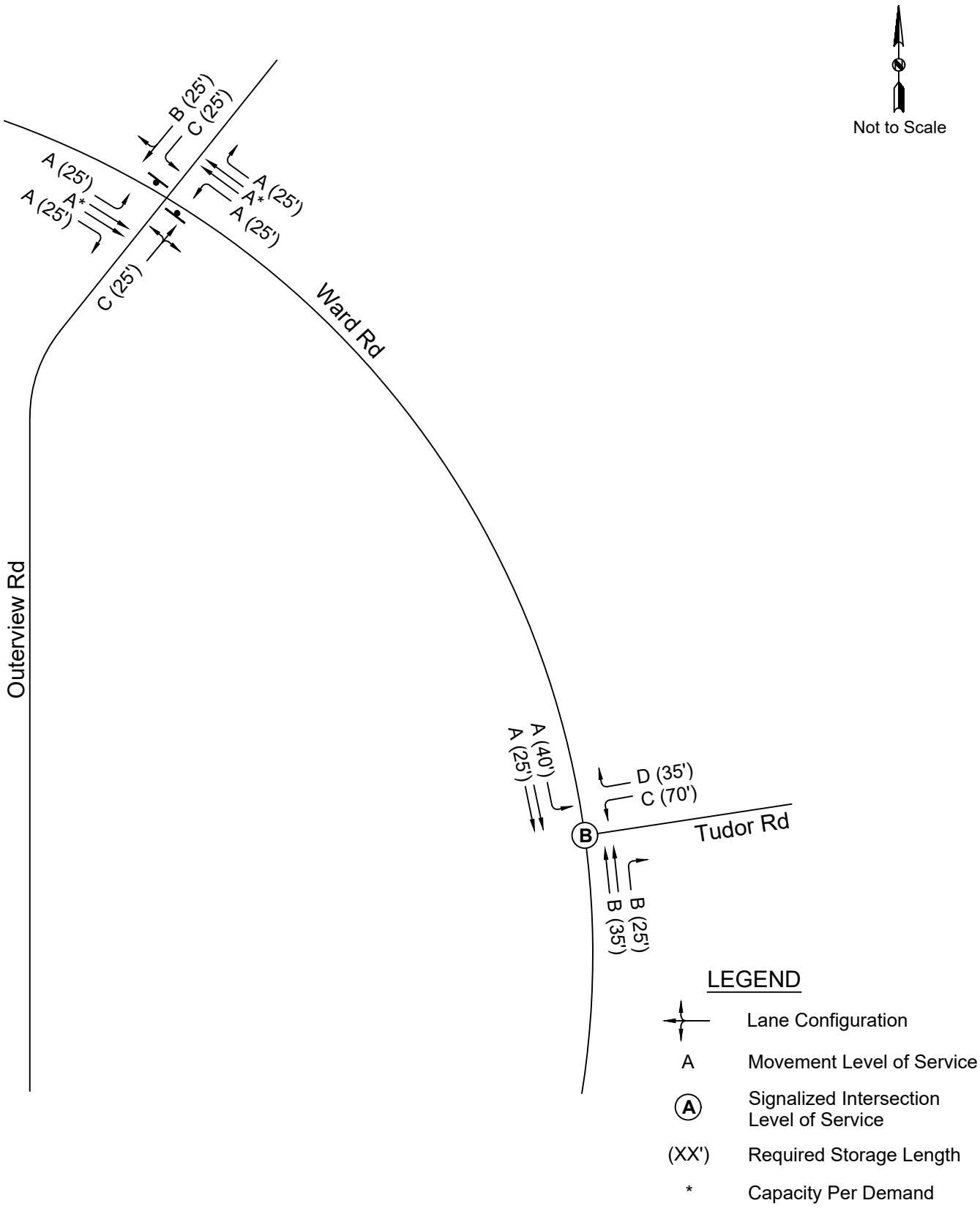


Figure 8 - Existing AM Level of Service

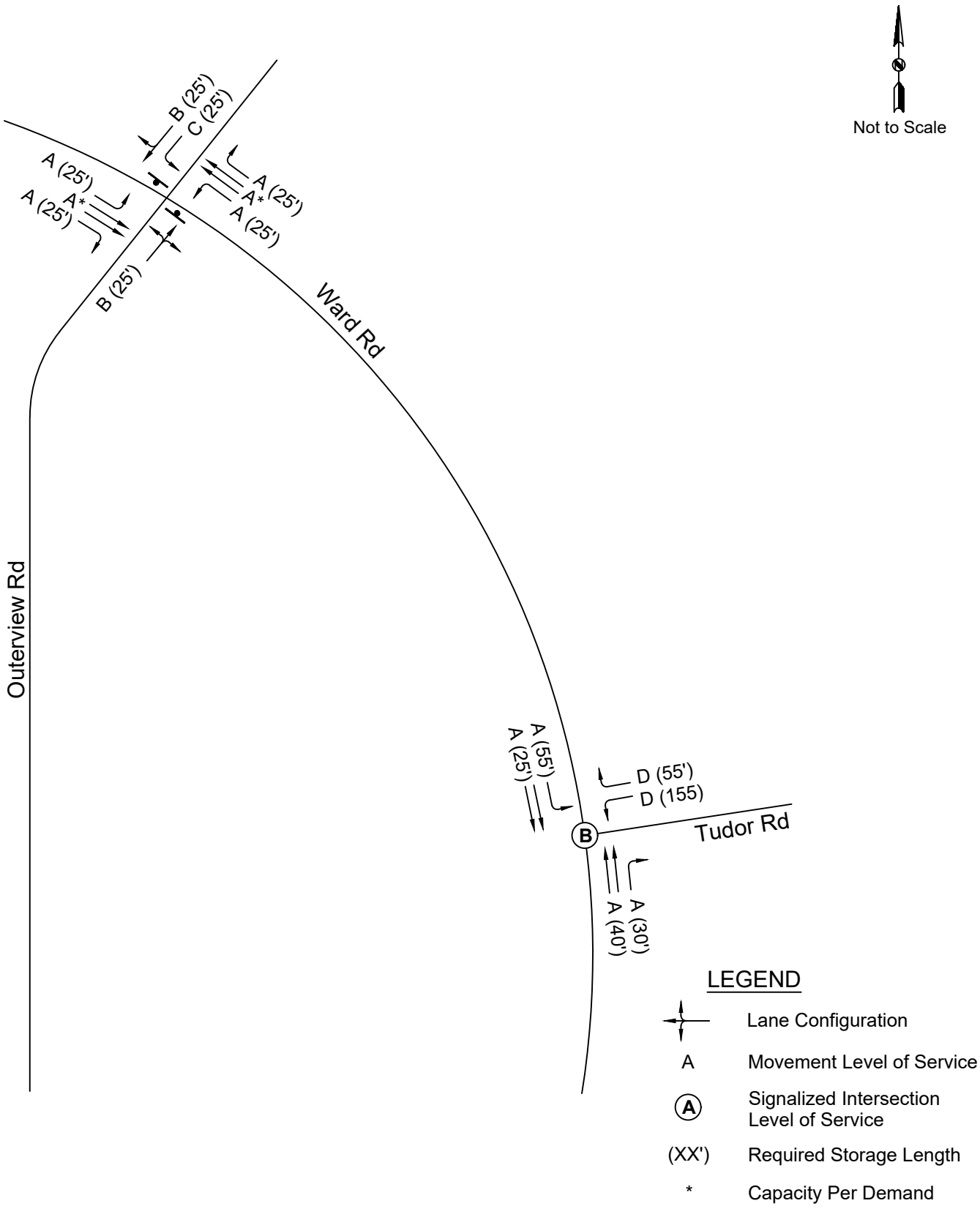


Figure 9 - Existing PM Level of Service

Existing Plus Site (Phase 1 & 2) Conditions

Signal timings were optimized to account for the additional traffic. Unless noted, existing roadway and lane configurations were used in intersection analysis.

Because the required improvements are triggered by the Phase 1 development, the analysis groups Phase 1 and Phase 2 traffic conditions together for the Level of Service analysis.

Tudor Road and Ward Road

With an additional west leg (left-turn lane and shared through/right-turn lane): 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. The overall LOS for the intersection is LOS B during the morning and afternoon peak period.

Outerview Road/Innovation Parkway and Ward Road

There is no significant change in the operation 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.

RIRO Access and Ward Road

With a stop controlled right-in/right-out only west leg and a southbound right-turn lane: All approaches operated at a LOS B or better and the intersection has sufficient capacity for queuing vehicles.

Internally, the traffic volumes will require a minimum of 25 feet of storage, which is available.

The results of the existing plus site analysis for the morning and afternoon peak hour conditions along with lane configuration and queue lengths are shown on Figures 10, 11, and 12.

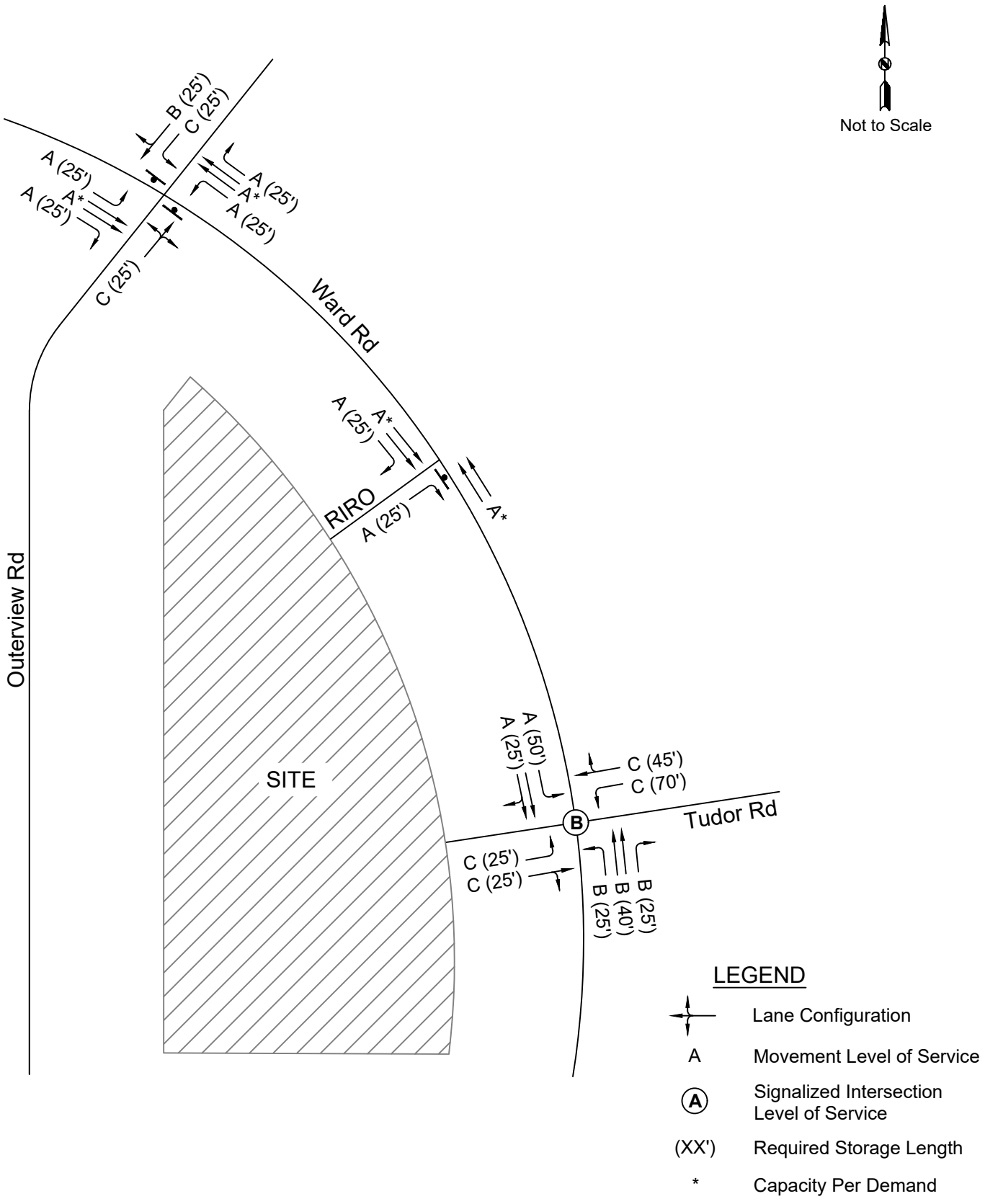


Figure 10 - Existing plus Site (Phase 1 & 2) AM Level of Service

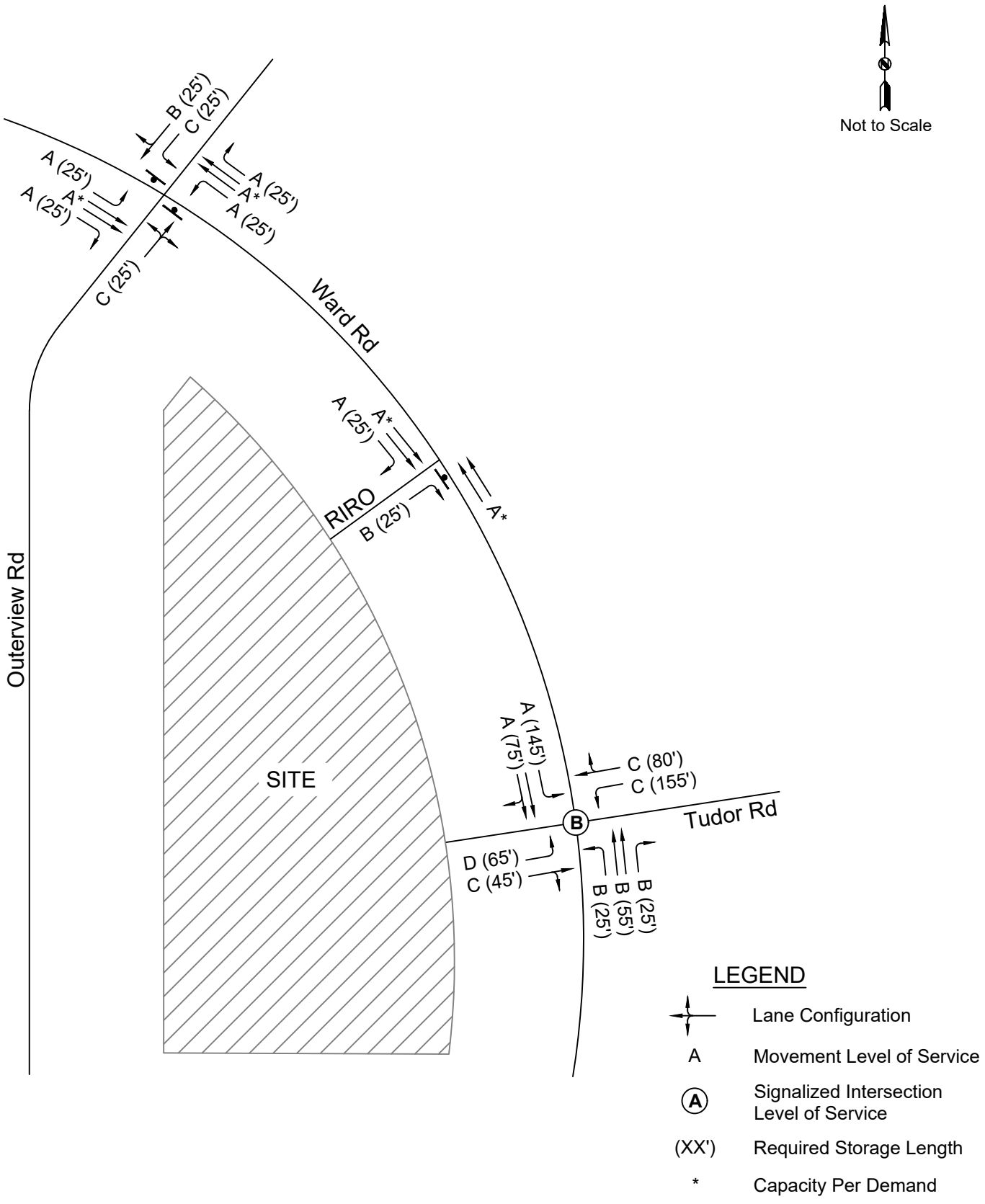


Figure 11 - Existing plus Site (Phase 1) PM Level of Service

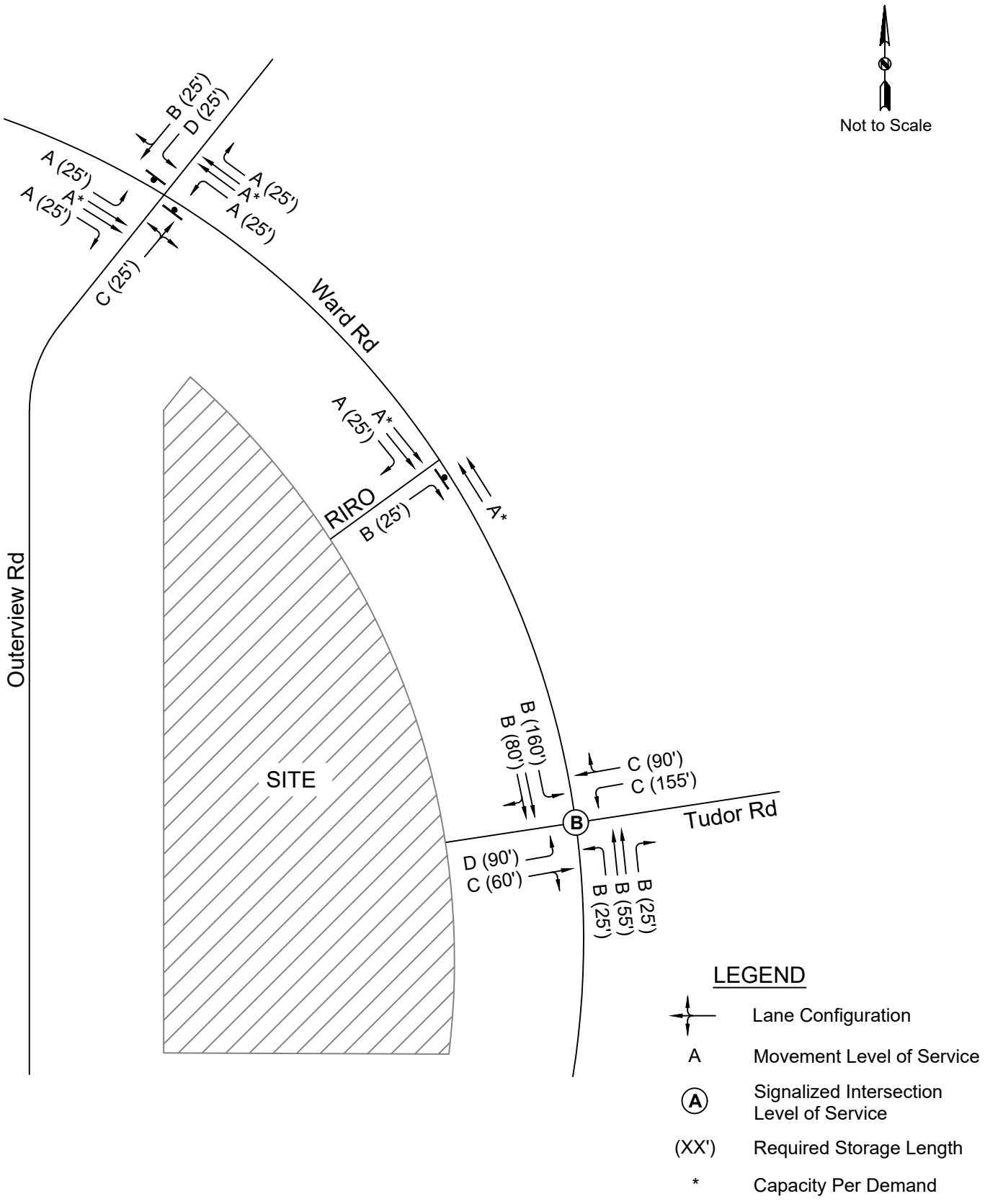


Figure 12 - Existing plus Site (Phase 1 & 2) PM Level of Service

Future Conditions

Future analysis is intended to provide a high-level overview of increases in trips as other development occurs and provide recommendations for reserving right-of-way for future expansion. Signal timings of intersection movements were optimized to account for the additional traffic.

A 2% annual growth rate was used to project future conditions. This represents an aggressive growth rate for a fully developed urban area, and the actual growth rate is expected to be lower since traffic from approved developments is already included in the existing conditions. Using the 2% growth assumption, future traffic is projected to result in a noticeable decrease in the overall level of service (LOS) at the nearby intersections.

Tudor Road and Ward Road

All approaches operate at LOS D or better during the morning and afternoon peak periods, and the intersection has sufficient capacity for queuing vehicles, although some approaches are approaching the maximum available storage length. The overall intersection operates at LOS C.

Outerview Road/Innovation Parkway and Ward Road

During this phase, the additional traffic on Ward Road is predicted to cause the southwest left-turn movement and the northeast approach to operate at LOS F and LOS E, respectively, during the afternoon peak period. However, the volumes experiencing these delays are less than 20 vehicles per hour for each movement, and alternative routes are available during the peak periods.

Because a traffic signal is not expected to meet warrant criteria at this intersection, installation of a signal to address these delays is not recommended.

RIRO Access and Ward Road

There is no significant change in the operation of this intersection compared to the existing plus site conditions. All approaches continue to operate at LOS B or better during the morning and afternoon peak periods, and the intersection has sufficient capacity for queuing vehicles.

The results of the future analysis is shown for the morning and afternoon peak hour conditions along with lane configuration and queue lengths on Figures 13 and 14.

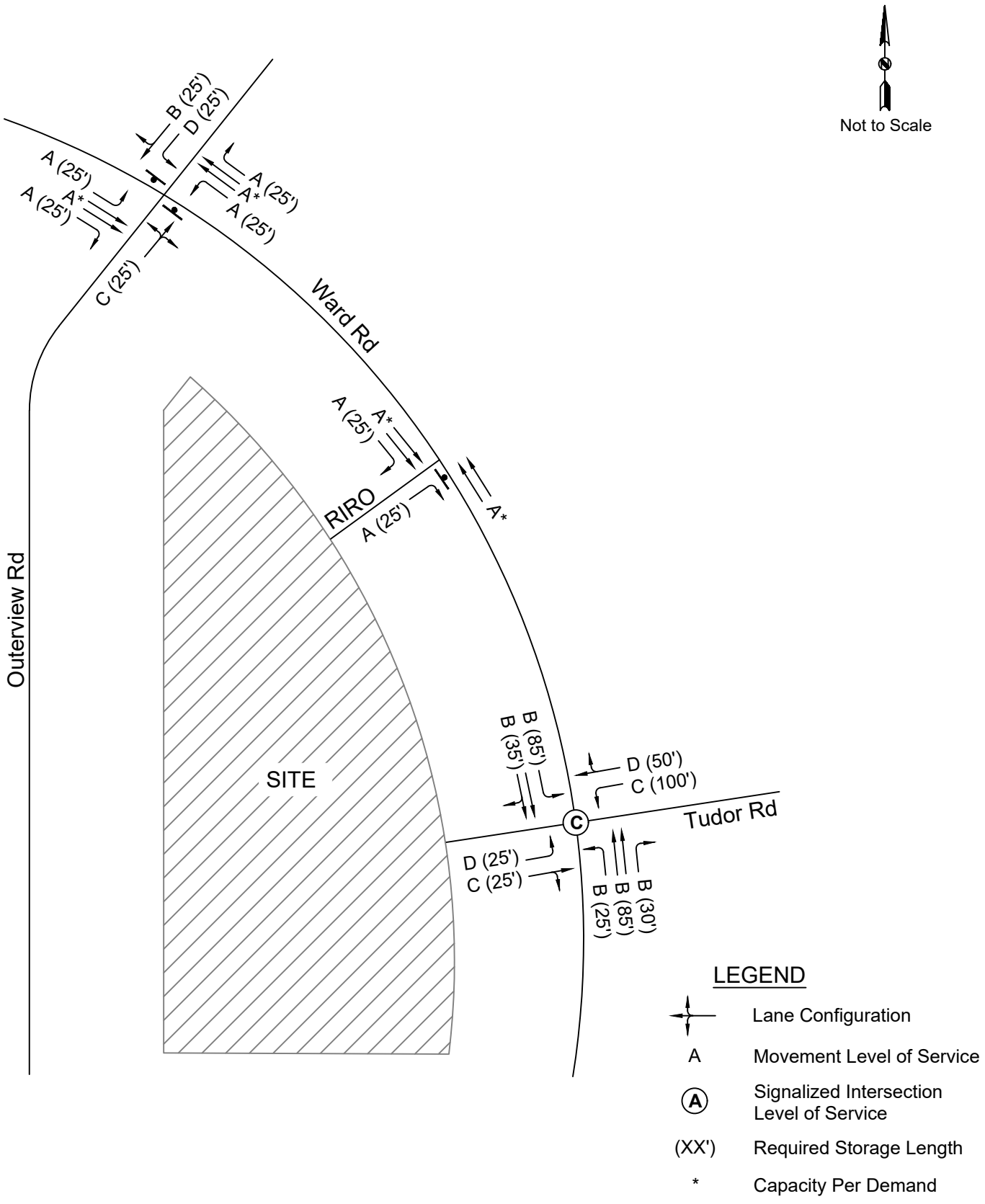


Figure 13 - Future AM Level of Service

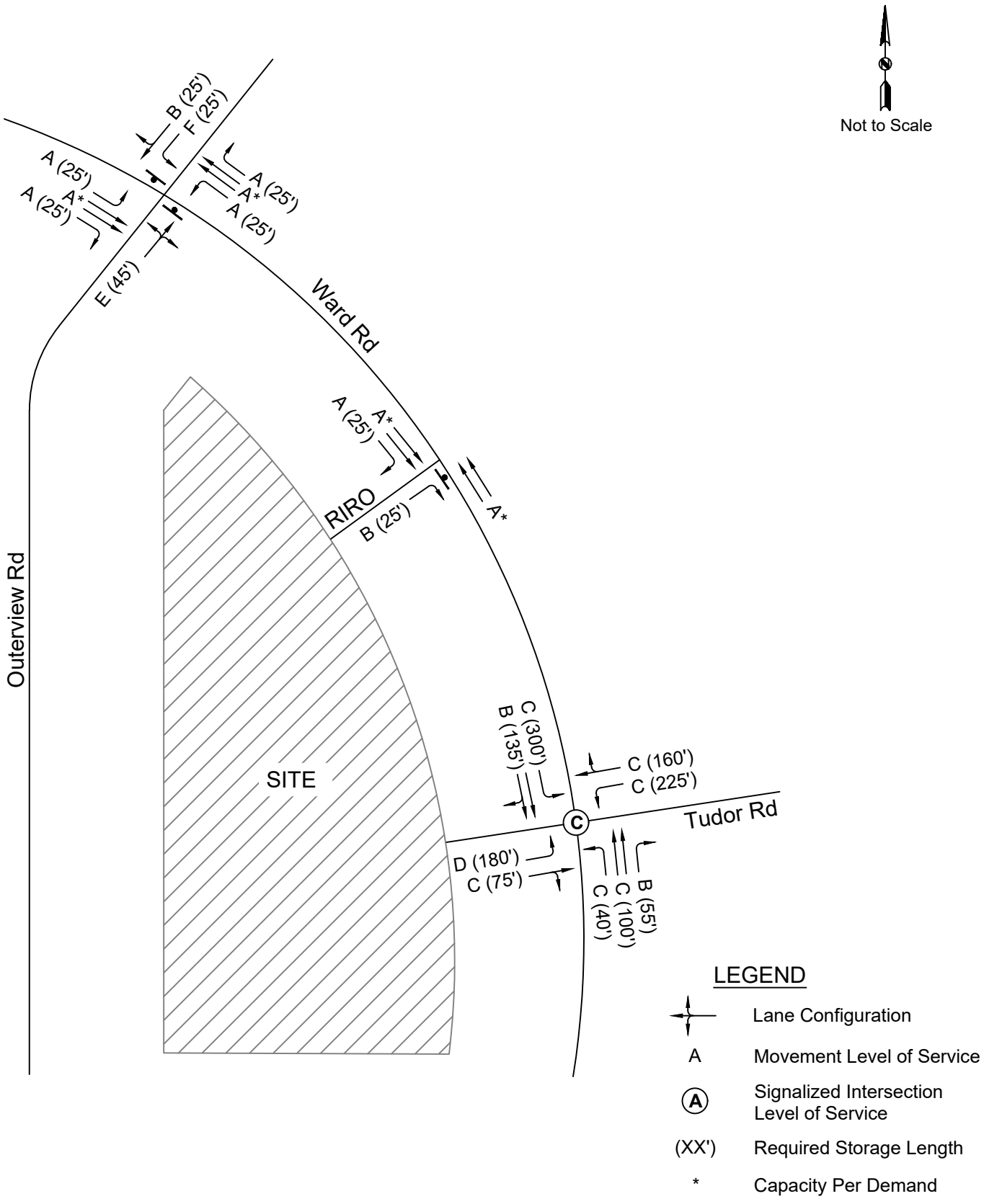


Figure 14 - Future PM Level of Service

RECOMMENDATIONS

This study documents the findings of the traffic analysis of the expected traffic for the Lot 10-A preliminary plan development in Lee's Summit, Missouri. The study includes an analysis of the existing conditions, existing plus site conditions (Phase 1 and 2), and future conditions.

