Legacy Ridge Development
Traffic Impact Study
Lee's Summit, Missouri

February 2, 2026

STATE OF MISSOURI
AMY LYNN
McCURDY
Amy L. McCurdy
NUMBER
PE-2010039281
2/2/25
PROFESSIONAL ENGINEER

Prepared by:

McCURDY
ENGINEERS

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INTRODUCTION

The purpose of this traffic impact study is to assess the potential impact on traffic with the Legacy Ridge development on the southeast corner of the intersection of Hook 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.

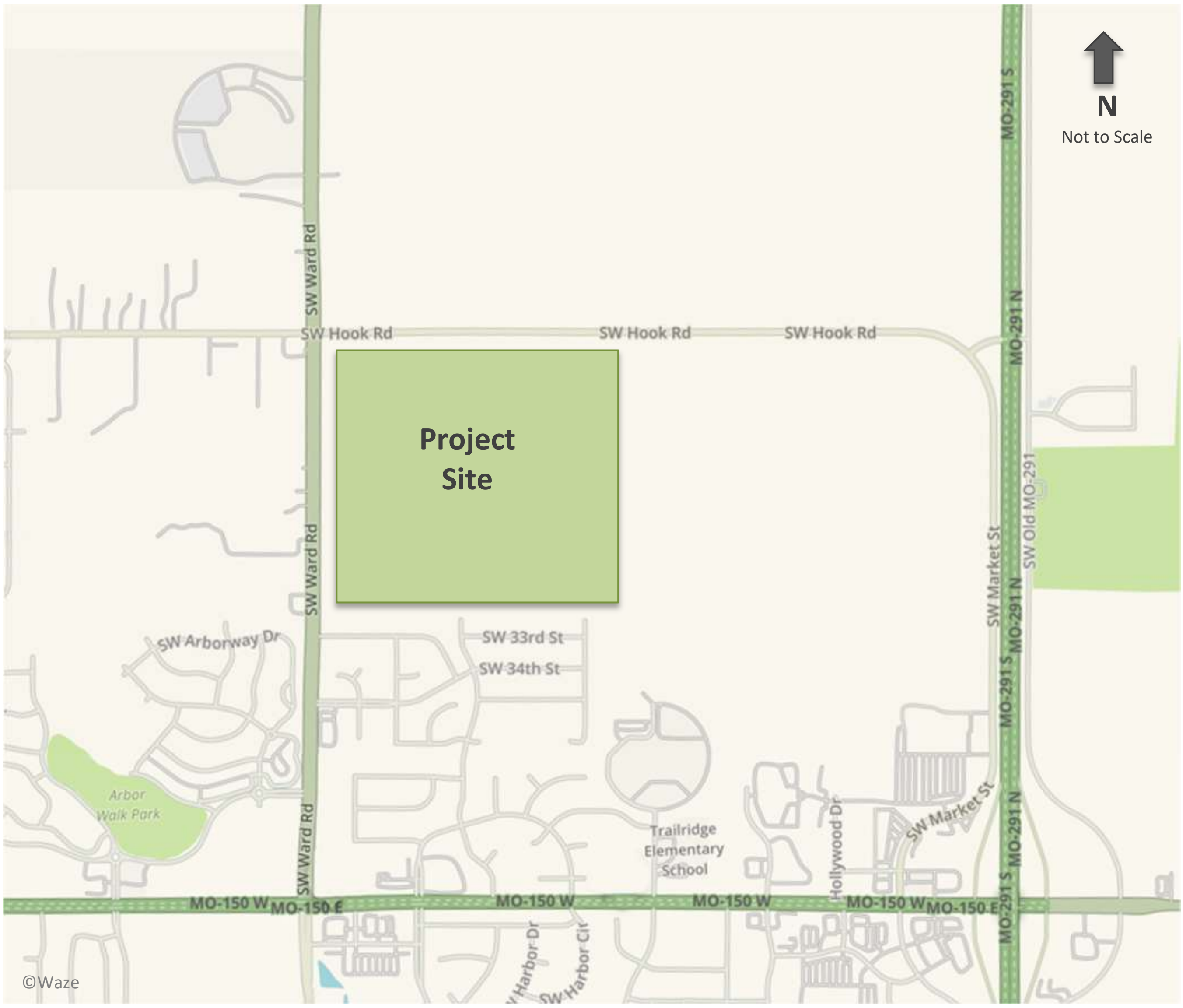
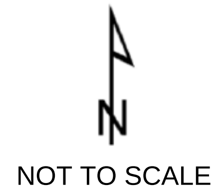


Figure 1 – Development Location



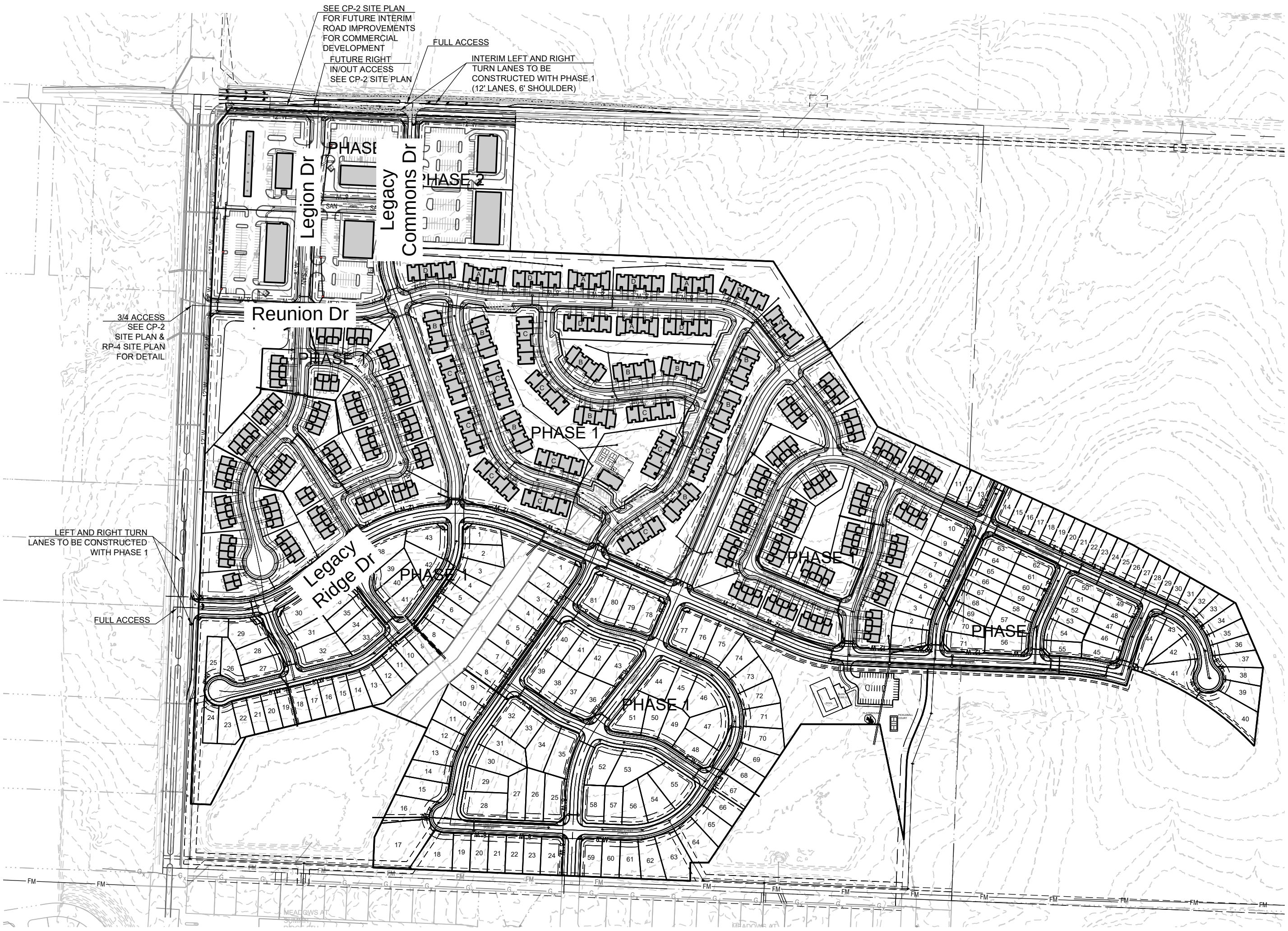


Figure 2 – Site Plan

EXISTING CONDITIONS

The site is in Lee's Summit, Missouri, in the southeast quadrant of the intersection Hook Road and Ward Road. The current land use of the planned development area to the north is undeveloped with low density residential to the immediate west and residential to the south.

Lee's Summit West High School is located approximately ½ mile northwest of the planned development. Trailridge Elementary School and Summit Lakes Middle School are located to the south adjacent to the existing residential community.

Street Network and Traffic Control

The development is bordered on the north by Hook Road, on the west by Ward Road, and generally on the east by Market Street.

Hook Road is a two-lane east-west minor arterial roadway and has a posted speed limit of 45 miles per hour (mph).

Ward Road is a four-lane north-south median divided major arterial with a posted speed limit of 45 mph. The intersection of Hook Road and Ward Road is signalized with left-turn lanes on all approaches, an eastbound right-turn lane, and a westbound right-turn lane.

Market Street is an uncategorized north-south street running parallel to MO 291 with a posted speed limit of 45 mph. Market Street and Hook Road tee into southbound MO 291, which is Right-In/Right-Out (RIRO). The intersection of Market Street/Hook Road and the MO 291 access is stop-controlled with the access street stopping.

Titan Crossing (the primary access for Lee's Summit West High School) is located approximately ½ mile north of the intersection of Hook Road and Ward Road. The intersection of Titan Crossing and Ward Road is signalized and has a northbound left-turn lane and a southbound right-turn lane.

Traffic Volumes

Intersections counted for analysis in this study were:

- Hook Road and Ward Road
- Titan Crossing and Ward Road
- Hook Road/Market Street and MO 291 access

The turning movement traffic counts were completed on Thursday, March 6th, 2025, and Tuesday, March 11th, 2025, for the peak volume time periods. Morning traffic counts were conducted from 6:00 AM until 8:00 AM and afternoon traffic counts were from 1:30 PM until 6:00 PM in order to capture the school peak period The morning peak period was determined to be from 6:45 AM until 7:45 AM, the school peak period from 2:15 PM until 3:15 PM, and the afternoon peak period from 4:30 PM until 5:30 PM. As the traditional afternoon peak period was had higher traffic volumes than the school peak period, the analysis was completed using the afternoon peak period.

Existing traffic volumes are shown on Figure 3. Traffic counts are included in the Appendix.

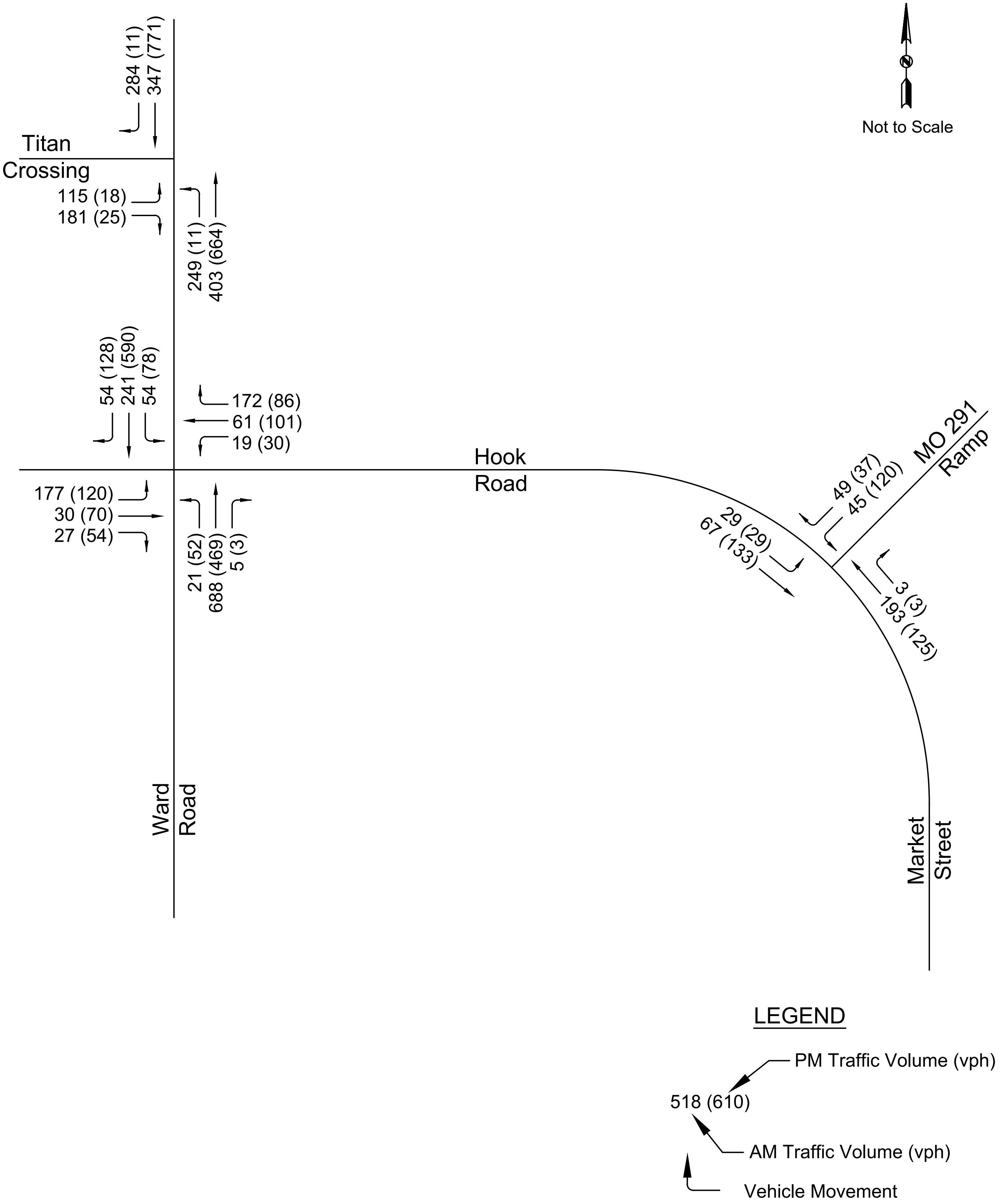


Figure 3 - Existing Traffic Volumes

PROPOSED CONDITIONS

The Legacy Ridge development will be constructed in two phases. Phase 1 (as shown on the phasing plan in the appendix) will consist of residential land uses only and is anticipated to be constructed in the near future. Phase 2 will include a mix of commercial land uses and is a conceptual design only. There is no timeline for the construction of the Phase 2.

Access Plan

Phase 1: The site will be accessed via a drive on Hook Road (Legacy Commons Drive), Ward Road (Legacy Ridge Drive), Ward Road (Reunion Drive), and connecting to the existing Windsong Drive to the south. Both the proposed Legacy Commons Drive and Legacy Ridge Drive will be full access while Reunion Drive is planned as ¾ access.

Phase 2: The site will be accessed by an additional right-in/right-out only (RIRO) drive on Hook Road (Legion Drive).

Two connections are planned for an unspecified future time period to connect to Hook Road on the east side of the development. There are no plans for access into the site from Market Street.

Access Management and Spacing

Streets located within the functional area of an intersection (the area of an intersection where vehicles maneuver and the required vehicle storage length) can have a detrimental impact on traffic flow and on the safety of the intersection. No new driveways or intersections should be constructed within the functional area of an intersection.

The minimum upstream functional area of an access point is calculated based on the distance traveled during perception-reaction time, distance traveled during deceleration when coming to a stop, and the actual queue storage length. The minimum downstream functional area per Lee's Summit *Access Management Code (2018)* is based on AASHTO stopping sight distances and is 360 feet for a 45 mph roadway.

Phase 1

Hook Road and Legacy Commons Drive

Legacy Commons Drive is located approximately 710 feet east of the Hook Road and Ward Road intersection (measured centerline-to-centerline). Using the limiting conditions criteria (405 feet) and the longest westbound queue length (AM peak period), the drive is outside the intersection functional area.

Ward Road and Legacy Ridge Drive

The Legacy Ridge Drive is located approximately 1,690 feet south of the Hook Road and Ward Road intersection. Using the limiting conditions criteria (405 feet) and the longest northbound queue length (AM peak period), the drive is outside the intersection functional area.

Ward Road and Reunion Drive

Reunion Drive is located approximately 680 feet south of the Hook Road and Ward Road intersection. Using the limiting conditions criteria (405 feet) and the longest northbound queue length (AM peak period), the drive is outside the intersection functional area.

Phase 2

Hook Road and Legion Drive

Legion Drive is 310 feet east of the Hook Road and Ward Road intersection. While the access would be within the downstream functional area, capacity analysis in Synchro and SimTraffic shows that all the intersections function appropriately with respect to queuing and there are sufficient gaps for the right-turning vehicles at the access point.

Sight Distance

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

The posted speed limit is 45 mph along Hook Road and Ward Road at the proposed access points. For 45 mph, AASHTO requires a minimum intersection sight distance of 500 feet and a stopping sight distance of 360 feet.

Phase 1

Hook Road and Legacy Commons Drive

Based on field measurements, the available stopping sight distance and the intersection sight distance is greater than 650 feet. The sight distance is adequate for the speed limit.

Ward Road and Legacy Ridge Drive

The measured intersection sight distance and the stopping sight distance are in excess of 500 feet and are adequate.

Ward Road and Reunion Drive

The available sight distance, based on field measurements, is greater than 500 feet and is adequate for the 45 mph speed limit.

Phase 2

Hook Road and Legion Drive

Based on field measurements, the available sight distance exceeds 500 feet and meets the AASHTO requirements.

Crash Analysis

Crash data was not available at the time of submittal and will be included in the final draft.

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.

As the Phase 2 site is conceptual, the trip generation assumes a mix of potential commercial land uses. These uses are illustrative only, as no specific tenants have been identified at this time.

Estimates for the expected trips generated by the development are provided in Table 1.

Table 1 – Trip Generation

	Weekday		A.M.		P.M.	
ITE Land Use Code Units	**Trips In (vpd)**	**Trips Out (vpd)**	**Trips In (vph)**	**Trips Out (vph)**	**Trips In (vph)**	**Trips Out (vph)**
210—Single-Family Detached Housing 195 dwelling units	933	932	34	103	117	69
215—Single-Family Attached Housing 310 dwelling units	1,156	1,156	39	117	107	75
Phase 1 Total	**2,089**	**2,089**	**73**	**220**	**224**	**144**
821-Shopping Plaza (w/o Supermarket) 52,800 Sq Ft	1,783	1,782	56	35	134	140
934-Fast-Food Restaurant with Drive-Through Window 6,700 Sq Ft	1,566	1,566	152	147	115	106
945-Convenience Store/Gas Station 14 Fueling Positions	1,533	1,533	113	112	129	129
Phase 2 Total	**4,882**	**4,881**	**321**	**294**	**378**	**375**
Phase 1 & 2 Total	**6,971**	**6,969**	**394**	**514**	**602**	**519**
With Internal Capture	**6,274**	**6,272**	**355**	**463**	**542**	**467**

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:
- 55% to and 25% from the north
- 30% to and 50% from the south
- 5% to and 10% from the west
- 10% to and 15% from the east

Trip distribution during the afternoon peak period:
- 40% to and 45% from the north
- 45% to and 35% from the south
- 5% to and 10% from the west
- 10% to and from the east

Existing Plus Site Traffic Volumes

The expected development site-generated traffic volumes were added to the existing traffic scenario for Phase 1 and then for Phase 1 and 2. The volumes are shown on Figures 4 through 7.

Future Traffic Volumes

Future traffic volumes were generated at a rate of 4.15% 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 8.