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

- *Ward Road and Outerview Road/Innovation Parkway:* No specific recommendations.
- *Ward Road and RIRO Drive:* Construct an eastbound stop-controlled right-in/right-out (RIRO) access. Install a southbound right-turn lane with a minimum of 150 feet of storage plus taper in accordance with the City of Lee's Summit Access Management Code. Maintain a minimum driveway throat length of 75 feet for the RIRO access.
- *Ward Road and Tudor Road:* Extend the existing northbound left-turn lane to provide a minimum of 200 feet of storage plus taper to meet City guidelines for arterial roadways. Maintain a minimum driveway throat length of 75 feet for the site access at Tudor Road. The west leg of the Tudor Road intersection should be configured with one receiving lane and two exit lanes consisting of a left-turn lane and a shared through/right-turn lane. Convert the operations for the existing east leg to a left-turn lane and a shared through/right-turn lane. Optimize/adjust signal timings as necessary.
- The future traffic volumes in this study should be incorporated into the City's future traffic projections and corridor planning as development continues in the area.

APPENDIX

Ward & Tudor
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	16	0	26	42	3	31	23	57	33	4	0	37	136
7:15	0	0	0	0	18	0	51	69	0	32	26	58	31	12	0	43	170
7:30	0	0	0	0	15	0	31	46	0	35	54	89	30	13	0	43	178
7:45	0	0	0	0	20	0	35	55	1	32	58	91	32	15	0	47	193
8:00	0	0	0	0	23	0	30	53	0	27	15	42	30	5	0	35	130
8:15	0	0	0	0	26	0	27	53	0	36	26	62	28	10	0	38	153
8:30	0	0	0	0	23	0	26	49	0	34	25	59	17	12	0	29	137
8:45	0	0	0	0	21	0	23	44	0	14	19	33	30	15	0	45	122
Total	**0**	**0**	**0**	**0**	**162**	**0**	**249**	**411**	**4**	**241**	**246**	**491**	**231**	**86**	**0**	**317**	**1219**

	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
7:00	0	0	0	0	#DIV/0!	16	0	26	42	0.77	3	31	23	57	0.81	33	4	0	37	0.9	136
7:15	0	0	0	0		18	0	51	69		0	32	26	58		31	12	0	43		170
7:30	0	0	0	0		15	0	31	46		0	35	54	89		30	13	0	43		178
7:45	0	0	0	0		20	0	35	55		1	32	58	91		32	15	0	47		193
Total	0	0	0	0		69	0	143	212		4	130	161	295		126	44	0	170		677

Ward & Innovation Parkway/Outerview Road
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	1	3	8	0	6	14	3	53	0	56	7	41	1	49	122
7:15	1	0	1	2	0	0	3	3	0	99	1	100	5	39	1	45	150
7:30	2	0	1	3	2	0	6	8	3	60	1	64	30	33	3	66	141
7:45	2	0	1	3	1	0	5	6	3	50	1	54	32	54	2	88	151
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**7**	**0**	**4**	**11**	**11**	**0**	**20**	**31**	**9**	**262**	**3**	**274**	**74**	**167**	**7**	**248**	**564**

	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
7:00	2	0	1	3	0.92	8	0	6	14	0.55	3	53	0	56	0.69	7	41	1	49	0.7	122
7:15	1	0	1	2		0	0	3	3		0	99	1	100		5	39	1	45		150
7:30	2	0	1	3		2	0	6	8		3	60	1	64		30	33	3	66		141
7:45	2	0	1	3		1	0	5	6		3	50	1	54		32	54	2	88		151
Total	7	0	4	11		11	0	20	31		9	262	3	274		74	167	7	248		564

Ward & Tudor
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 PM	0	0	0	0	44	0	37	81	1	27	13	41	40	47	0	87	209
4:15 PM	0	0	0	0	39	0	39	78	1	37	38	76	49	47	0	96	250
4:30 PM	0	0	0	0	36	0	41	77	0	24	22	46	49	42	0	91	214
4:45 PM	0	0	0	0	36	0	38	74	2	33	25	60	43	61	0	104	238
5:00 PM	0	0	1	1	47	0	42	89	2	24	30	56	58	55	0	113	259
5:15 PM	0	0	0	0	40	0	44	84	3	28	24	55	59	62	0	121	260
5:30 PM	0	0	0	0	26	0	39	65	0	29	28	57	41	43	0	84	206
5:45 PM	0	0	0	0	30	0	29	59	1	22	22	45	42	53	0	95	199
Total	**0**	**0**	**1**	**1**	**298**	**0**	**309**	**607**	**10**	**224**	**202**	**436**	**381**	**410**	**0**	**791**	**1835**

	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
4:30 PM	0	0	0	0	**0.25**	36	0	41	77	**0.91**	0	24	22	46	**0.9**	49	42	0	91	**0.89**	214
4:45 PM	0	0	0	0		36	0	38	74		2	33	25	60		43	61	0	104		238
5:00 PM	0	0	1	1		47	0	42	89		2	24	30	56		58	55	0	113		259
5:15 PM	0	0	0	0		40	0	44	84		3	28	24	55		59	62	0	121		260
Total	0	0	1	1		159	0	165	324		7	109	101	217		209	220	0	429		971

Ward & Innovation Parkway/Outerview Road
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 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	2	0	5	7	0	0	2	2	0	62	1	63	4	111	2	117	189
4:45 PM	2	0	3	5	1	0	1	2	0	66	1	67	1	118	2	121	195
5:00 PM	1	0	7	8	2	0	4	6	1	84	0	85	5	94	3	102	201
5:15 PM	1	0	2	3	0	0	3	3	2	69	1	72	8	103	3	114	192
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**6**	**0**	**17**	**23**	**3**	**0**	**10**	**13**	**3**	**281**	**3**	**287**	**18**	**426**	**10**	**454**	**777**

	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
4:30 PM	2	0	5	7	**0.72**	0	0	2	2	**0.54**	0	62	1	63	**0.84**	4	111	2	117	**0.94**	189
4:45 PM	2	0	3	5		1	0	1	2		0	66	1	67		1	118	2	121		195
5:00 PM	1	0	7	8		2	0	4	6		1	84	0	85		5	94	3	102		201
5:15 PM	1	0	2	3		0	0	3	3		2	69	1	72		8	103	3	114		192
Total	6	0	17	23		3	0	10	13		3	281	3	287		18	426	10	454		777

General Office Building
(710)

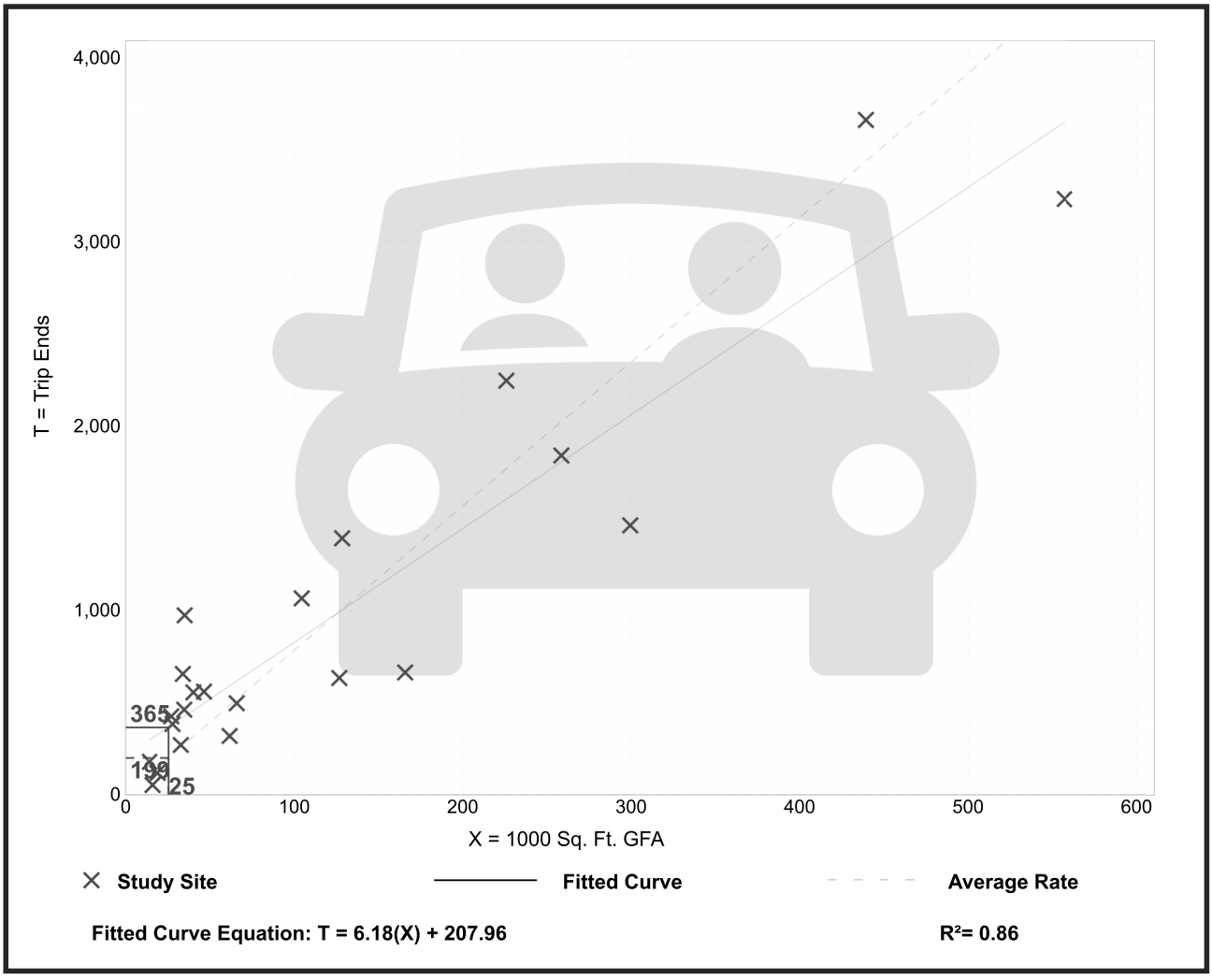
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. 1000 Sq. Ft. GFA: 126
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.83	3.27 - 27.56	3.71

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant
(932)

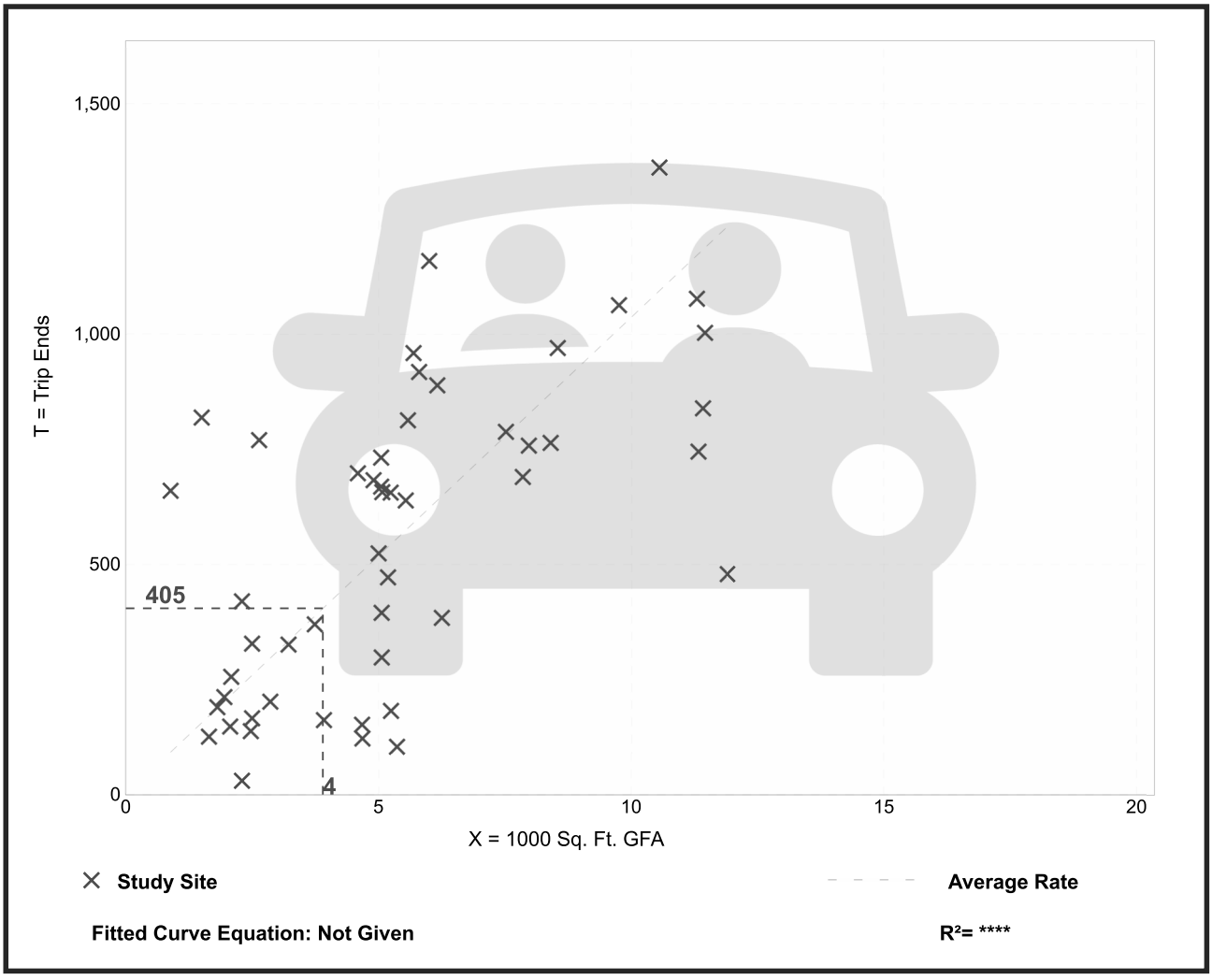
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
103.75	13.04 - 742.41	67.15

Data Plot and Equation



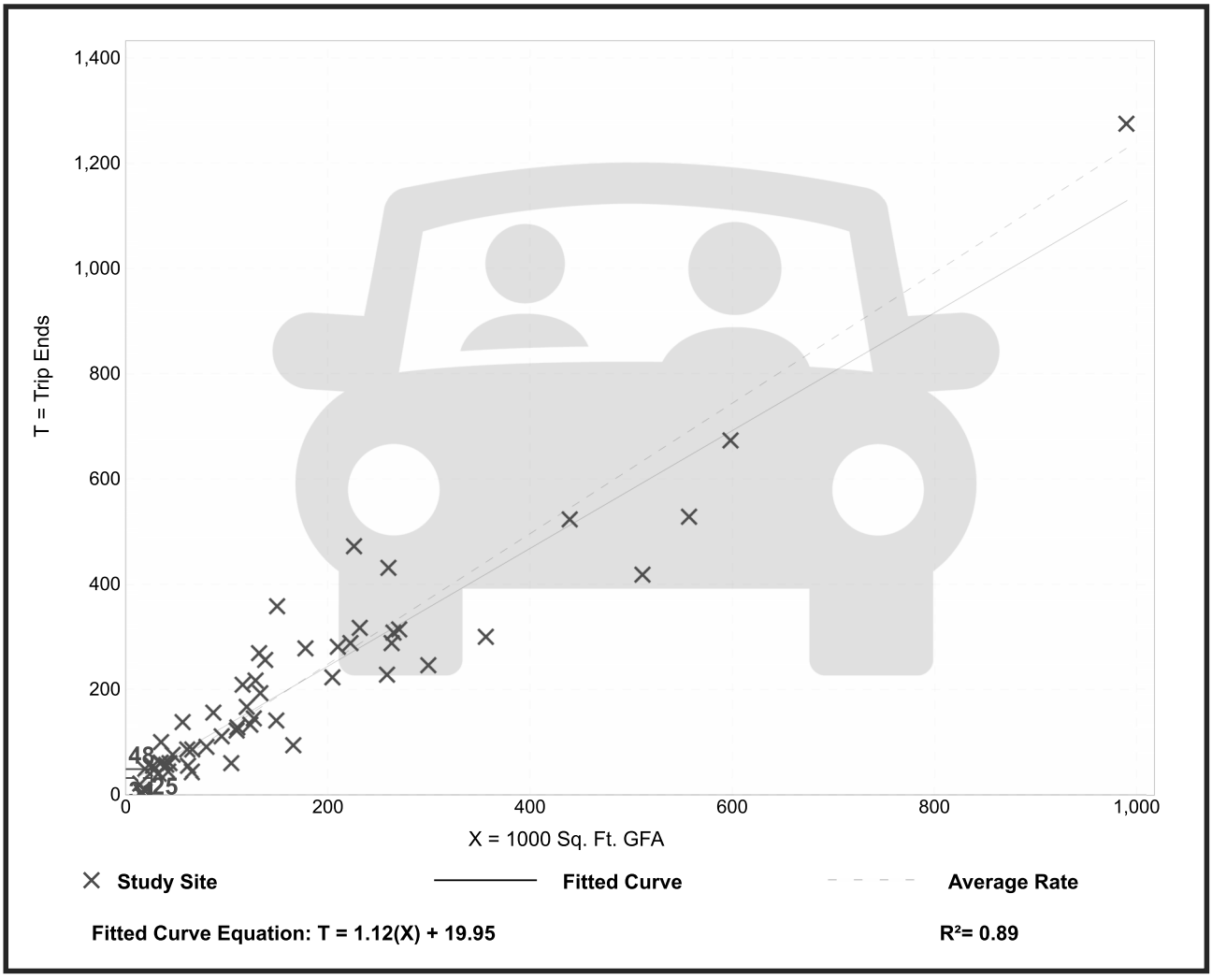
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 54
Avg. 1000 Sq. Ft. GFA: 170
Directional Distribution: 88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.24	0.32 - 2.83	0.40

Data Plot and Equation



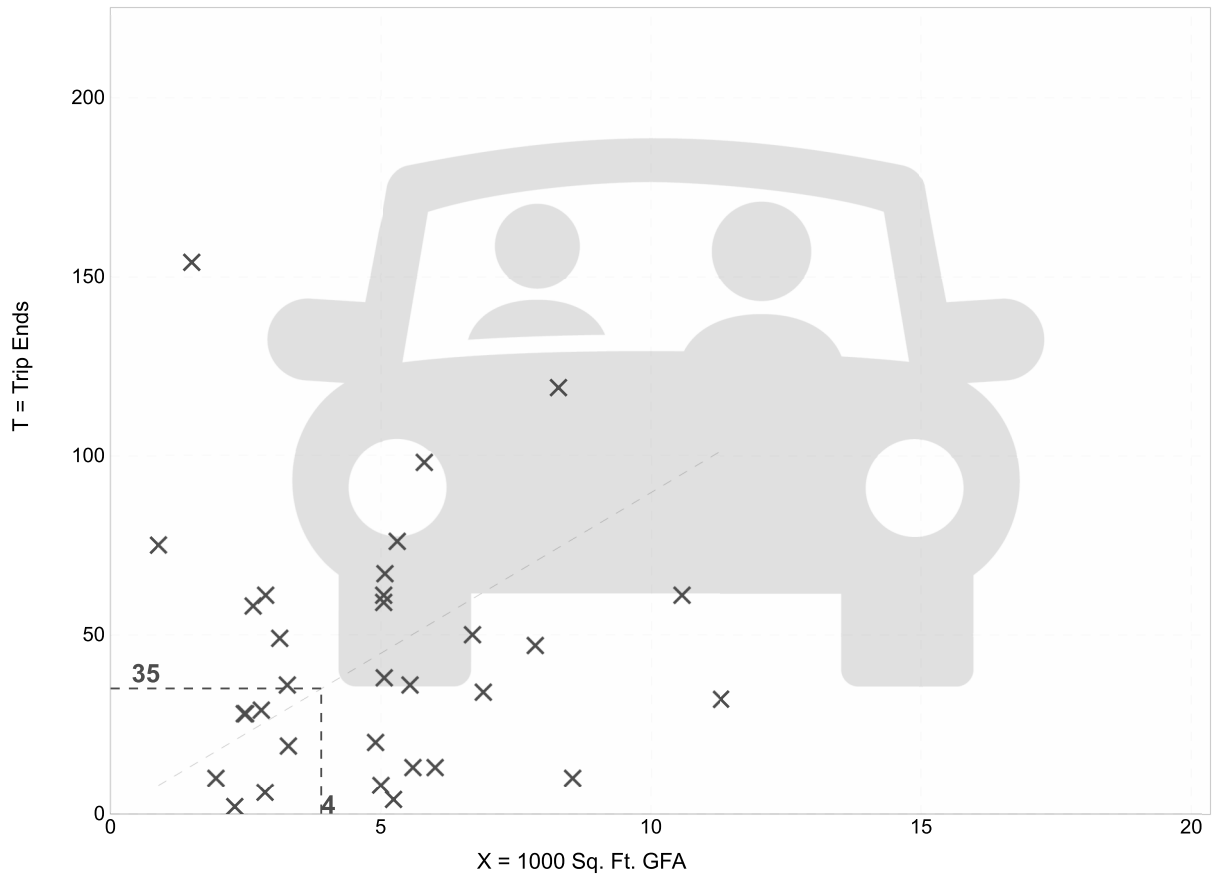
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 32
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 55% entering, 45% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
8.97	0.76 - 102.39	12.35

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= **

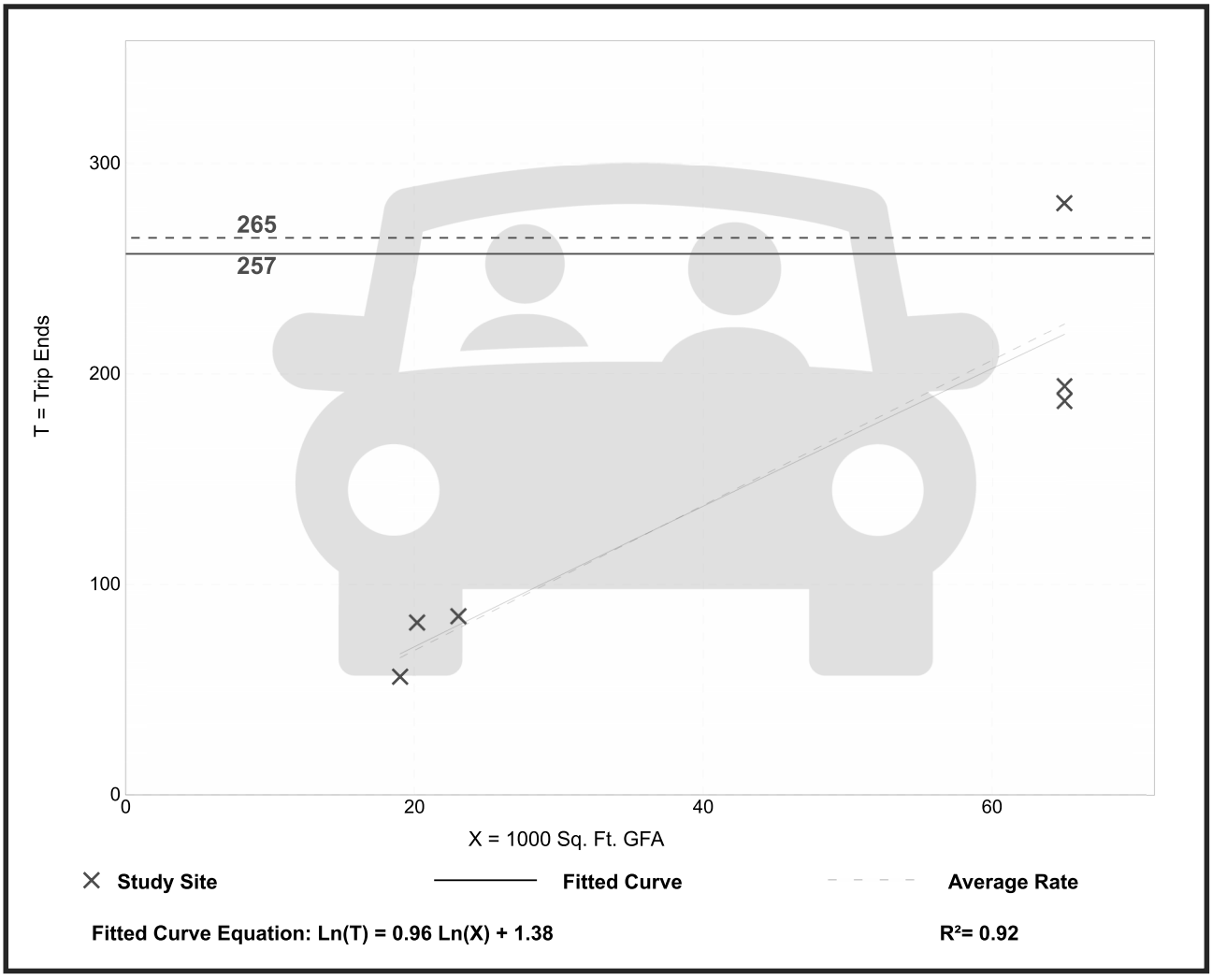
Multipurpose Recreational Facility
(435)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 43
Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.44	2.88 - 4.32	0.68

Data Plot and Equation



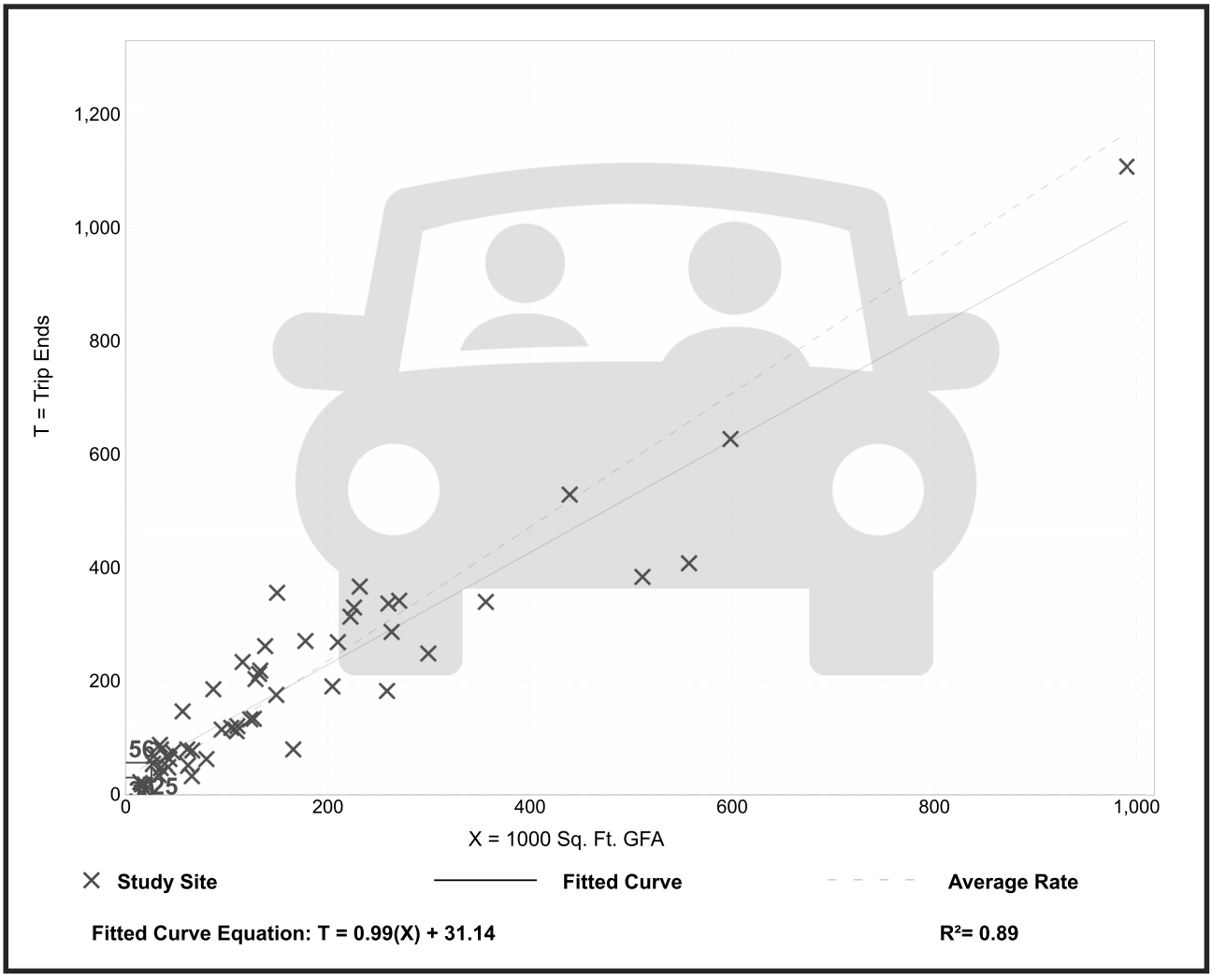
General Office Building
(710)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 53
Avg. 1000 Sq. Ft. GFA: 166
Directional Distribution: 16% entering, 84% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.18	0.26 - 2.59	0.41

Data Plot and Equation



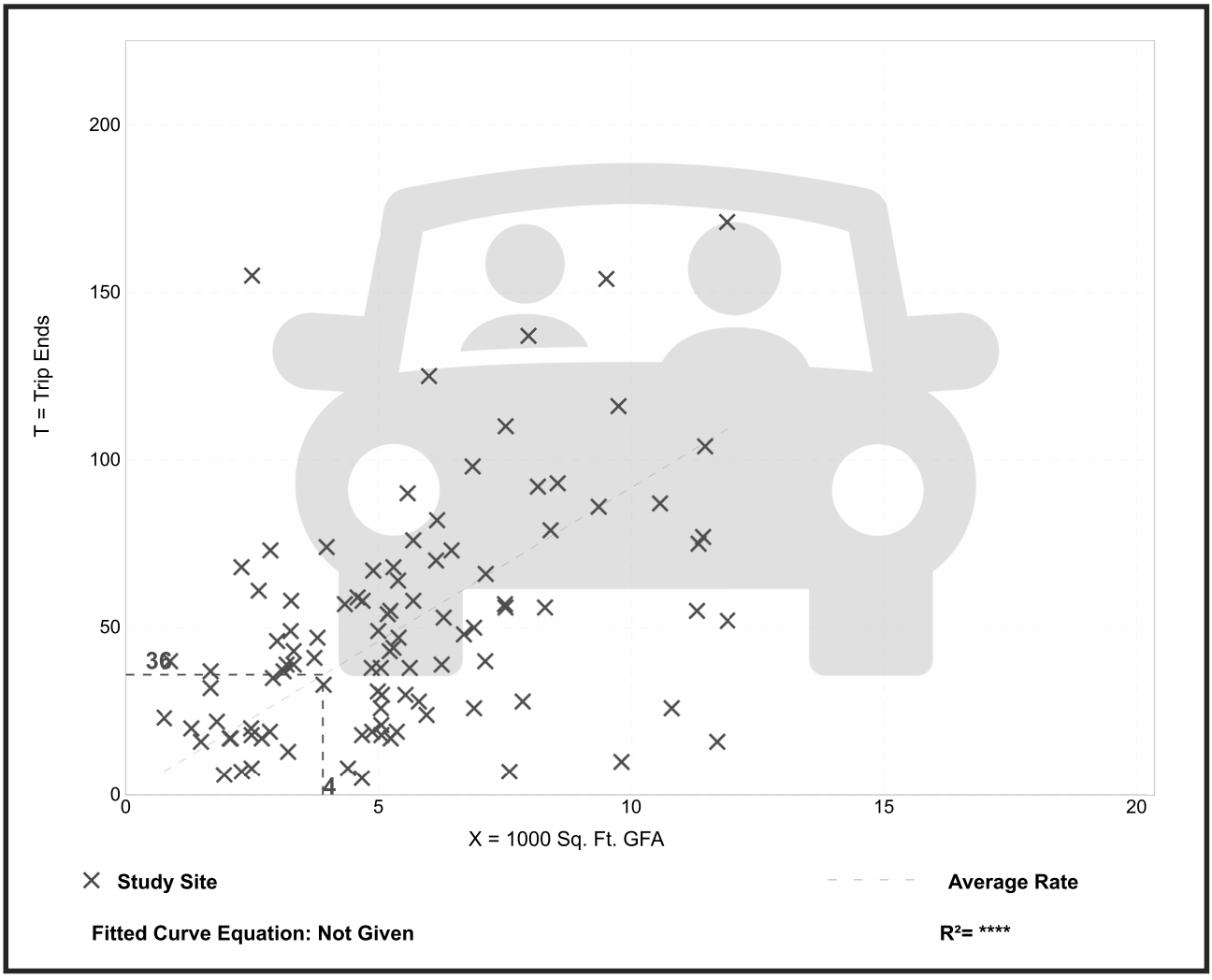
High-Turnover (Sit-Down) Restaurant
(932)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 100
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.18	0.92 - 62.00	6.36

Data Plot and Equation



Trip Gen Manual, 12th Edition ● Institute of Transportation Engineers

Rush Fun Plex TIS Site Trip Generation

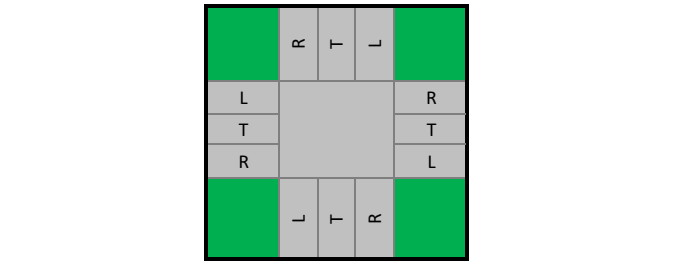
ITE Trip Generation Manual - 12th Edition

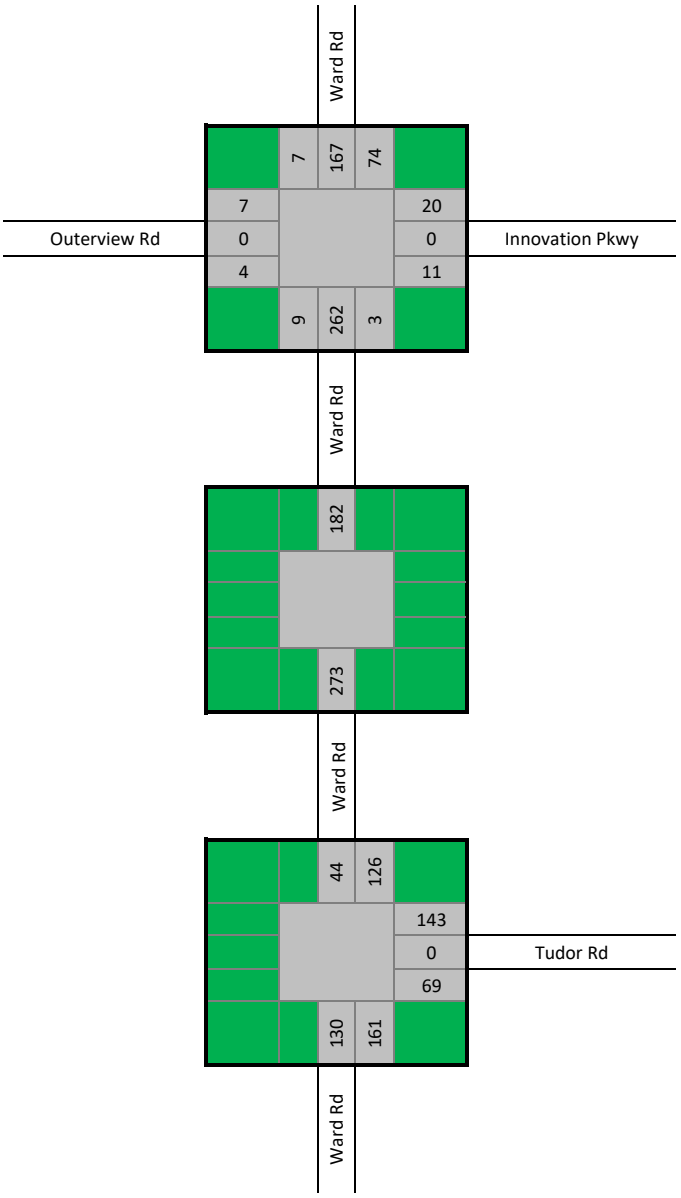
Highlighted text indicates trips used in Synchro and Warrant Analysis

Land Use	ITE Code	Size	Units	Equation	Trips (Eq.)	Av. Rate	Trips (Av. Rate)	In%	Out%	Trips In	Trips Out
****PHASE I****											
Multipurpose Recreational Facility **(Weekday)**	210	76.9	1000 Sq Ft	N/A							
Multipurpose Recreational Facility **(AM)**	210	76.9	1000 Sq Ft	N/A							
Multipurpose Recreational Facility **(PM)**	210	76.9	1000 Sq Ft	Ln(T)=0.96Ln(X)+1.38	257	3.44	265	56%	44%	144	113
****PHASE II****											
General Office Building **(Weekday)**	710	21.5	1000 Sq Ft	T=6.18(X)+207.96	341	7.83	168	50%	50%	171	170
High-Turnover (Sit-Down) Restaurant	932	3.9	1000 Sq Ft	n/a	n/a	103.75	405	50%	50%	203	202
										374	372
General Office Building **(AM)**	710	21.5	1000 Sq Ft	T=1.12(X)+19.95	44	1.24	27	88%	12%	39	5
High-Turnover (Sit-Down) Restaurant	932	3.9	1000 Sq Ft	n/a	n/a	8.97	35	55%	45%	19	16
										58	21
General Office Building **(AM)**	710	21.5	1000 Sq Ft	T=.099(X)+31.14	52	1.18	25	16%	84%	8	44
High-Turnover (Sit-Down) Restaurant	932	3.9	1000 Sq Ft	n/a	n/a	9.18	36	61%	39%	22	14
										30	58