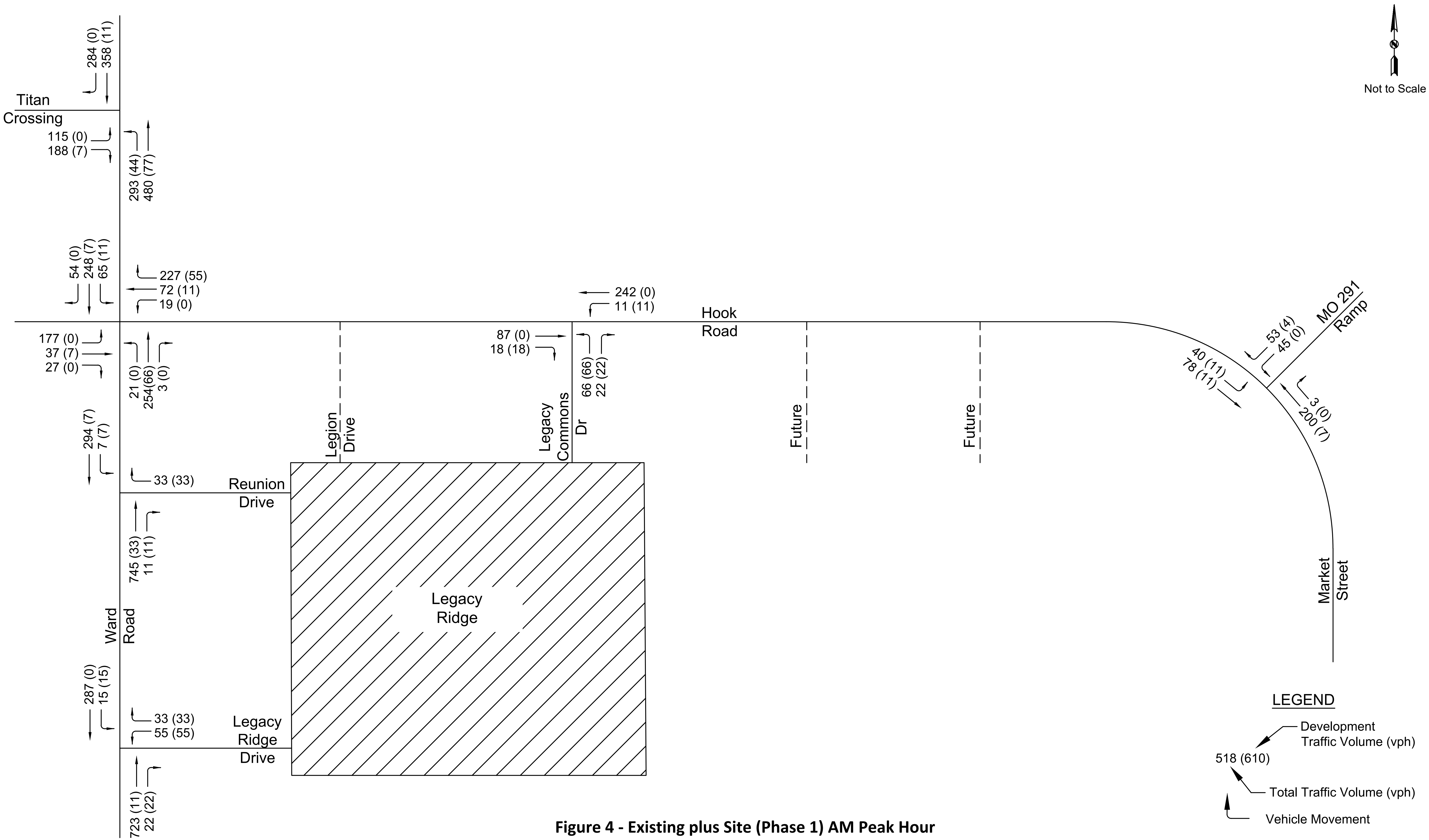


Figure 4 - Existing plus Site (Phase 1) AM Peak Hour Volumes

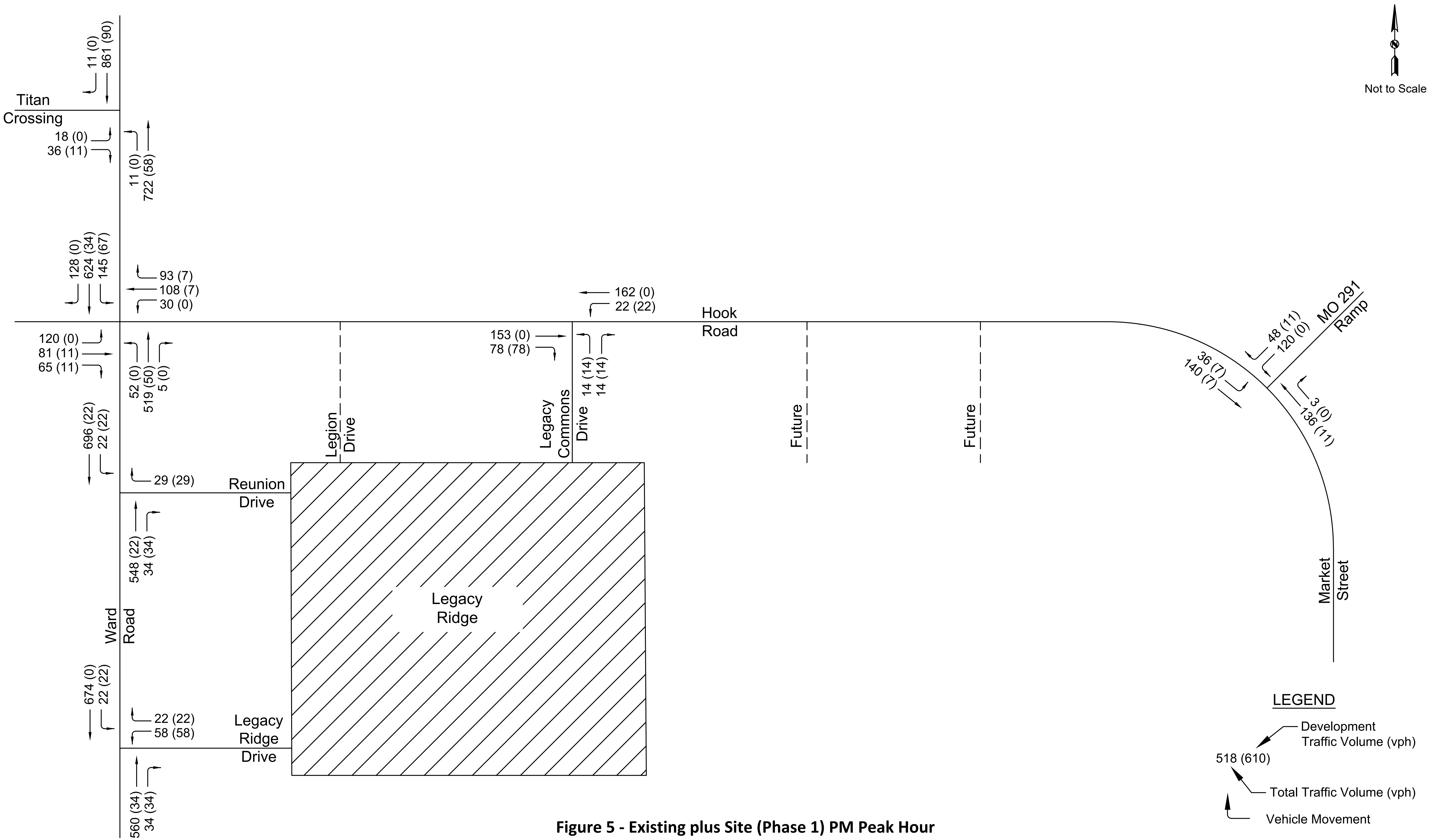


Figure 5 - Existing plus Site (Phase 1) PM Peak Hour Volumes

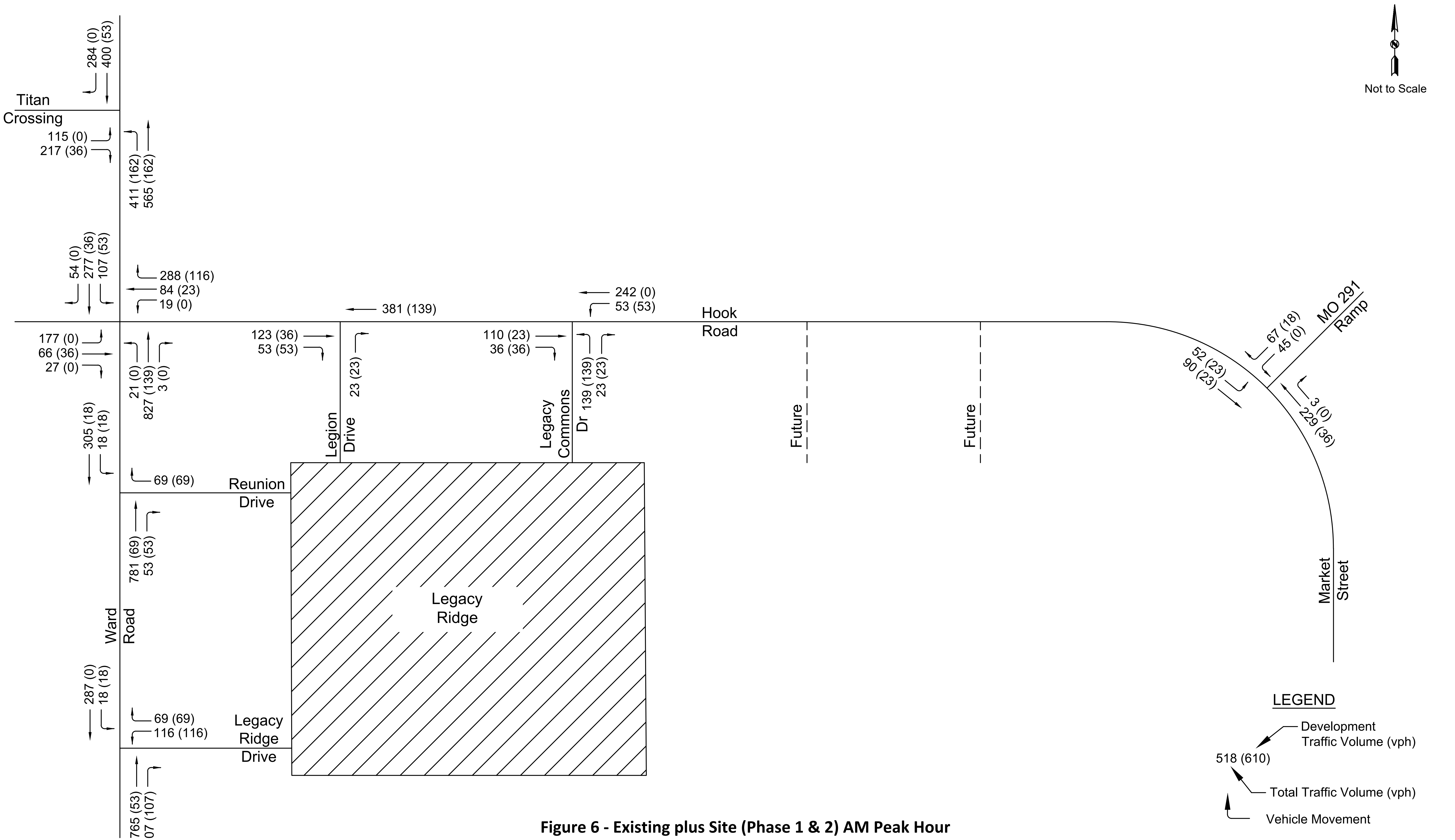


Figure 6 - Existing plus Site (Phase 1 & 2) AM Peak Hour Volumes

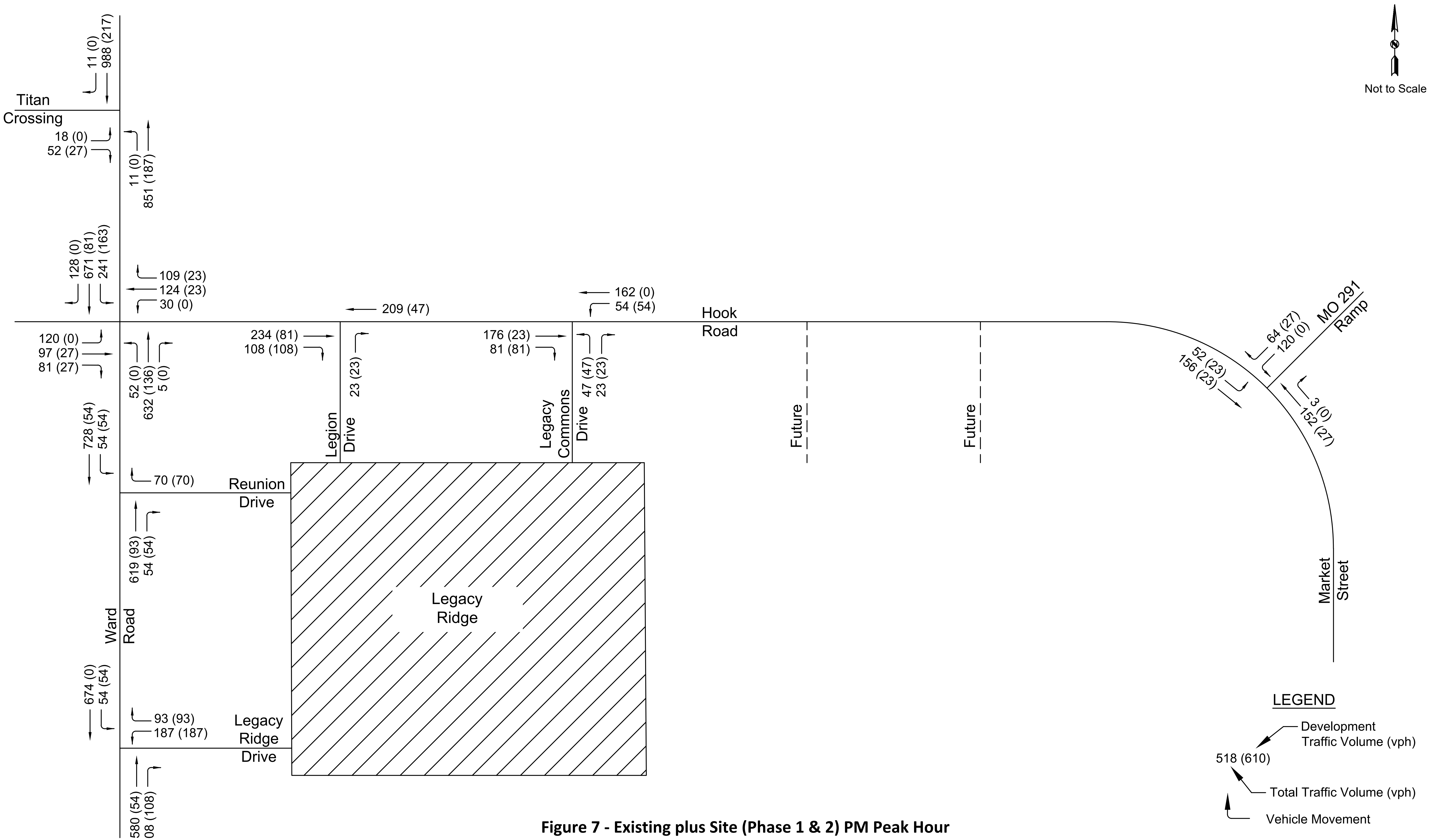


Figure 7 - Existing plus Site (Phase 1 & 2) PM Peak Hour Volumes

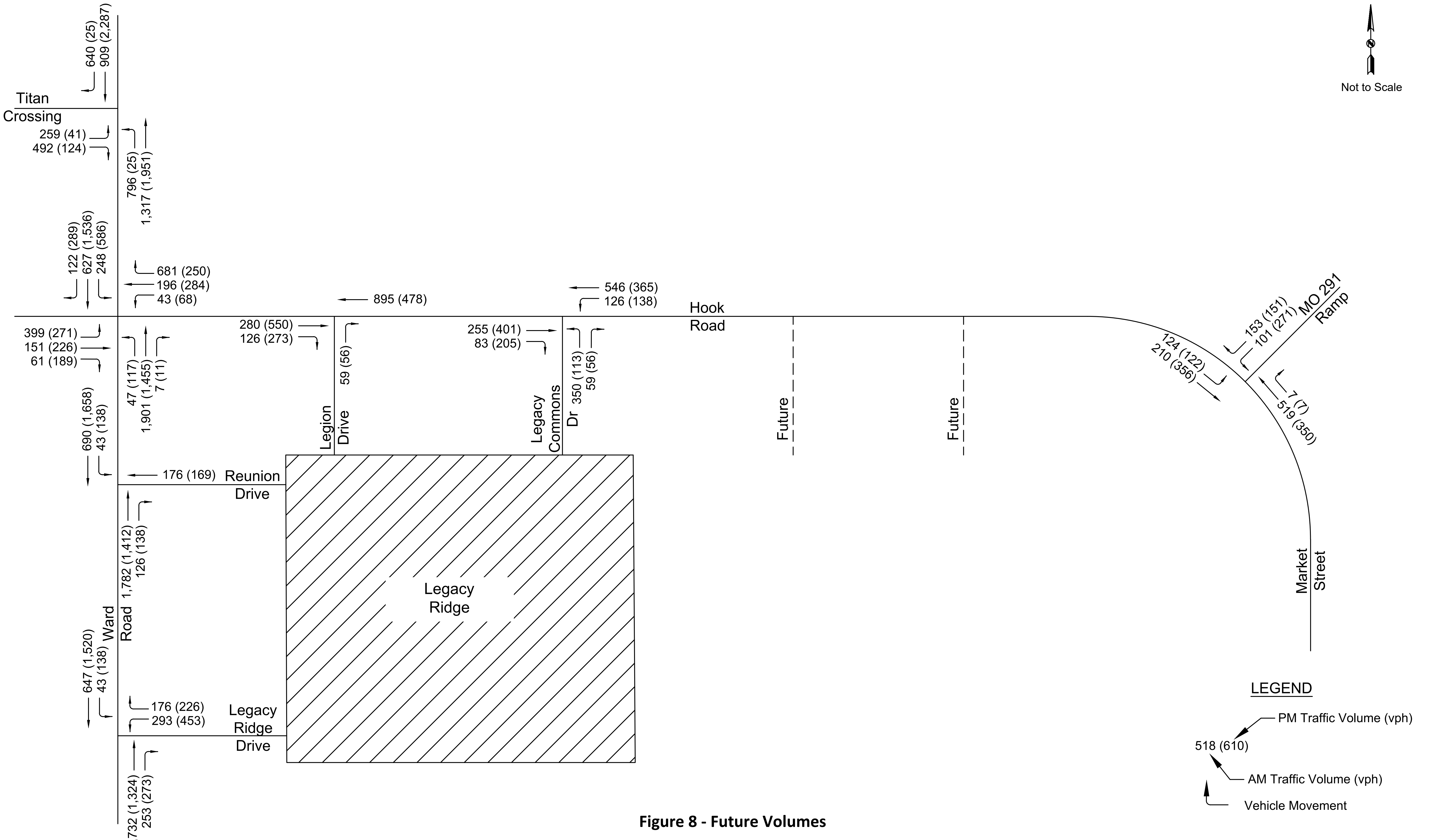


Figure 8 - Future Volumes

Signal Warrant Study

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

Warrants 2, 3, 4, and 7 were evaluated at the analysis intersections as part of this study.

Warrant 2: Four-Hour Vehicular Volume

The four-hour vehicular volume warrant is satisfied when the vehicles per hour on both approaches of the major street and the vehicles on the higher volume approach of the minor street for four hours fall above the 2009 MUTCD Warrant 2 curve.

Warrant 3: Peak Hour

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

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

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

2. The volume on the same minor-street approach (one direction 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 4: Pedestrian Volume

The pedestrian volume warrant is satisfied if either of the two following conditions are met:

A: The pedestrian volume warrant is satisfied if the vehicles per hour for four hours on both approaches of the major street all pedestrians crossing the major street fall above the 2009 MUTCD Warrant 4 curve.

B: The pedestrian volume warrant is satisfied if the vehicles per hour for one hour on both approaches of the major street all pedestrians crossing the major street fall above the 2009 MUTCD Warrant 4 curve.

Warrant 7: Crash Experience

The crash experience warrant is met if all of the three following conditions are met:

A: The crash experience warrant is met if alternatives and enforcement has failed to reduce crash frequency over a satisfactory trial period.

B: The crash experience warrant is met five or more correctable crashes have occurred within a 12- month period.

C: For each of any eight hours of an average day, the vehicles per hour given are 80 percent of Condition A in Table 4C-1 or the vehicles per hour in are 80 percent of Condition B in Table 4C-1 or 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours.

Warrant Analysis

Table 2 summarizes the results of the traffic signal warrant analysis.

Table 2 – Traffic Signal Warrant Analysis

Intersection	Warrant 2: Four-Hour Vehicular Volume	Warrant 3: Peak Hour				Warrant 7: Crash Experience
		Existing	Existing Plus Site		Future	
			Phase 1	Phase 1 & 2		
Hook Rd/Market St and MO 291 access	No	No	No	No	Yes	n/a
Hook Road and Legacy Commons Drive	n/a	n/a	No	No	Yes	n/a
Ward Road and Reunion Drive	n/a	n/a	n/a	n/a	n/a	n/a
Ward Road and Legacy Ridge Drive	n/a	n/a	No	Yes	Yes	n/a

The traffic volumes are not expected to warrant a traffic signal at any of the study intersections during the existing or existing plus site Phase 1 or Phase 1 & 2 conditions, except for the Legacy Ridge Drive intersection which is expected to meet the Warrant 3 criteria when Phase 2 is constructed. Traffic signals should not be installed based on Warrant 3: Peak Hour criteria alone, but this data can be used to act as a trigger for a full traffic signal warrant analysis in the future. The raw data and graphs from the 2023 MUTCD are included in the Appendix.

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 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.

Phase 1: Left-turn lanes will be required westbound on Hook Road at the Legacy Commons Drive and southbound on Ward Road at Legacy Ridge Drive and Reunion Drive 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.

Phase 1: The traffic volumes are expected to meet the right-turning volume criteria at all proposed Phase 1 site drives—Legacy Commons Drive, Reunion Drive, and Legacy Ridge Drive.

Phase 1 & 2: The traffic volumes are expected to meet the right-turning volume criteria at Legion Drive.

The raw analysis data is included in the Appendix.

Unimproved Road Policy

The need for future improvements to Hook Road was evaluated in accordance with the City of Lee's Summit's *Unimproved Road Policy* as Hook Road is a minor arterial and is currently constructed to City interim road standards. Based on the criteria for unimproved roads versus interim roads versus urban standard, Phase 1 of the development doesn't meet the requirements for improvements to Hook Road as this phase consists solely of residential land uses with no commercial or retail components.

When Phase 2 is constructed—with its associated commercial land uses—it will trigger the requirement to upgrade Hook Road from its current interim standard to the full urban street standards on both sides of Hook Road.

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) and SIDRA software (latest version) for the following scenarios:

- Existing
- Existing plus Site (Phase 1)
- Existing plus Site (Phase 1 & 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 current roadway and lane configurations.

Hook Road and Ward 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 B during the morning and afternoon peak periods.

Titan Crossing 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 B during the morning peak period and a LOS A during the afternoon peak period.

Hook Road/Market Street and MO 291 Access

The through movements of Market Street and Hook Road are not stop-controlled and are therefore operating in a free-flow condition. The southbound movements operates at a LOS B and has 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 9 and 10.

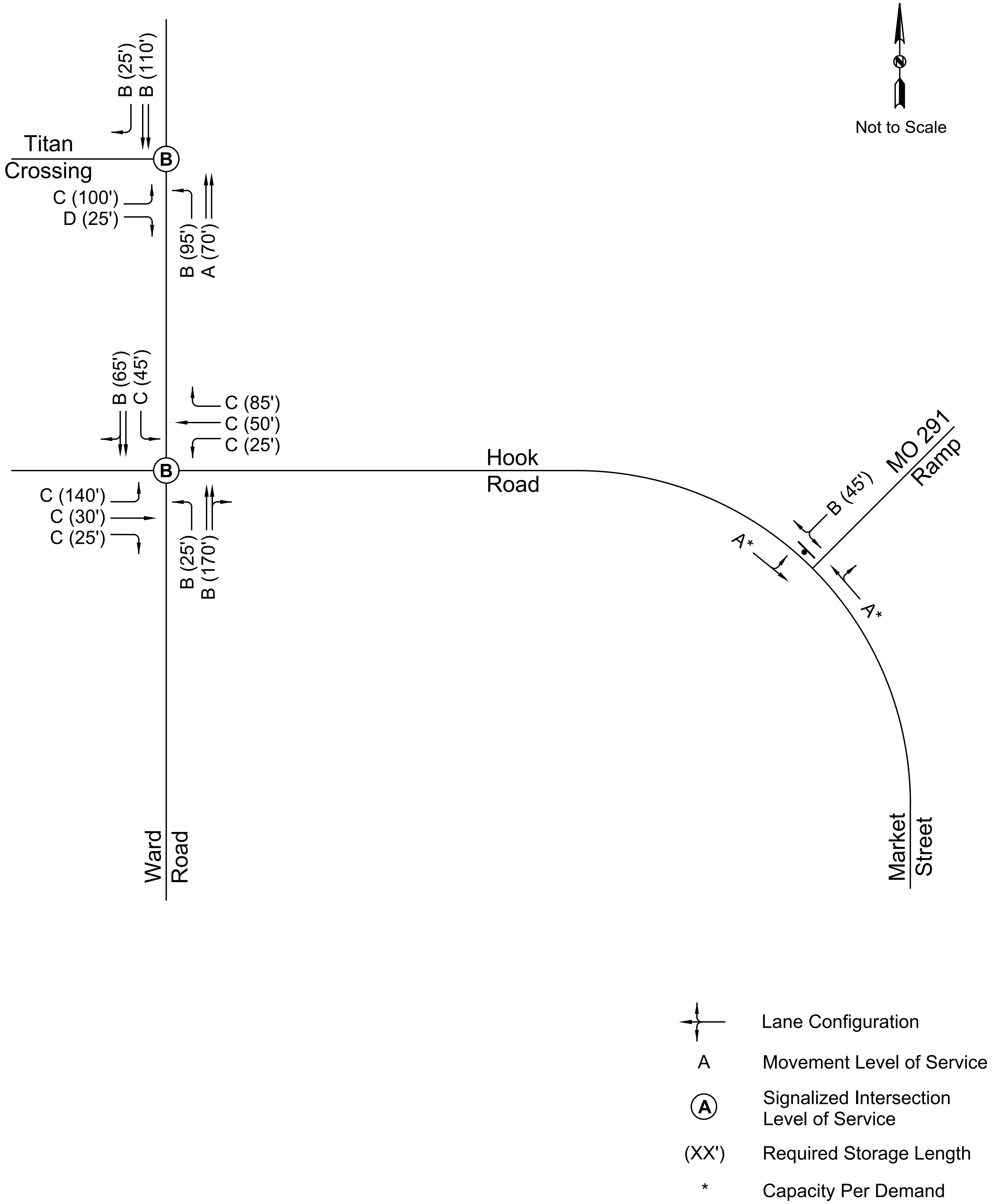


Figure 9 - Existing AM Level of Service

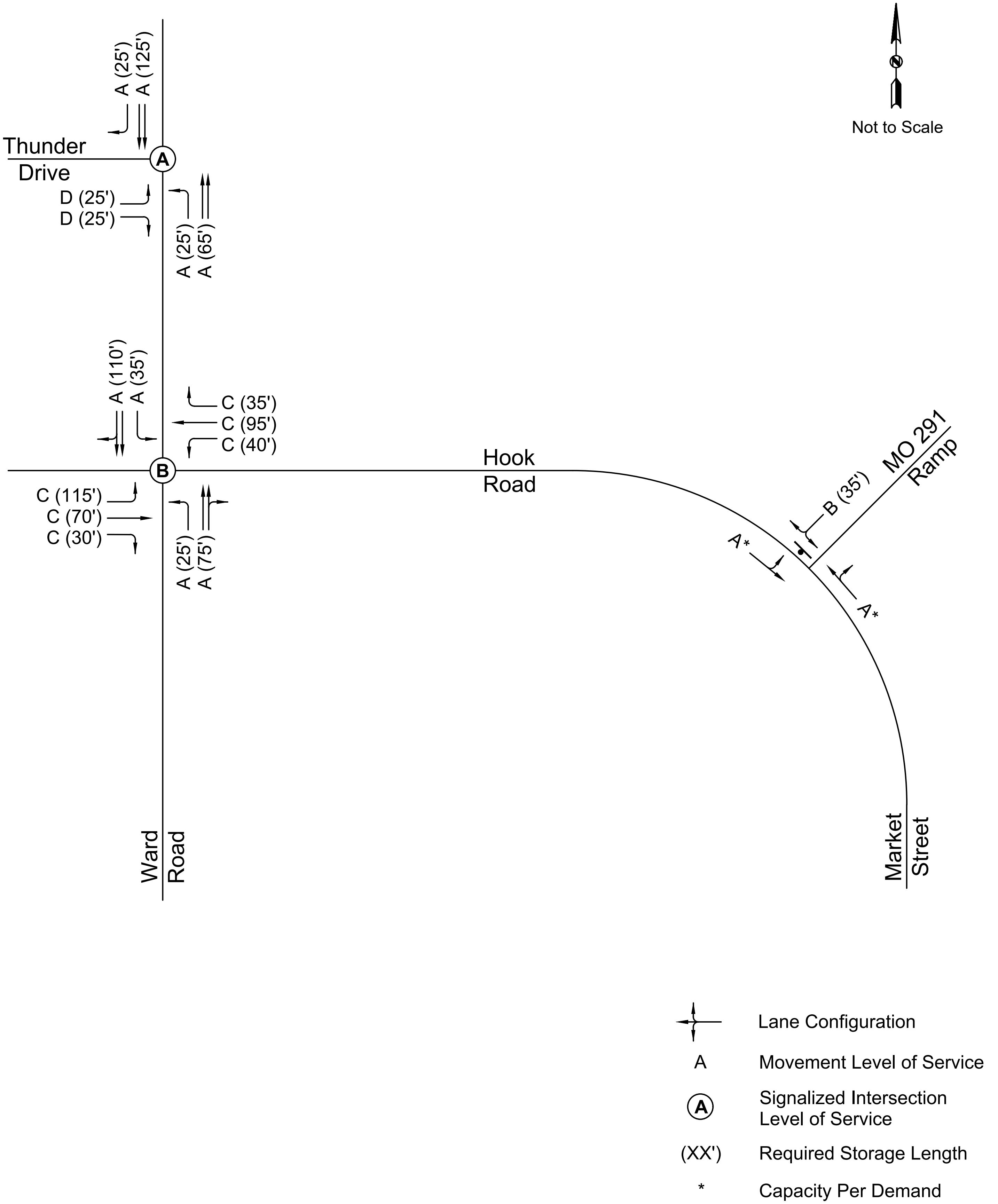


Figure 10 - Existing PM Level of Service

Existing Plus Site (Phase 1) Conditions

Signal timings were optimized to account for the additional traffic. Lane configurations from the existing conditions analysis were used unless otherwise noted.

Hook Road and Ward Road

During both peak periods, the eastbound left-turn movement drops from LOS C to LOS D. All other movements continue to operate at LOS D or better and have sufficient capacity for queuing vehicles.

Titan Crossing 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.

Hook Road/Market Street and MO 291 Access

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

Hook Road and Legacy Commons Drive

The intersection was analyzed as a stop controlled northbound intersection with an eastbound right-turn lane and a westbound left-turn lane. All approaches operated at a LOS B or better and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Reunion Drive (3/4 Access)

The intersection will be designed as a ¾ access with a southbound left-turn lane and a northbound right-turn lane. The eastbound right-turn only movement will be stop-controlled. All approaches operate at a LOS B or better and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Legacy Ridge Drive

The intersection was analyzed as a stop controlled westbound intersection with a northbound right-turn lane and a southbound left-turn lane. The westbound approach has a left-turn lane and a right-turn lane. All approaches operated at a LOS D or better and the intersection has sufficient capacity for queuing vehicles.

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

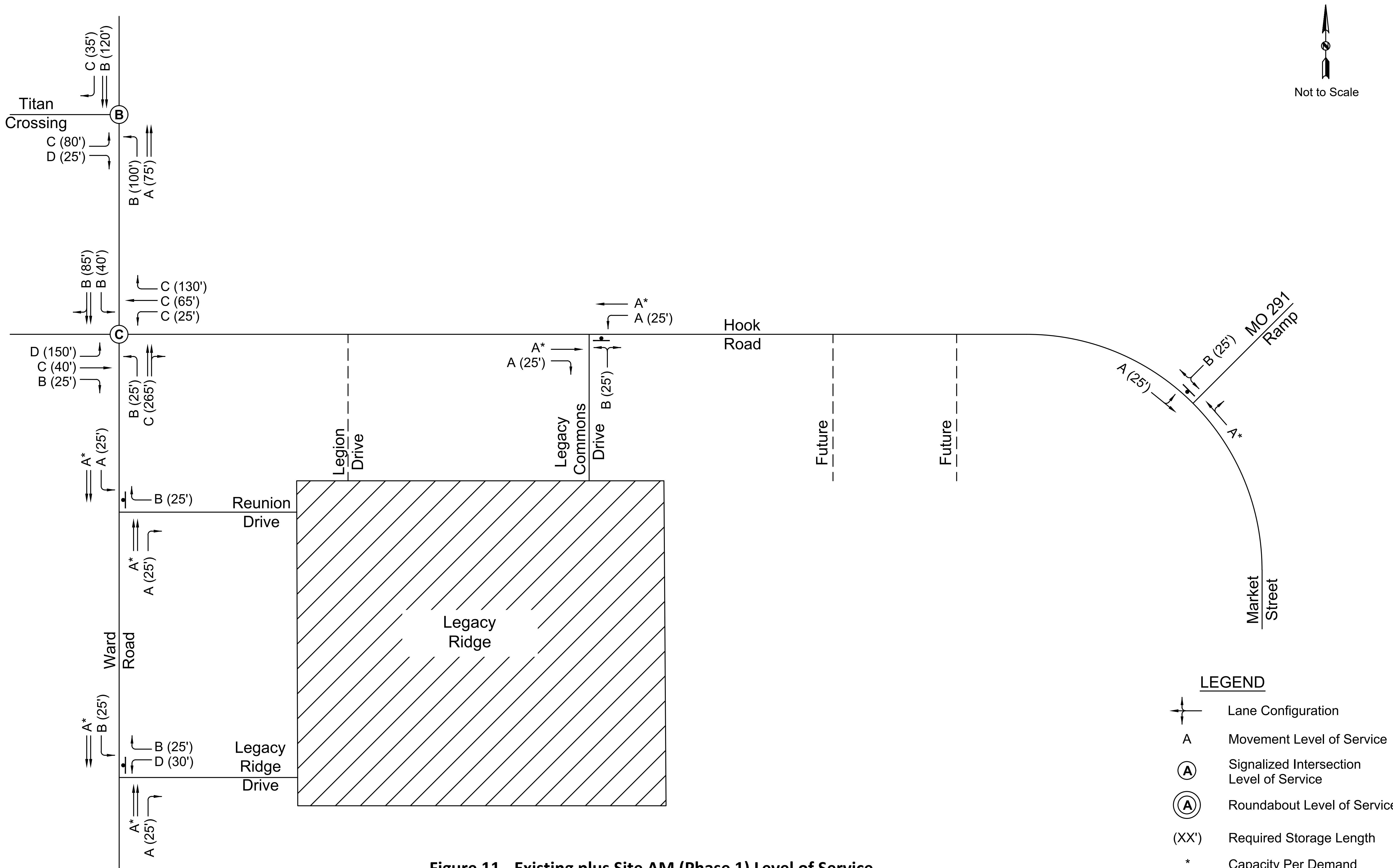


Figure 11 - Existing plus Site AM (Phase 1) Level of Service

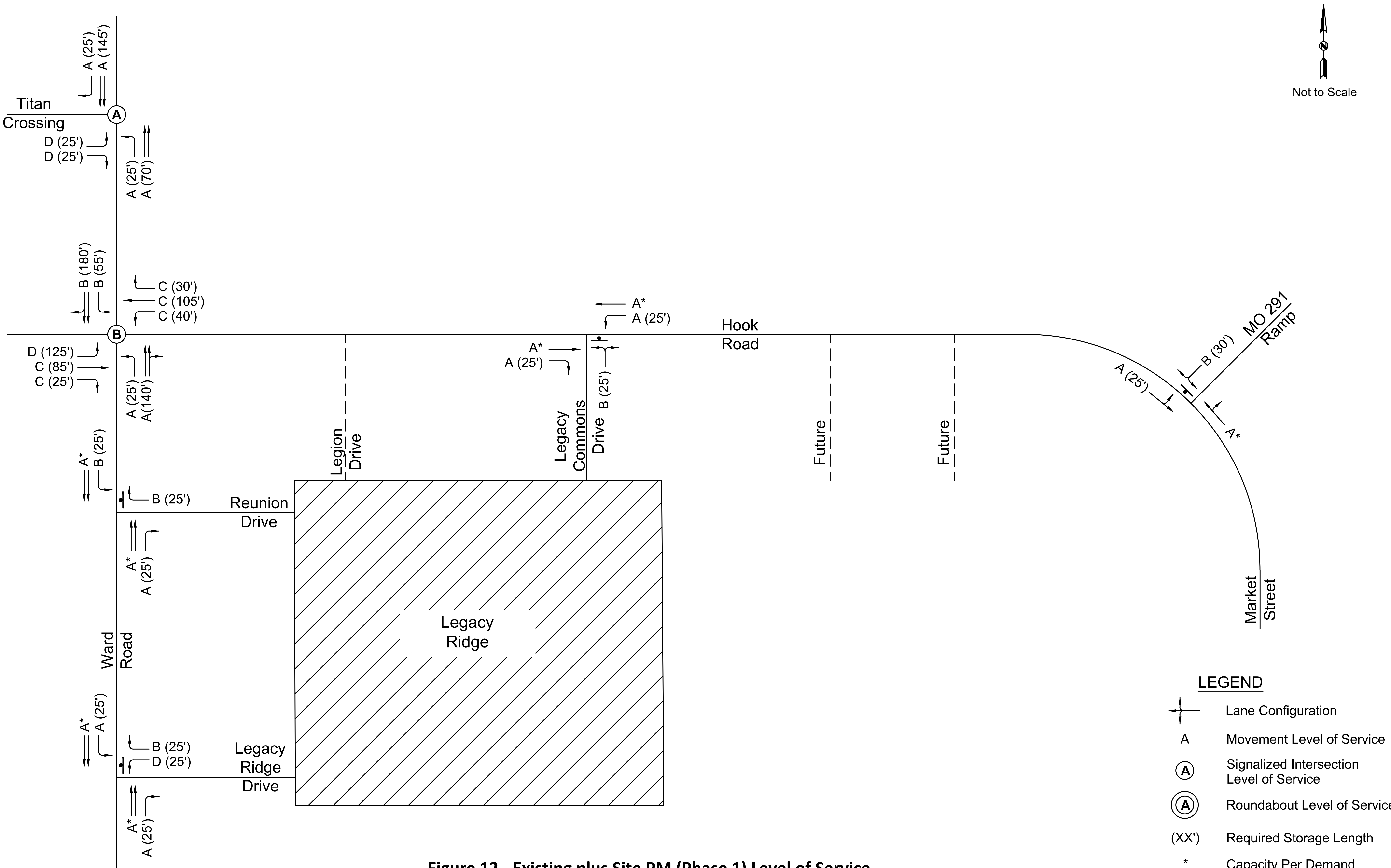


Figure 12 - Existing plus Site PM (Phase 1) Level of Service

Existing Plus Site (Phase 1 & 2) Conditions

Signal timings were optimized to account for the additional traffic. Lane configurations from the existing and existing plus site Phase 1 conditions analysis were used unless otherwise noted.

Hook Road and Ward Road

During the morning peak period, the eastbound left-turn movement drops to a LOS E. All other movements continue to operate at LOS D or better and have sufficient capacity for queuing vehicles.

Titan Crossing and Ward Road

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

Hook Road/Market Street and MO 291 Access

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

Hook Road and Legion Drive (RIRO)

All approaches operated at a LOS B or better and the intersection has sufficient capacity for queuing vehicles.

Hook Road and Legacy Commons Drive

All approaches are expected to operate at a LOS C or better and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Reunion Drive (3/4 Access)

All approaches are expected to continue operating at a LOS B or better and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Legacy Ridge Drive

Unsignalized: The westbound left-turn lane is expected to operate at a LOS F during the morning and afternoon peak period.

Signalized: With signalization, the intersection movements operate at a LOS D or better for the morning and afternoon peak hours with sufficient capacity for vehicles to queue.

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 13 and 14.

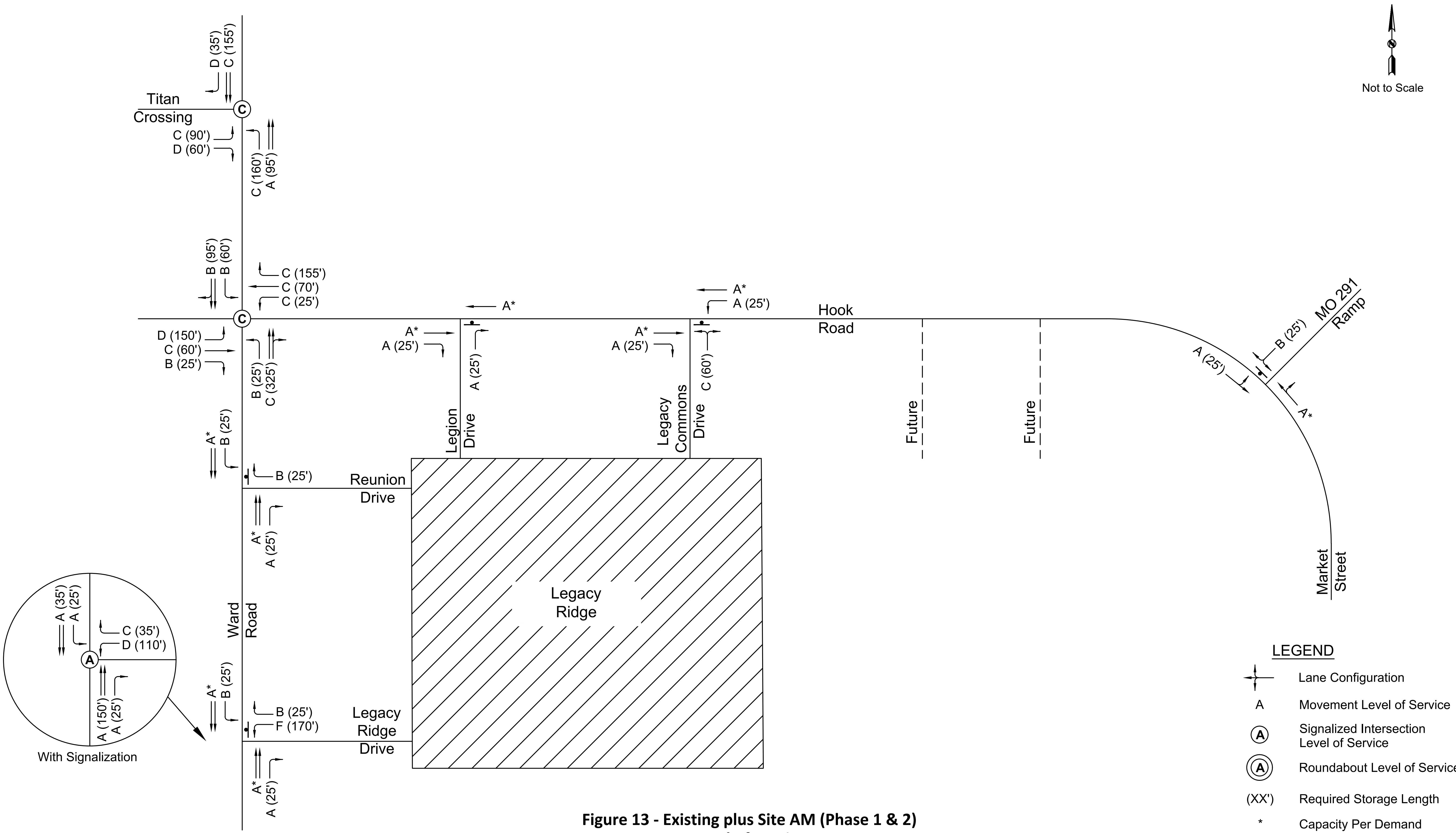


Figure 13 - Existing plus Site AM (Phase 1 & 2) Level of Service

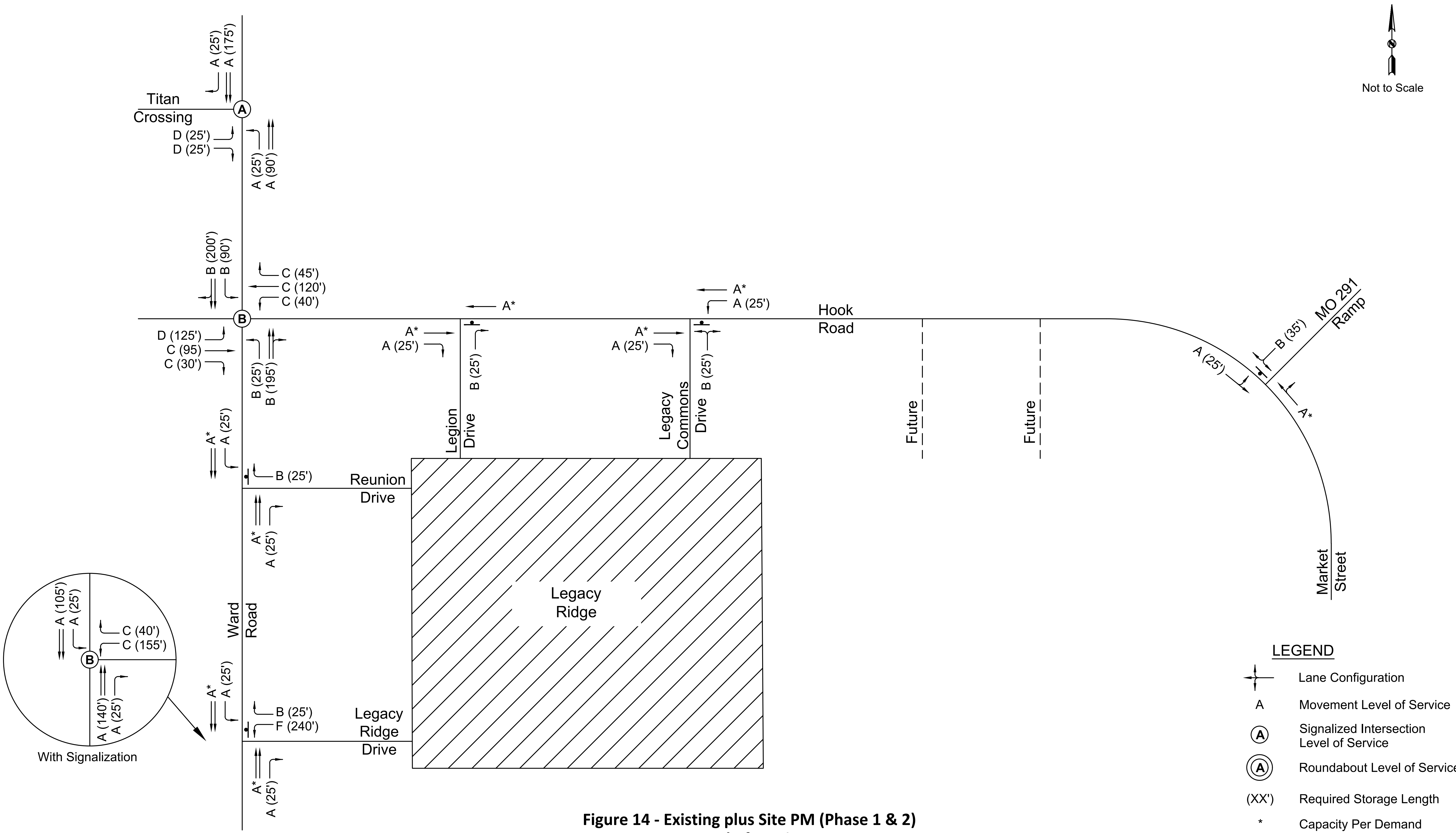


Figure 14 - Existing plus Site PM (Phase 1 & 2) Level of Service

Future Conditions

Future analysis is intended to provide a high-level overview of increases in trips as other developments occurs and provide recommendations for reserving right-of-way for future expansion as the increase in traffic is expected trigger the need for significant improvements to surrounding infrastructure and the roadway network. Signal timings of intersection movements were optimized to account for the future traffic. An additional through lane was assumed on Hook Road and Ward Road for the future analysis – additional improvements are noted.

Hook Road and Ward Road

With channelized right-turns, dual eastbound left-turn lanes, and duel southbound left-turn lanes: During the afternoon peak period, all approaches operate at a LOS D or above and the intersection has sufficient capacity for queuing vehicles.

Despite the additional capacity provided by these improvements, several movements operate at LOS F during the morning peak period due to school-related traffic demand. In a future scenario, traffic volumes are expected to be redistributed as additional high school facilities are developed, diverting a portion of these trips as the existing high school would be unable to support that large of an increase in student population.

Titan Crossing and Ward Road

The morning peak period causes multiple movements to drop to a LOS F. As seen at the Hook Road and Ward Road intersection, the existing high school would be unable to support that large of an increase in student population.

Hook Road/Market Street and MO 291 Access

With signalization: All approaches operate at a LOS D or better and the intersection has sufficient capacity for queuing vehicles.

Hook Road and Legion Drive

All approaches operate at a LOS B or better and the intersection has sufficient capacity for queuing vehicles.

Hook Road and Legacy Commons Drive

With signalization: All approaches operate at a LOS C or better and the intersection has sufficient capacity for queuing vehicles.

Ward Road and Reunion Drive

The additional traffic causes the southbound left-turn lane and eastbound right-turn lane to drop below a LOS D.

Ward Road and Legacy Ridge Drive

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 results of the future analysis is shown for the morning and afternoon peak hour conditions along with lane configuration and queue lengths on Figures 15 and 16.

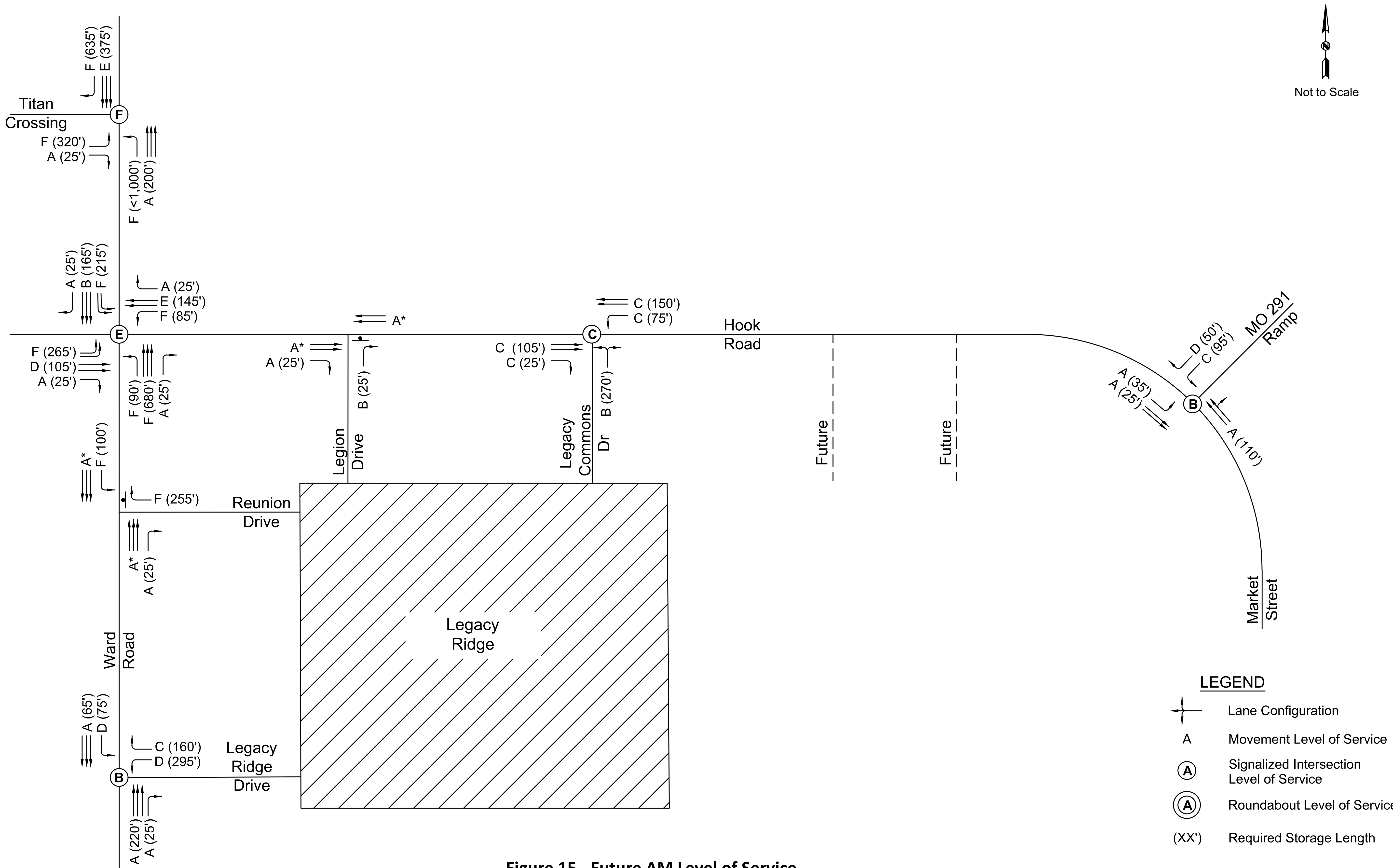


Figure 15 - Future AM Level of Service

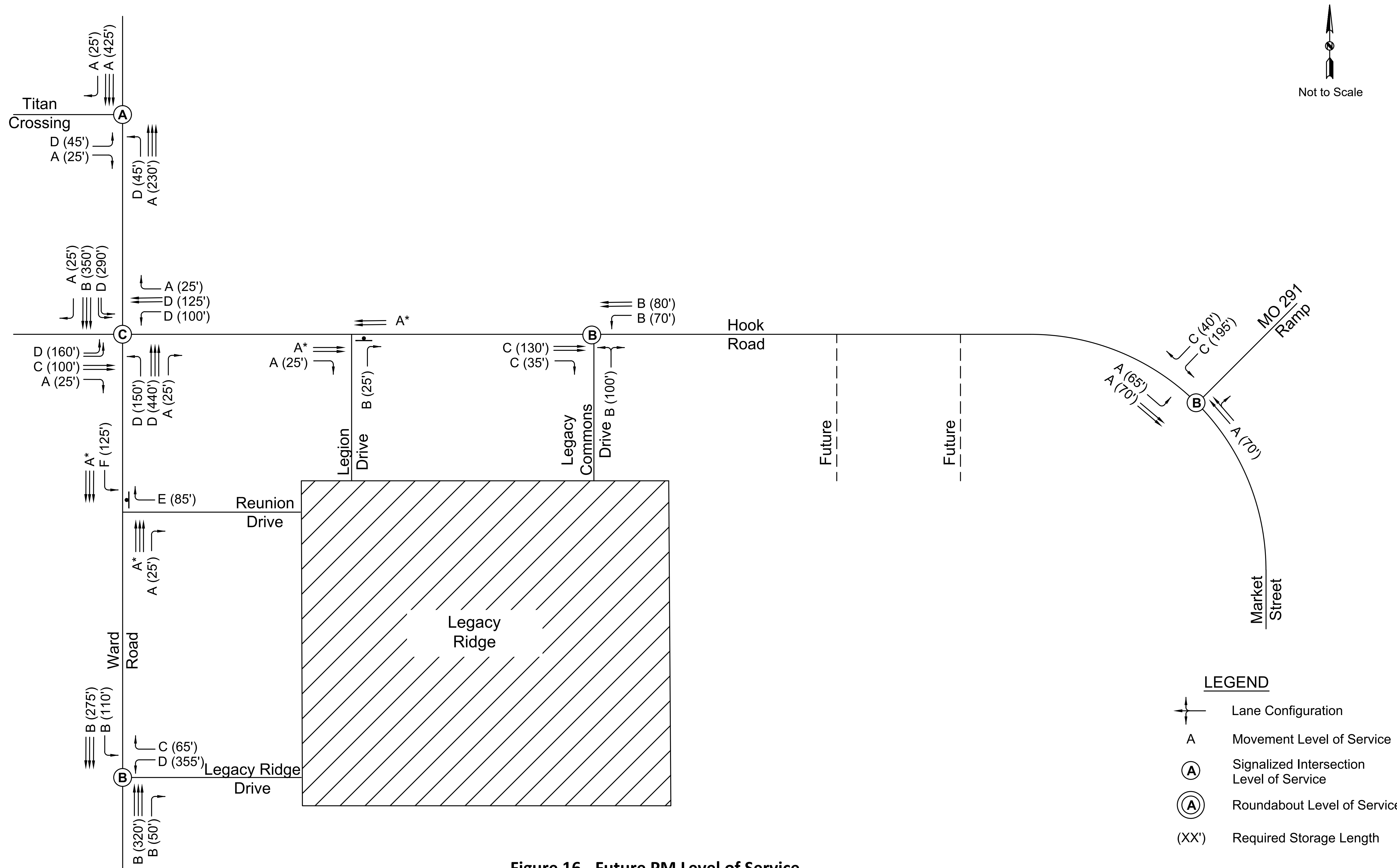


Figure 16 - Future PM Level of Service

RECOMMENDATIONS

This study documents the findings of the traffic analysis of the expected traffic for the Legacy Ridge development in Lee's Summit, Missouri. The study includes an analysis of the existing conditions, existing plus site conditions (two phases), and future conditions.

Based on the results of the SYNCHRO analysis, observations from the field, and engineering judgment, the following recommendations are made for Phase 1 of the development:

- *General:* Reserve right-of-way for future roadway widening.
- *Hook Road and Ward Road:* Update traffic signal timings as necessary
- *Titan Crossing and Ward Road:* Update traffic signal timings as necessary
- *Hook Road/Market Street and MO 291 Access:* No specific recommendations
- *Hook Road and Legacy Commons Drive:* Construct an eastbound right-turn lane (150 feet of storage), a westbound left-turn lane (200 feet of storage), and a northbound approach with a shared left/right-turn lane. The northbound approach should be stop-controlled.
- *Ward Road and Reunion Drive (3/4 access):* Construct a northbound right-turn lane (150 feet of storage), southbound left-turn lane (200 feet of storage), and a westbound approach with a right-turn only lane. The westbound approach should be stop-controlled.
- *Ward Road and Legacy Ridge Drive:* Construct a northbound right-turn lane (150 feet of storage), a southbound left-turn lane (200 feet of storage), and a westbound approach with a left-turn lane and a shared (future) through/right-turn lane. The westbound approach should be stop-controlled and right-of-way should be reserved for a future traffic signal.