AM - Existing Traffic Volumes

Legend

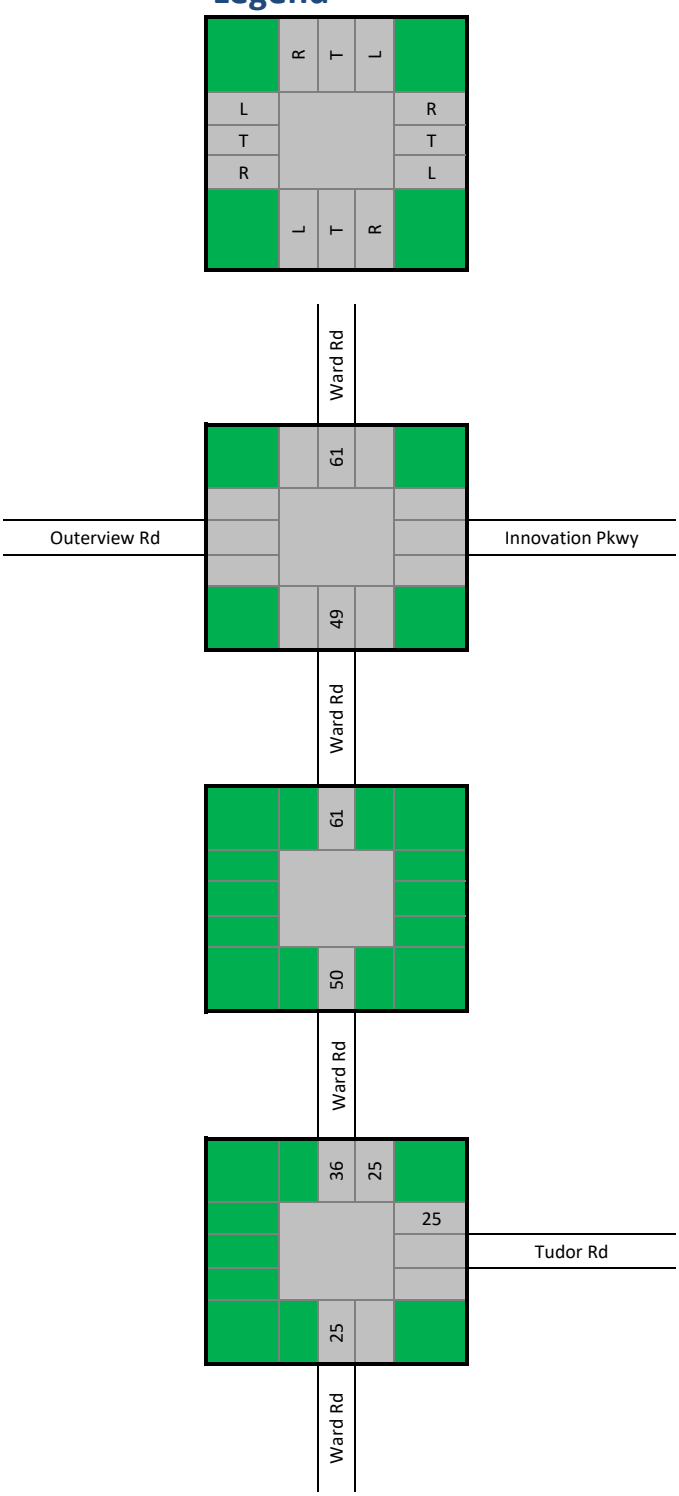




AM - Volumes from Approved Site

*Summit Orchard North - trips from unconstructed sites

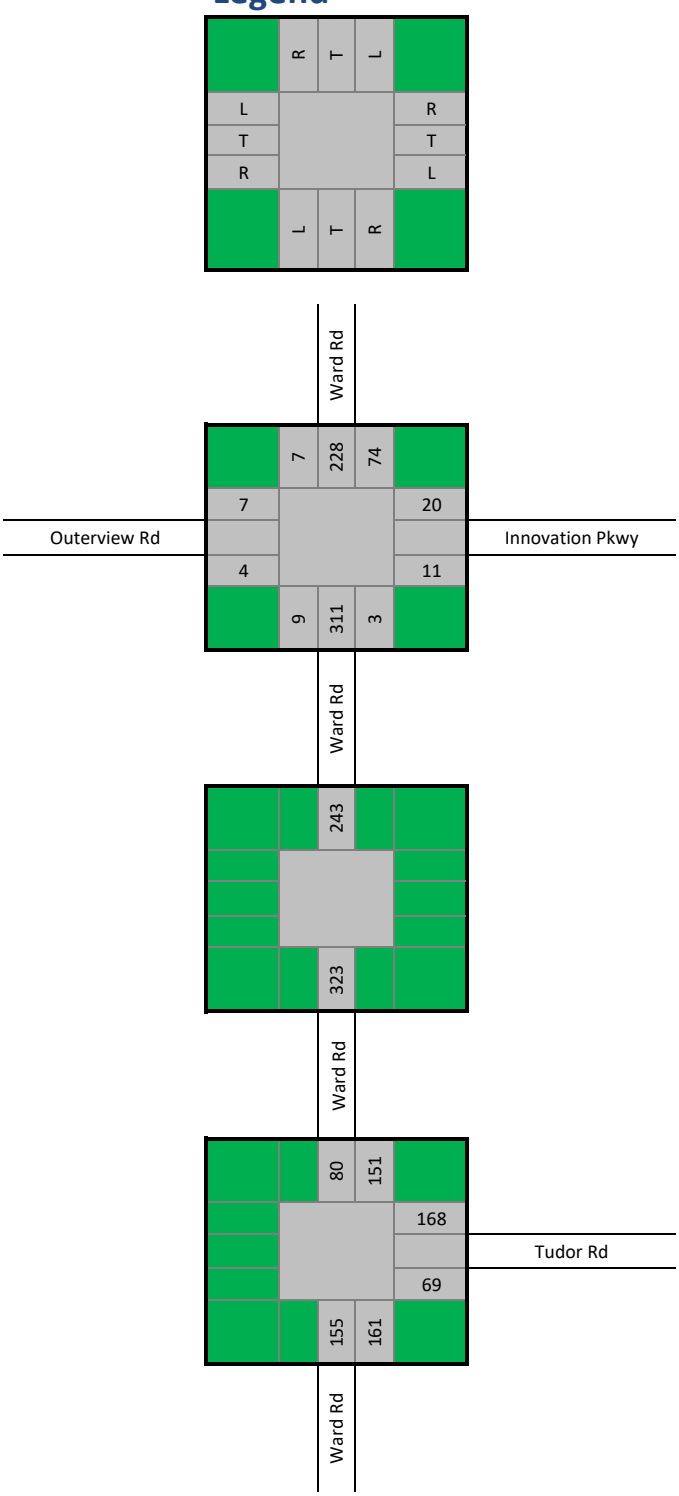
Legend



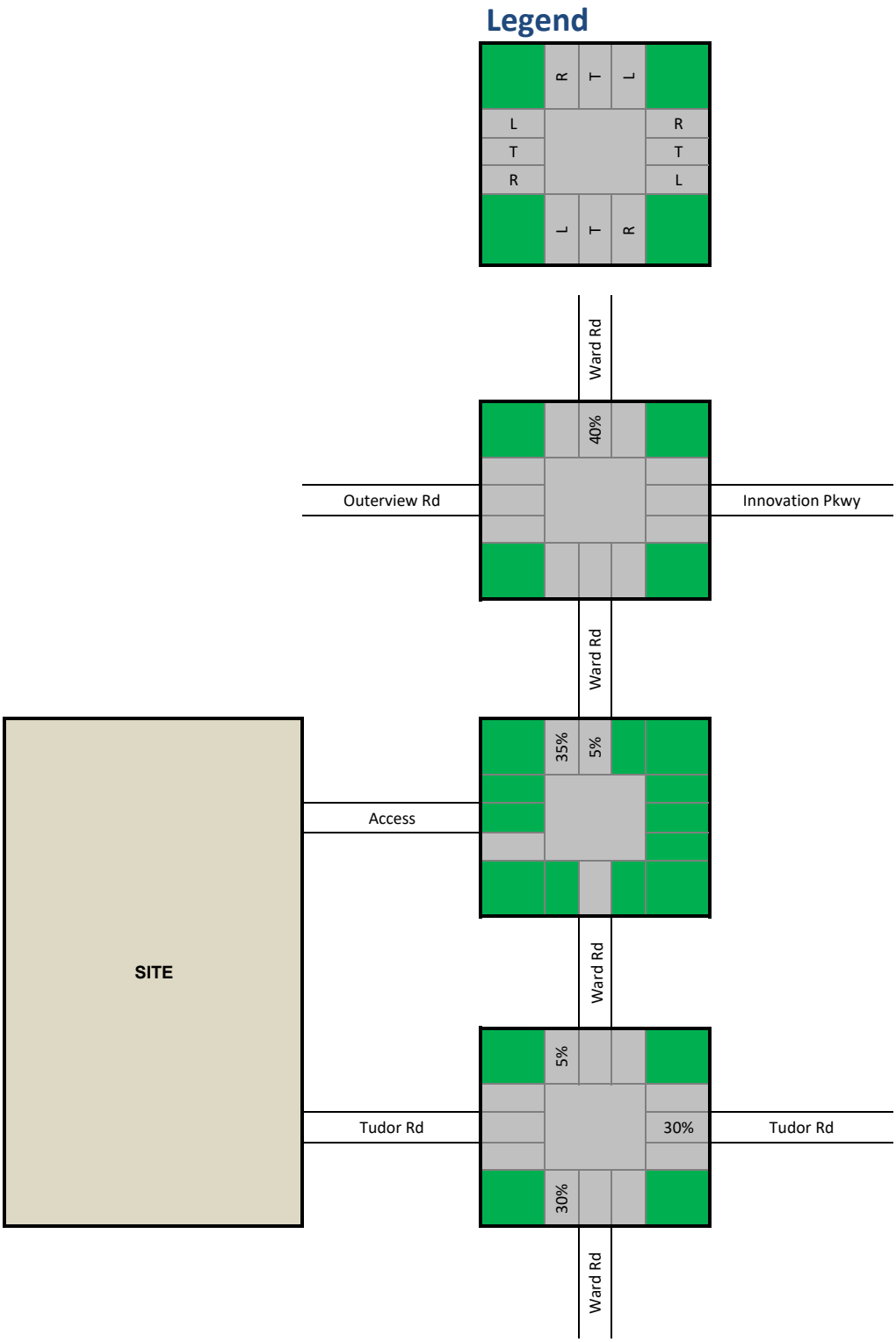
AM - Existing plus Approved Trips

*Used for the existing conditions analysis

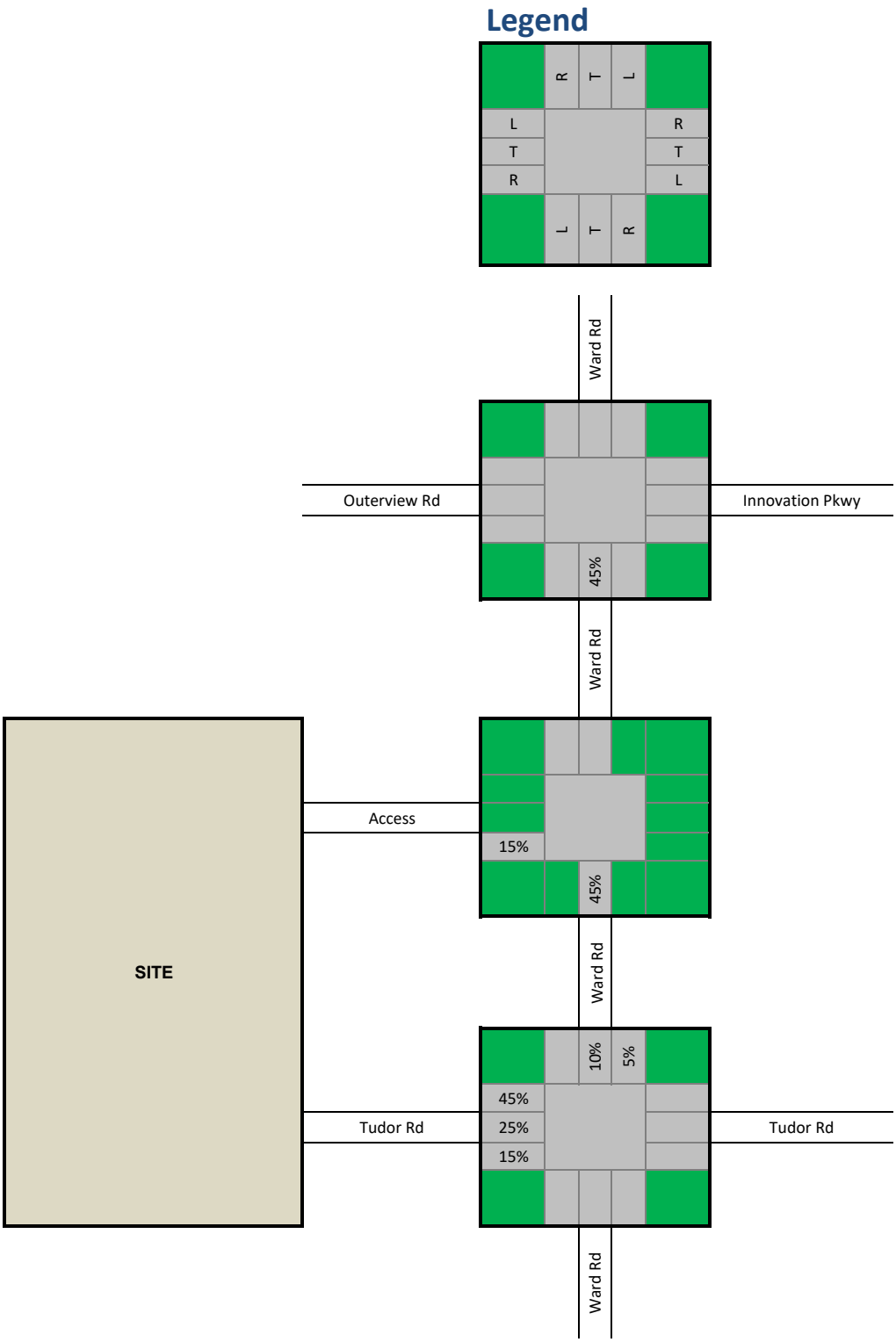
Legend



AM - Distribution In
Phase I



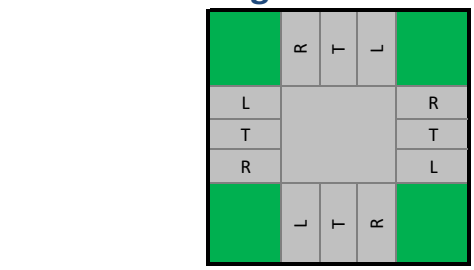
AM - Distribution Out
Phase I

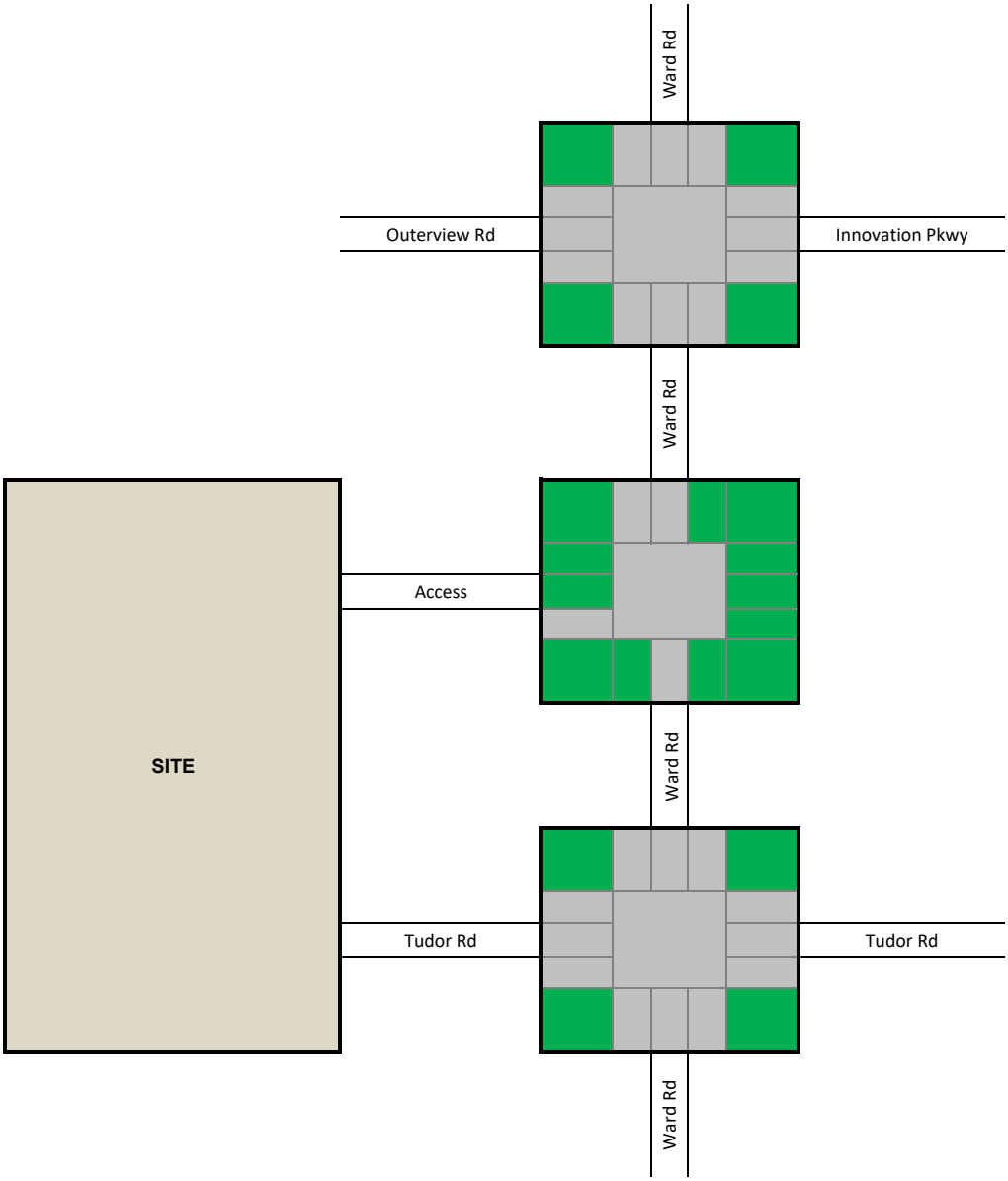


AM - Trips In
Phase I

Trips

Legend

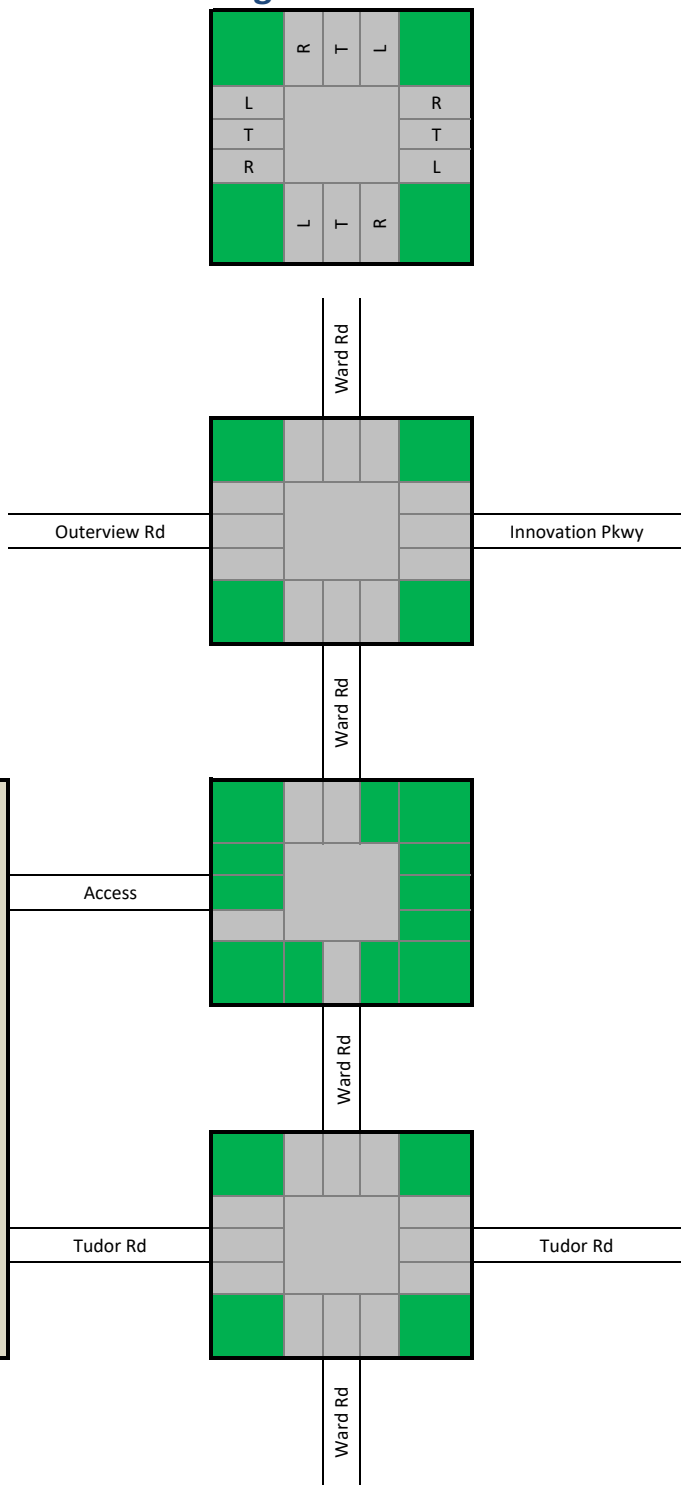




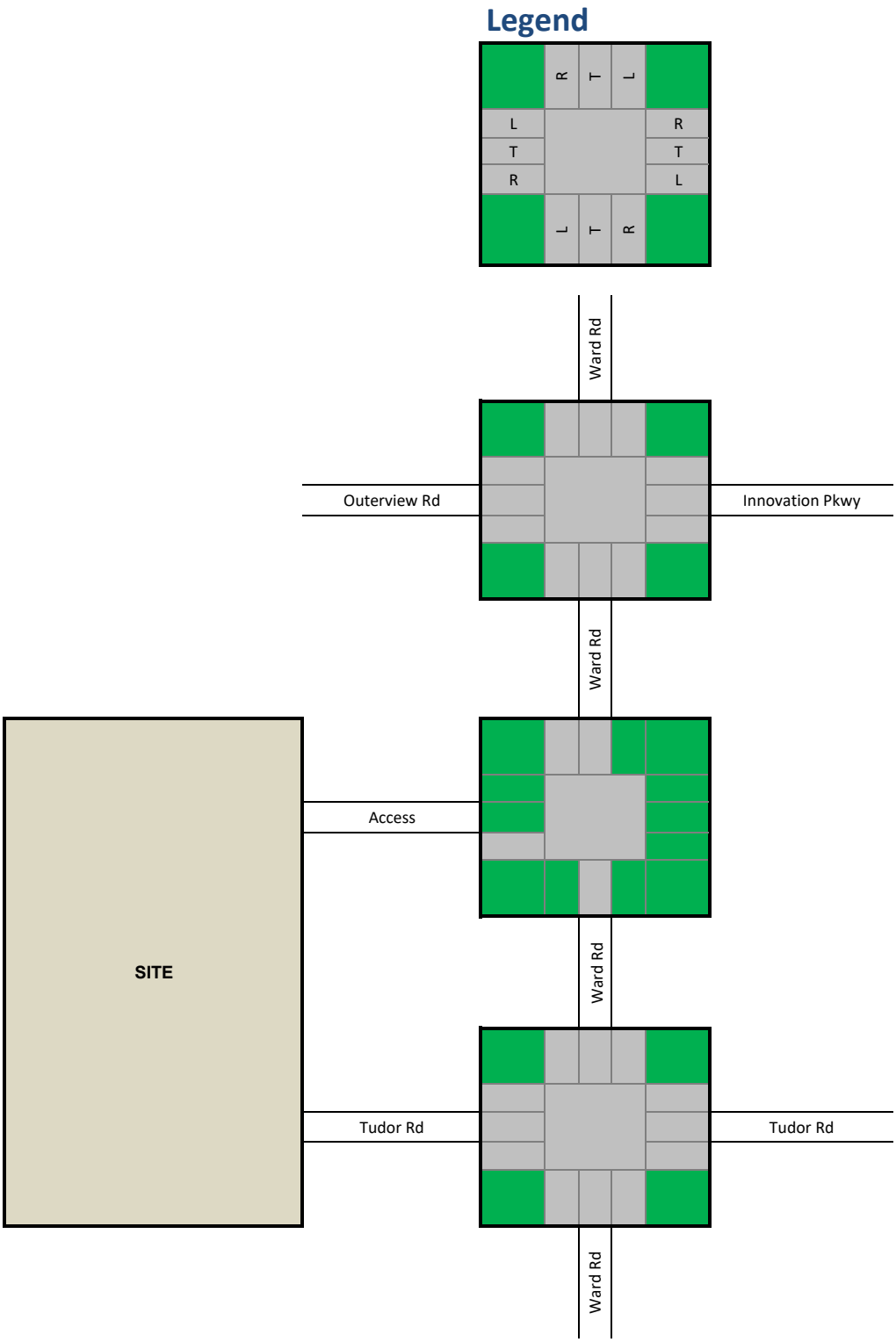
AM - Trips Out
Phase I

Trips

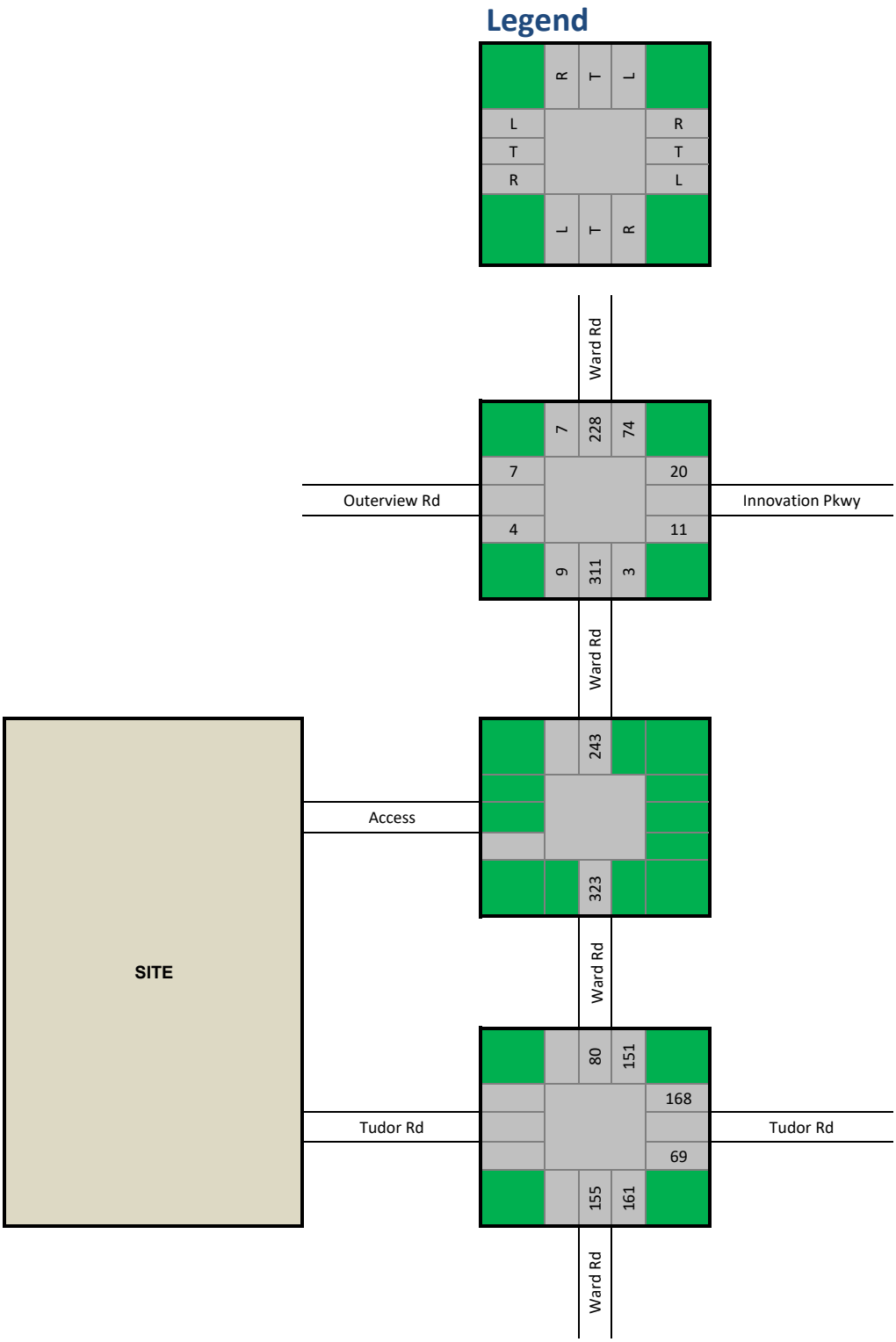
Legend



AM - Trips (I)

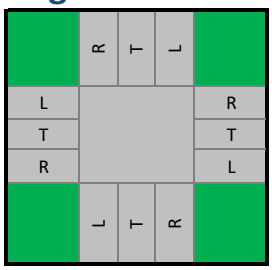

Legend
R
T
L
L
T
R
R
T
L
L
T
R
Ward Rd
Outerview Rd
Innovation Pkwy
Ward Rd
SITE
Access
Ward Rd
Tudor Rd
Tudor Rd
Ward Rd

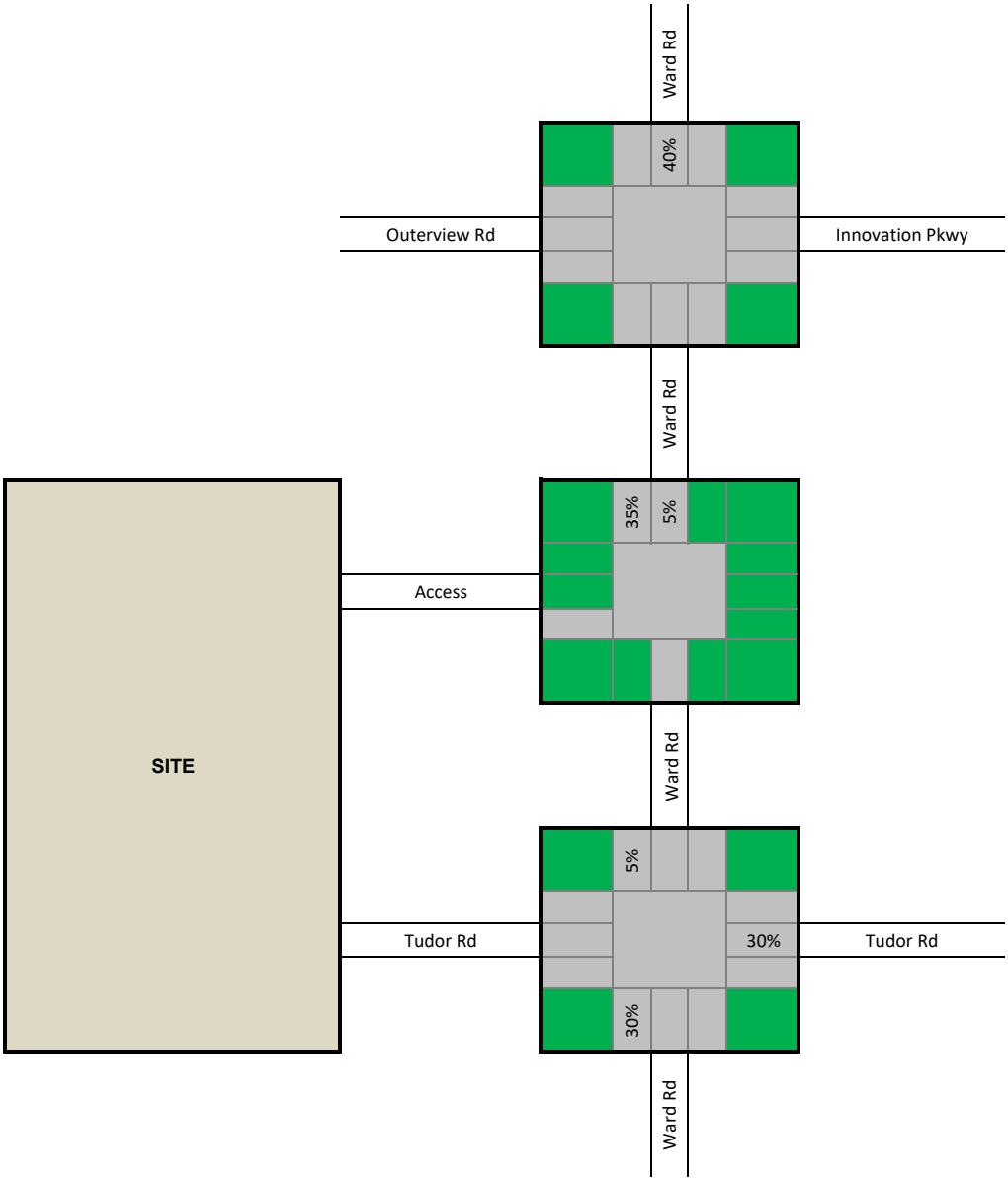
AM - Existing (Approved) plus Trips (I)