Based on the results of the SYNCHRO analysis, observations from the field, and engineering judgment, the following recommendations are made for Phase 1 and 2 of the development:

- *Hook Road:* Upgrade Hook Road from its current interim standard to full urban street standards on both sides of Hook Road
- *Hook Road and Ward Road:* Update traffic signal timings as necessary
- *Titan Crossing and Ward Road:* Update traffic signal timings as necessary
- *Hook Road/Market Street and MO 291 Access:* No specific recommendations
- *Hook Road and Legion Drive (RIRO):* Construct an eastbound right-turn lane (150 feet of storage) and a northbound approach with a right-turn only lane. The northbound approach should be stop-controlled.
- *Hook Road and Legacy Commons Drive:* No specific recommendations.

APPENDIX

Hook and Ward Rd
AM

Time	Eastbound				Westbound				Northbound				Southbound				Int. Total
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
6:00	11	2	1	14	0	2	4	6	2	42	0	44	3	17	1	21	85
6:15	13	5	2	20	2	3	12	17	0	50	1	51	3	16	0	19	107
6:30	21	5	3	29	2	4	10	16	3	63	0	66	0	21	2	23	134
6:45	52	5	4	61	3	10	57	70	3	158	1	162	6	32	6	44	337
7:00	76	11	5	92	7	16	78	101	3	251	1	255	22	71	20	113	561
7:15	28	2	9	39	3	25	24	52	10	131	1	142	21	68	22	111	344
7:30	21	12	9	42	6	10	13	29	5	148	0	153	5	70	6	81	305
7:45	16	7	14	37	7	11	11	29	7	131	0	138	5	52	6	63	267
Total	**238**	**49**	**47**	**334**	**30**	**81**	**209**	**320**	**33**	**974**	**4**	**1011**	**65**	**347**	**63**	**475**	**2140**

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
6:45	52	5	4	61	0.64	3	10	57	70	0.62	3	158	1	162	0.7	6	32	6	44	0.77	337
7:00	76	11	5	92		7	16	78	101		3	251	1	255		22	71	20	113		561
7:15	28	2	9	39		3	25	24	52		10	131	1	142		21	68	22	111		344
7:30	21	12	9	42		6	10	13	29		5	148	0	153		5	70	6	81		305
Total	177	30	27	234		19	61	172	252		21	688	3	712		54	241	54	349		1547

Thunder and Ward
AM

Time	Eastbound				Westbound				Northbound				Southbound				Int. Total
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
6:00	1	0	1	2	0	0	0	0	2	42	0	44	0	17	1	18	64
6:15	2	0	1	3	0	0	0	0	15	50	0	65	0	16	18	34	102
6:30	2	0	2	4	0	0	0	0	27	72	0	99	0	30	23	53	156
6:45	23	0	39	62	0	0	0	0	101	62	0	163	0	79	95	174	399
7:00	53	0	89	142	0	0	0	0	124	99	0	223	0	155	145	300	665
7:15	34	0	50	84	0	0	0	0	20	101	0	121	0	51	41	92	297
7:30	5	0	3	8	0	0	0	0	4	141	0	145	0	62	3	65	218
7:45	3	0	2	5	0	0	0	0	10	76	0	86	0	55	6	61	152
Total	**123**	**0**	**187**	**310**	**0**	**0**	**0**	**0**	**303**	**643**	**0**	**946**	**0**	**465**	**332**	**797**	**2053**

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
6:45	23	0	39	62	0.52	0	0	0	0	#DIV/0!	101	62	0	163	0.73	0	79	95	174	0.53	399
7:00	53	0	89	142		0	0	0	0		124	99	0	223		0	155	145	300		665
7:15	34	0	50	84		0	0	0	0		20	101	0	121		0	51	41	92		297
7:30	5	0	3	8		0	0	0	0		4	141	0	145		0	62	3	65		218
Total	115	0	181	296		0	0	0	0		249	403	0	652		0	347	284	631		1579

Hook/Market and Mo 291 Access
AM

Time	Eastbound				Westbound				Northbound				Southbound				Int. Total
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
6:00	0	0	0	0	3	0	3	6	0	11	1	12	1	4	0	5	23
6:15	0	0	0	0	7	0	5	12	0	3	0	3	0	7	0	7	22
6:30	0	0	0	0	8	0	3	11	0	25	1	26	4	6	0	10	47
6:45	0	0	0	0	7	0	15	22	0	85	2	87	8	11	0	19	128
7:00	0	0	0	0	16	0	9	25	0	69	1	70	7	19	0	26	121
7:15	0	0	0	0	13	0	13	26	0	23	0	23	6	17	0	23	72
7:30	0	0	0	0	9	0	12	21	0	16	0	16	8	20	0	28	65
7:45	0	0	0	0	6	0	8	14	0	13	2	15	2	10	0	12	41
Total	**0**	**0**	**0**	**0**	**69**	**0**	**68**	**137**	**0**	**245**	**7**	**252**	**36**	**94**	**0**	**130**	**519**

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
6:45	0	0	0	0	**#DIV/0!**	7	0	15	22	**0.9**	0	85	2	87	**0.56**	8	11	0	19	**0.86**	128
7:00	0	0	0	0		16	0	9	25		0	69	1	70		7	19	0	26		121
7:15	0	0	0	0		13	0	13	26		0	23	0	23		6	17	0	23		72
7:30	0	0	0	0		9	0	12	21		0	16	0	16		8	20	0	28		65
Total	0	0	0	0		45	0	49	94		0	193	3	196		29	67	0	96		386

Hook and Ward Rd
PM

Time	Eastbound				Westbound				Northbound				Southbound				Int. Total
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	
1:30 PM	13	11	7	31	6	14	6	26	3	76	2	81	35	105	34	174	312
1:45 PM	12	17	2	31	2	17	13	32	2	81	0	83	10	62	8	80	226
2:00 PM	15	10	3	28	5	8	24	37	1	70	1	72	13	73	16	102	239
2:15 PM	21	9	4	34	4	18	16	38	2	67	2	71	61	138	47	246	389
2:30 PM	15	16	7	38	5	24	11	40	6	75	1	82	67	123	55	245	405
2:45 PM	14	25	17	56	3	18	16	37	10	96	0	106	21	89	15	125	324
3:00 PM	12	21	14	47	5	14	11	30	12	84	1	97	21	101	14	136	310
3:15 PM	13	14	10	37	3	24	18	45	11	90	1	102	14	131	21	166	350
3:30 PM	17	15	7	39	10	18	8	36	6	101	0	107	16	121	20	157	339
3:45 PM	17	15	5	37	7	19	11	37	6	99	0	105	11	117	11	139	318
4:00 PM	17	10	7	34	8	24	10	42	5	86	3	94	16	125	20	161	331
4:15 PM	27	17	15	59	2	20	11	33	9	102	1	112	13	117	17	147	351
4:30 PM	35	15	13	63	6	23	22	51	9	107	0	116	19	134	34	187	417
4:45 PM	28	23	21	72	8	24	18	50	9	111	2	122	28	152	32	212	456
5:00 PM	24	14	9	47	9	26	19	54	22	125	0	147	14	148	36	198	446
5:15 PM	33	18	11	62	7	28	27	62	12	126	3	141	17	156	26	199	464
5:30 PM	25	17	13	55	5	21	14	40	10	100	3	113	15	130	27	172	380
5:45 PM	25	19	8	52	10	18	16	44	16	99	1	116	14	112	22	148	360
Total	**363**	**286**	**173**	**822**	**105**	**358**	**271**	**734**	**151**	**1695**	**21**	**1867**	**405**	**2134**	**455**	**2994**	**6417**

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
2:15 PM	21	9	4	34	**0.78**	4	18	16	38	**0.91**	2	67	2	71	**0.84**	61	138	47	246	**0.76**	389
2:30 PM	15	16	7	38		5	24	11	40		6	75	1	82		67	123	55	245		405
2:45 PM	14	25	17	56		3	18	16	37		10	96	0	106		21	89	15	125		324
3:00 PM	12	21	14	47		5	14	11	30		12	84	1	97		21	101	14	136		310
Total	62	71	42	175		17	74	54	145		30	322	4	356		170	451	131	752		1428

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	35	15	13	63	**0.85**	6	23	22	51	**0.88**	9	107	0	116	**0.89**	19	134	34	187	**0.94**	417
4:45 PM	28	23	21	72		8	24	18	50		9	111	2	122		28	152	32	212		456
5:00 PM	24	14	9	47		9	26	19	54		22	125	0	147		14	148	36	198		446
5:15 PM	33	18	11	62		7	28	27	62		12	126	3	141		17	156	26	199		464
Total	120	70	54	244		30	101	86	217		52	469	5	526		78	590	128	796		1783

Thunder and Ward
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
1:30 PM	22	0	11	33	0	0	0	0	11	91	0	102	0	90	28	118	253
1:45 PM	2	0	4	6	0	0	0	0	11	95	0	106	0	79	17	96	208
2:00 PM	19	0	18	37	0	0	0	0	10	78	0	88	0	96	15	111	236
2:15 PM	86	0	199	285	0	0	0	0	11	97	0	108	0	91	14	105	498
2:30 PM	33	0	23	56	0	0	0	0	5	127	0	132	0	102	20	122	310
2:45 PM	17	0	12	29	0	0	0	0	3	54	0	57	0	76	11	87	173
Total	**179**	**0**	**267**	**446**	**0**	**0**	**0**	**0**	**51**	**542**	**0**	**593**	**0**	**534**	**105**	**639**	**1678**

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
2:15 PM	86	0	199	285	**0.32**	0	0	0	0	**#DIV/0!**	11	97	0	108	**0.56**	0	91	14	105	**0.64**	498
2:30 PM	33	0	23	56		0	0	0	0		5	127	0	132		0	102	20	122		310
2:45 PM	17	0	12	29		0	0	0	0		3	54	0	57		0	76	11	87		173
3:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Total	136	0	234	370		0	0	0	0		19	278	0	297		0	269	45	314		981

Hook/Market and Mo 291 Access
PM

	Eastbound				Westbound				Northbound				Southbound				
Time	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Int. Total
2:30 PM	0	0	0	0	22	0	9	31	0	38	0	38	1	41	0	42	111
2:45 PM	0	0	0	0	27	0	14	41	0	21	3	24	2	16	0	18	83
3:00 PM	0	0	0	0	17	0	12	29	0	23	1	24	2	25	0	27	80
3:15 PM	0	0	0	0	18	0	4	22	0	17	0	17	11	48	0	59	98
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	23	0	9	32	0	22	0	22	5	18	0	23	77
4:15 PM	0	0	0	0	26	0	22	48	0	21	1	22	5	31	0	36	106
4:30 PM	0	0	0	0	27	0	11	38	0	37	0	37	7	40	0	47	122
4:45 PM	0	0	0	0	27	0	17	44	0	35	1	36	11	39	0	50	130
5:00 PM	0	0	0	0	33	0	20	53	0	35	1	36	7	33	0	40	129
5:15 PM	0	0	0	0	33	0	19	52	0	18	1	19	4	21	0	25	96
5:30 PM	0	0	0	0	21	0	14	35	0	25	2	27	4	38	0	42	104
5:45 PM	0	0	0	0	33	0	21	54	0	51	1	52	3	30	0	33	139
Total	**0**	**0**	**0**	**0**	**307**	**0**	**172**	**479**	**0**	**343**	**11**	**354**	**62**	**380**	**0**	**442**	**1275**

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
2:15 PM	0	0	0	0	**#DIV/0!**	0	0	0	0	**0.62**	0	0	0	0	**0.57**	0	0	0	0	**0.52**	0
2:30 PM	0	0	0	0		22	0	9	31		0	38	0	38		1	41	0	42		111
2:45 PM	0	0	0	0		27	0	14	41		0	21	3	24		2	16	0	18		83
3:00 PM	0	0	0	0		17	0	12	29		0	23	1	24		2	25	0	27		80
Total	0	0	0	0		66	0	35	101		0	82	4	86		5	82	0	87		274

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	**#DIV/0!**	27	0	11	38	**0.88**	0	37	0	37	**0.86**	7	40	0	47	**0.81**	122
4:45 PM	0	0	0	0		27	0	17	44		0	35	1	36		11	39	0	50		130
5:00 PM	0	0	0	0		33	0	20	53		0	35	1	36		7	33	0	40		129
5:15 PM	0	0	0	0		33	0	19	52		0	18	1	19		4	21	0	25		96
Total	0	0	0	0		120	0	67	187		0	125	3	128		29	133	0	162		477

Legacy TIS Site Trip Generation

ITE Trip Generation Manual - 11th Edition

Highlighted text indicates trips used in Synchro and Warrant Analysis

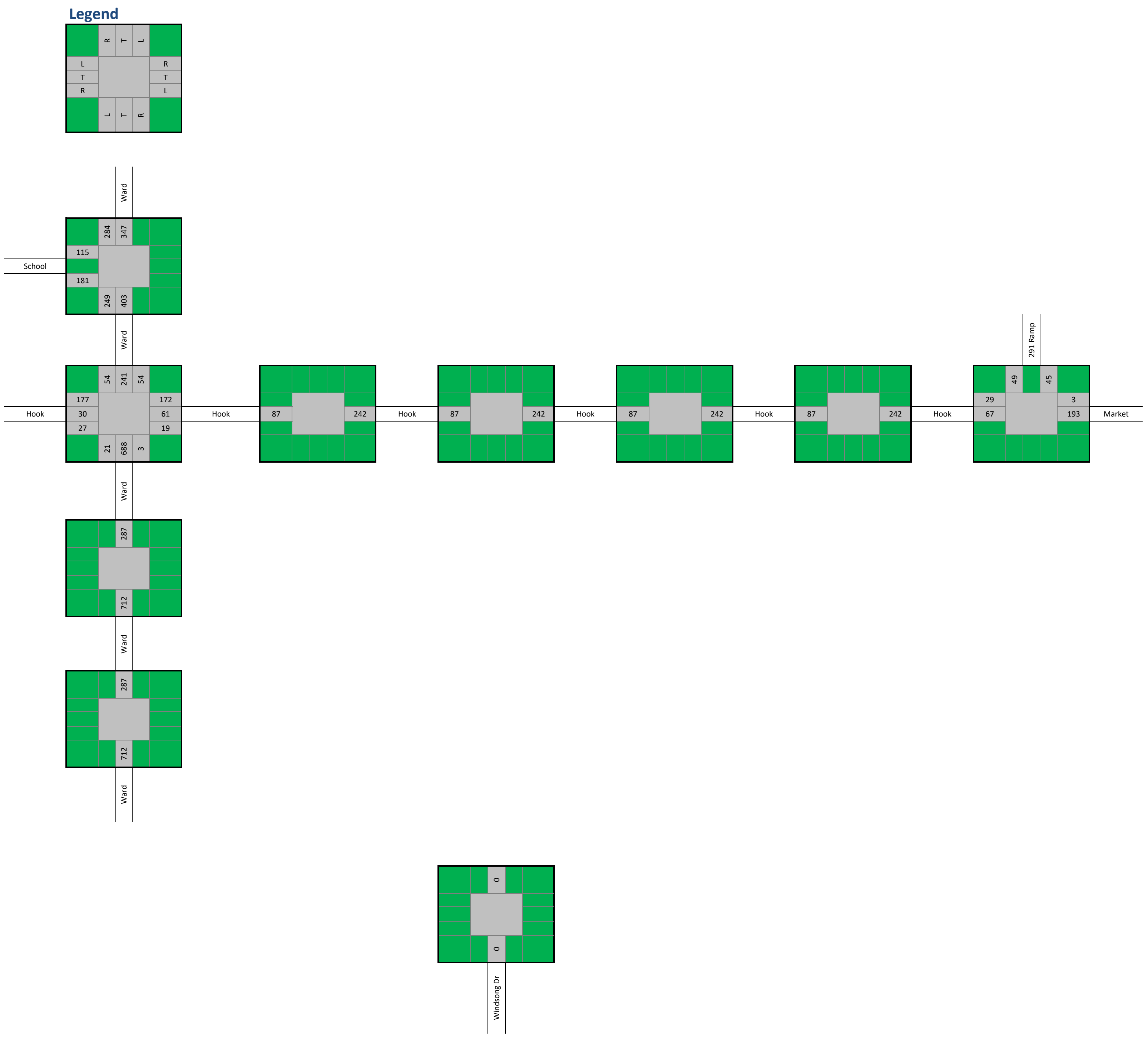
Phase I

Land Use	ITE Code	Size	Units	Equation	Trips (Eq.)	Av. Rate	Trips (Av. Rate)	In%	Out%	Trips In	Trips Out
Single- Family Detached Housing **(Weekday)**	210	195	Dwelling Units	Ln(T)=0.92Ln(X)+2.68	1865	9.43	1839	50%	50%	933	932
Single-Family Attached Housing	215	310	Dwelling Units	T=7.62(X)-50.48	2312	7.2	2232	50%	50%	1156	1156
										2089	2088
Single-Family Detached Housing **(AM)**	210	195	Dwelling Units	Ln(T)=0.91Ln(X)+0.12	137	0.7	137	25%	75%	34	103
Single-Family Attached Housing	215	310	Dwelling Units	T=0.52(X)-5.70	156	0.48	149	25%	75%	39	117
										73	220
Single-Family Detached Housing **(PM)**	210	195	Dwelling Units	Ln(T)=0.94Ln(X)+0.27	186	0.94	183	63%	37%	117	69
Single-Family Attached Housing	215	310	Dwelling Units	T=0.60(X)-3.93	182	0.57	177	59%	41%	107	75
										224	144

Phase II

Land Use	ITE Code	Size	Units	Equation	Trips (Eq.)	Av. Rate	Trips (Av. Rate)	In%	Out%	Trips In	Trips Out
Shopping Plaza (40-150K)(w/o Supermarket)	821	52.8	1000 Sq Ft	n/a	n/a	67.52	3565	50%	50%	1783	1782
Fast-Food Restaurant with Drive-Through Window	934	6.7	1000 Sq Ft	n/a	n/a	467.48	3132	50%	50%	1566	1566
Convenience Store/Gas Station	945	14	Fueling Pos.	T=158.28(X)+850.23	3066	265.12	3712	50%	50%	1533	1533
										4882	4881
									Phase I & II Total	6971	6969
									Internal Capture -10%	6274	6272
Shopping Plaza (40-150K)(w/o Supermarket)	821	52.8	1000 Sq Ft	n/a	n/a	1.73	91	62%	38%	56	35
Fast-Food Restaurant with Drive-Through Window	934	6.7	1000 Sq Ft	n/a	n/a	44.61	299	51%	49%	152	147
Convenience Store/Gas Station	945	14	Fueling Pos.	n/a	n/a	16.06	225	50%	50%	113	112
										321	294
									Phase I & II Total	394	514
									Internal Capture -10%	355	463
Shopping Plaza (40-150K)(w/o Supermarket)	821	52.8	1000 Sq Ft	n/a	n/a	5.19	274	49%	51%	134	140
Fast-Food Restaurant with Drive-Through Window	934	6.7	1000 Sq Ft	n/a	n/a	33.03	221	52%	48%	115	106
Convenience Store/Gas Station	945	14	Fueling Pos.	n/a	n/a	18.42	258	50%	50%	129	129
										378	375
									Phase I & II Total	602	519
									Internal Capture -10%	542	467

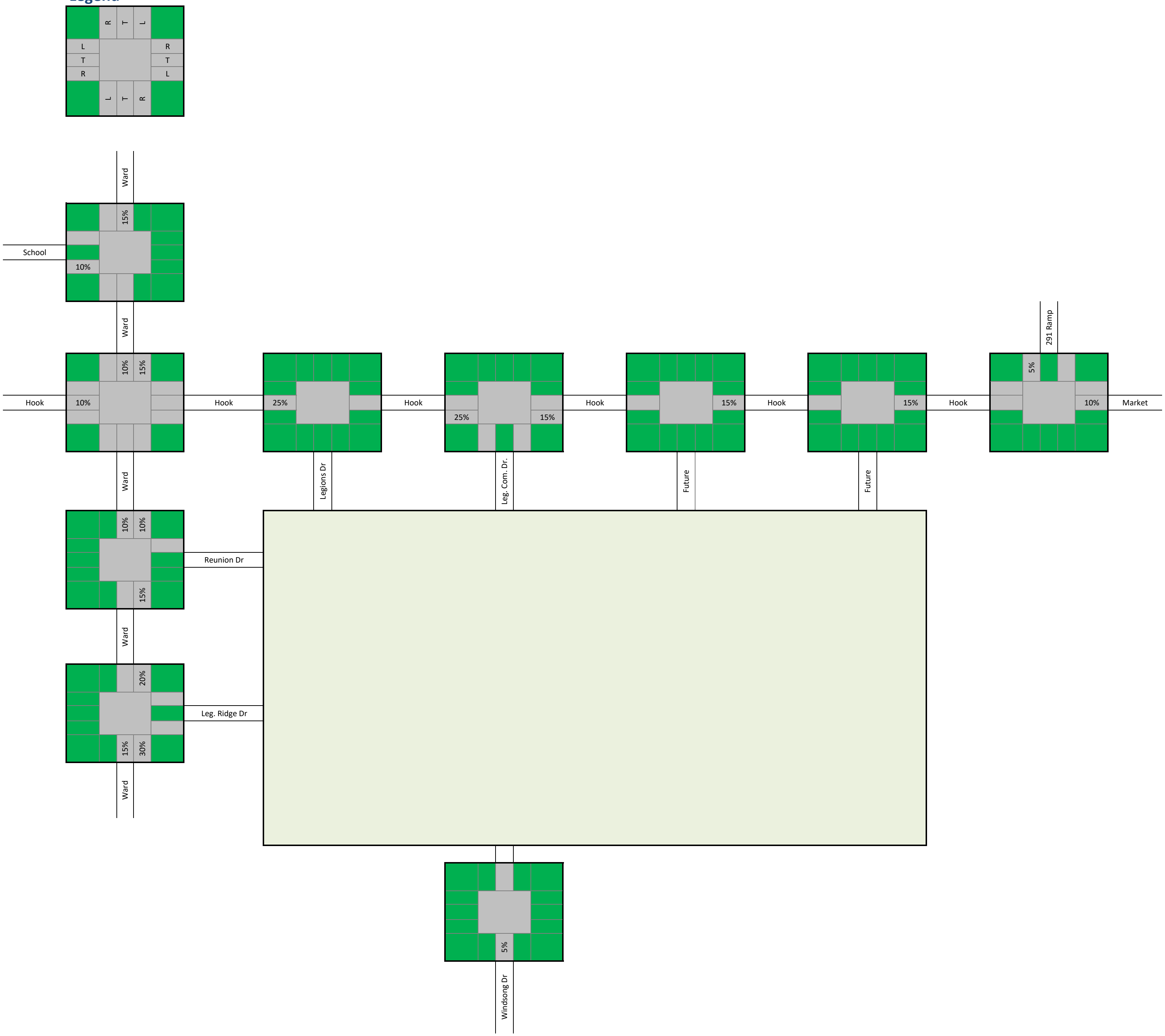
AM Peak Hour Traffic Counts



https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

AM Distribution In
Phase I

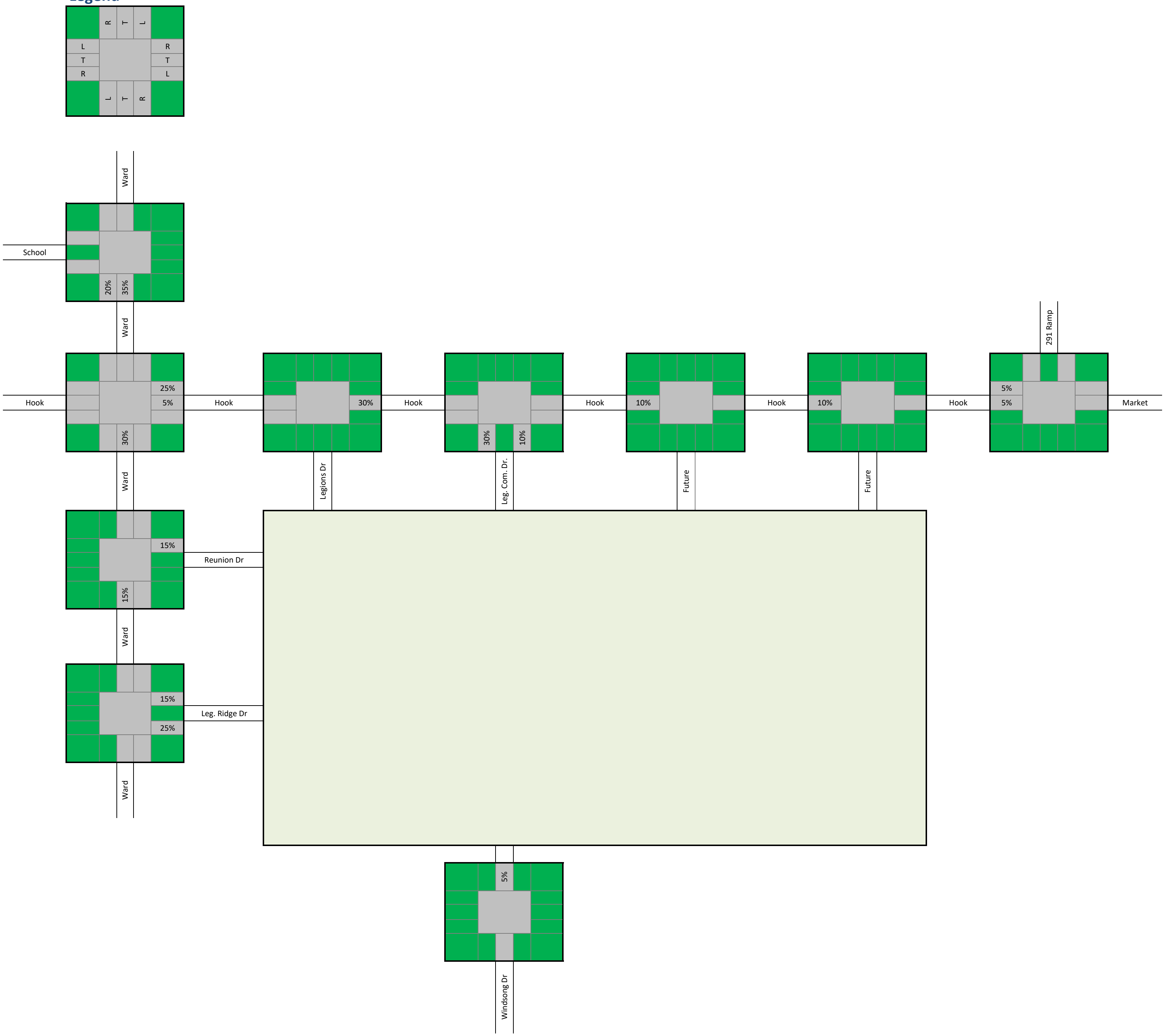
Legend



https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

AM Distribution Out
Phase I

Legend

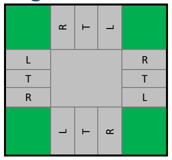


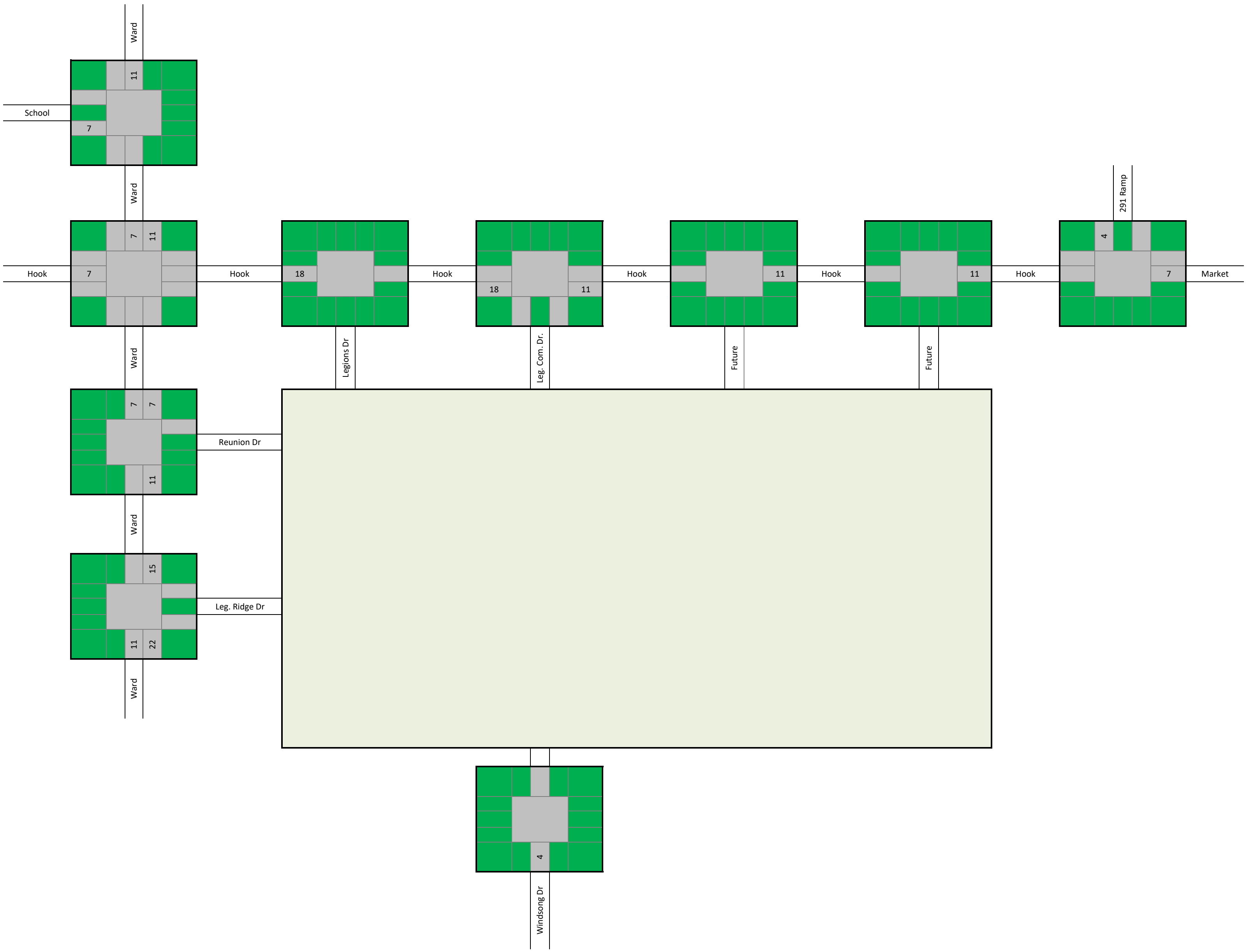
https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