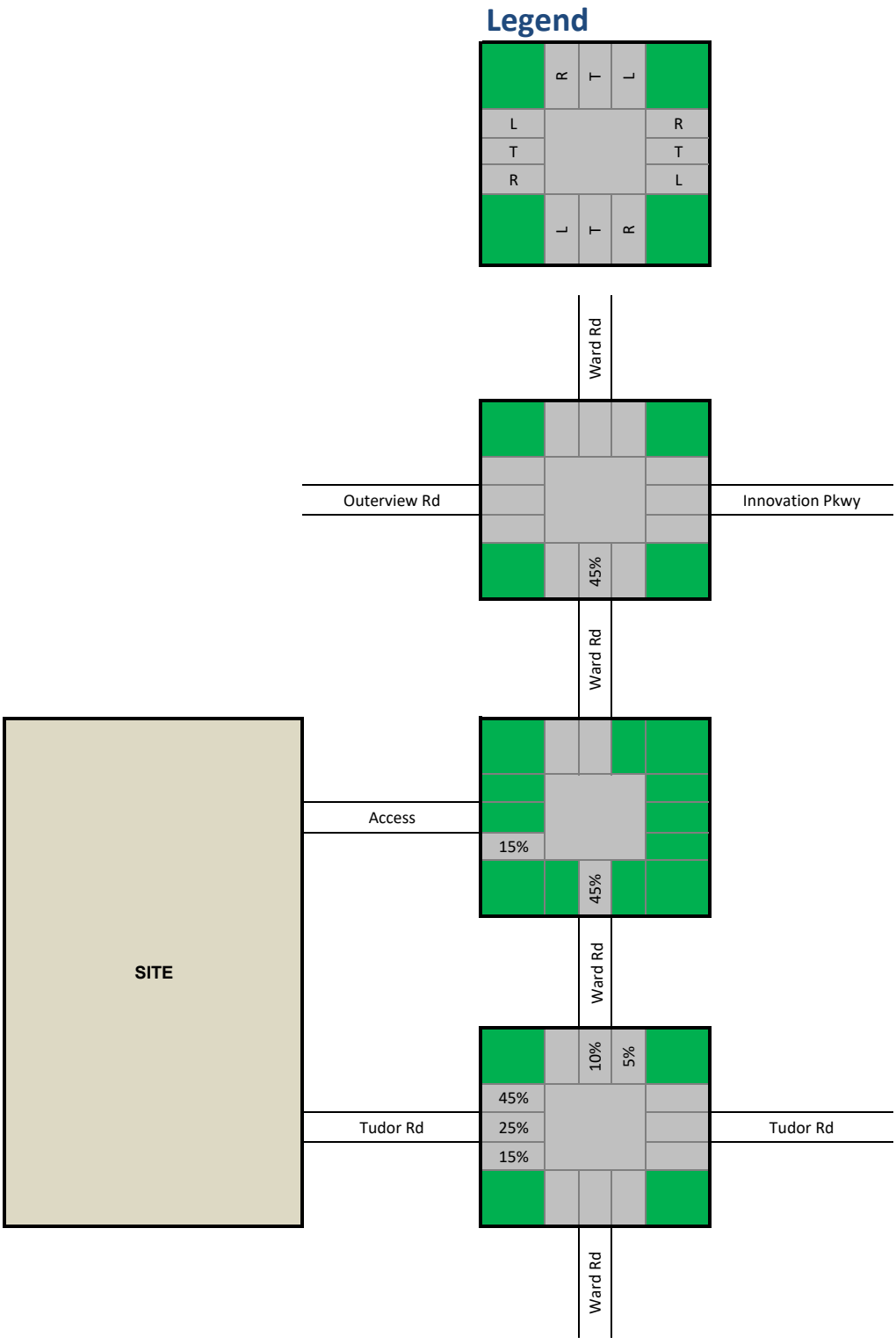
AM - Distribution In
Phase II

Legend





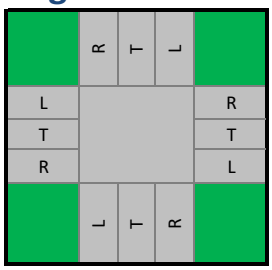
AM - Distribution Out
Phase II

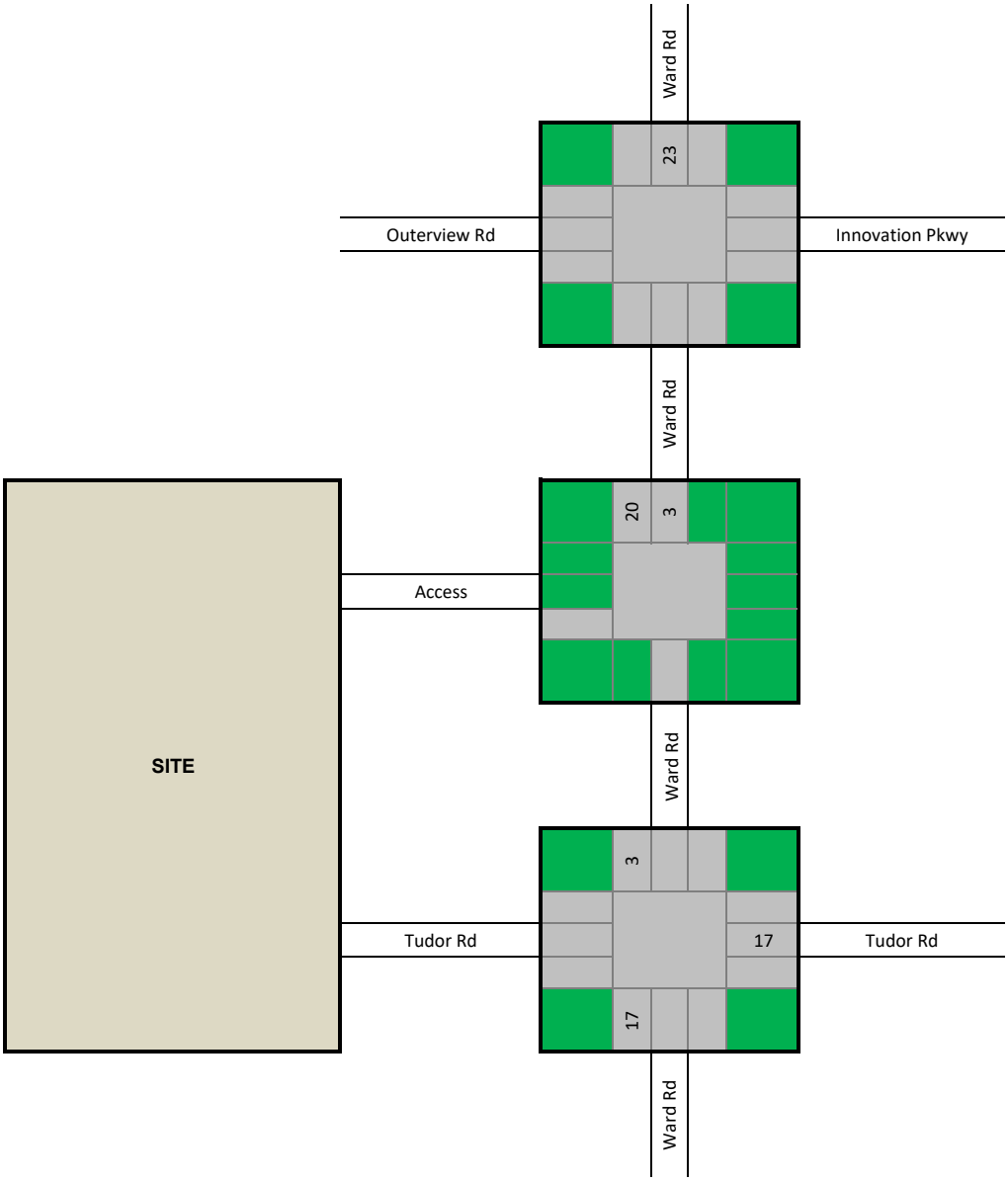


AM - Trips In
Phase II

Trips
58

Legend

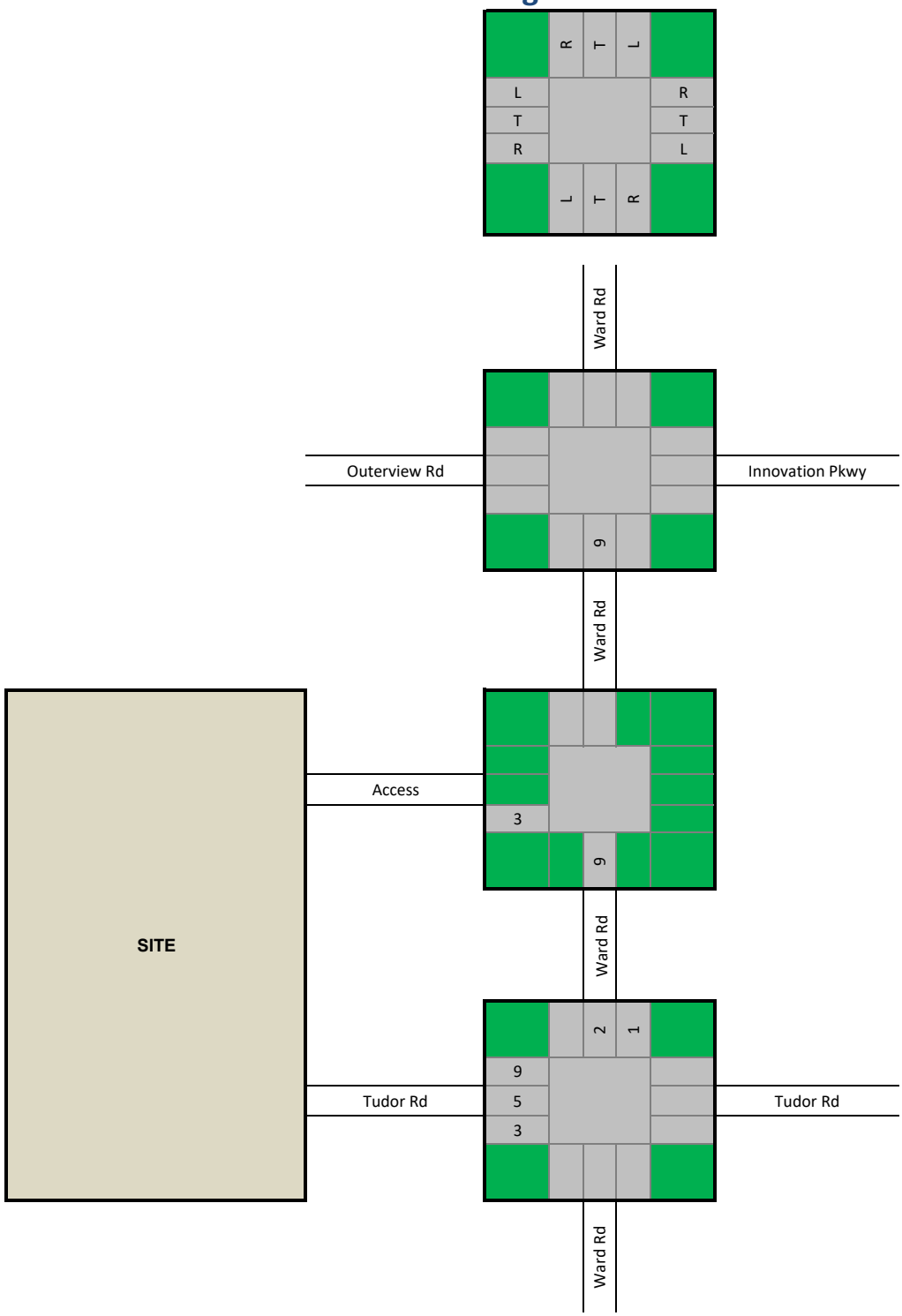




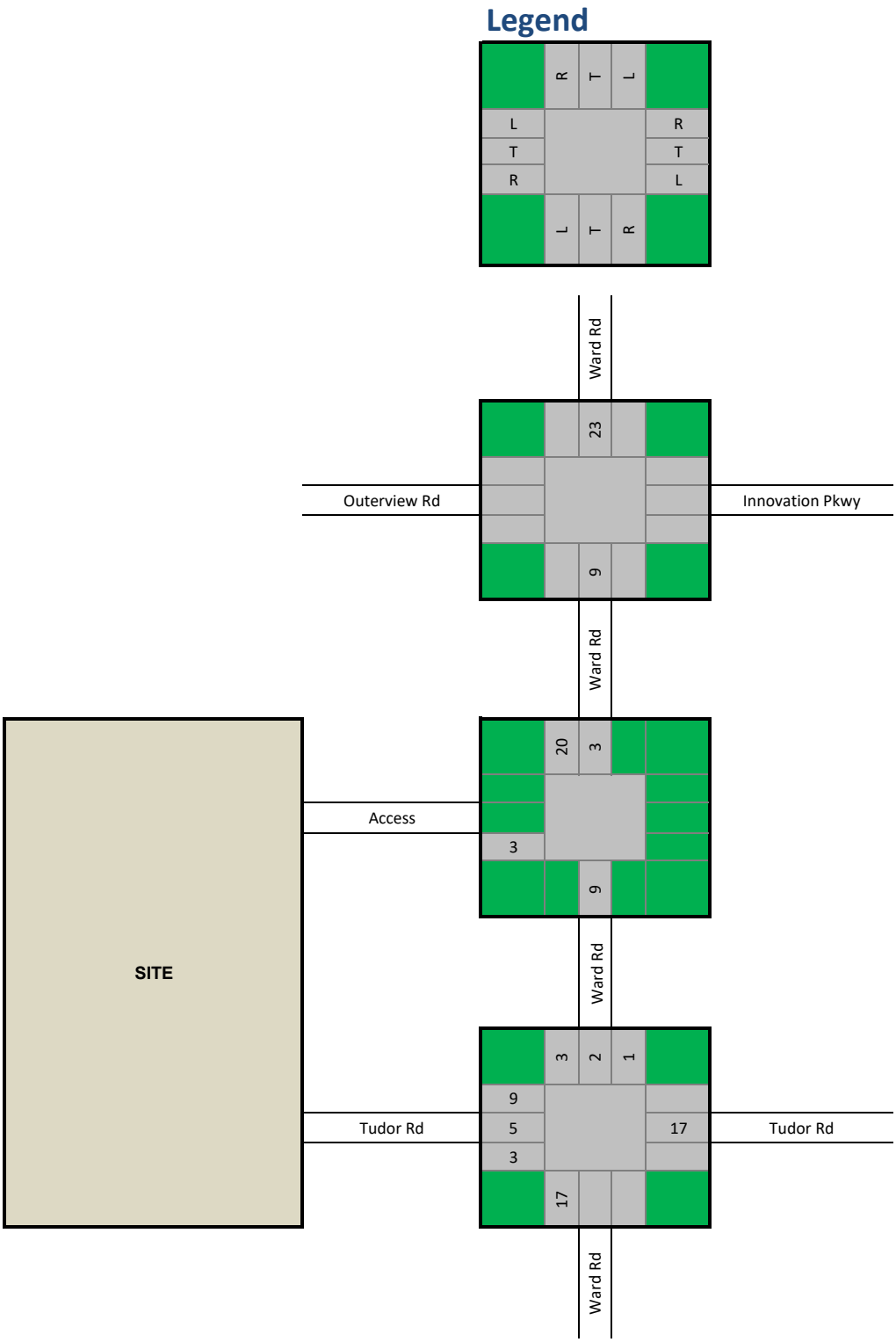
AM - Trips Out
Phase II

Trips
21

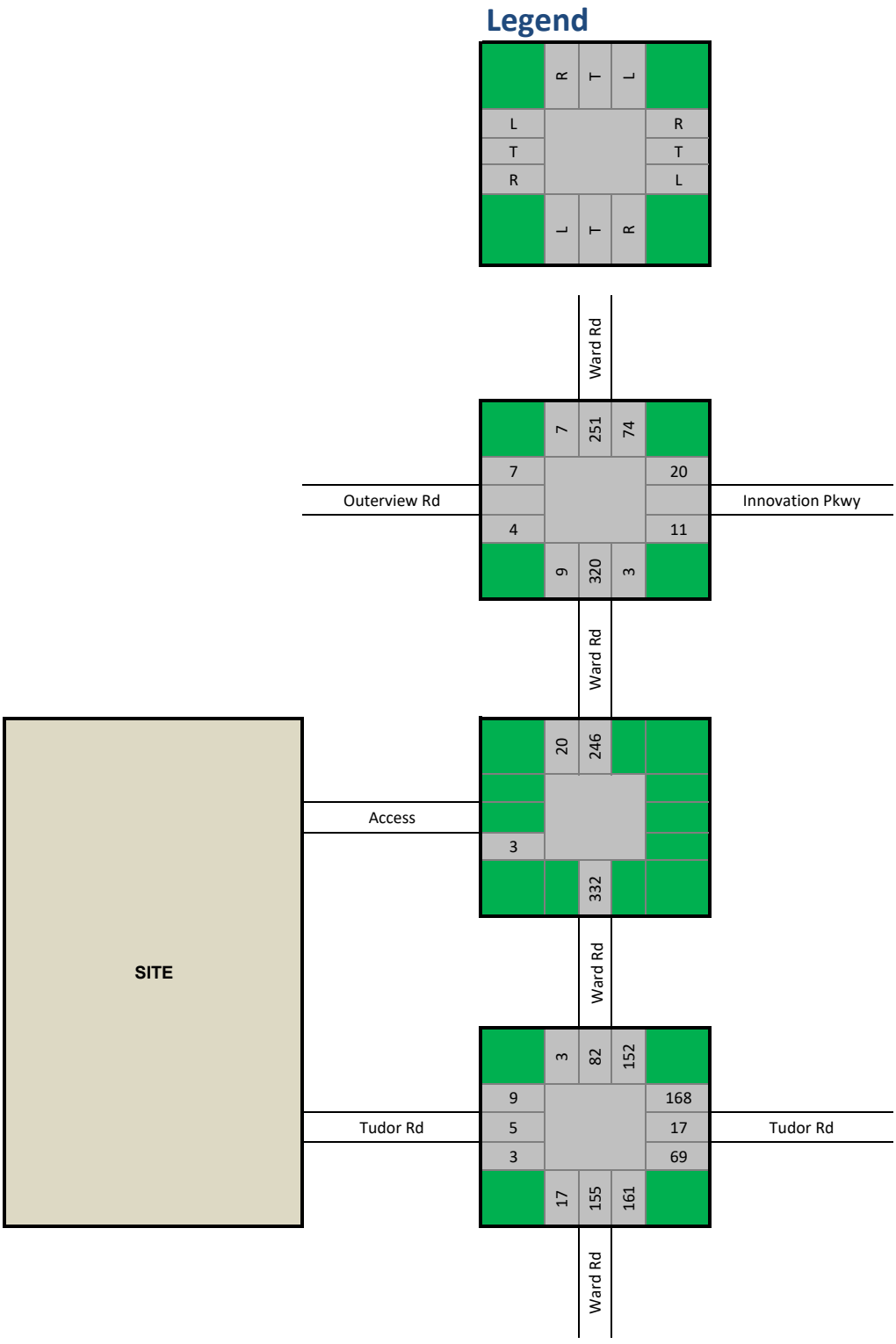
Legend



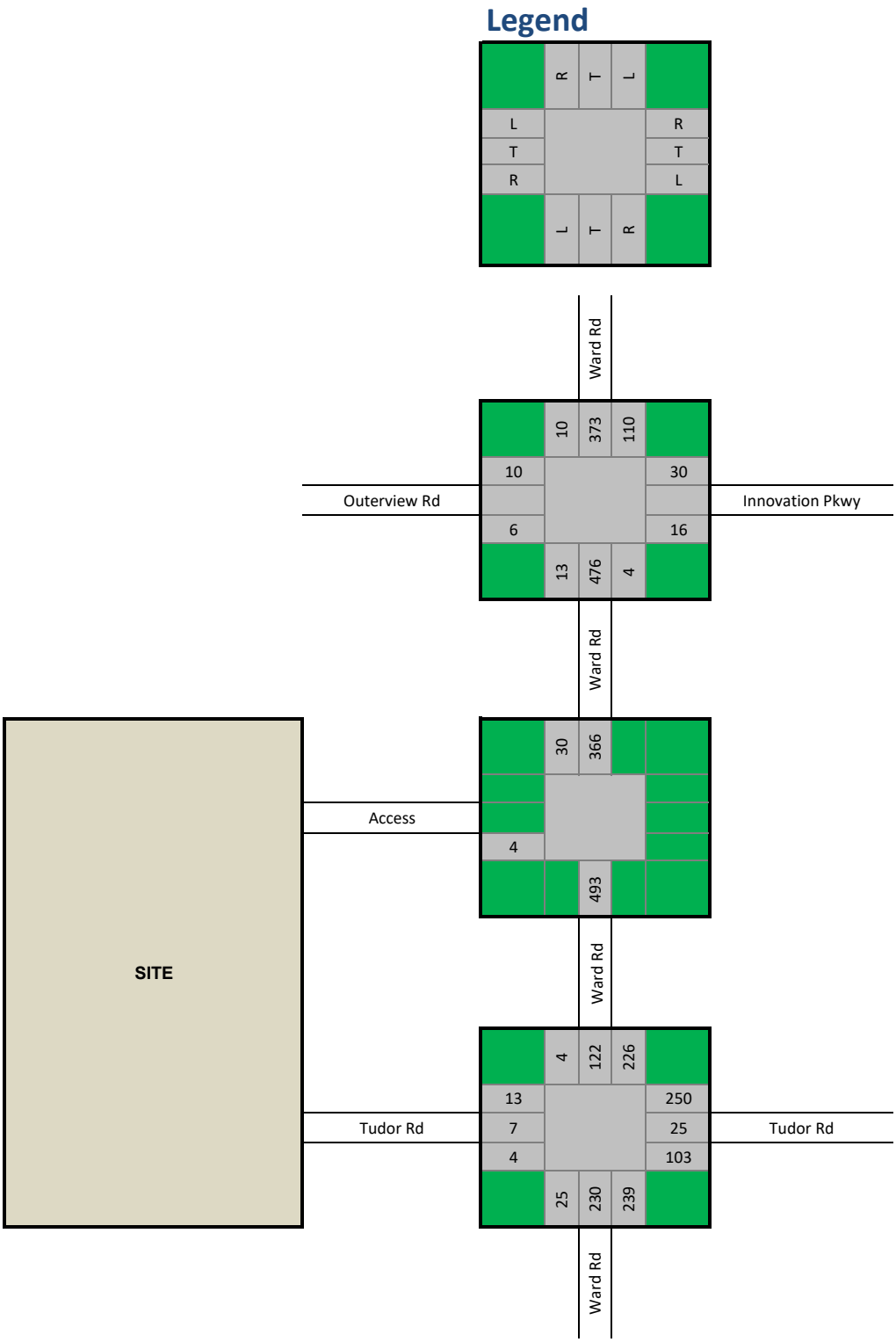
AM - Trips (II)
Phase II



AM - Existing (Approved) plus Trips (II)
Phase II

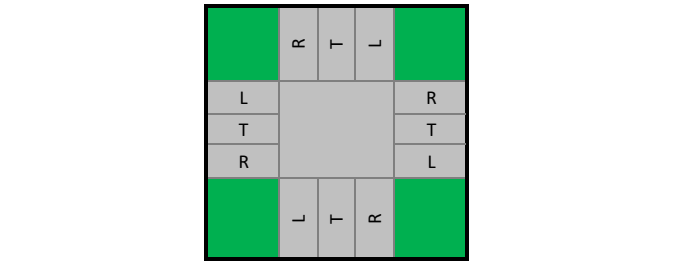


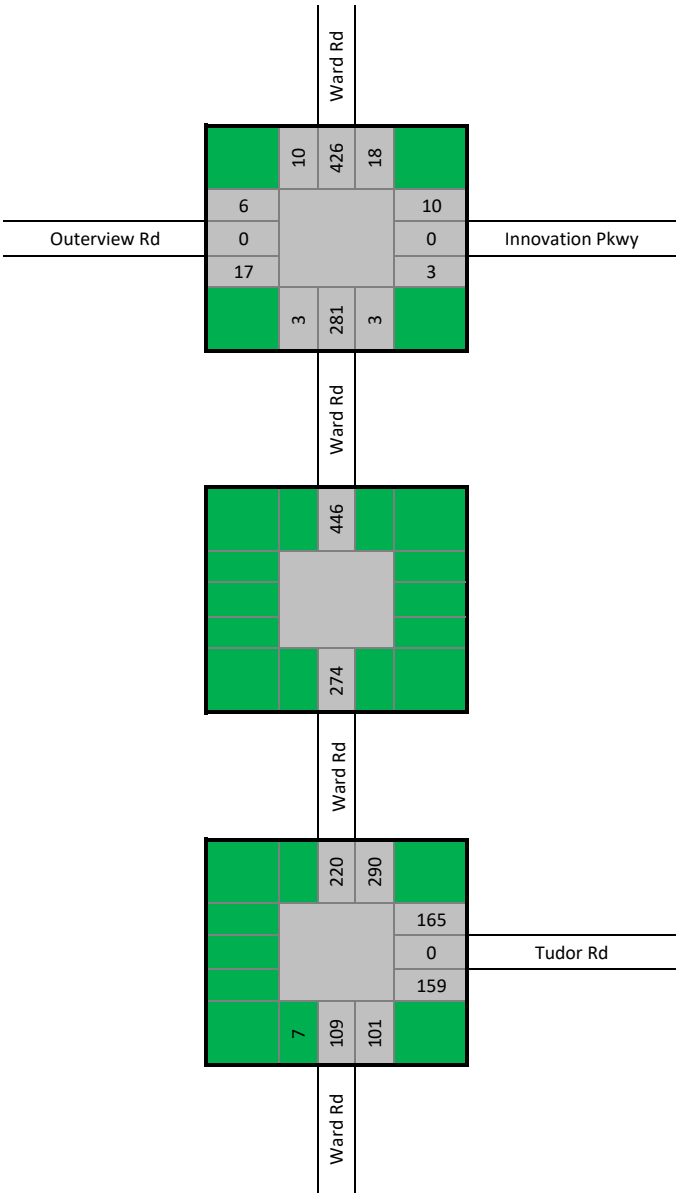
AM - Future


Legend
R
T
L
L
T
R
R
T
L
L
T
R
Ward Rd
10
373
110
10
30
Outerview Rd
Innovation Pkwy
6
16
13
476
4
Ward Rd
30
366
Access
4
493
SITE
Ward Rd
4
122
226
13
250
Tudor Rd
7
25
Tudor Rd
4
103
25
230
239
Ward Rd

PM - Existing Traffic Volumes

Legend

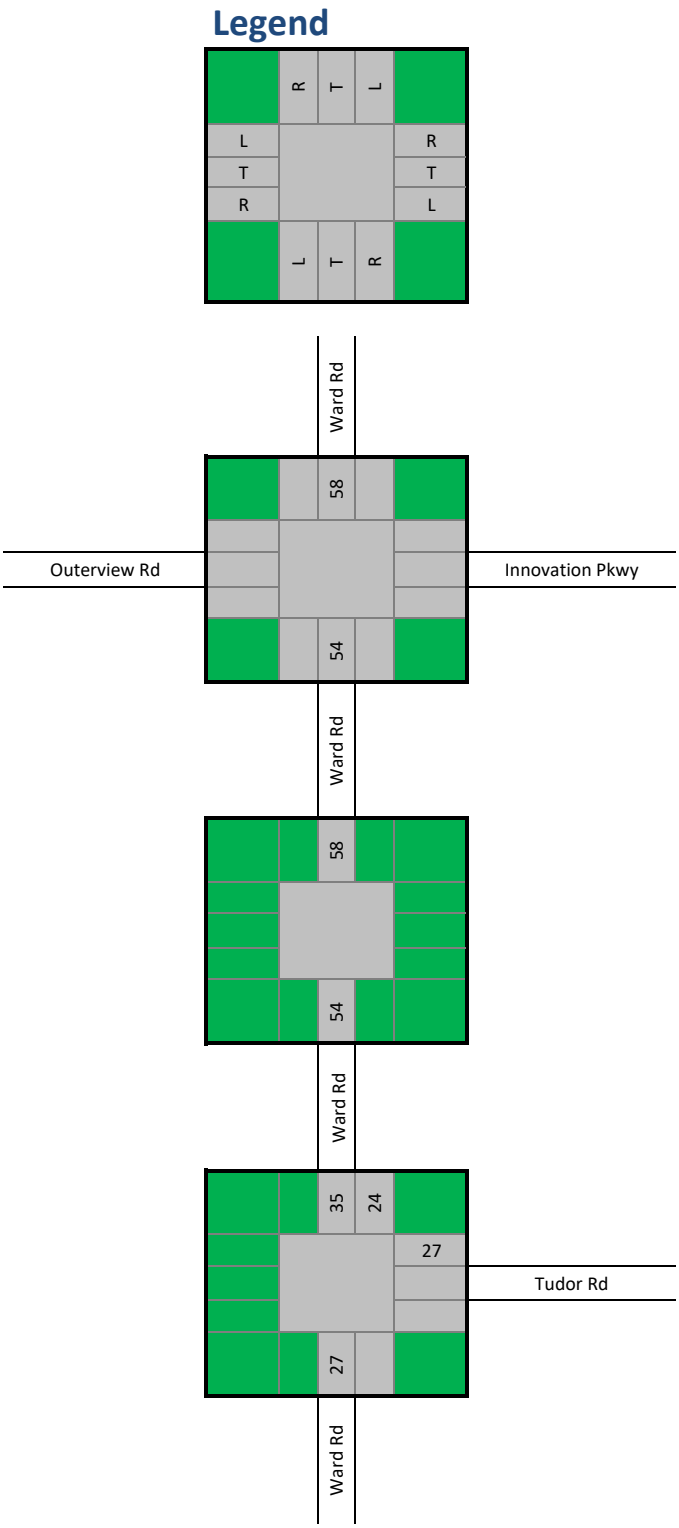




PM - Volumes from Approved Site

*Summit Orchard North - trips from unconstructed sites

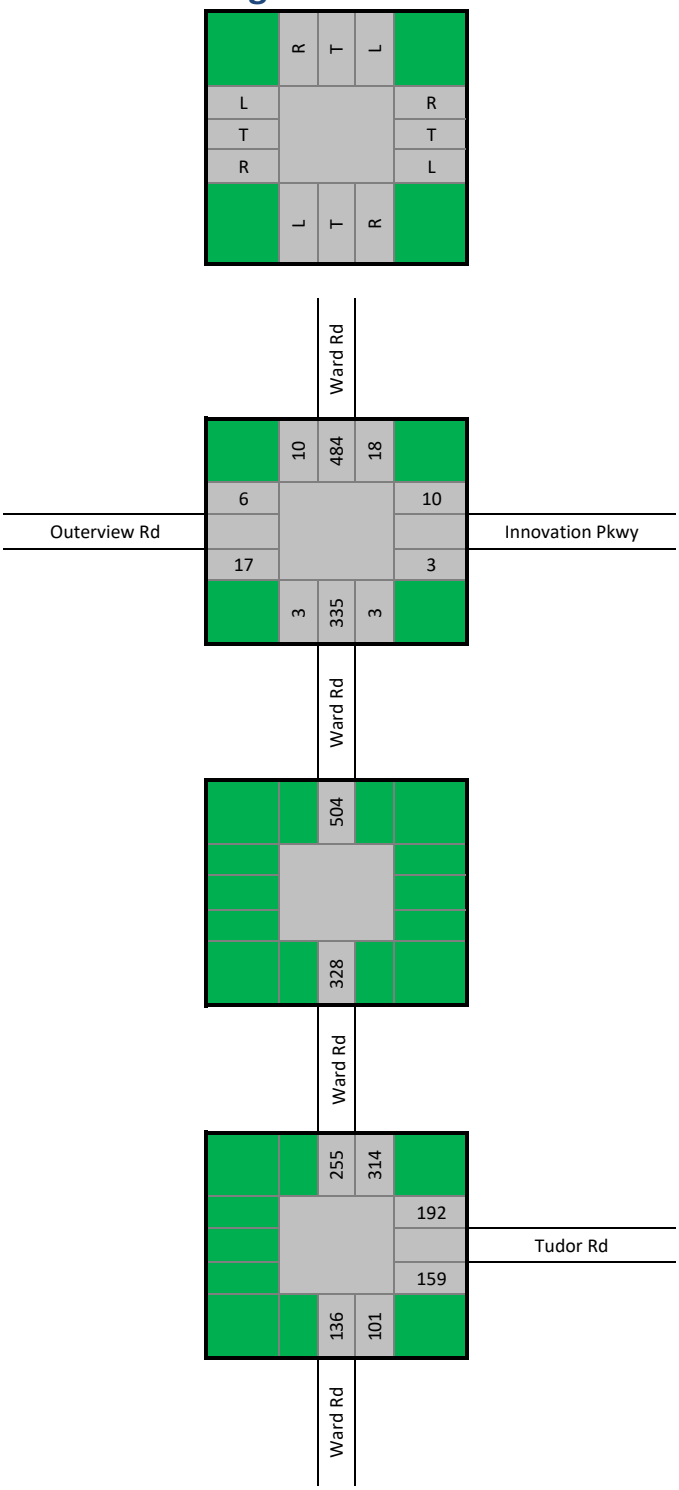
Legend



PM - Existing plus Approved Trips

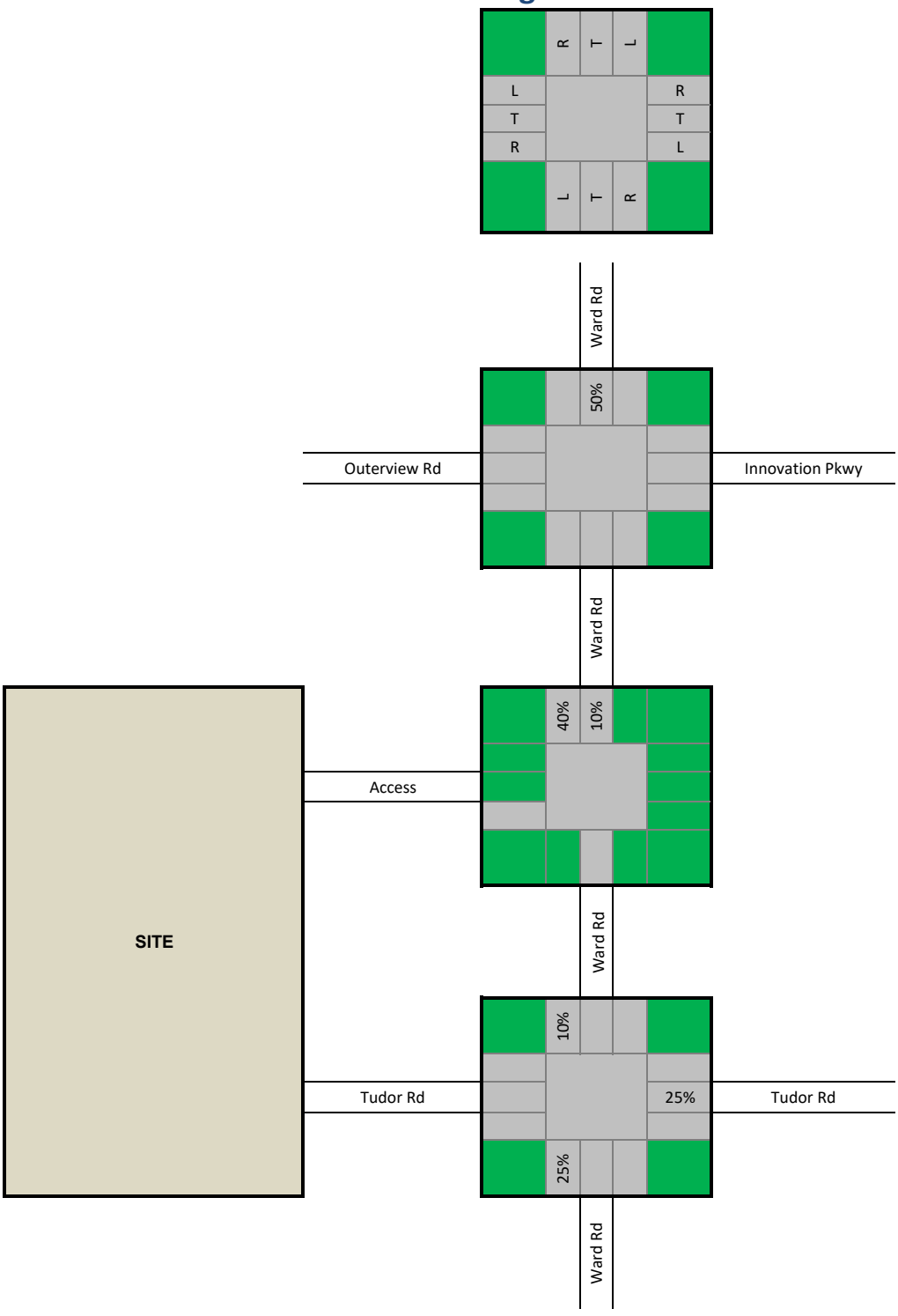
*Used for the existing conditions analysis