AM Trips In
Phase I

Trips
73

Legend

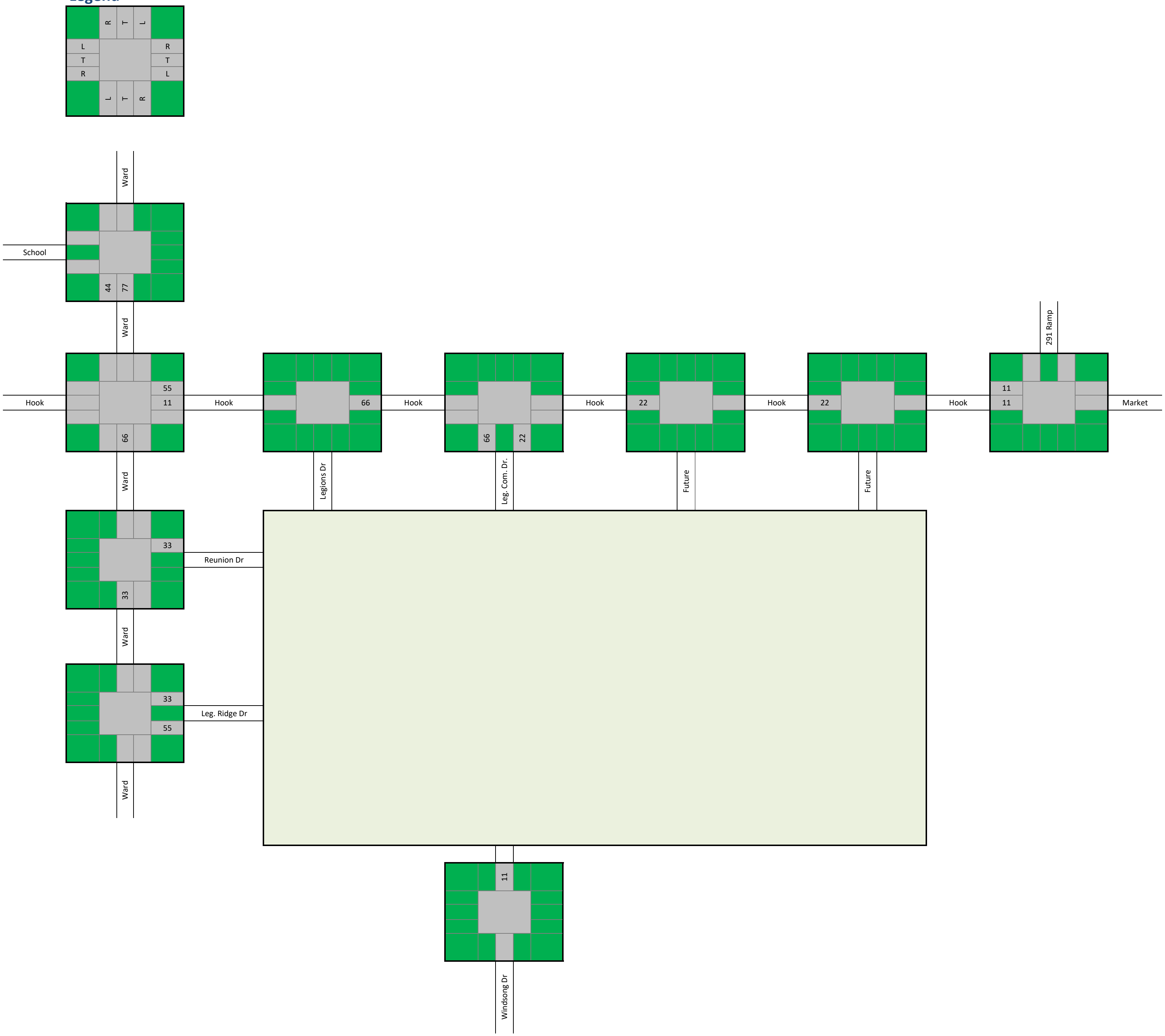




AM Trips Out
Phase I

Trips
220

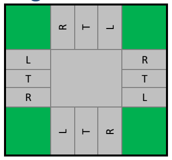
Legend

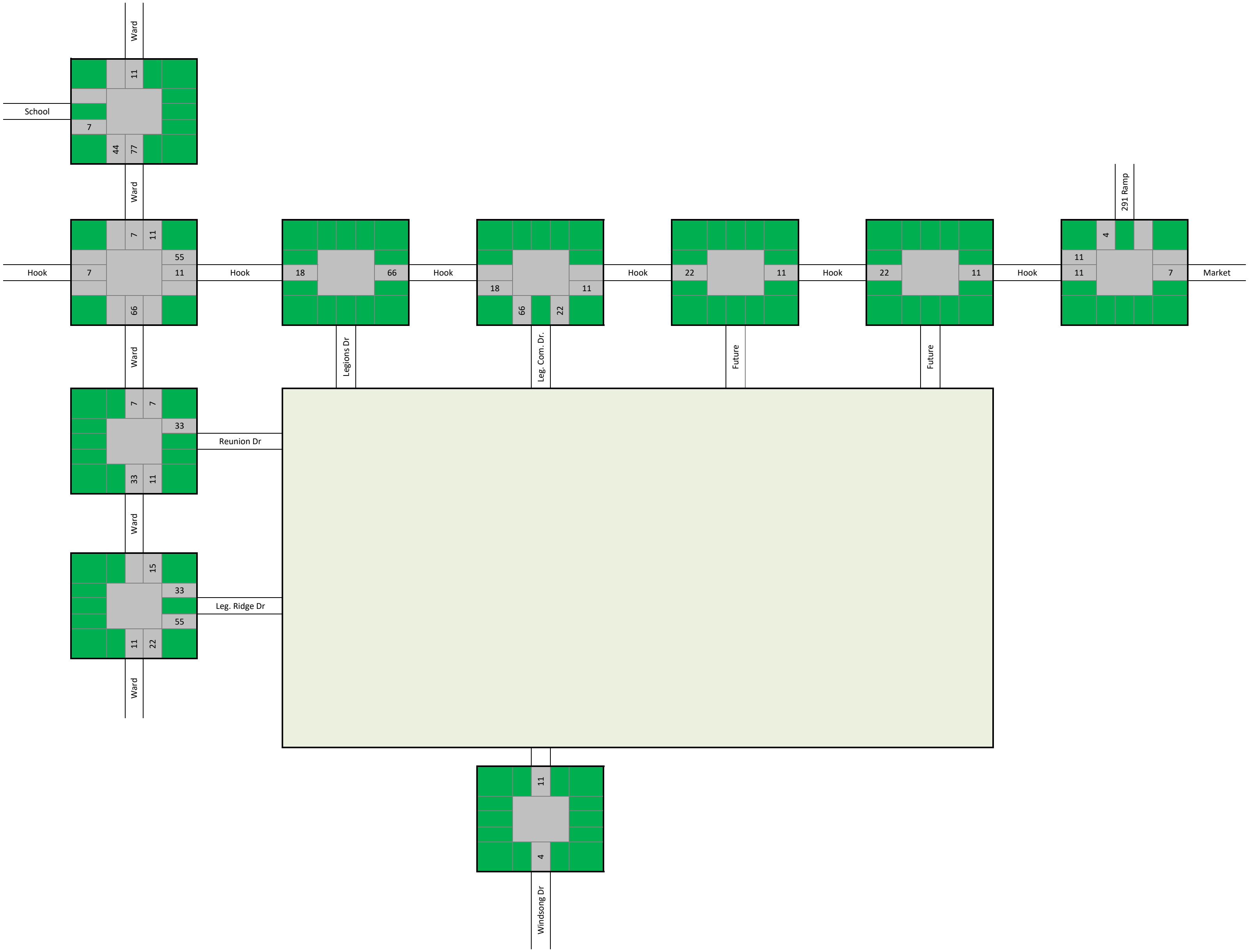


https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

AM Trips
Phase I

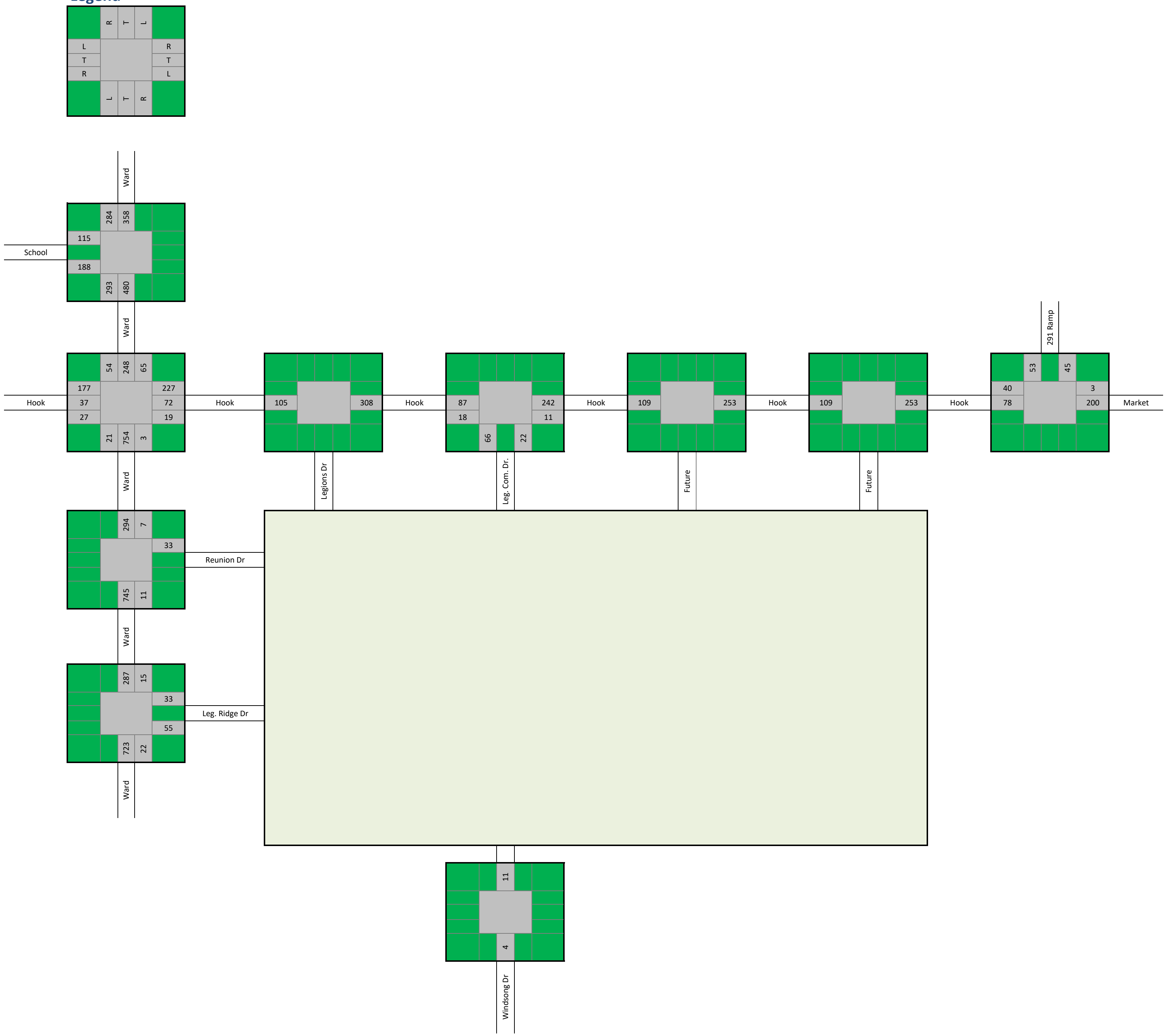
Legend





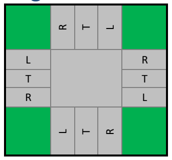
AM Existing Traffic plus Site
Phase I

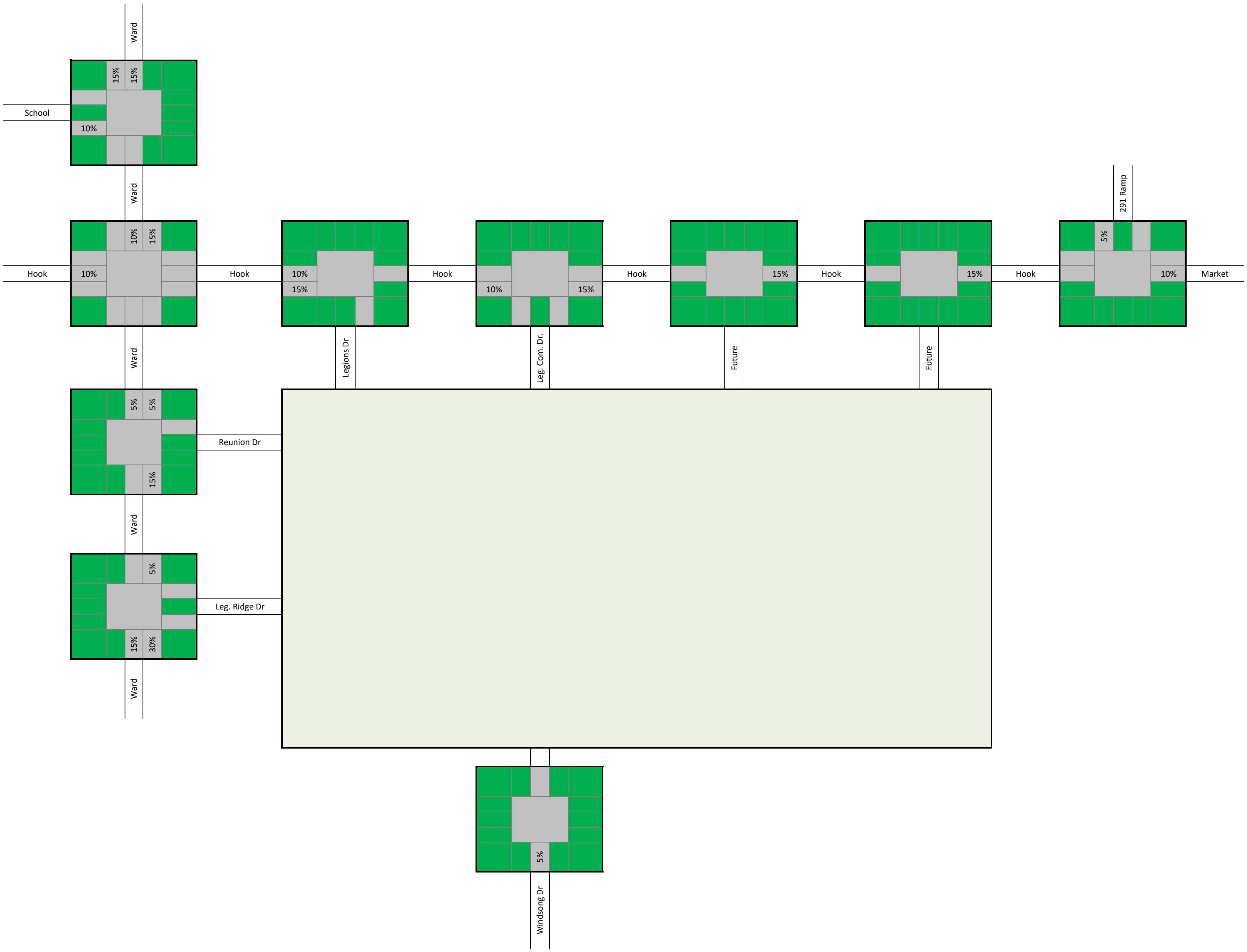
Legend



AM Distribution In
Phase I & II

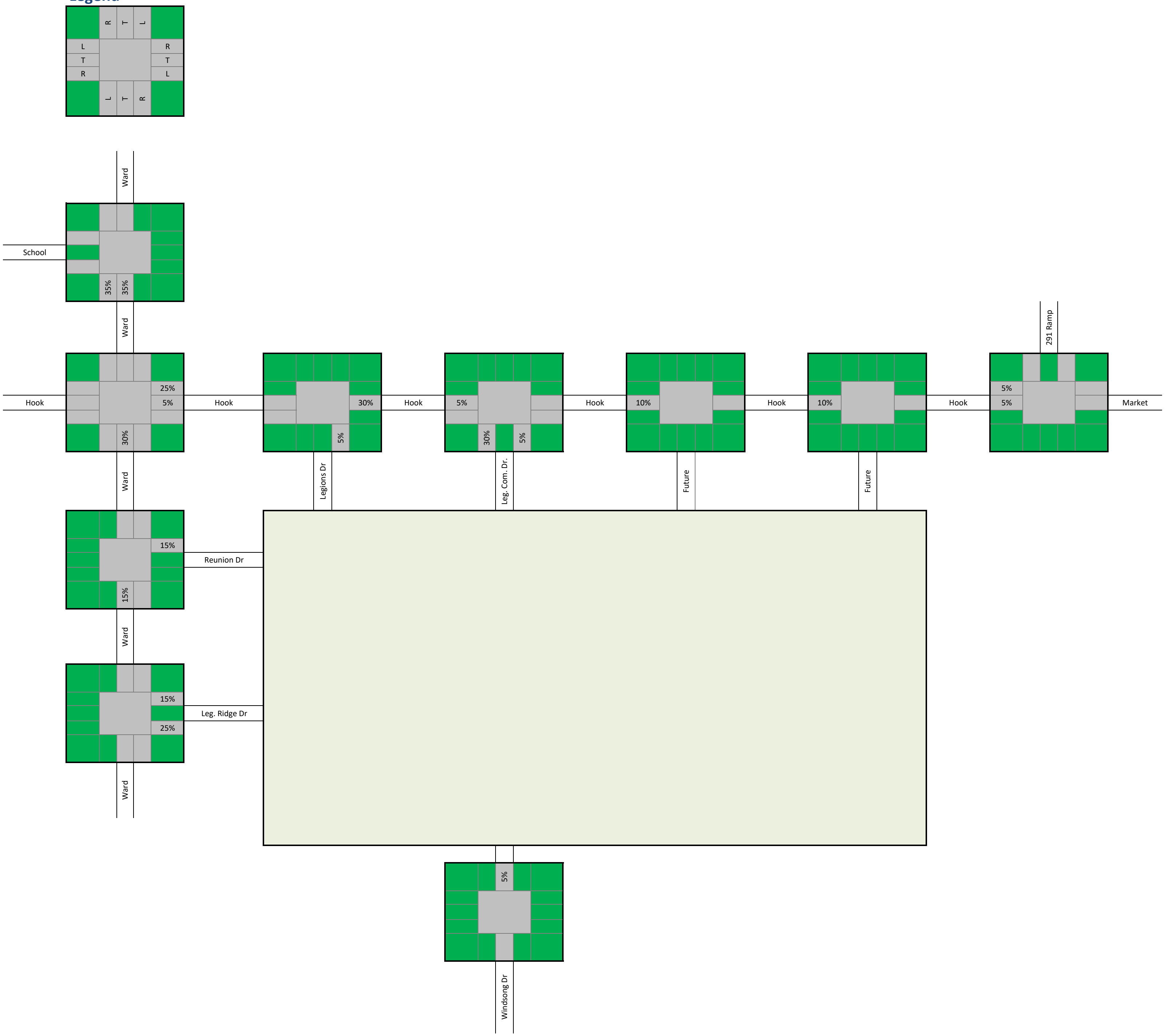
Legend





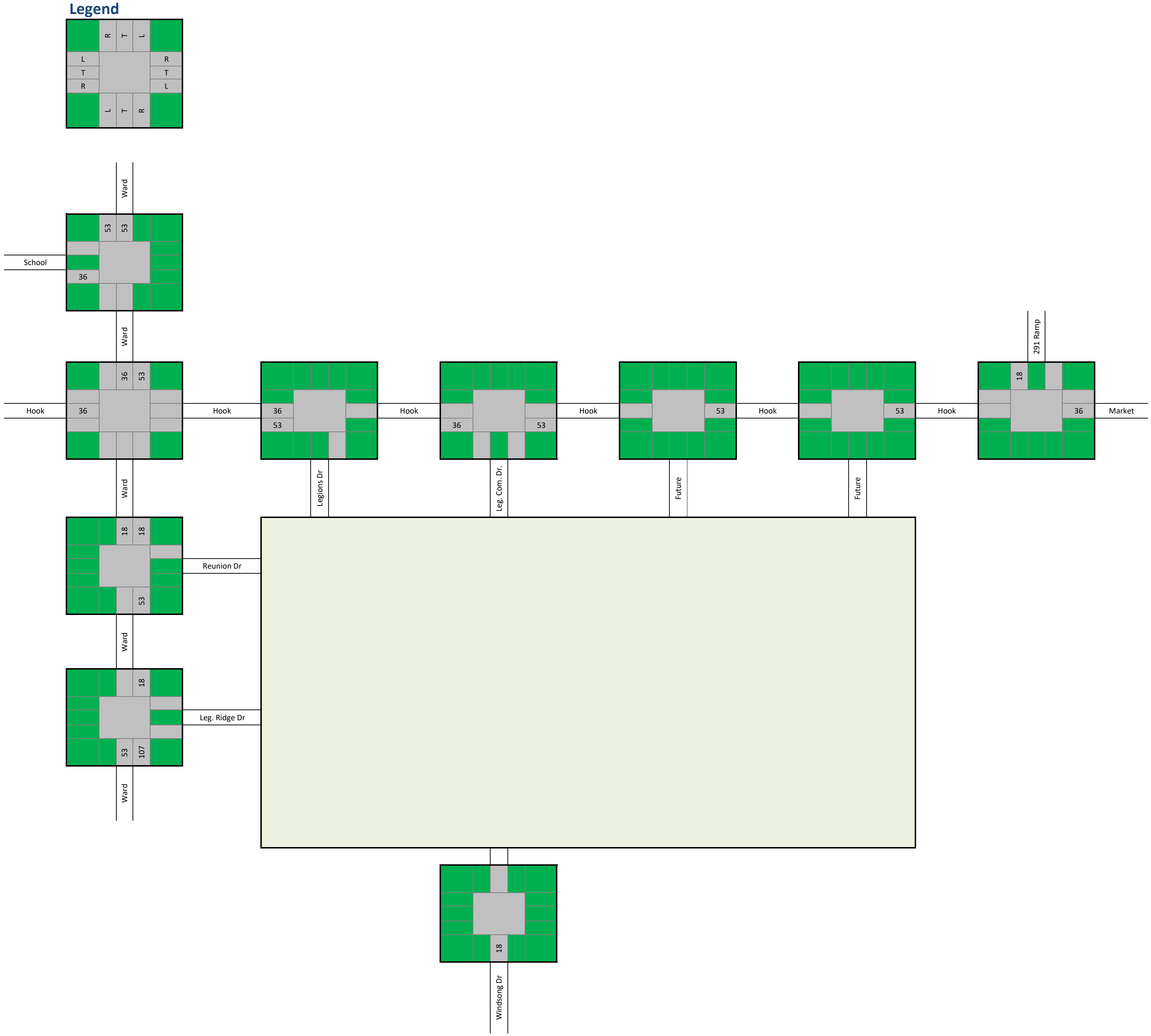
AM Distribution Out
Phase I & II

Legend



AM Trips In
Phase I & II

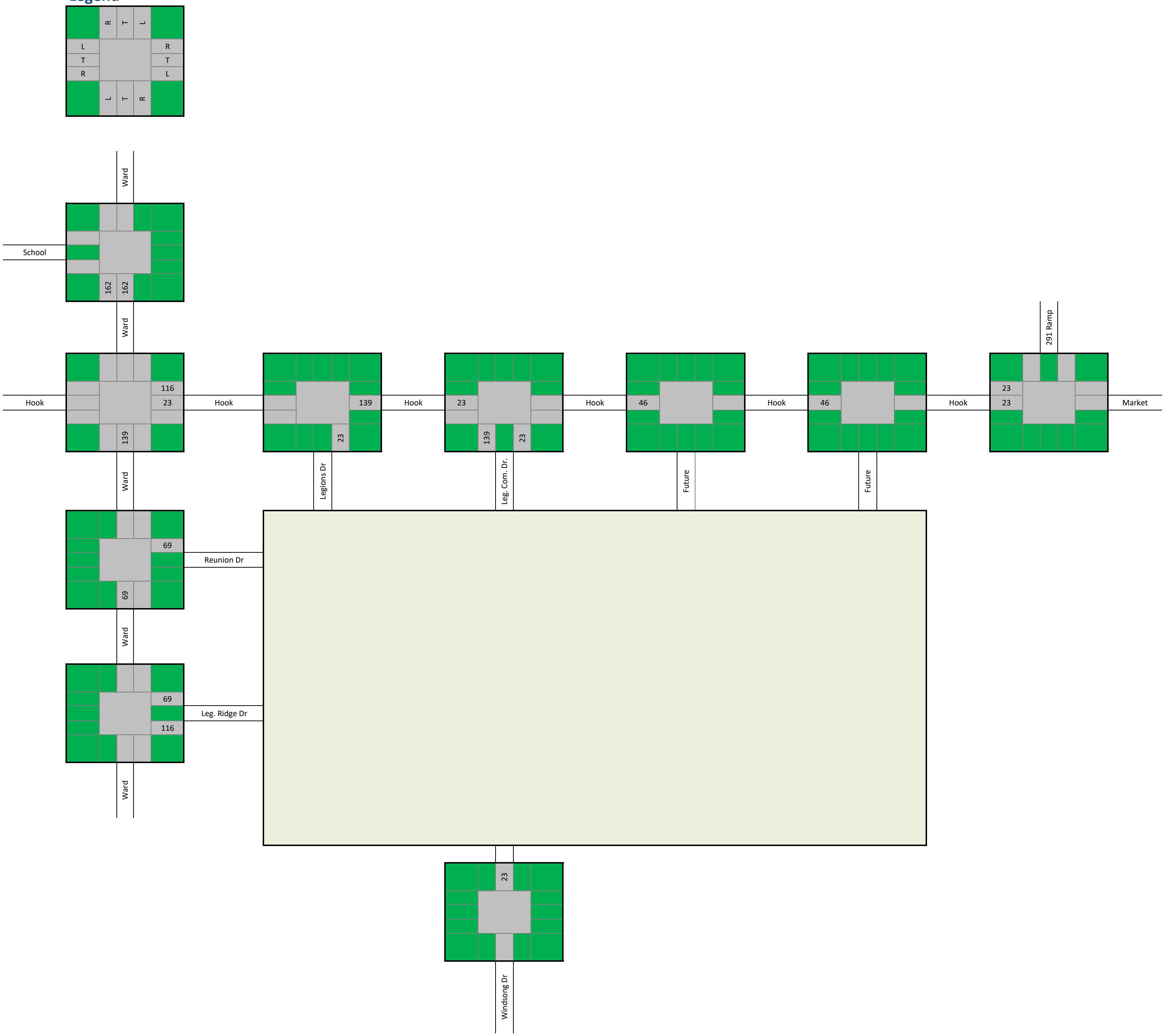
Trips
355



AM Trips Out
Phase I & II

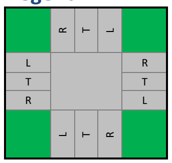
Trips
463

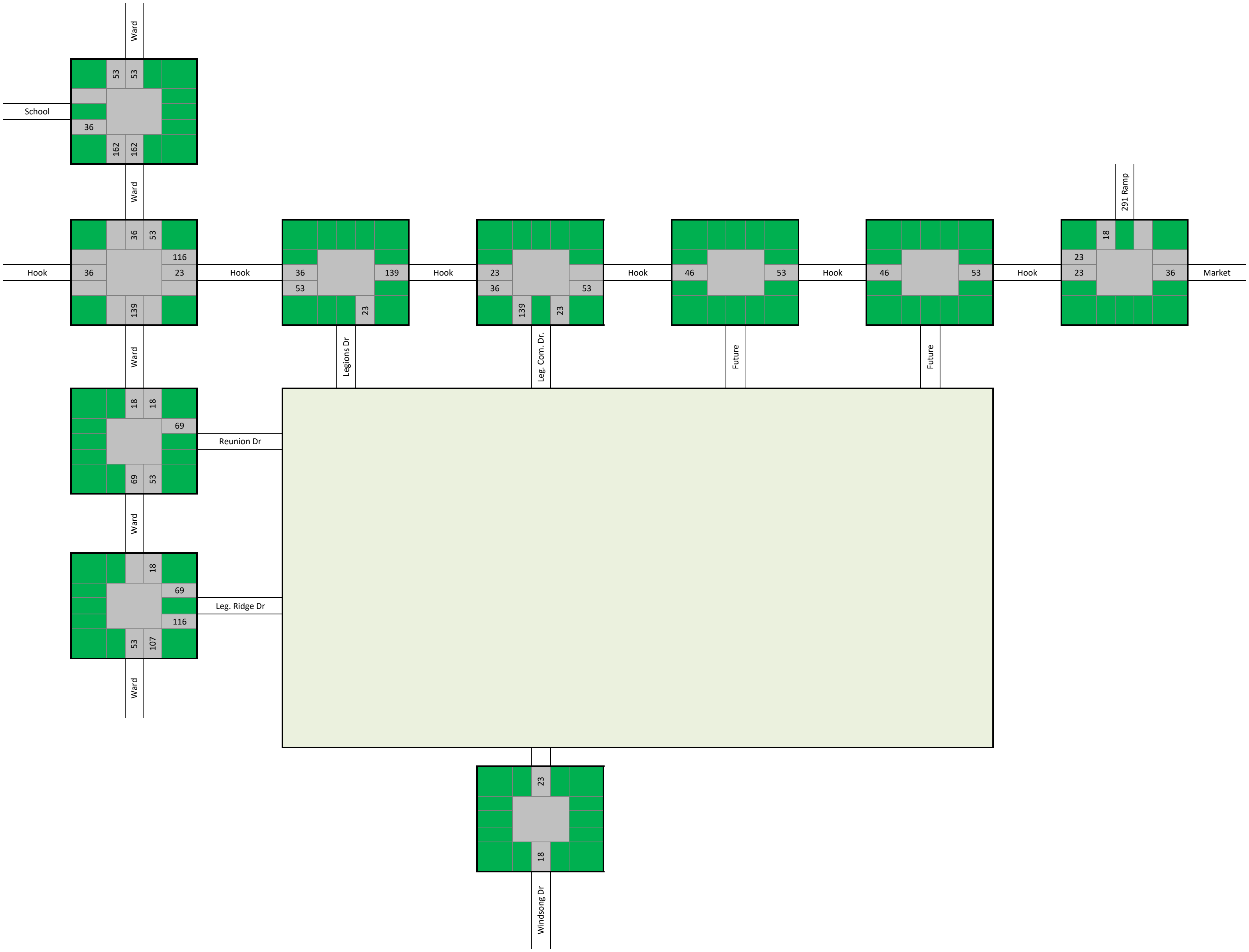
Legend



AM Trips
Phase I & II

Legend

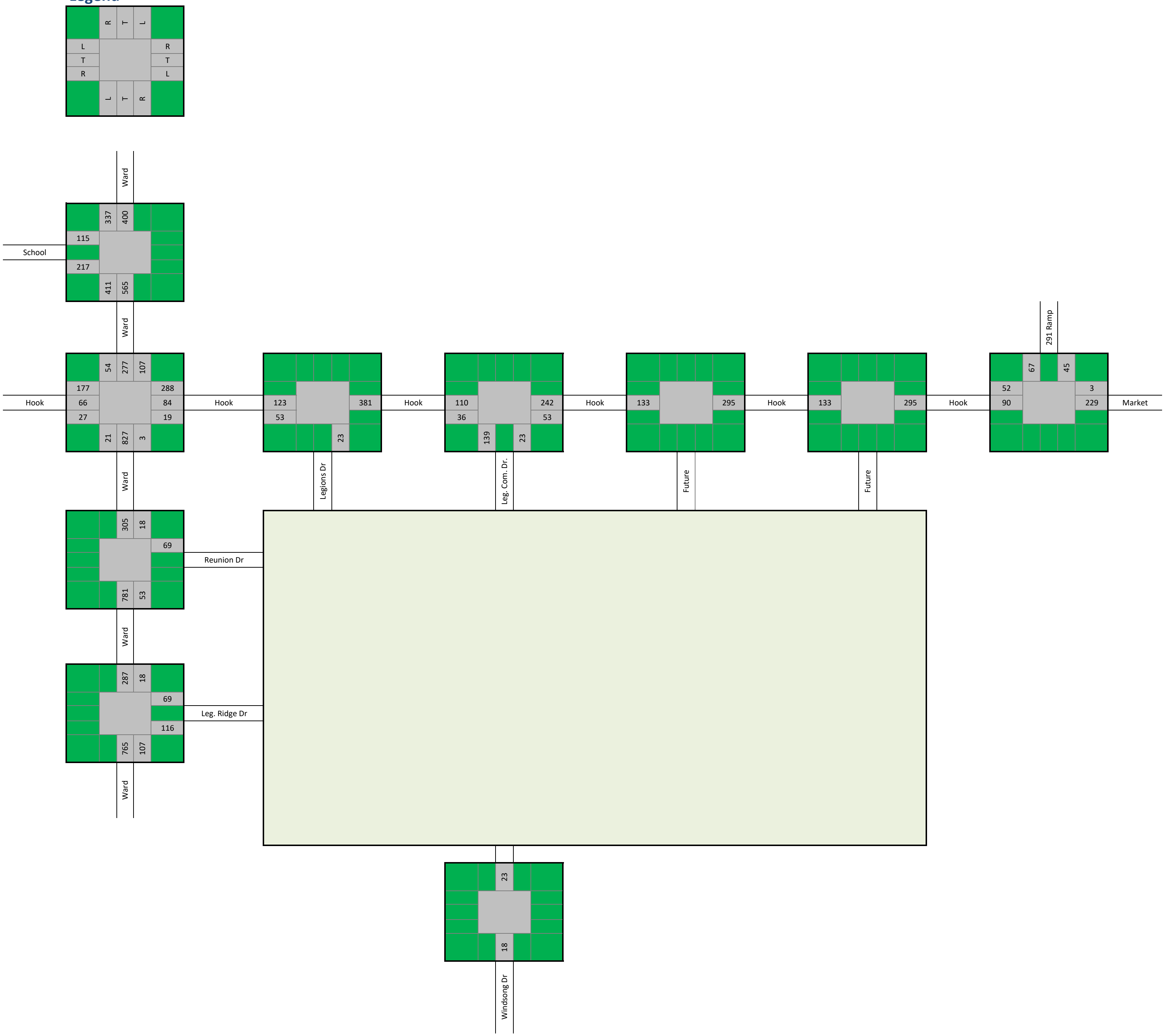




https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

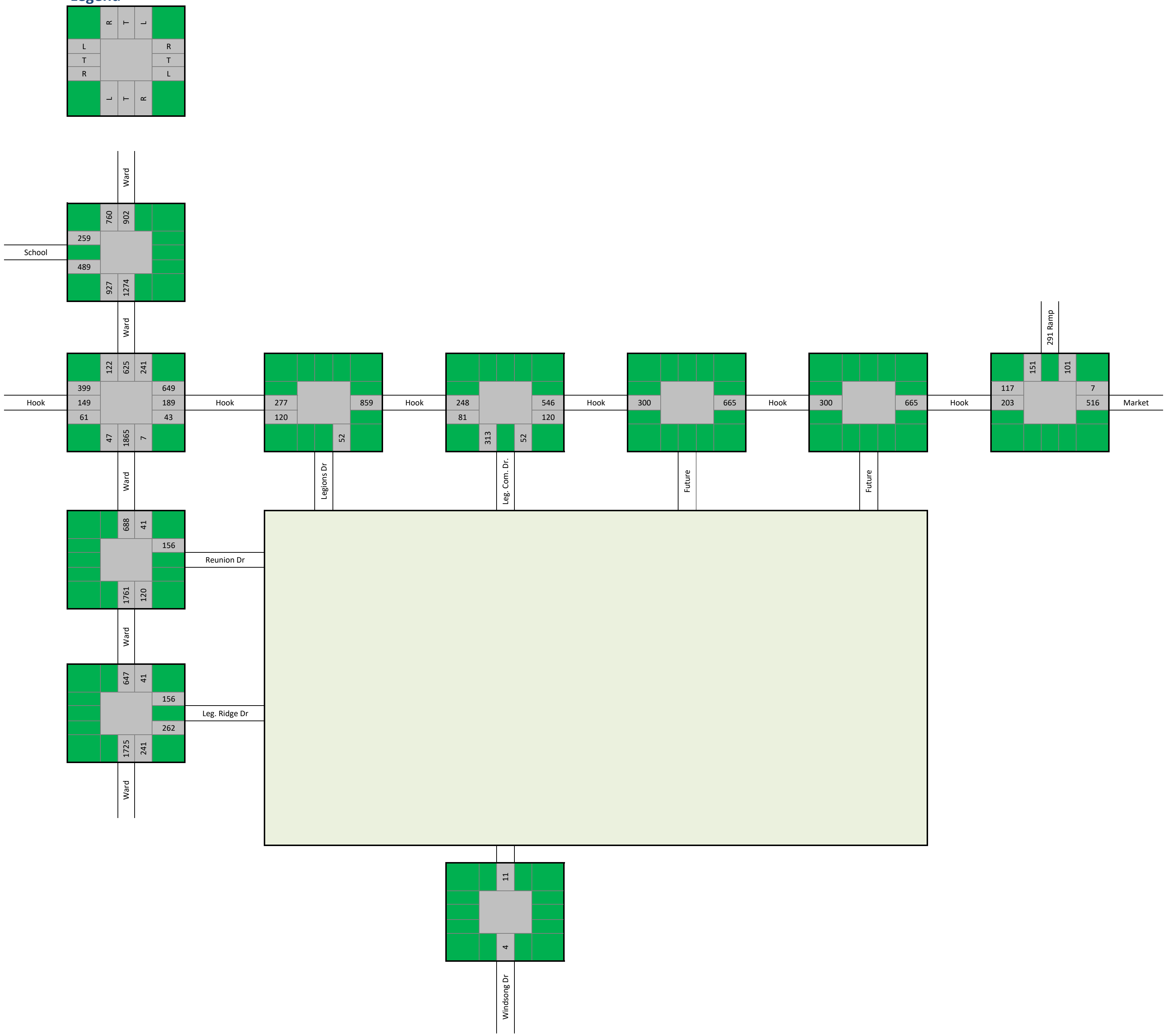
AM Existing Traffic plus Site
Phase I & II

Legend



AM Future

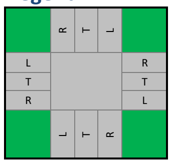
Legend

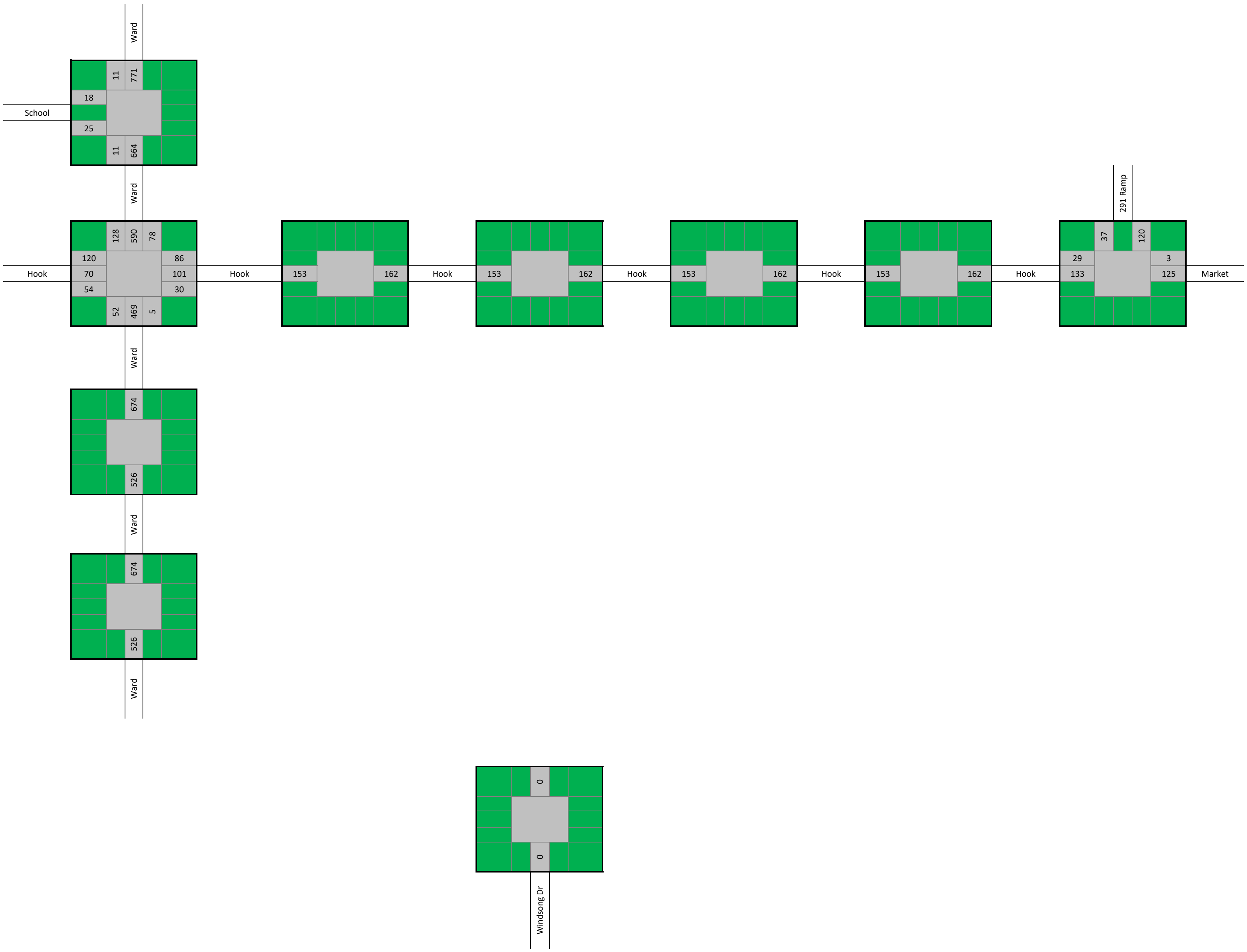


https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

PM Peak Hour Traffic Counts

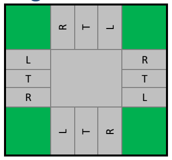
Legend

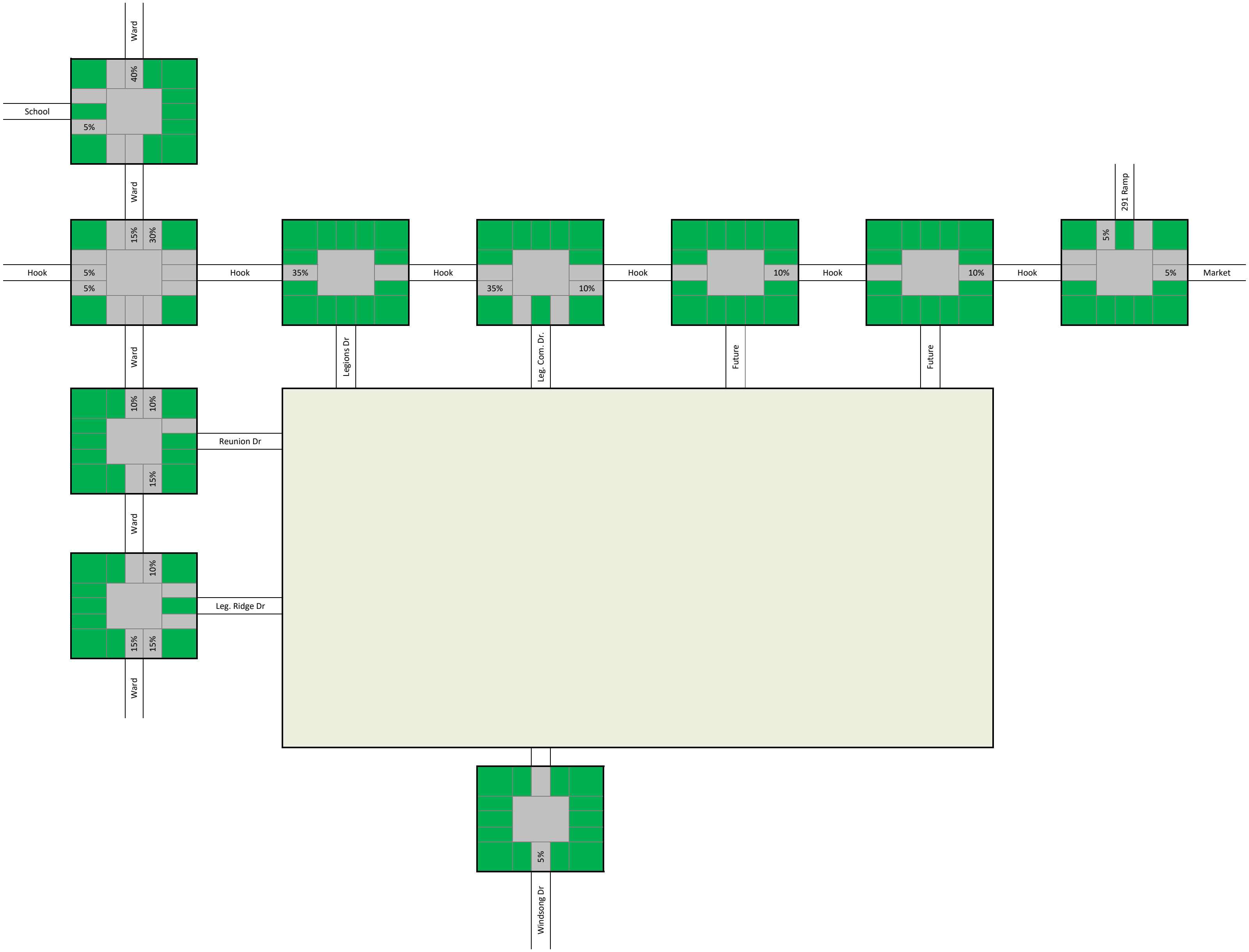




PM Distribution In
Phase I

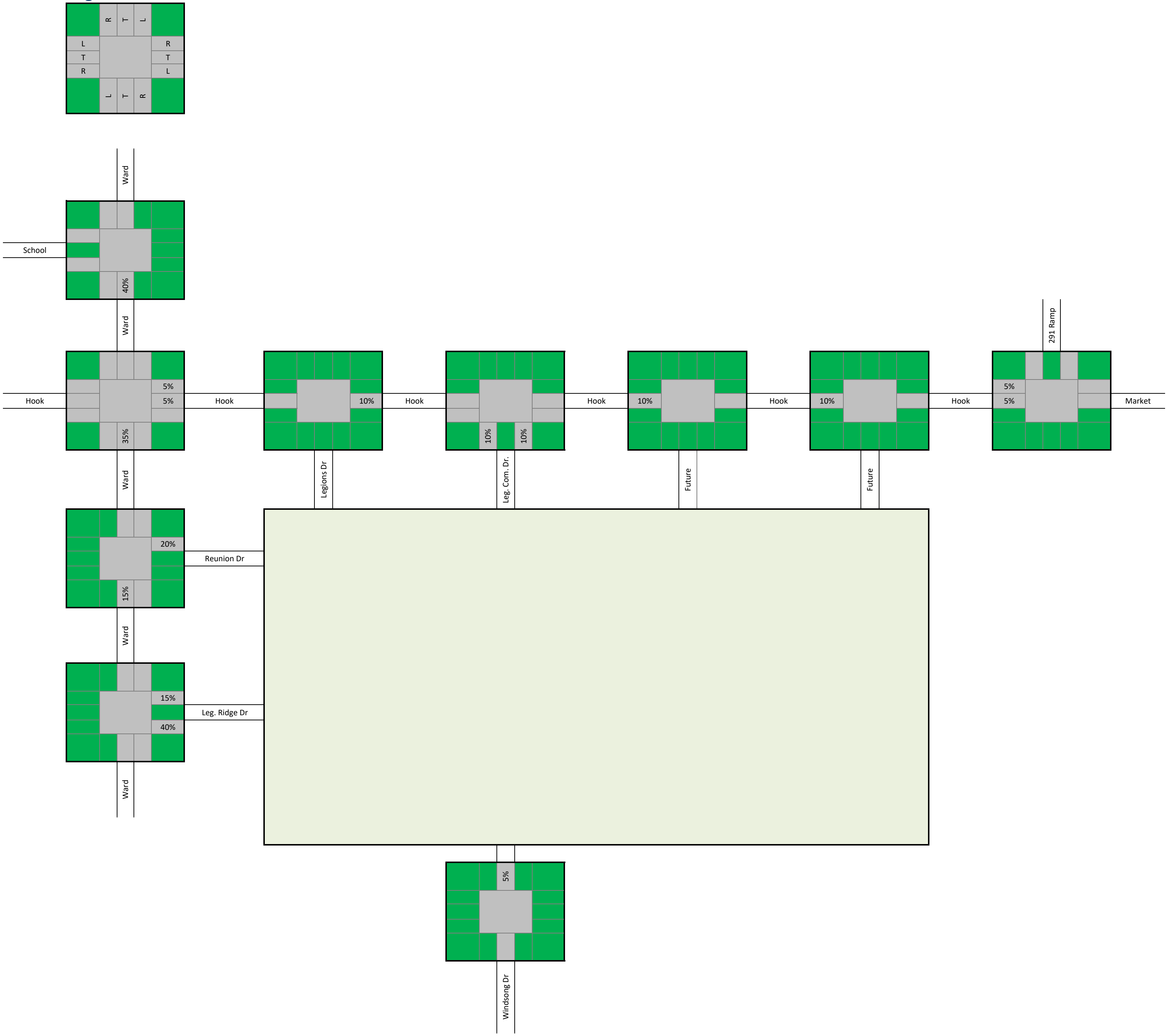
Legend





PM Distribution Out
Phase I

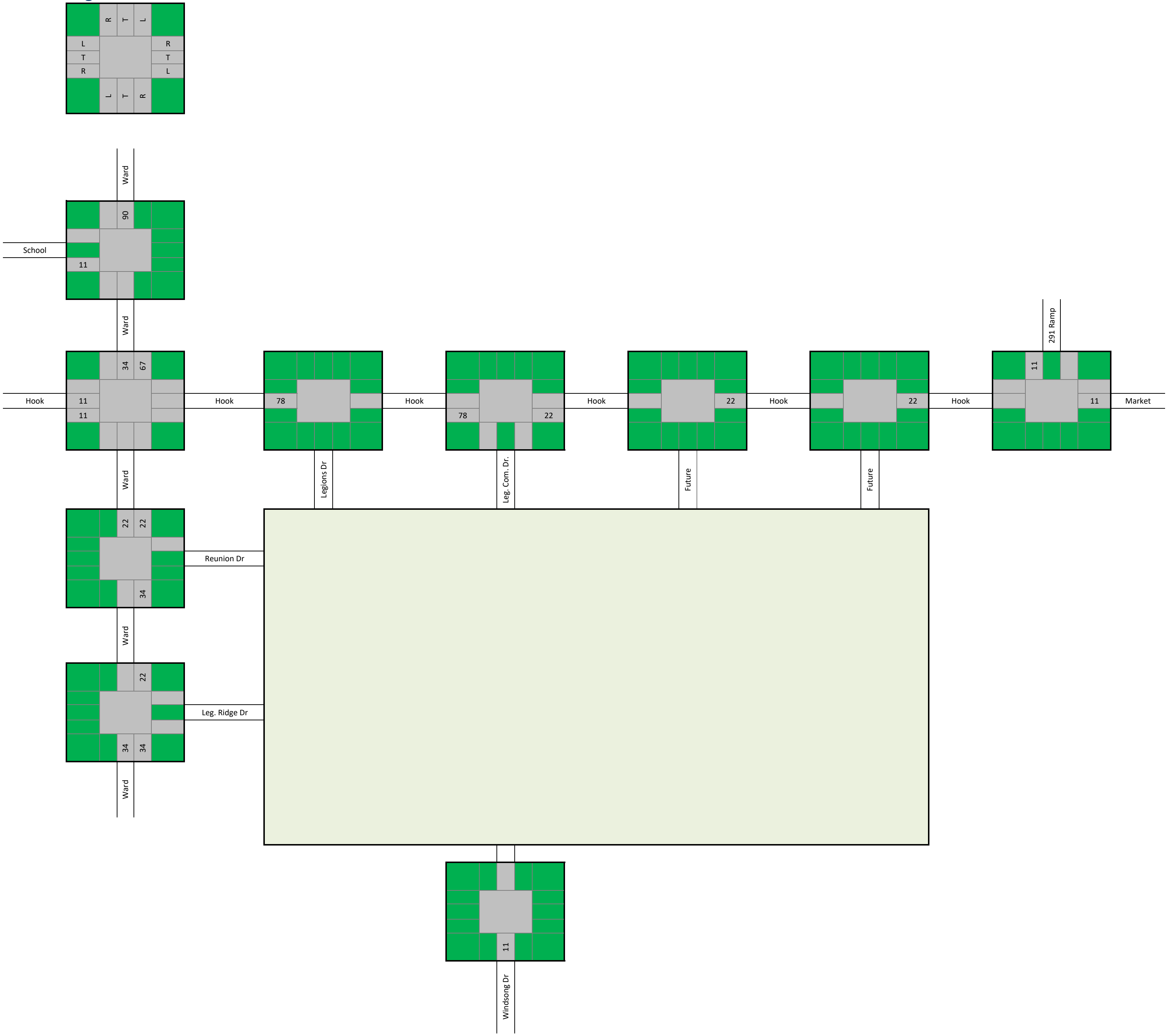
Legend



PM Trips In
Phase I

Trips
224

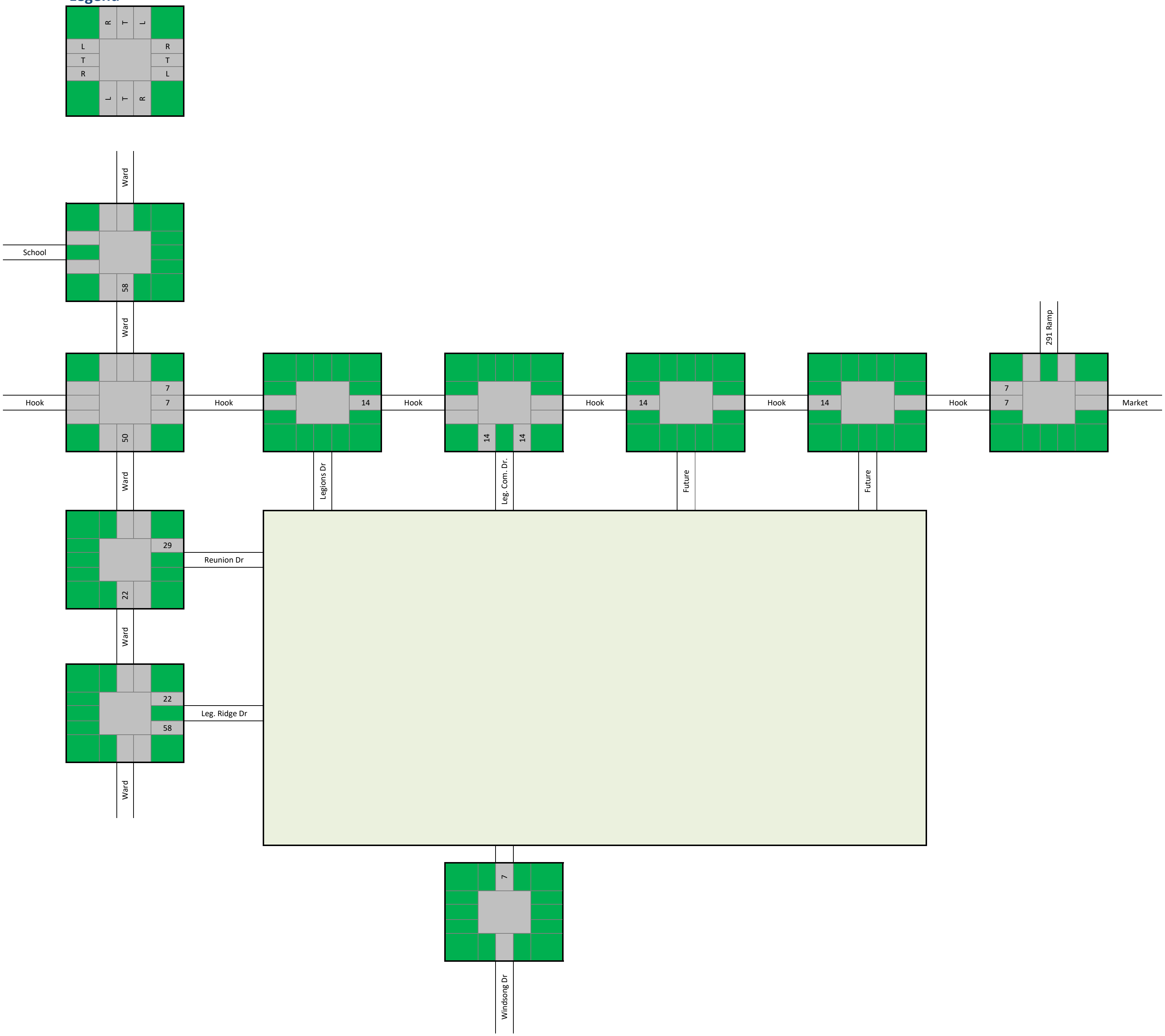
Legend



https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

PM Trips Out
Phase I

Trips
144



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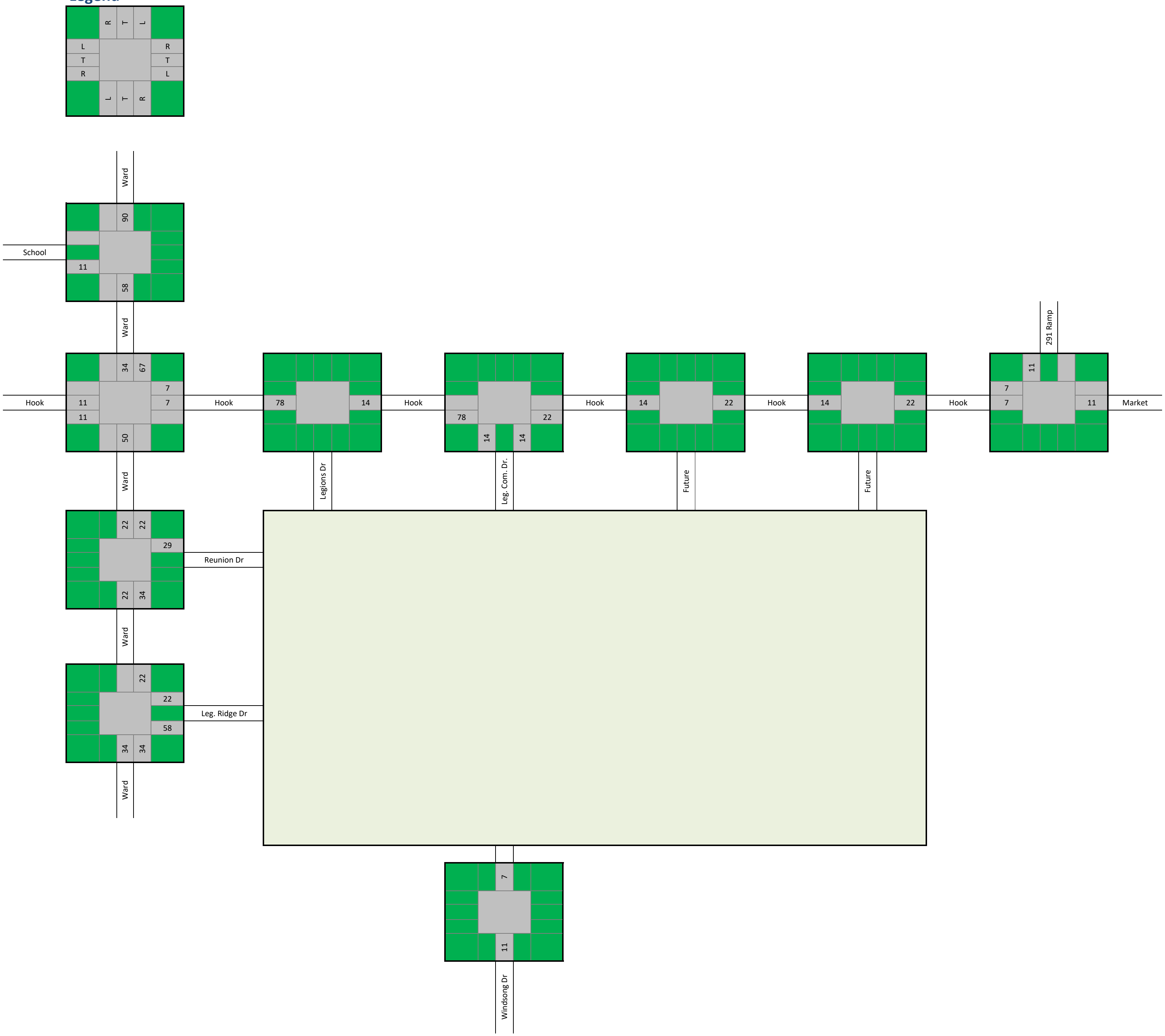
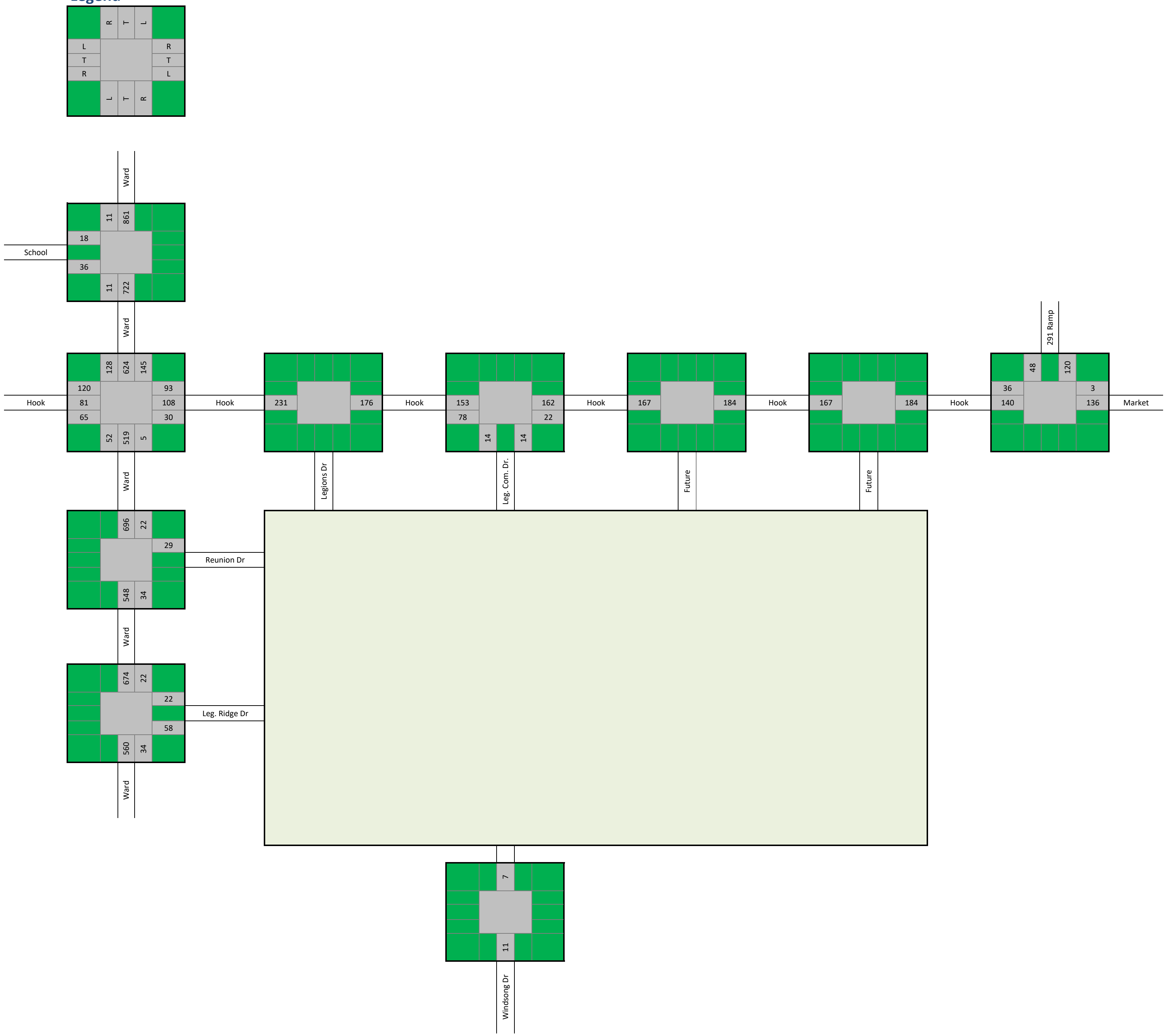
PM Trips
Phase I