Legend

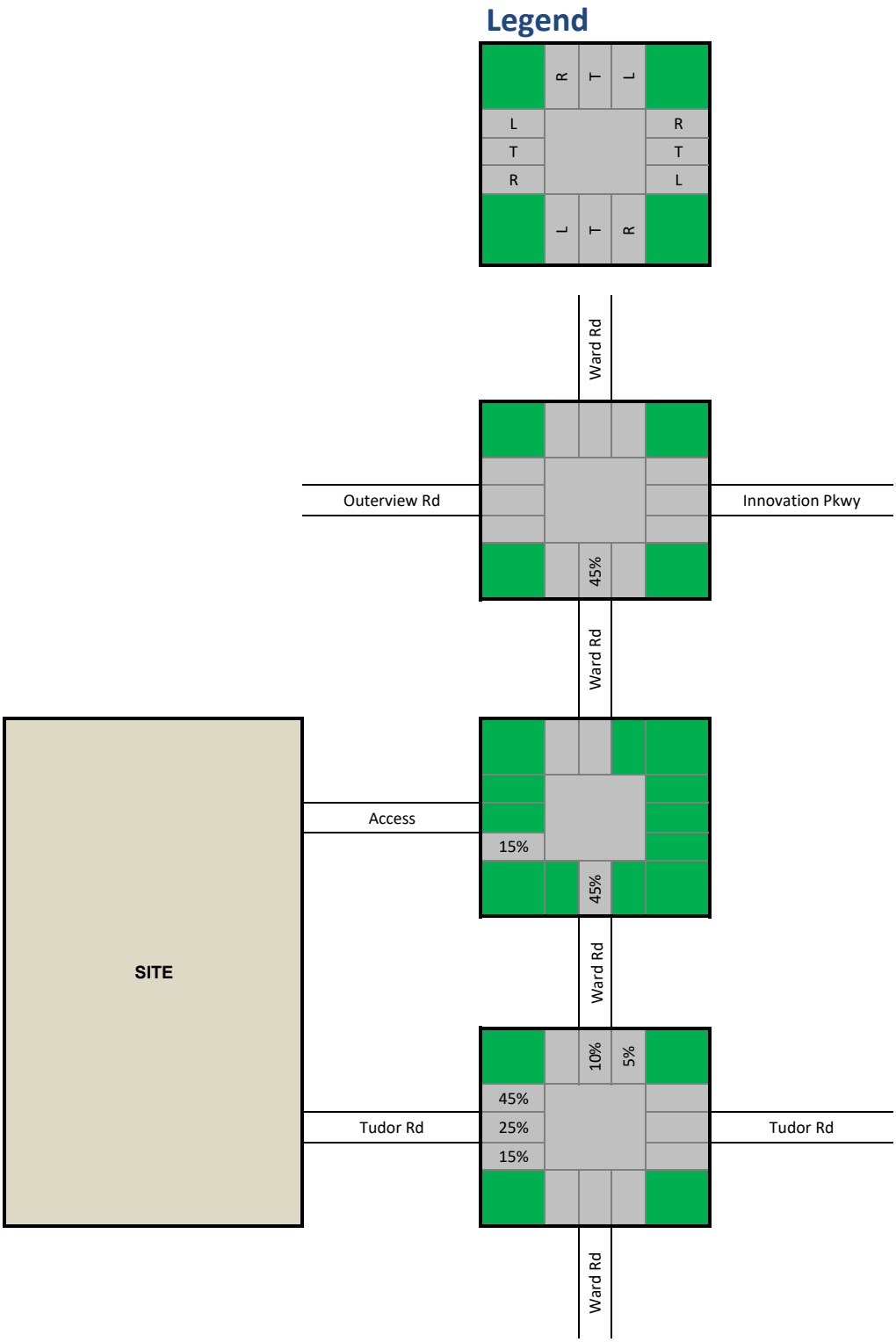


PM - Distribution In
Phase I

Legend



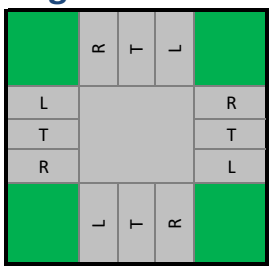
PM - Distribution Out
Phase I

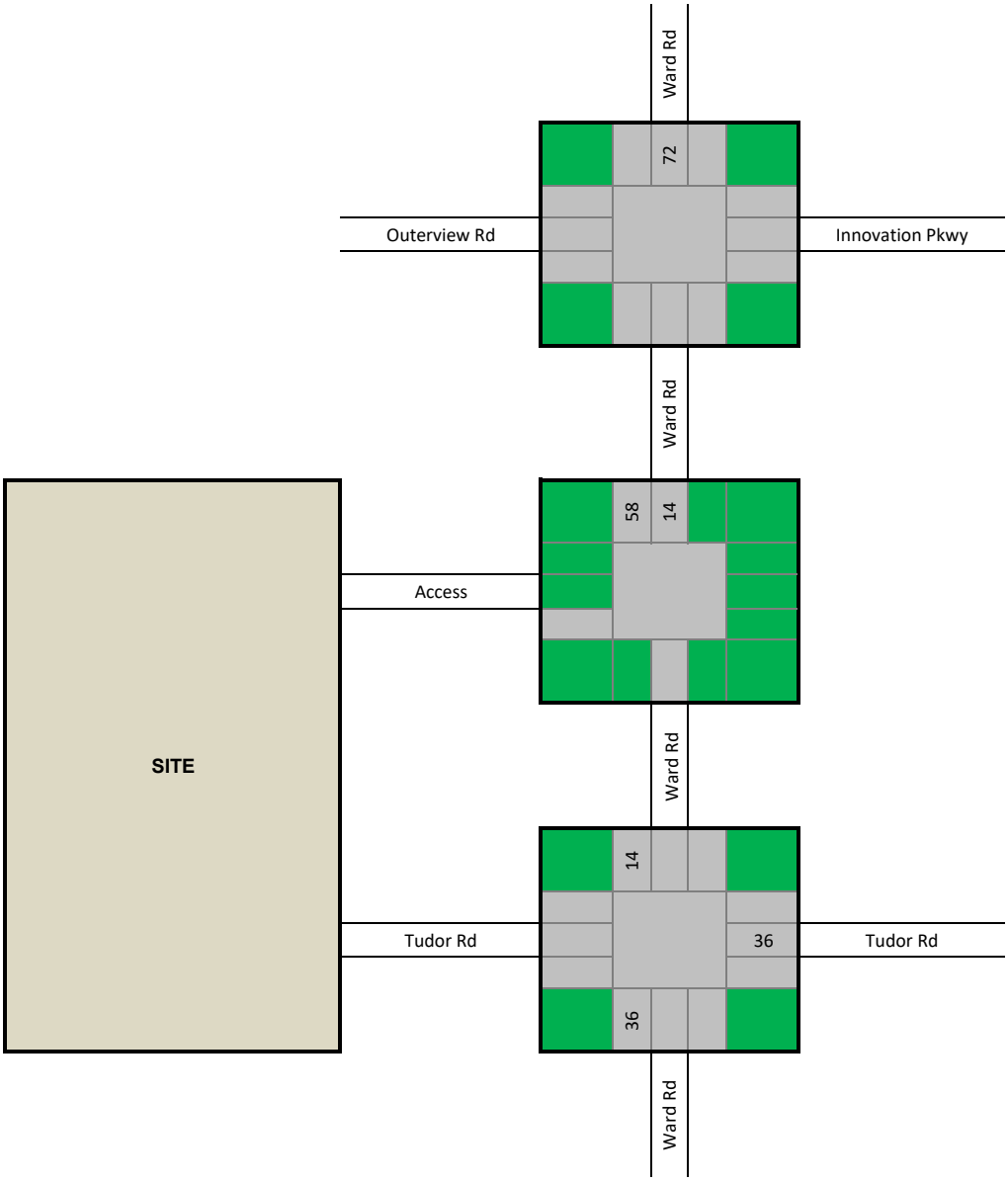


PM - Trips In
Phase I

Trips
144

Legend

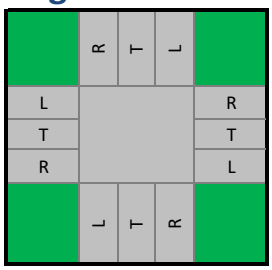


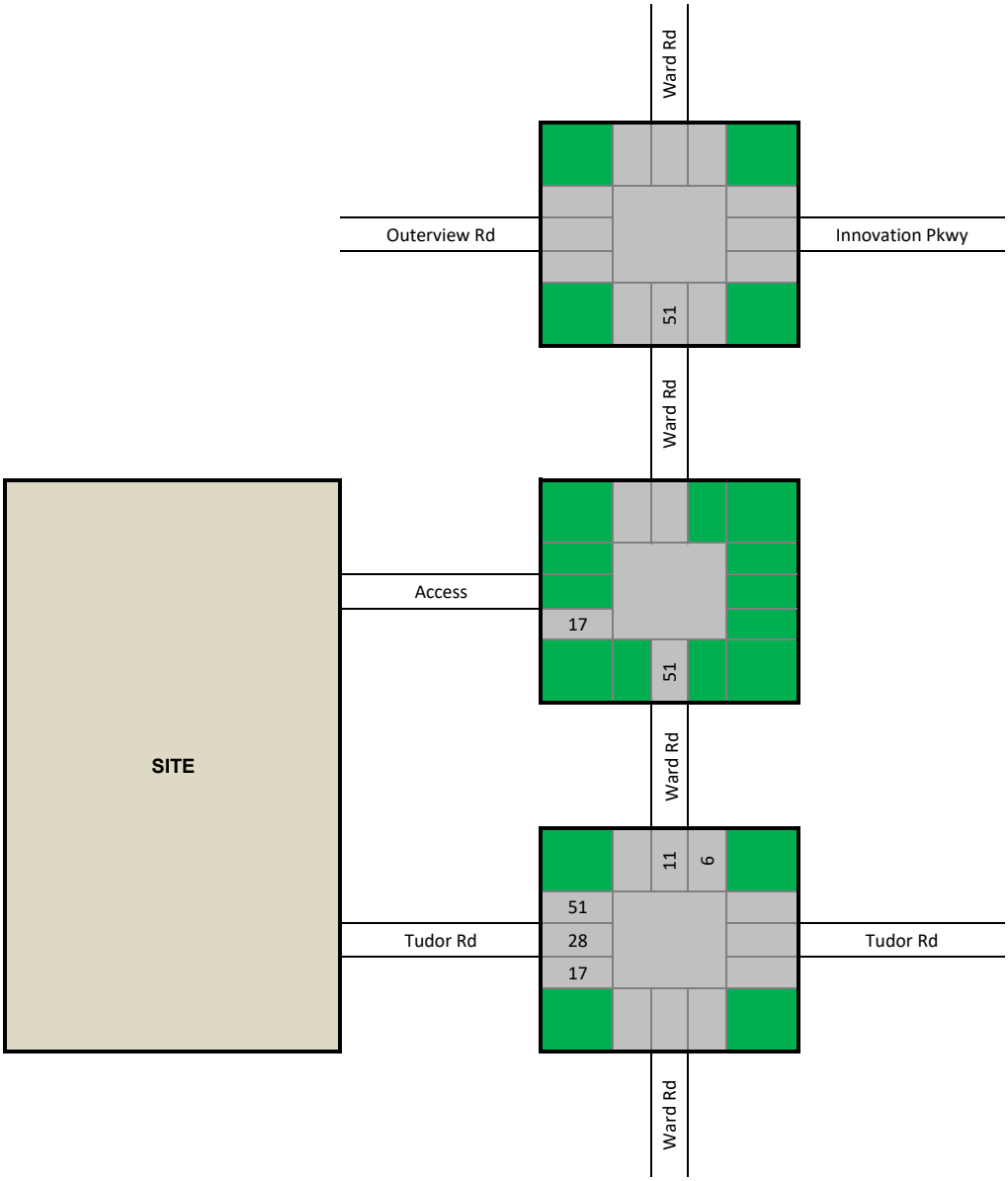


PM - Trips Out
Phase I

Trips
113

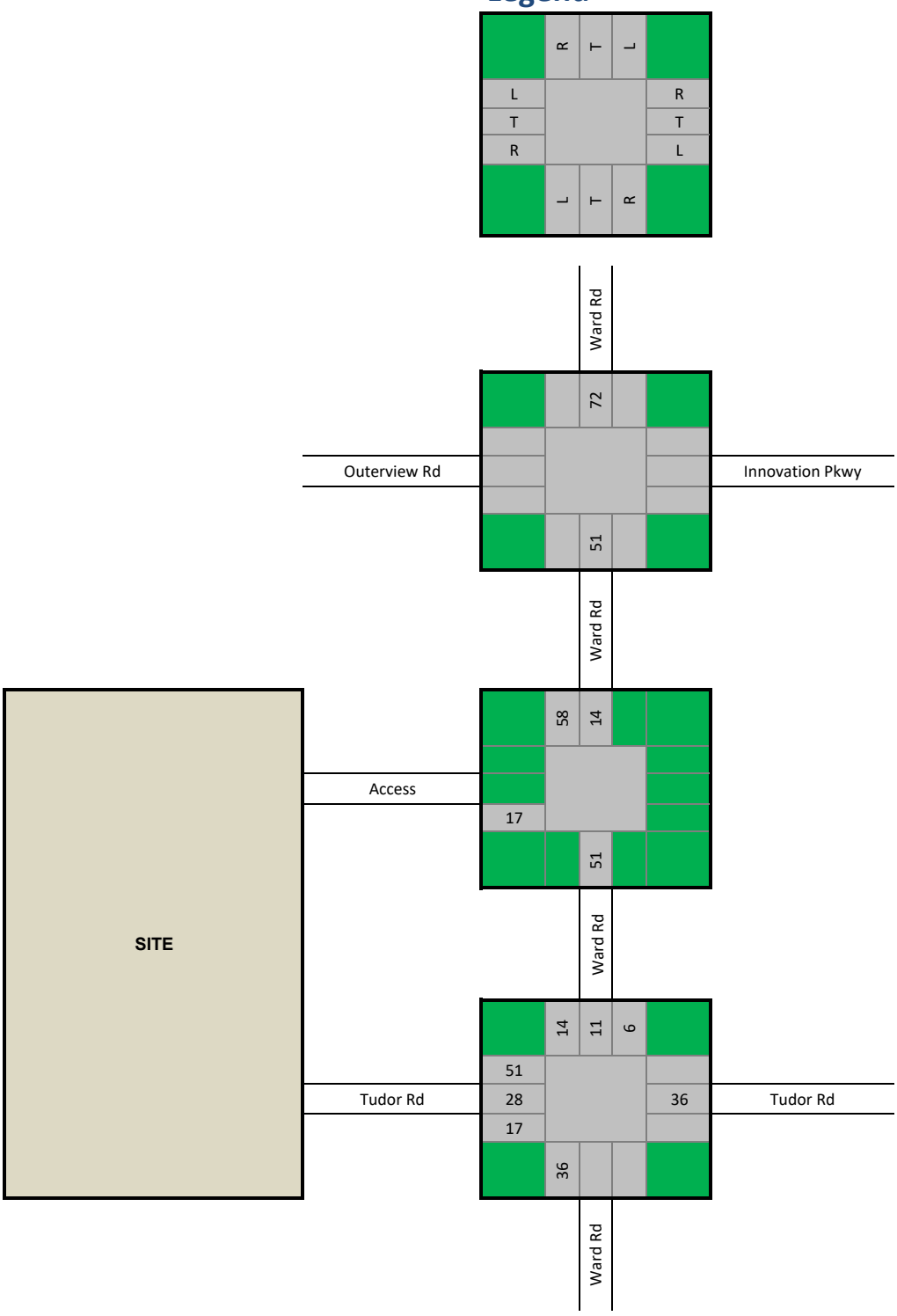
Legend



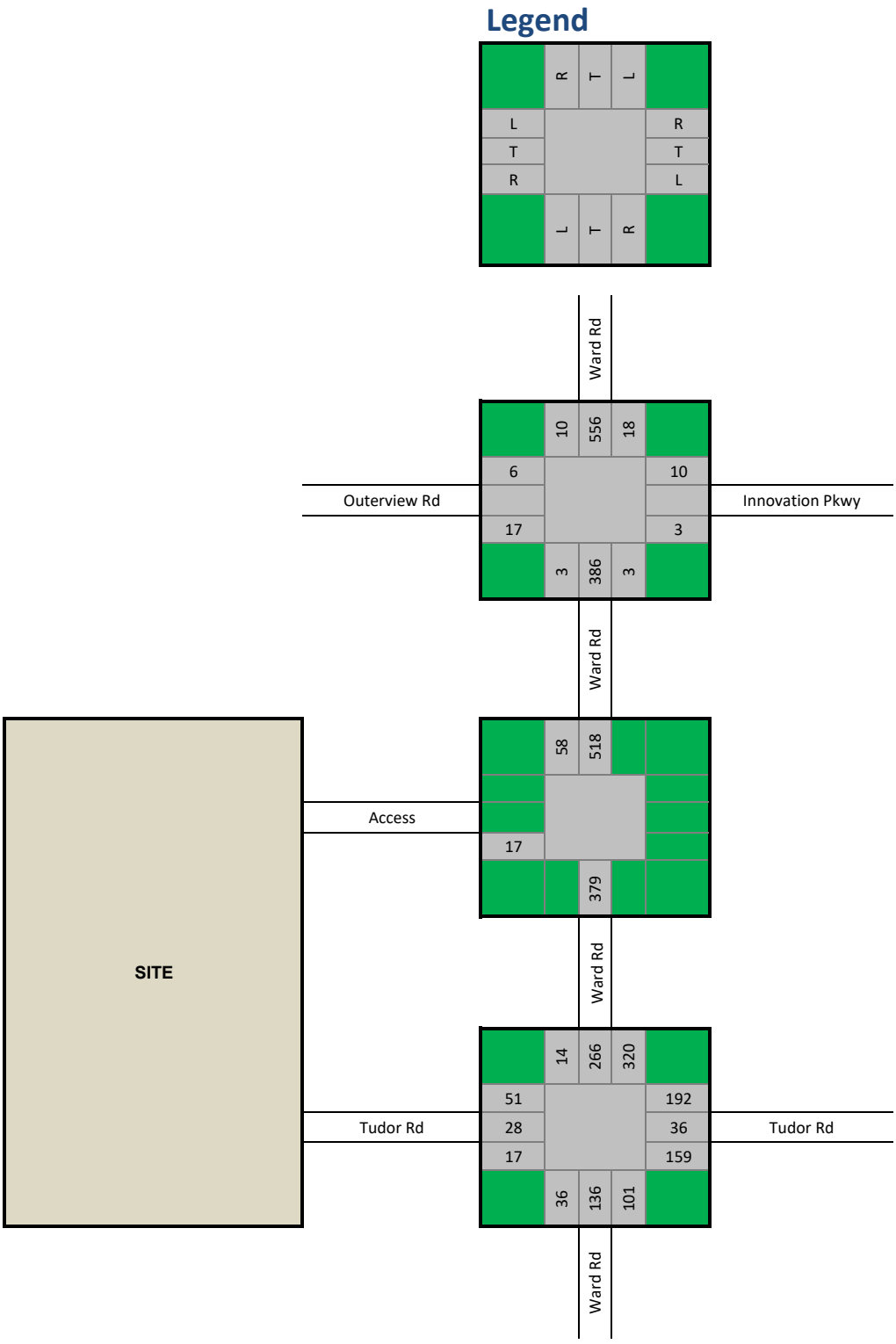


PM - Trips (I)

Legend

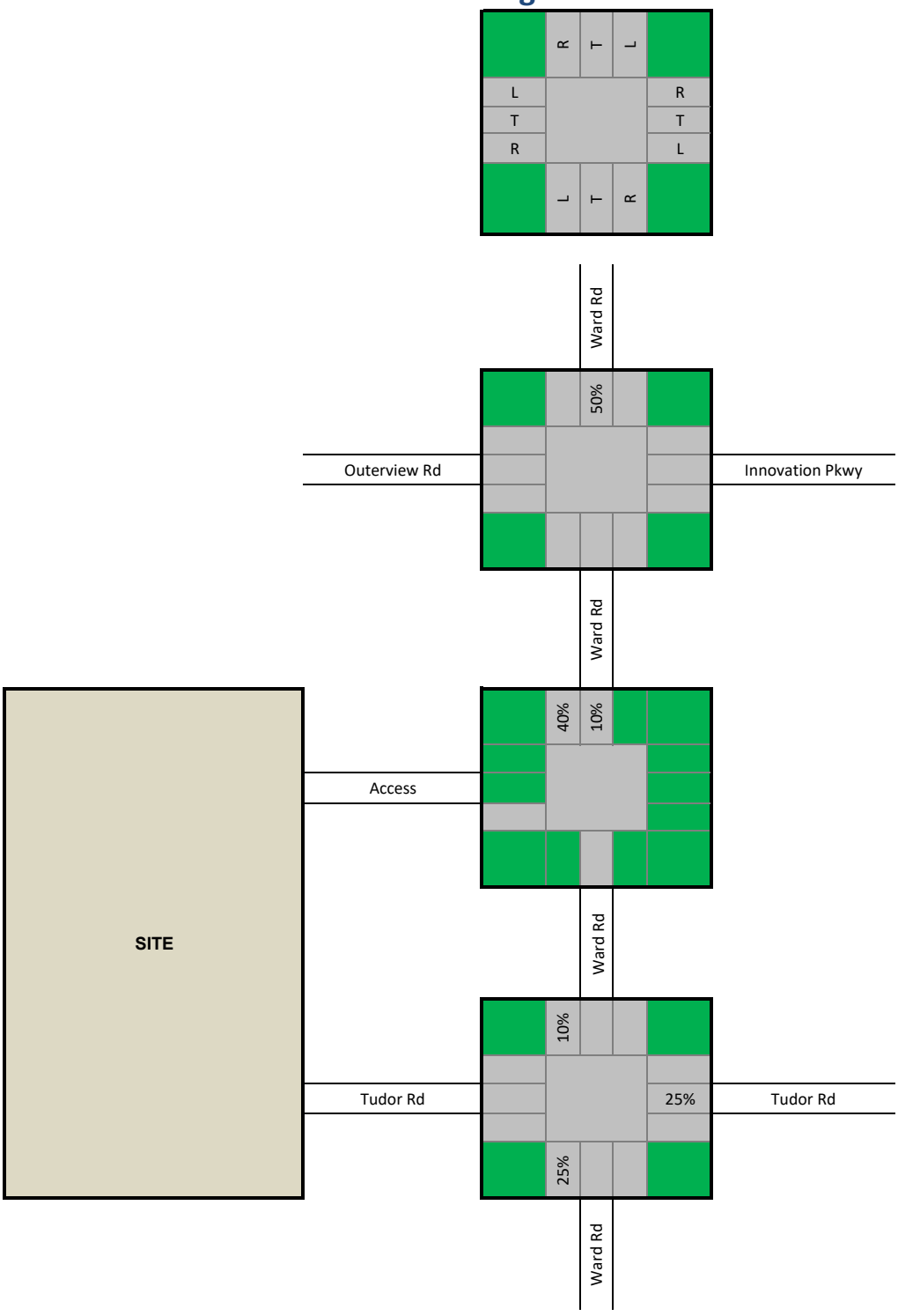


PM - Existing (Approved) plus Trips (I)

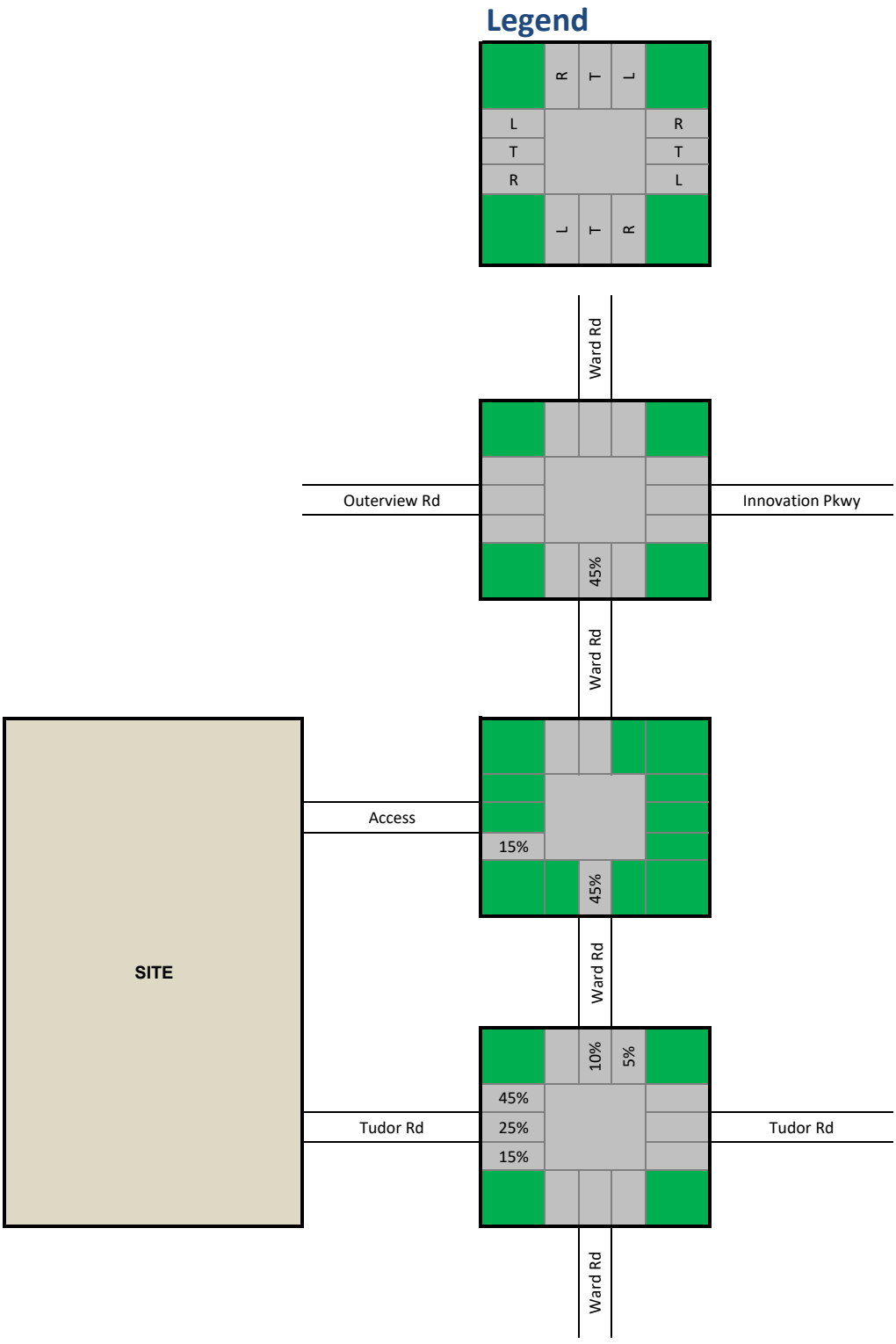


PM - Distribution In
Phase II

Legend



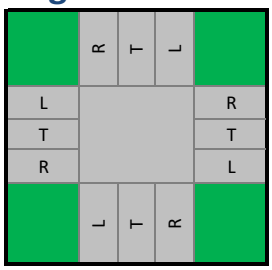
PM - Distribution Out
Phase II

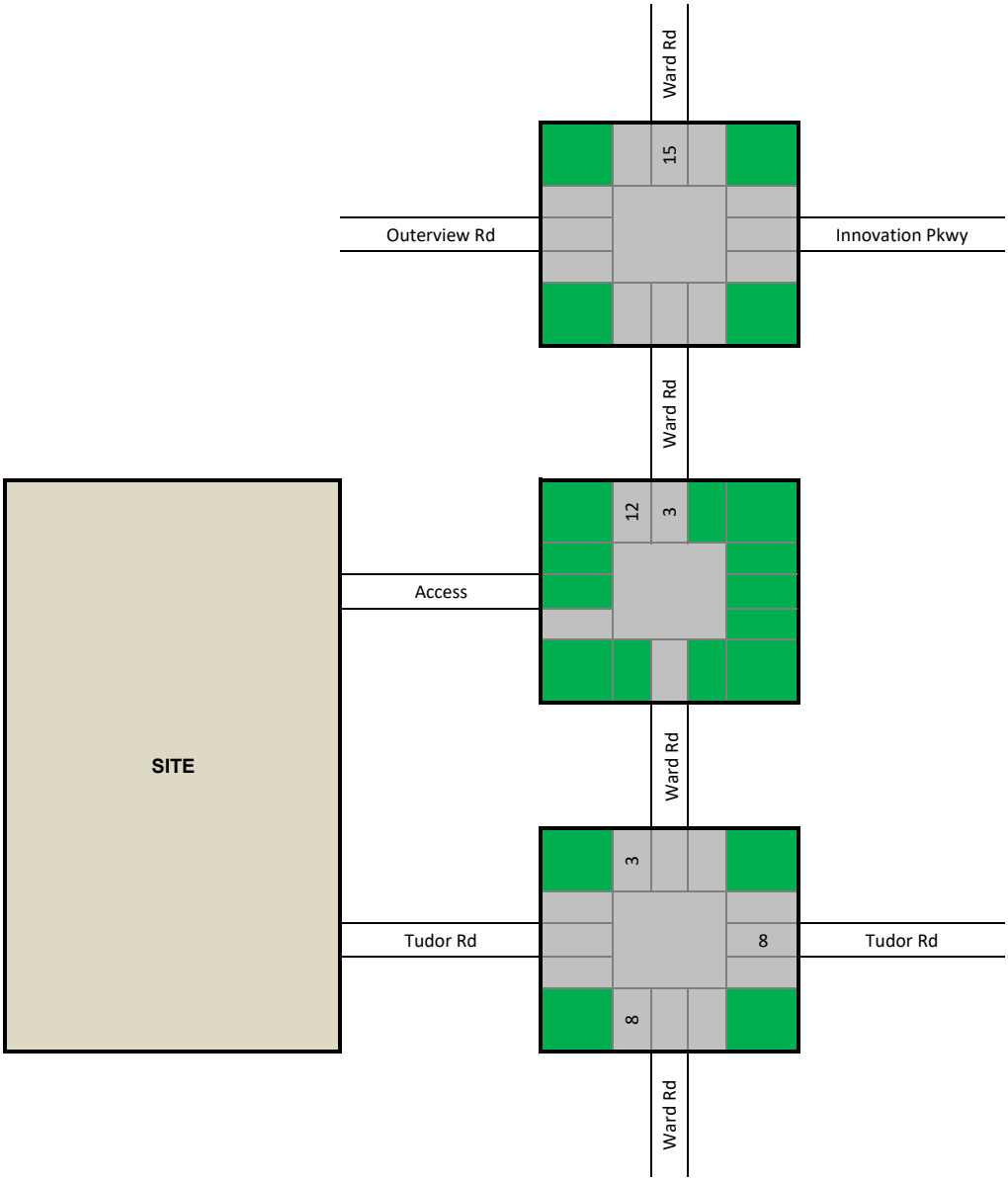


PM - Trips In
Phase II

Trips
30

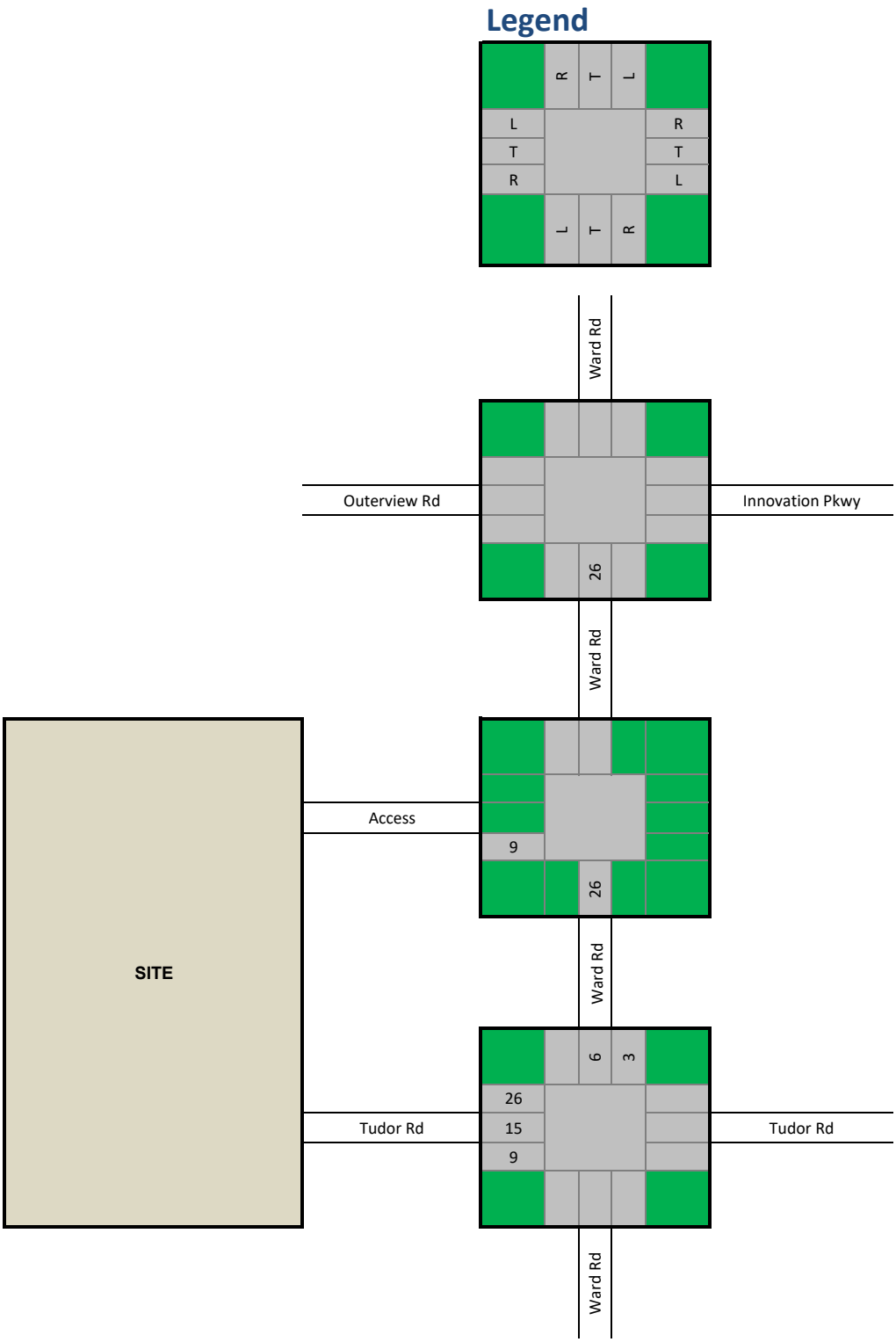
Legend



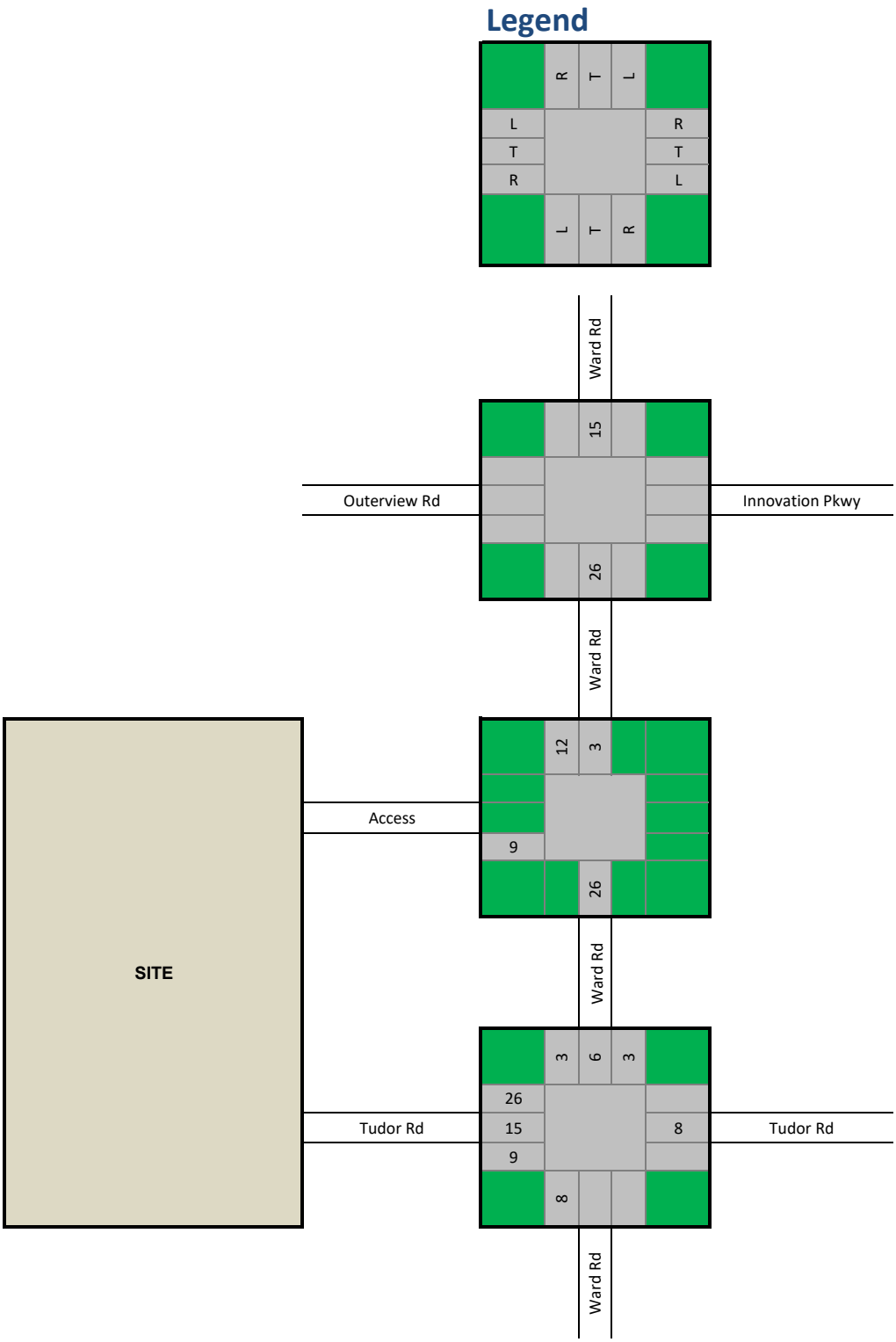


PM - Trips Out
Phase II

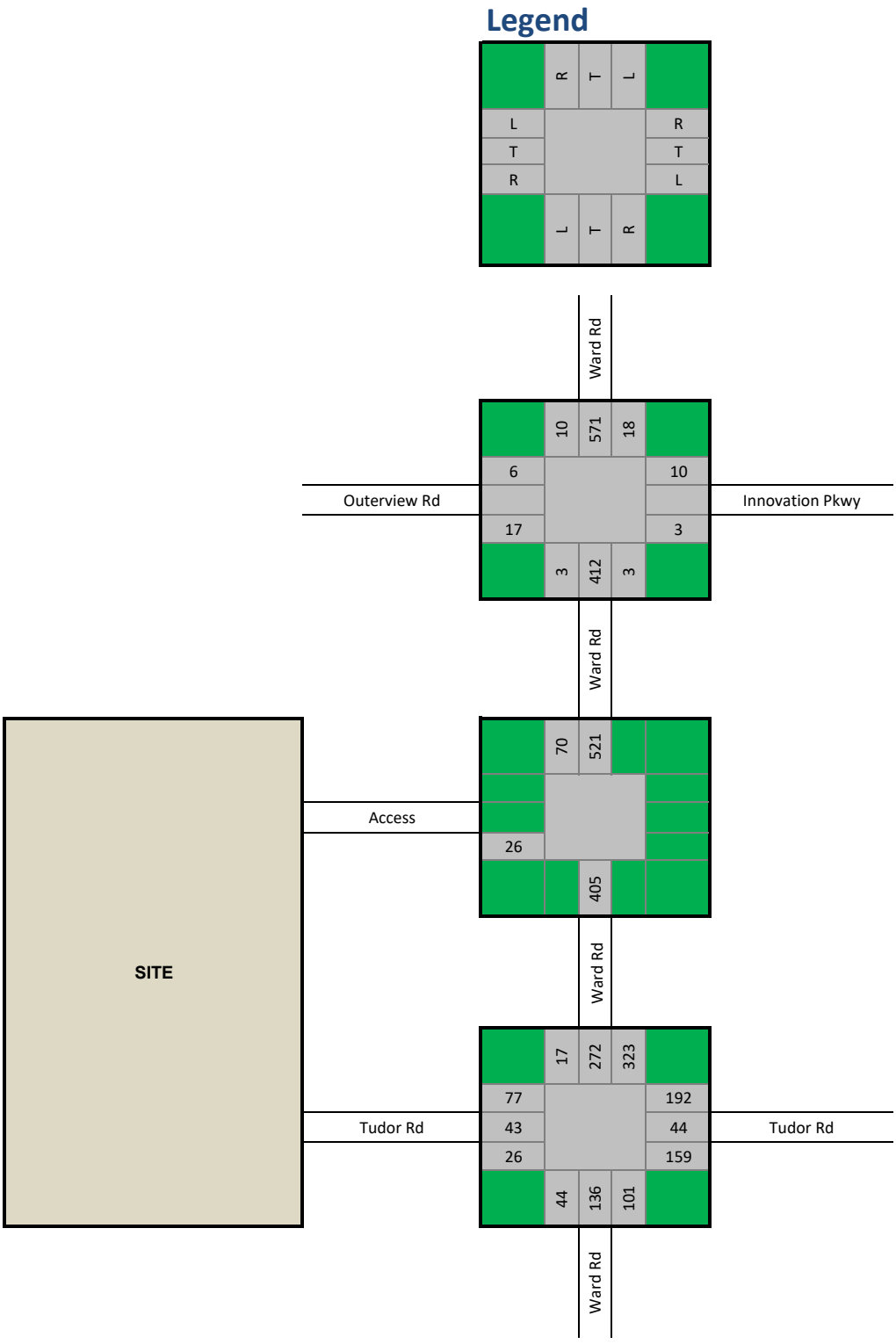
Trips
58



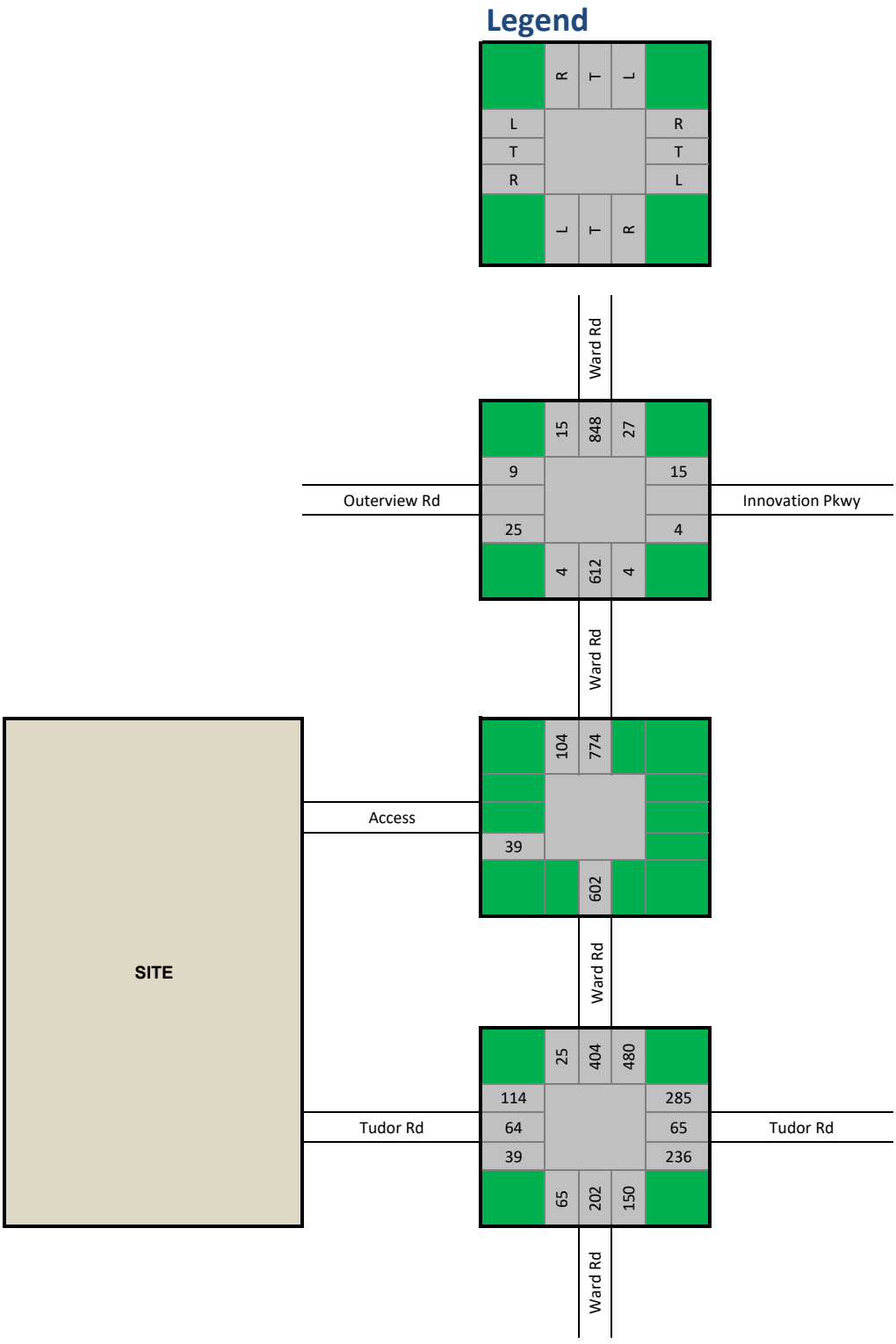
PM - Trips (II)
Phase II



PM - Existing (Approved) plus Trips (II)
Phase II



PM - Future


Legend
R
T
L
L
T
R
R
T
L
L
T
R
Ward Rd
15
848
27
9
15
Outerview Rd
Innovation Pkwy
25
4
4
612
4
Ward Rd
104
774
Access
39
602
SITE
Ward Rd
25
404
480
114
285
Tudor Rd
64
65
Tudor Rd
39
236
65
202
150
Ward Rd

Crash Summaries (Previous 3 Years)					
ID	**Year**	**Intersection**	**Type of Crash**	**PDO/ Injury/ Fatality**	**Notes/Description**
607	2026	Tudor and Ward	Fixed Object	PDO	Slid on snow/ice - One vehicle into curb
740	2024	Tudor and Ward	Angle	PDO	Failure to stop at red light
648	2024	Tudor and Ward	Fixed Object	PDO	Slid on snow/ice - One vehicle into curb
415	2024	Tudor and Ward	Fixed Object	PDO	Failed to turn and hit fire hydrant
48	2024	Innovation and Ward	Fixed Object	PDO	Driver lost control, "blacked out"
547	2024	Tudor and Ward	Fixed Object	PDO	Failed to turn and hit speed limit sign
331	2023	Ward between Inn & Tudor	Fixed Object	PDO	Hit median
966	2025	Innovation and Ward	Rear End	INJ - 1	Following too close
325	2024	Innovation and Ward	Fixed Object	INJ - 1	Slid on snow - hit street light in median

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	90	218	191	199	168	89
v/c Ratio	0.42	0.57	0.09	0.20	0.19	0.03
Control Delay	37.5	11.3	8.2	2.0	3.8	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.5	11.3	8.2	2.0	3.8	2.9
Queue Length 50th (ft)	41	0	19	0	17	4
Queue Length 95th (ft)	70	34	34	21	38	11
Internal Link Dist (ft)	1567		2098			1216
Turn Bay Length (ft)				90	150	
Base Capacity (vph)	750	796	2015	987	1025	2653
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	0.12	0.27	0.09	0.20	0.16	0.03

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations							
Traffic Volume (veh/h)	69	168	155	161	151	80	
Future Volume (veh/h)	69	168	155	161	151	80	
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	90	218	191	199	168	89	
Peak Hour Factor	0.77	0.77	0.81	0.81	0.90	0.90	
Percent Heavy Veh, %	2	2	2	2	2	2	
Cap, veh/h	300	267	1934	863	776	2518	
Arrive On Green	0.17	0.17	0.54	0.54	0.10	0.71	
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647	
Grp Volume(v), veh/h	90	218	191	199	168	89	
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777	
Q Serve(g_s), s	3.6	10.8	2.1	5.3	3.0	0.6	
Cycle Q Clear(g_c), s	3.6	10.8	2.1	5.3	3.0	0.6	
Prop In Lane	1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	300	267	1934	863	776	2518	
V/C Ratio(X)	0.30	0.82	0.10	0.23	0.22	0.04	
Avail Cap(c_a), veh/h	713	635	1934	863	1010	2518	
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	29.6	32.5	8.9	9.6	5.8	3.5	
Incr Delay (d2), s/veh	0.6	6.1	0.1	0.6	0.1	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	1.5	4.4	0.8	1.8	0.9	0.2	
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	30.1	38.6	9.0	10.3	6.0	3.6	
LnGrp LOS	C	D	A	B	A	A	
Approach Vol, veh/h	308		390			257	
Approach Delay, s/veh	36.1		9.6			5.1	
Approach LOS	D		A			A	

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.3	49.7			63.0	18.2
Change Period (Y+Rc), s	5.5	5.5			5.5	4.5
Max Green Setting (Gmax), s	18.5	33.5			57.5	32.5
Max Q Clear Time (g_c+I1), s	5.0	7.3			2.6	12.8
Green Ext Time (p_c), s	0.3	1.9			0.6	0.9

Intersection Summary		
HCM 6th Ctrl Delay	17.0	
HCM 6th LOS	B	

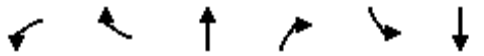
Intersection	
Int Delay, s/veh	2.1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	74	228	7	9	311	3	7	0	4	11	0	20
Future Vol, veh/h	74	228	7	9	311	3	7	0	4	11	0	20
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	70	70	70	69	69	69	92	92	92	55	55	55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	106	326	10	13	451	4	8	0	4	20	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	455	0	0	336	0	0	790	1019	163	852	1025	226
Stage 1	-	-	-	-	-	-	538	538	-	477	477	-
Stage 2	-	-	-	-	-	-	252	481	-	375	548	-
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	1102	-	-	1220	-	-	281	236	853	253	234	777
Stage 1	-	-	-	-	-	-	495	521	-	538	554	-
Stage 2	-	-	-	-	-	-	730	552	-	618	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1102	-	-	1220	-	-	246	211	853	231	209	777
Mov Cap-2 Maneuver	-	-	-	-	-	-	246	211	-	231	209	-
Stage 1	-	-	-	-	-	-	447	471	-	486	548	-
Stage 2	-	-	-	-	-	-	688	546	-	556	466	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	2.1	0.2	16.2	14.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	332	1220	-	-	1102	-	-	231	777
HCM Lane V/C Ratio	0.036	0.011	-	-	0.096	-	-	0.087	0.047
HCM Control Delay (s)	16.2	8	-	-	8.6	-	-	22.1	9.9
HCM Lane LOS	C	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0.3	-	-	0.3	0.1



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	175	181	121	112	326	247
v/c Ratio	0.62	0.45	0.07	0.13	0.37	0.10
Control Delay	43.9	8.9	12.3	3.5	6.4	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	8.9	12.3	3.5	6.4	4.4
Queue Length 50th (ft)	90	0	16	0	52	18
Queue Length 95th (ft)	154	53	37	30	104	36
Internal Link Dist (ft)	1567		2098			1216
Turn Bay Length (ft)				90	150	
Base Capacity (vph)	564	628	1830	872	1072	2525
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	0.31	0.29	0.07	0.13	0.30	0.10

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	159	165	109	101	290	220
Future Volume (veh/h)	159	165	109	101	290	220
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	175	181	121	112	326	247
Peak Hour Factor	0.91	0.91	0.90	0.90	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	259	230	1953	871	894	2576
Arrive On Green	0.15	0.15	0.55	0.55	0.11	0.73
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	175	181	121	112	326	247
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	7.9	9.3	1.3	2.9	6.5	1.7
Cycle Q Clear(g_c), s	7.9	9.3	1.3	2.9	6.5	1.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	259	230	1953	871	894	2576
V/C Ratio(X)	0.68	0.79	0.06	0.13	0.36	0.10
Avail Cap(c_a), veh/h	577	514	1953	871	1317	2576
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	34.4	35.0	8.9	9.3	6.0	3.4
Incr Delay (d2), s/veh	3.1	5.8	0.1	0.3	0.2	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	3.5	3.8	0.5	1.0	2.0	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.4	40.8	9.0	9.6	6.3	3.5
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	356		233			573
Approach Delay, s/veh	39.2		9.3			5.1
Approach LOS	D		A			A

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	14.9	52.1			67.0	17.8
Change Period (Y+Rc), s	5.5	5.5			5.5	5.5
Max Green Setting (Gmax), s	29.5	26.5			61.5	27.5
Max Q Clear Time (g_c+I1), s	8.5	4.9			3.7	11.3
Green Ext Time (p_c), s	0.9	1.0			1.7	1.0

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	0.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	18	426	10	3	281	3	6	0	17	3	0	10
Future Vol, veh/h	18	426	10	3	281	3	6	0	17	3	0	10
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	72	72	72	54	54	54	84	84	84	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	592	14	6	520	6	7	0	20	3	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	526	0	0	606	0	0	914	1180	296	878	1188	260
Stage 1	-	-	-	-	-	-	642	642	-	532	532	-
Stage 2	-	-	-	-	-	-	272	538	-	346	656	-
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	1037	-	-	968	-	-	228	189	700	242	187	739
Stage 1	-	-	-	-	-	-	429	467	-	499	524	-
Stage 2	-	-	-	-	-	-	711	521	-	643	460	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1037	-	-	968	-	-	220	183	700	230	181	739
Mov Cap-2 Maneuver	-	-	-	-	-	-	220	183	-	230	181	-
Stage 1	-	-	-	-	-	-	419	456	-	487	521	-
Stage 2	-	-	-	-	-	-	696	518	-	609	449	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.3	0.1	13.6	12.4
HCM LOS			B	B

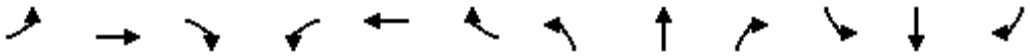
Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	446	968	-	-	1037	-	-	230	739
HCM Lane V/C Ratio	0.061	0.006	-	-	0.024	-	-	0.014	0.014
HCM Control Delay (s)	13.6	8.7	-	-	8.6	-	-	20.9	9.9
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0	0

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	55	48	175	251	40	151	112	360	315
v/c Ratio	0.38	0.13	0.66	0.51	0.05	0.10	0.15	0.44	0.15
Control Delay	37.0	20.0	43.2	10.8	5.8	16.1	3.0	8.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	20.0	43.2	10.8	5.8	16.1	3.0	8.7	9.4
Queue Length 50th (ft)	26	13	88	18	6	22	0	66	38
Queue Length 95th (ft)	61	41	154	80	20	54	24	142	74
Internal Link Dist (ft)		211		1567		2098			650
Turn Bay Length (ft)					200		90	150	
Base Capacity (vph)	282	680	515	751	737	1550	769	1016	2086
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.07	0.34	0.33	0.05	0.10	0.15	0.35	0.15

Intersection Summary

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

PM Existing plus Site (Phase 1)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	28	17	159	36	192	36	136	101	320	266	14
Future Volume (veh/h)	51	28	17	159	36	192	36	136	101	320	266	14
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	30	18	175	40	211	40	151	112	360	299	16
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	169	238	143	351	56	297	704	1587	708	807	1931	103
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.04	0.45	0.45	0.14	0.56	0.56
Sat Flow, veh/h	1129	1095	657	1357	259	1366	1781	3554	1585	1781	3431	183
Grp Volume(v), veh/h	55	0	48	175	0	251	40	151	112	360	154	161
Grp Sat Flow(s),veh/h/ln	1129	0	1752	1357	0	1625	1781	1777	1585	1781	1777	1837
Q Serve(g_s), s	4.0	0.0	1.9	10.1	0.0	12.1	0.8	2.1	3.6	8.8	3.5	3.5
Cycle Q Clear(g_c), s	16.1	0.0	1.9	11.9	0.0	12.1	0.8	2.1	3.6	8.8	3.5	3.5
Prop In Lane	1.00		0.38	1.00		0.84	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	169	0	381	351	0	353	704	1587	708	807	1000	1034
V/C Ratio(X)	0.32	0.00	0.13	0.50	0.00	0.71	0.06	0.10	0.16	0.45	0.15	0.16
Avail Cap(c_a), veh/h	332	0	633	546	0	587	777	1587	708	1179	1000	1034
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	38.0	0.0	26.6	31.4	0.0	30.6	7.0	13.5	13.9	9.1	8.8	8.8
Incr Delay (d2), s/veh	1.1	0.0	0.1	1.1	0.0	2.6	0.0	0.1	0.5	0.4	0.3	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	1.1	0.0	0.8	3.3	0.0	4.8	0.3	0.8	1.3	3.0	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	26.7	32.5	0.0	33.2	7.1	13.6	14.4	9.4	9.2	9.2
LnGrp LOS	D	A	C	C	A	C	A	B	B	A	A	A
Approach Vol, veh/h		103			426			303			675	
Approach Delay, s/veh		33.3			32.9			13.0			9.3	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.3	43.2		23.9	7.5	53.0		23.9				
Change Period (Y+Rc), s	5.5	5.5		5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	29.5	23.5		30.5	6.5	47.5		30.5				
Max Q Clear Time (g_c+I1), s	10.8	5.6		18.1	2.8	5.5		14.1				
Green Ext Time (p_c), s	1.0	1.2		0.3	0.0	1.9		1.9				

Intersection Summary			
HCM 6th Ctrl Delay		18.4	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	0.7

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	18	556	10	3	286	3	6	0	17	3	0	10
Future Vol, veh/h	18	556	10	3	286	3	6	0	17	3	0	10
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	72	72	72	54	54	54	84	84	84	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	772	14	6	530	6	7	0	20	3	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	536	0	0	786	0	0	1099	1370	386	978	1378	265
Stage 1	-	-	-	-	-	-	822	822	-	542	542	-
Stage 2	-	-	-	-	-	-	277	548	-	436	836	-
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	1028	-	-	829	-	-	167	145	612	205	144	733
Stage 1	-	-	-	-	-	-	334	386	-	492	518	-
Stage 2	-	-	-	-	-	-	706	515	-	569	381	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1028	-	-	829	-	-	161	141	612	194	140	733
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	141	-	194	140	-
Stage 1	-	-	-	-	-	-	326	377	-	480	514	-
Stage 2	-	-	-	-	-	-	691	511	-	537	372	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.3	0.1	16	13.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	354	829	-	-	1028	-	-	194	733
HCM Lane V/C Ratio	0.077	0.007	-	-	0.024	-	-	0.016	0.015
HCM Control Delay (s)	16	9.4	-	-	8.6	-	-	23.9	10
HCM Lane LOS	C	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1	0

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	17	0	379	518	58
Future Vol, veh/h	0	17	0	379	518	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	90	90	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	18	0	421	582	65

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	291	-	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	706	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	706	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

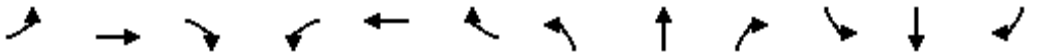
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	706	-	-
HCM Lane V/C Ratio	-	0.026	-	-
HCM Control Delay (s)	-	10.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	10	8	90	240	21	191	199	169	94
v/c Ratio	0.10	0.03	0.44	0.57	0.02	0.11	0.22	0.21	0.04
Control Delay	29.4	22.9	35.6	11.8	3.7	10.1	2.5	4.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.4	22.9	35.6	11.8	3.7	10.1	2.5	4.9	6.5
Queue Length 50th (ft)	4	2	35	8	2	21	0	19	5
Queue Length 95th (ft)	18	13	69	43	8	40	23	47	21
Internal Link Dist (ft)		211		1567		2098			650
Turn Bay Length (ft)					200		90	150	
Base Capacity (vph)	324	806	641	854	963	1774	892	968	2270
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.01	0.14	0.28	0.02	0.11	0.22	0.17	0.04

Intersection Summary

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

AM Existing plus Site (Phase 2)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	5	3	69	17	168	17	155	161	152	82	3
Future Volume (veh/h)	9	5	3	69	17	168	17	155	161	152	82	3
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	10	5	3	90	22	218	21	191	199	169	91	3
Peak Hour Factor	0.92	0.92	0.92	0.77	0.77	0.77	0.81	0.81	0.81	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	208	125	358	28	278	878	1729	771	735	2035	67
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.02	0.49	0.49	0.10	0.58	0.58
Sat Flow, veh/h	1140	1095	657	1407	147	1460	1781	3554	1585	1781	3511	115
Grp Volume(v), veh/h	10	0	8	90	0	240	21	191	199	169	46	48
Grp Sat Flow(s),veh/h/ln	1140	0	1752	1407	0	1608	1781	1777	1585	1781	1777	1850
Q Serve(g_s), s	0.6	0.0	0.3	4.2	0.0	10.7	0.4	2.2	5.5	3.2	0.8	0.8
Cycle Q Clear(g_c), s	11.3	0.0	0.3	4.4	0.0	10.7	0.4	2.2	5.5	3.2	0.8	0.8
Prop In Lane	1.00		0.38	1.00		0.91	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	151	0	333	358	0	306	878	1729	771	735	1030	1072
V/C Ratio(X)	0.07	0.00	0.02	0.25	0.00	0.78	0.02	0.11	0.26	0.23	0.04	0.04
Avail Cap(c_a), veh/h	428	0	759	700	0	696	1038	1729	771	966	1030	1072
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	34.3	0.0	24.7	26.5	0.0	28.9	6.0	10.5	11.3	7.0	6.8	6.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.4	0.0	4.4	0.0	0.1	0.8	0.2	0.1	0.1
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	0.2	0.0	0.1	1.4	0.0	4.3	0.1	0.8	2.0	1.0	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	0.0	24.7	26.9	0.0	33.4	6.0	10.6	12.1	7.2	6.9	6.9
LnGrp LOS	C	A	C	C	A	C	A	B	B	A	A	A
Approach Vol, veh/h		18			330			411			263	
Approach Delay, s/veh		30.2			31.6			11.1			7.1	
Approach LOS		C			C			B			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	42.0		19.8	6.3	49.0		19.8				
Change Period (Y+Rc), s	5.5	5.5		5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	17.5	33.5		32.5	8.5	43.5		32.5				
Max Q Clear Time (g_c+I1), s	5.2	7.5		13.3	2.4	2.8		12.7				
Green Ext Time (p_c), s	0.3	1.9		0.0	0.0	0.5		1.6				

Intersection Summary			
HCM 6th Ctrl Delay		17.0	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	1

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	7	251	74	9	320	3	7	0	4	11	0	20
Future Vol, veh/h	7	251	74	9	320	3	7	0	4	11	0	20
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	70	70	70	69	69	69	92	92	92	55	55	55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	359	106	13	464	4	8	0	4	20	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	468	0	0	465	0	0	637	873	180	690	975	232
Stage 1	-	-	-	-	-	-	379	379	-	490	490	-
Stage 2	-	-	-	-	-	-	258	494	-	200	485	-
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	1090	-	-	1093	-	-	362	287	832	331	250	770
Stage 1	-	-	-	-	-	-	615	613	-	529	547	-
Stage 2	-	-	-	-	-	-	724	545	-	783	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1090	-	-	1093	-	-	340	281	832	324	245	770
Mov Cap-2 Maneuver	-	-	-	-	-	-	340	281	-	324	245	-
Stage 1	-	-	-	-	-	-	609	607	-	524	540	-
Stage 2	-	-	-	-	-	-	682	538	-	772	545	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.2	0.2	13.6	12.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	433	1093	-	-	1090	-	-	324	770
HCM Lane V/C Ratio	0.028	0.012	-	-	0.009	-	-	0.062	0.047
HCM Control Delay (s)	13.6	8.3	-	-	8.3	-	-	16.8	9.9
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	0	332	246	20
Future Vol, veh/h	0	3	0	332	246	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	81	81	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	0	410	273	22

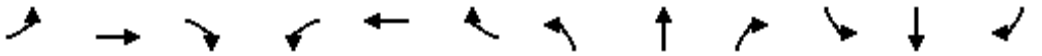
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	137	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	886	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	886	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	886	-	-
HCM Lane V/C Ratio	-	0.004	-	-
HCM Control Delay (s)	-	9.1	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	84	75	175	259	49	151	112	363	325
v/c Ratio	0.58	0.20	0.66	0.52	0.07	0.10	0.15	0.45	0.16
Control Delay	46.6	20.3	43.0	11.2	6.0	16.5	3.0	8.9	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.6	20.3	43.0	11.2	6.0	16.5	3.0	8.9	9.6
Queue Length 50th (ft)	42	21	89	22	7	22	0	68	41
Queue Length 95th (ft)	90	56	155	86	24	55	25	146	76
Internal Link Dist (ft)		211		1567		2098			650
Turn Bay Length (ft)					200		90	150	
Base Capacity (vph)	274	681	498	749	725	1533	763	1001	2068
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.11	0.35	0.35	0.07	0.10	0.15	0.36	0.16

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	43	26	159	44	192	44	136	101	323	272	17
Future Volume (veh/h)	77	43	26	159	44	192	44	136	101	323	272	17
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	84	47	28	175	48	211	49	151	112	363	306	19
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	267	159	359	74	323	675	1508	673	785	1837	114
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.04	0.42	0.42	0.14	0.54	0.54
Sat Flow, veh/h	1120	1098	654	1325	302	1329	1781	3554	1585	1781	3399	210
Grp Volume(v), veh/h	84	0	75	175	0	259	49	151	112	363	159	166
Grp Sat Flow(s),veh/h/ln	1120	0	1753	1325	0	1631	1781	1777	1585	1781	1777	1833
Q Serve(g_s), s	6.4	0.0	3.0	10.6	0.0	12.5	1.0	2.2	3.8	9.7	4.0	4.0
Cycle Q Clear(g_c), s	19.0	0.0	3.0	13.5	0.0	12.5	1.0	2.2	3.8	9.7	4.0	4.0
Prop In Lane	1.00		0.37	1.00		0.81	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	195	0	427	359	0	397	675	1508	673	785	960	991
V/C Ratio(X)	0.43	0.00	0.18	0.49	0.00	0.65	0.07	0.10	0.17	0.46	0.17	0.17
Avail Cap(c_a), veh/h	311	0	608	497	0	566	736	1508	673	1105	960	991
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	38.4	0.0	26.3	31.6	0.0	29.9	8.1	15.2	15.7	10.3	10.2	10.2
Incr Delay (d2), s/veh	1.5	0.0	0.2	1.0	0.0	1.8	0.0	0.1	0.5	0.4	0.4	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	1.8	0.0	1.2	3.4	0.0	4.9	0.4	0.9	1.4	3.5	1.5	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.9	0.0	26.5	32.7	0.0	31.7	8.1	15.3	16.2	10.7	10.6	10.6
LnGrp LOS	D	A	C	C	A	C	A	B	B	B	B	B
Approach Vol, veh/h		159			434			312			688	
Approach Delay, s/veh		33.6			32.1			14.5			10.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.2	42.8		26.9	8.0	53.0		26.9				
Change Period (Y+Rc), s	5.5	5.5		5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	28.5	24.5		30.5	6.5	47.5		30.5				
Max Q Clear Time (g_c+I1), s	11.7	5.8		21.0	3.0	6.0		15.5				
Green Ext Time (p_c), s	1.0	1.2		0.4	0.0	1.9		1.9				

Intersection Summary												
HCM 6th Ctrl Delay			19.5									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	0.6

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	571	18	3	412	3	6	0	17	3	0	10
Future Vol, veh/h	10	571	18	3	412	3	6	0	17	3	0	10
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	72	72	72	54	54	54	84	84	84	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	793	25	6	763	6	7	0	20	3	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	769	0	0	818	0	0	1215	1602	397	1200	1621	382
Stage 1	-	-	-	-	-	-	821	821	-	775	775	-
Stage 2	-	-	-	-	-	-	394	781	-	425	846	-
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	841	-	-	806	-	-	137	105	602	141	102	616
Stage 1	-	-	-	-	-	-	335	387	-	357	406	-
Stage 2	-	-	-	-	-	-	602	403	-	578	377	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	841	-	-	806	-	-	132	102	602	134	100	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	132	102	-	134	100	-
Stage 1	-	-	-	-	-	-	329	380	-	351	403	-
Stage 2	-	-	-	-	-	-	587	400	-	549	371	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.2	0.1	17.6	15.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	312	806	-	-	841	-	-	134	616
HCM Lane V/C Ratio	0.088	0.007	-	-	0.017	-	-	0.024	0.017
HCM Control Delay (s)	17.6	9.5	-	-	9.4	-	-	32.5	10.9
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	26	0	405	521	70
Future Vol, veh/h	0	26	0	405	521	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	90	90	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	0	450	585	79

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	293	-	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	703	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	703	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

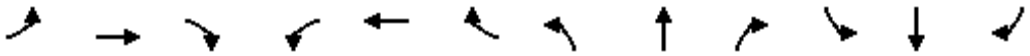
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	703	-	-
HCM Lane V/C Ratio	-	0.04	-	-
HCM Control Delay (s)	-	10.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	14	12	134	357	31	284	295	251	140
v/c Ratio	0.14	0.04	0.54	0.65	0.04	0.17	0.33	0.34	0.06
Control Delay	30.5	22.4	37.2	11.1	4.8	13.1	3.1	6.9	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.5	22.4	37.2	11.1	4.8	13.1	3.1	6.9	7.6
Queue Length 50th (ft)	5	3	53	12	4	36	0	36	9
Queue Length 95th (ft)	22	17	98	47	13	68	30	85	33
Internal Link Dist (ft)		1008		1567		2098			650
Turn Bay Length (ft)					200		90	150	
Base Capacity (vph)	249	785	618	892	870	1641	892	908	2195
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.02	0.22	0.40	0.04	0.17	0.33	0.28	0.06

Intersection Summary

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

AM Future



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	7	4	103	25	250	25	230	239	226	122	4
Future Volume (veh/h)	13	7	4	103	25	250	25	230	239	226	122	4
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	14	8	4	134	32	325	31	284	295	251	136	4
Peak Hour Factor	0.92	0.92	0.92	0.77	0.77	0.77	0.81	0.81	0.81	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	133	306	153	441	37	380	775	1581	705	599	1867	55
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.03	0.44	0.44	0.10	0.53	0.53
Sat Flow, veh/h	1024	1176	588	1402	144	1463	1781	3554	1585	1781	3525	103
Grp Volume(v), veh/h	14	0	12	134	0	357	31	284	295	251	68	72
Grp Sat Flow(s),veh/h/ln	1024	0	1764	1402	0	1607	1781	1777	1585	1781	1777	1852
Q Serve(g_s), s	1.1	0.0	0.4	6.8	0.0	18.2	0.7	4.1	10.9	6.4	1.6	1.6
Cycle Q Clear(g_c), s	19.3	0.0	0.4	7.2	0.0	18.2	0.7	4.1	10.9	6.4	1.6	1.6
Prop In Lane	1.00		0.33	1.00		0.91	1.00		1.00	1.00		0.06
Lane Grp Cap(c), veh/h	133	0	458	441	0	417	775	1581	705	599	941	980
V/C Ratio(X)	0.11	0.00	0.03	0.30	0.00	0.86	0.04	0.18	0.42	0.42	0.07	0.07
Avail Cap(c_a), veh/h	255	0	667	607	0	608	856	1581	705	819	941	980
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	39.5	0.0	23.7	26.4	0.0	30.3	8.5	14.4	16.3	10.3	9.9	9.9
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	8.0	0.0	0.2	1.8	0.5	0.1	0.1
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	0.3	0.0	0.2	2.2	0.0	7.6	0.2	1.7	4.1	2.3	0.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.8	0.0	23.7	26.8	0.0	38.3	8.5	14.6	18.1	10.8	10.0	10.0
LnGrp LOS	D	A	C	C	A	D	A	B	B	B	B	B
Approach Vol, veh/h		26			491			610			391	
Approach Delay, s/veh		32.4			35.1			16.0			10.5	
Approach LOS		C			D			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.4	43.7		27.8	7.1	51.0		27.8				
Change Period (Y+Rc), s	5.5	5.5		5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	19.5	31.5		32.5	6.5	45.5		32.5				
Max Q Clear Time (g_c+I1), s	8.4	12.9		21.3	2.7	3.6		20.2				
Green Ext Time (p_c), s	0.5	2.7		0.0	0.0	0.8		2.2				

Intersection Summary			
HCM 6th Ctrl Delay		21.1	
HCM 6th LOS		C	

Intersection	
Int Delay, s/veh	1.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	10	373	110	13	476	4	10	0	6	16	0	30
Future Vol, veh/h	10	373	110	13	476	4	10	0	6	16	0	30
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	70	70	70	69	69	69	92	92	92	55	55	55
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	533	157	19	690	6	11	0	7	29	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	696	0	0	690	0	0	944	1295	267	1023	1446	345
Stage 1	-	-	-	-	-	-	561	561	-	728	728	-
Stage 2	-	-	-	-	-	-	383	734	-	295	718	-
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	896	-	-	900	-	-	217	161	731	190	131	651
Stage 1	-	-	-	-	-	-	480	508	-	381	427	-
Stage 2	-	-	-	-	-	-	611	424	-	689	431	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	896	-	-	900	-	-	193	155	731	183	126	651
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	155	-	183	126	-
Stage 1	-	-	-	-	-	-	472	500	-	375	418	-
Stage 2	-	-	-	-	-	-	548	415	-	672	424	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.2	0.2	19.4	17.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	267	900	-	-	896	-	-	183	651
HCM Lane V/C Ratio	0.065	0.021	-	-	0.016	-	-	0.159	0.084
HCM Control Delay (s)	19.4	9.1	-	-	9.1	-	-	28.4	11
HCM Lane LOS	C	A	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.6	0.3

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	0	493	366	30
Future Vol, veh/h	0	4	0	493	366	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	81	81	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	0	609	407	33

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	204	-	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	803	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	803	-	-	-	-
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)	-	803	-	-
HCM Lane V/C Ratio	-	0.005	-	-
HCM Control Delay (s)	-	9.5	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	124	112	259	384	72	224	167	539	482
v/c Ratio	1.02	0.23	0.77	0.63	0.13	0.20	0.27	0.70	0.26
Control Delay	121.7	19.5	46.0	15.6	9.0	26.9	6.7	17.1	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.7	19.5	46.0	15.6	9.0	26.9	6.7	17.1	13.6
Queue Length 50th (ft)	~72	35	137	67	15	48	0	156	77
Queue Length 95th (ft)	#178	75	224	158	40	99	54	298	131
Internal Link Dist (ft)		1008		1567		2098			650
Turn Bay Length (ft)					200		90	150	
Base Capacity (vph)	178	696	490	776	554	1110	611	889	1853
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.16	0.53	0.49	0.13	0.20	0.27	0.61	0.26

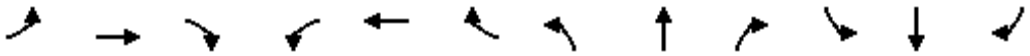
Intersection Summary

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

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

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

PM Future



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	64	39	236	65	285	65	202	150	480	404	25
Future Volume (veh/h)	114	64	39	236	65	285	65	202	150	480	404	25
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	124	70	42	259	71	313	72	224	167	539	454	28
Peak Hour Factor	0.92	0.92	0.92	0.91	0.91	0.91	0.90	0.90	0.90	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	370	222	447	102	449	497	878	392	711	1573	97
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.04	0.25	0.25	0.25	0.46	0.46
Sat Flow, veh/h	999	1095	657	1281	302	1329	1781	3554	1585	1781	3400	209
Grp Volume(v), veh/h	124	0	112	259	0	384	72	224	167	539	237	245
Grp Sat Flow(s),veh/h/ln	999	0	1752	1281	0	1631	1781	1777	1585	1781	1777	1833
Q Serve(g_s), s	12.2	0.0	4.5	17.8	0.0	20.2	2.1	5.0	8.8	21.7	8.2	8.2
Cycle Q Clear(g_c), s	32.4	0.0	4.5	22.3	0.0	20.2	2.1	5.0	8.8	21.7	8.2	8.2
Prop In Lane	1.00		0.38	1.00		0.82	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	206	0	592	447	0	551	497	878	392	711	822	848
V/C Ratio(X)	0.60	0.00	0.19	0.58	0.00	0.70	0.14	0.26	0.43	0.76	0.29	0.29
Avail Cap(c_a), veh/h	206	0	592	447	0	551	511	878	392	797	822	848
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	42.5	0.0	23.2	31.1	0.0	28.5	13.0	30.0	31.4	18.3	16.5	16.5
Incr Delay (d2), s/veh	4.8	0.0	0.2	1.9	0.0	3.8	0.1	0.7	3.4	3.8	0.9	0.9
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	3.2	0.0	1.9	5.6	0.0	8.2	0.8	2.2	3.7	9.0	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.3	0.0	23.4	33.0	0.0	32.3	13.1	30.7	34.8	22.1	17.4	17.4
LnGrp LOS	D	A	C	C	A	C	B	C	C	C	B	B
Approach Vol, veh/h		236			643			463			1021	
Approach Delay, s/veh		36.0			32.6			29.4			19.9	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	30.2	30.0		39.0	8.8	51.4		39.0				
Change Period (Y+Rc), s	5.5	5.5		5.5	4.5	5.5		5.5				
Max Green Setting (Gmax), s	29.5	20.5		33.5	5.1	45.9		33.5				
Max Q Clear Time (g_c+I1), s	23.7	10.8		34.4	4.1	10.2		24.3				
Green Ext Time (p_c), s	1.0	1.4		0.0	0.0	3.0		2.4				

Intersection Summary												
HCM 6th Ctrl Delay			26.8									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	1.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	27	848	15	4	612	4	9	0	24	4	0	15
Future Vol, veh/h	27	848	15	4	612	4	9	0	24	4	0	15
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	72	72	72	54	54	54	84	84	84	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	1178	21	7	1133	7	11	0	29	4	0	16

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1140	0	0	1199	0	0	1835	2408	589	1812	2422	567
Stage 1	-	-	-	-	-	-	1254	1254	-	1147	1147	-
Stage 2	-	-	-	-	-	-	581	1154	-	665	1275	-
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	609	-	-	578	-	-	47	33	452	49	32	467
Stage 1	-	-	-	-	-	-	182	242	-	212	272	-
Stage 2	-	-	-	-	-	-	467	270	-	416	236	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	609	-	-	578	-	-	43	31	452	43	30	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	43	31	-	43	30	-
Stage 1	-	-	-	-	-	-	171	227	-	199	269	-
Stage 2	-	-	-	-	-	-	446	267	-	365	221	-

Approach	SE	NW	NE	SW
HCM Control Delay, s	0.3	0.1	46	30.8
HCM LOS			E	D

Minor Lane/Major Mvmt	NELn1	NWL	NWT	NWR	SEL	SET	SER	SWLn1	SWLn2
Capacity (veh/h)	126	578	-	-	609	-	-	43	467
HCM Lane V/C Ratio	0.312	0.013	-	-	0.062	-	-	0.099	0.034
HCM Control Delay (s)	46	11.3	-	-	11.3	-	-	97.7	13
HCM Lane LOS	E	B	-	-	B	-	-	F	B
HCM 95th %tile Q(veh)	1.2	0	-	-	0.2	-	-	0.3	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	39	0	602	774	104
Future Vol, veh/h	0	39	0	602	774	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	90	90	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	42	0	669	870	117

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	435	-	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	569	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	569	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	569	-	-
HCM Lane V/C Ratio	-	0.075	-	-
HCM Control Delay (s)	-	11.8	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.2	-	-