Legend



PM Existing Traffic plus Site
Phase I

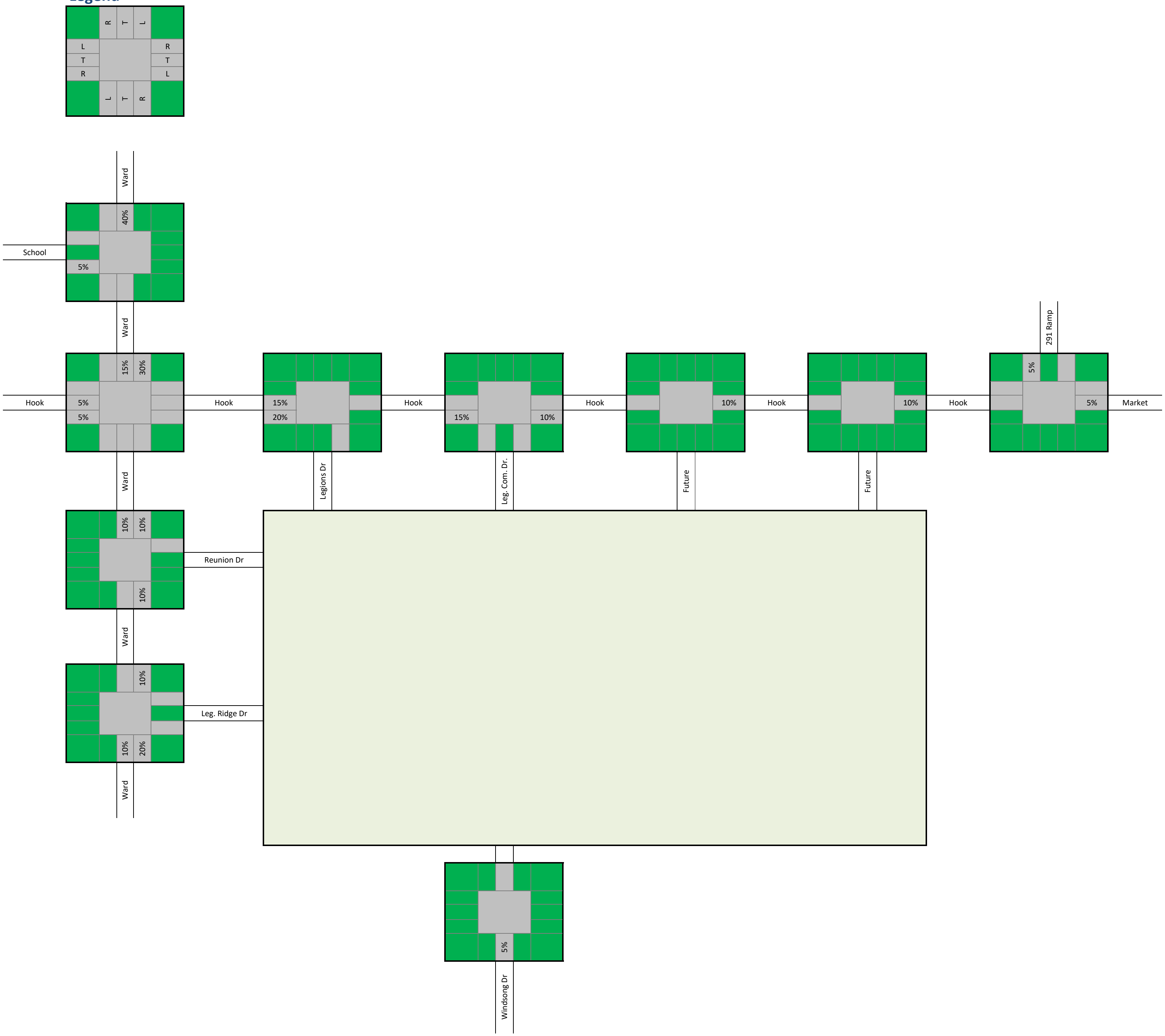
Legend



https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

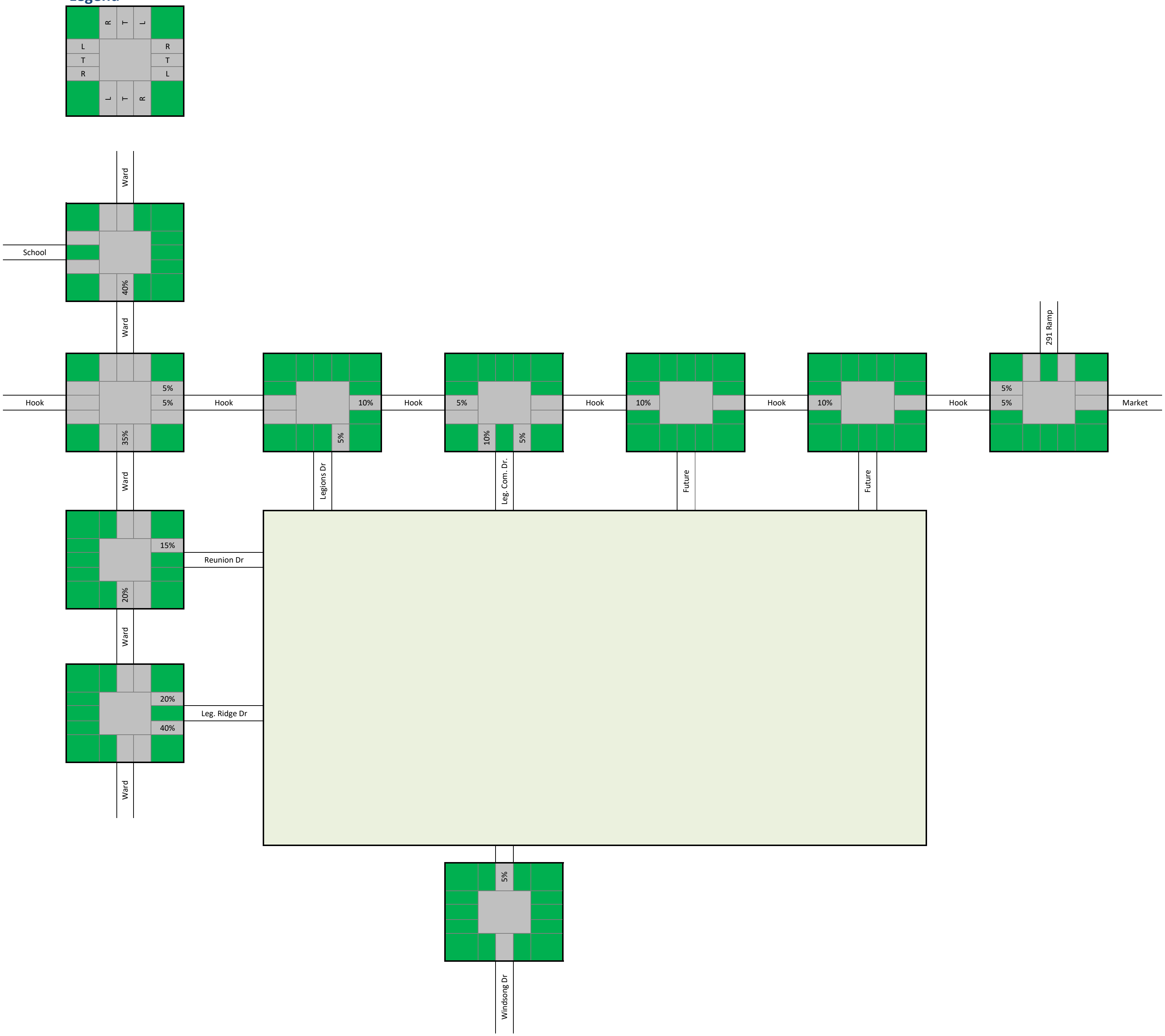
PM Distribution In
Phase I & II

Legend



PM Distribution Out
Phase I & II

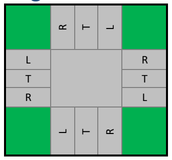
Legend

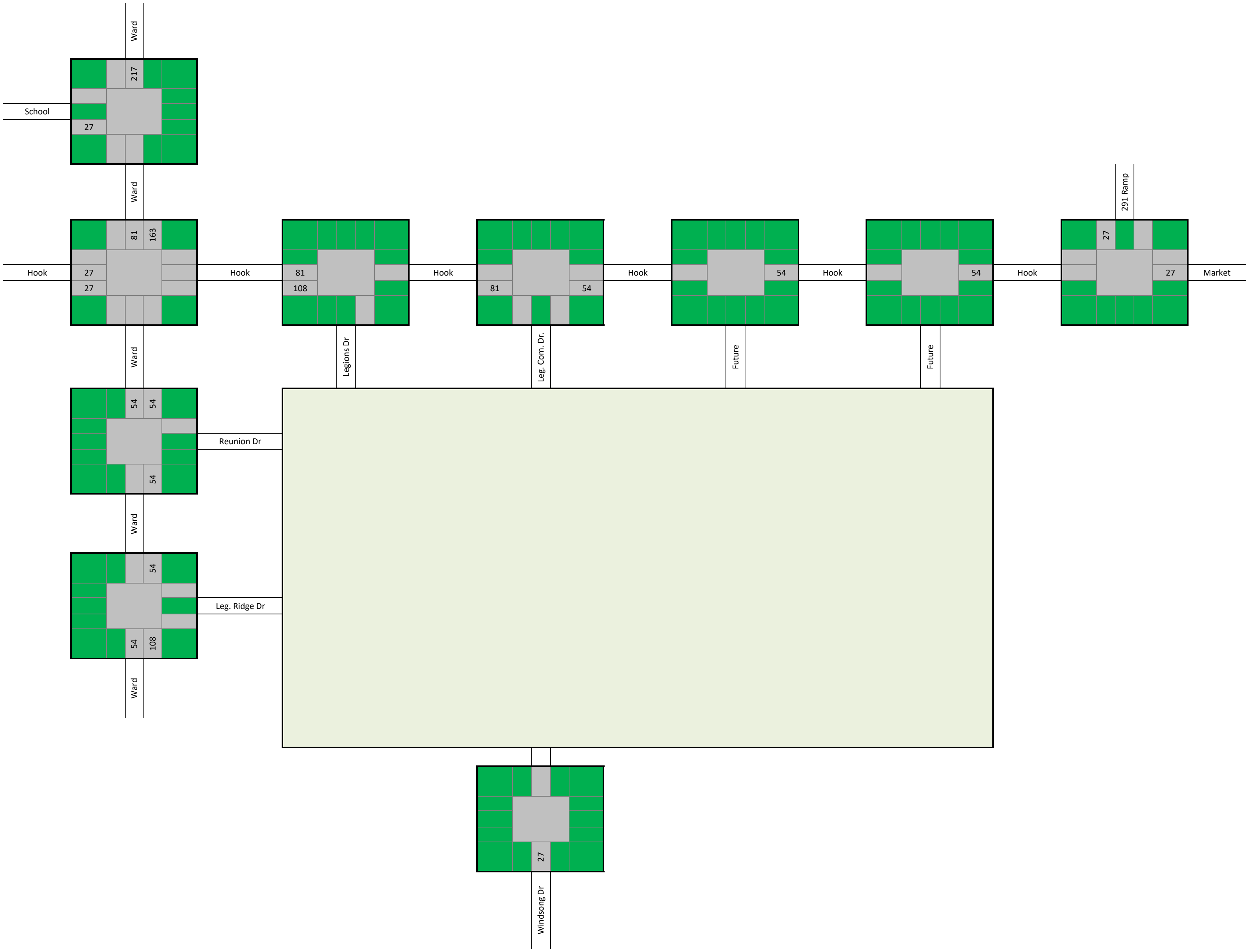


PM Trips In
Phase I & II

Trips
542

Legend

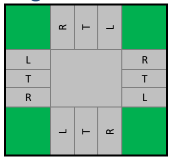


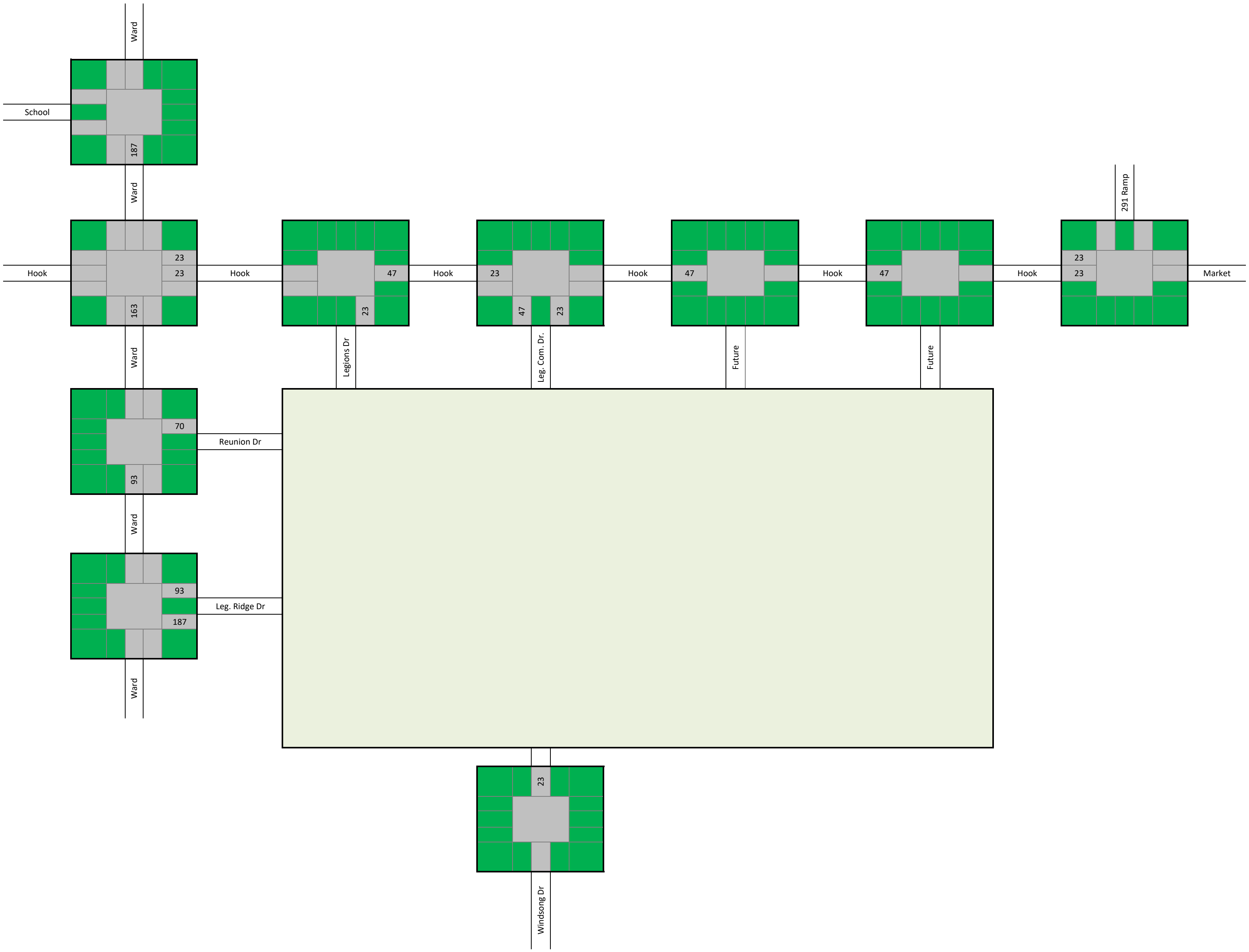


PM Trips Out
Phase I & II

Trips
467

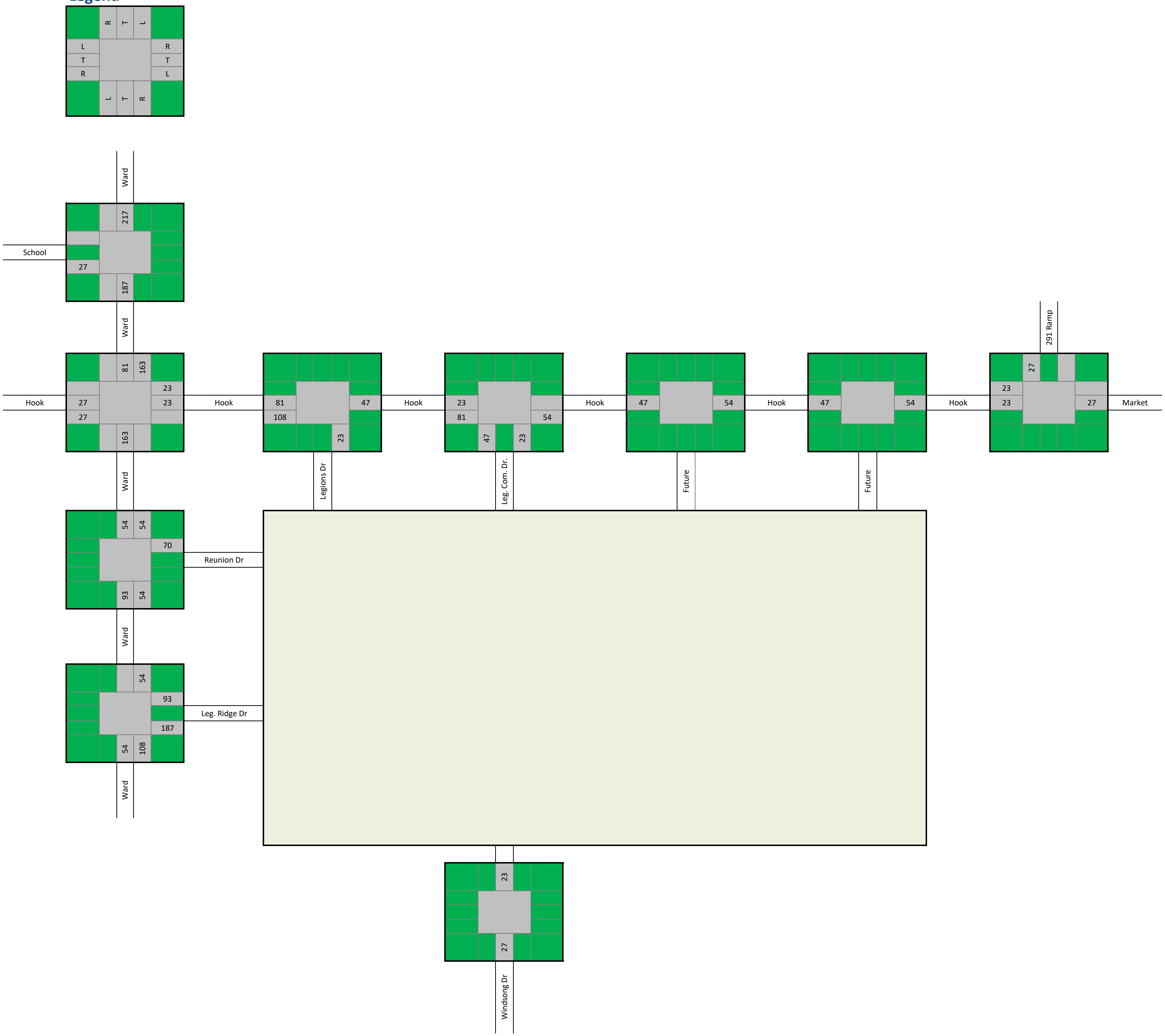
Legend





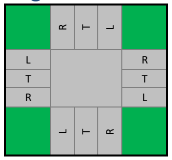
PM Trips
Phase I & II

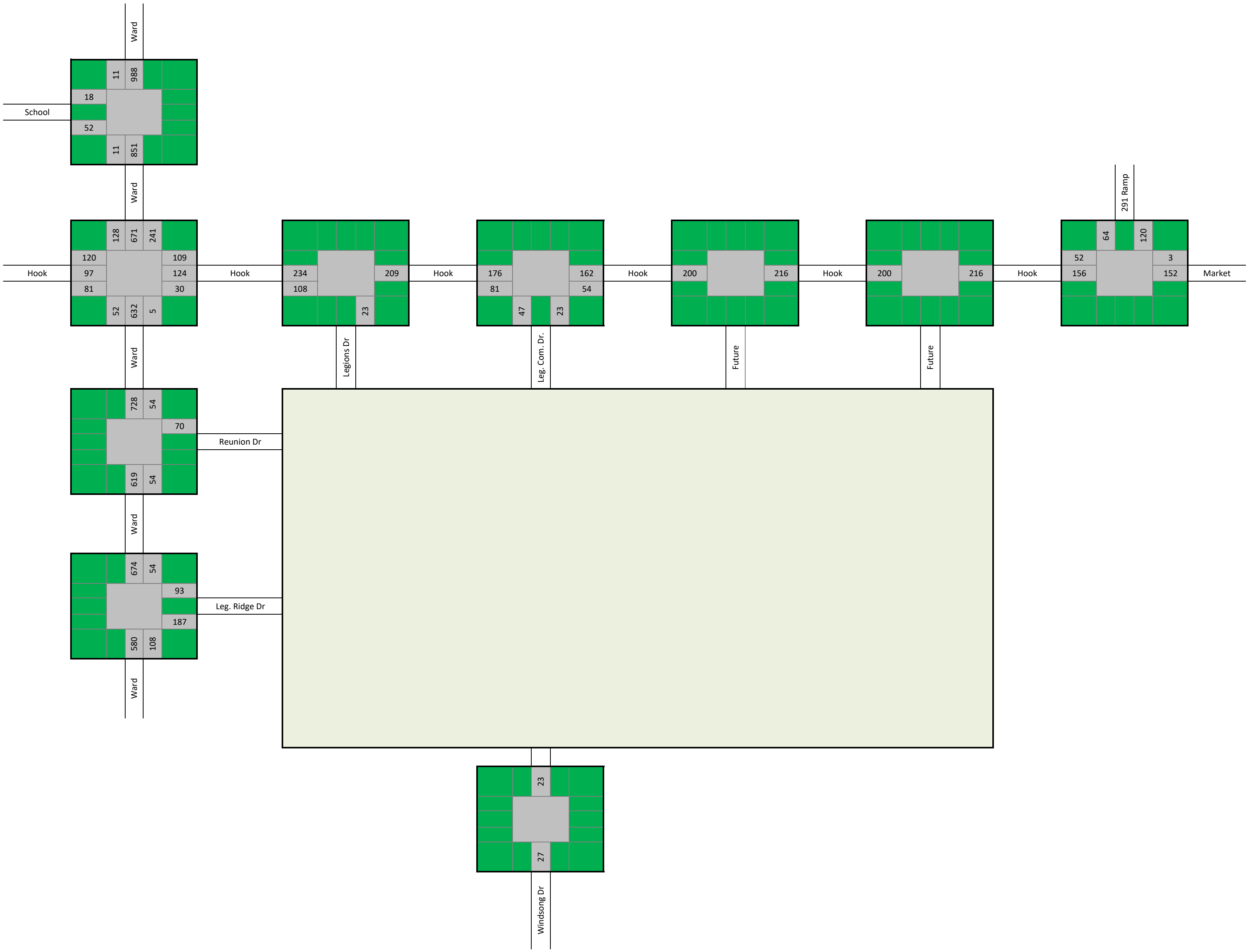
Legend



PM Existing Traffic plus Site
Phase I & II

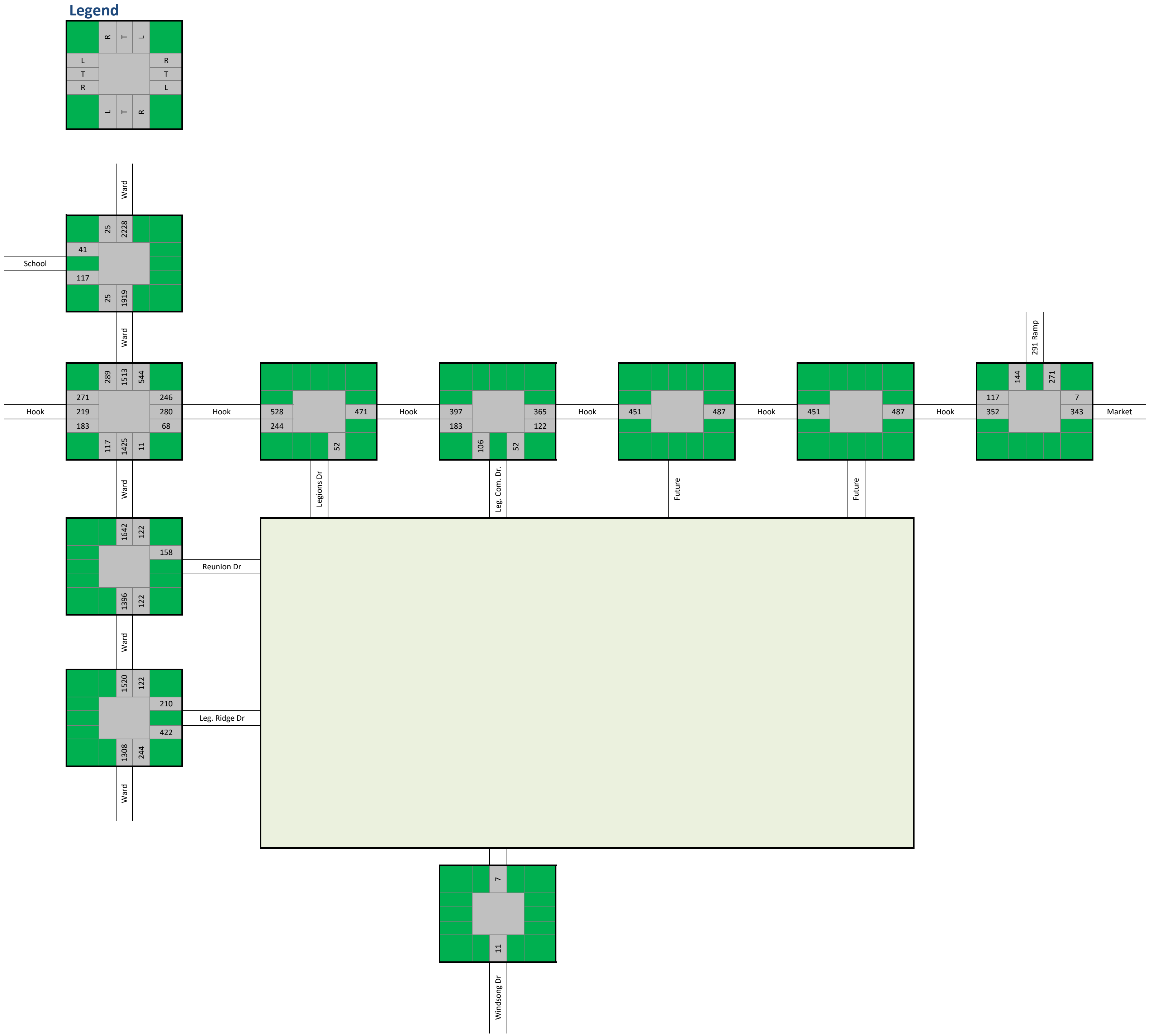
Legend





https://mccurdyengineers.sharepoint.com/sites/McCurdyDesign/Shared Documents/25_004 (Griffin - Legacy Ridge - Hook and Ward in Lees Summit, MO)/APPENDIX - Hook and Ward Trip Gen for Updated Site Plan.xlsx

PM Future


Legend
R T L
L T R
R T L
L T R
Ward
School
25 2228
41
117
25 1919
Hook
289 1513 544
271 219 183
246 280 68
117 1425 11
528 244
471
52
Legions Dr
397 183
365 122
106 52
Leg. Com. Dr.
451 487
Future
451 487
Future
291 Ramp
144 271
117 352
7 343
Market
1642 122
158
Reunion Dr
1396 122
1520 122
210
422
Leg. Ridge Dr
1308 244
7
11
Windsong Dr

EXISTING - Ward Road/Market Street and MO 291 Access - AM & PM

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on more critical minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Not included in analysis

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on more critical minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume

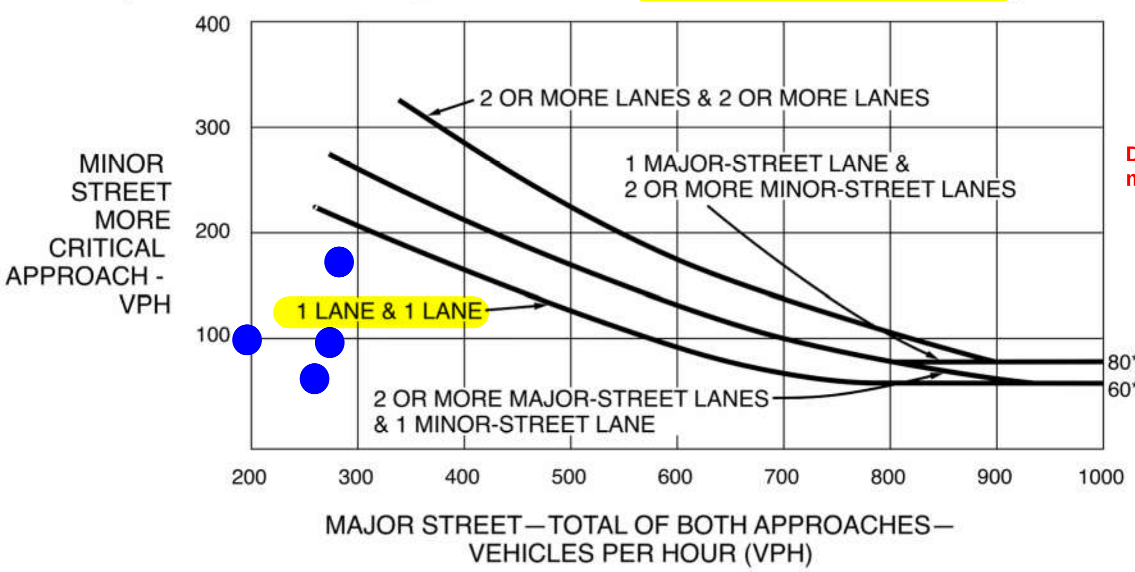
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

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

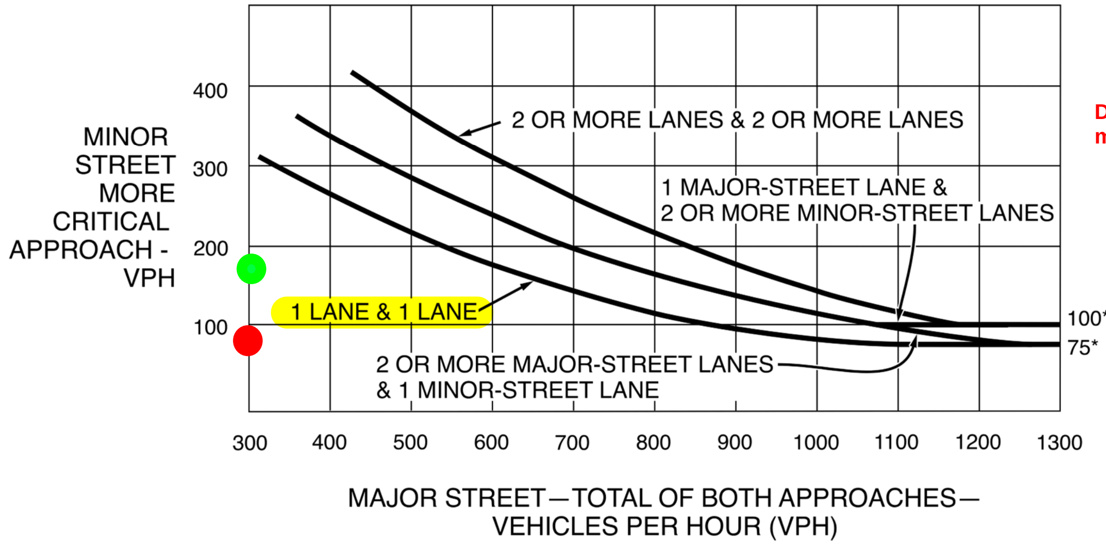


Does not meet warrants

*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane

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

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



Does not meet warrants

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

Table 4C-4. Minimum Number of Reported Crashes in a One-Year Period

Community less than 10,000 population or above 40 mph on major street					
Number of through lanes on each approach		Total of angle and pedestrian crashes (all severities)[a]		Total of fatal-and-injury angle and pedestrian crashes[a]	
Major Street	Minor Street	Four Legs	Three Legs	Four Legs	Three Legs
1	1	4	3	3	3
2 or more	1	10	9	6	6
2 or more	2 or more	10	9	6	6
1	2 or more	4	3	3	3

Not included in analysis

[a] Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major street and one or more vehicles on the minor street

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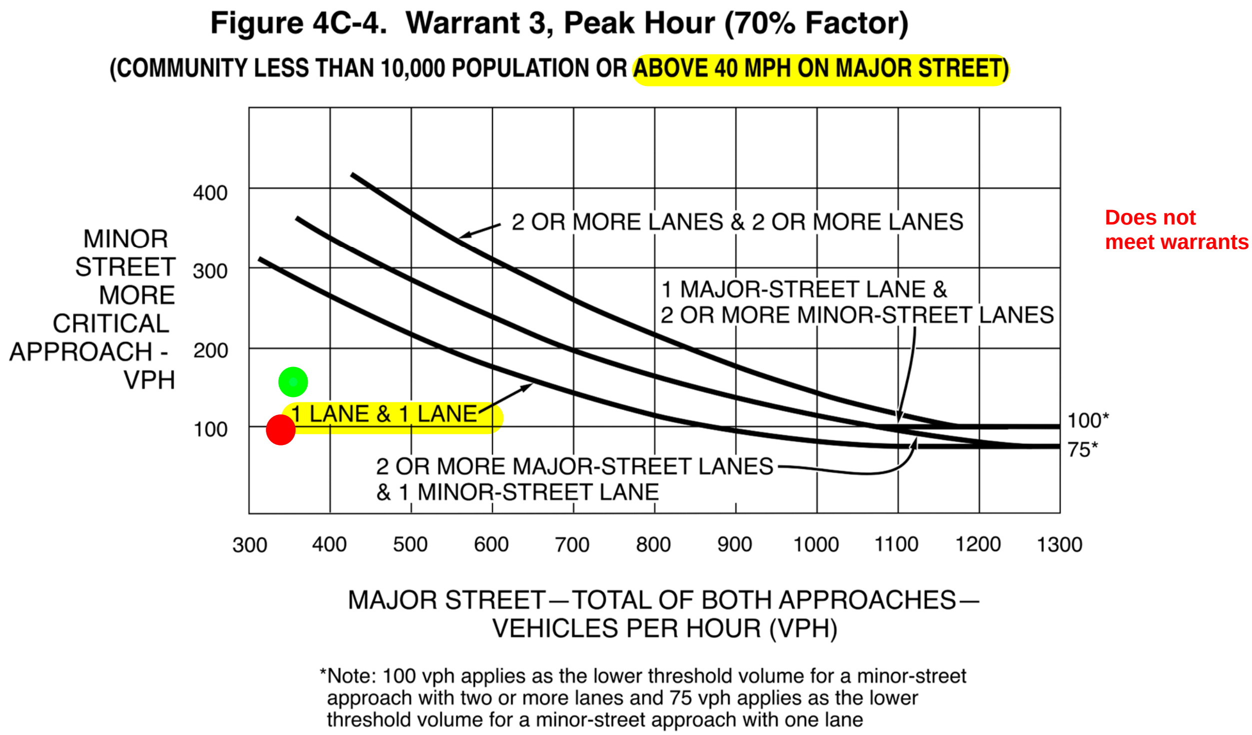
Table 4C-5. Minimum Number of Reported Crashes in a Three-Year Period

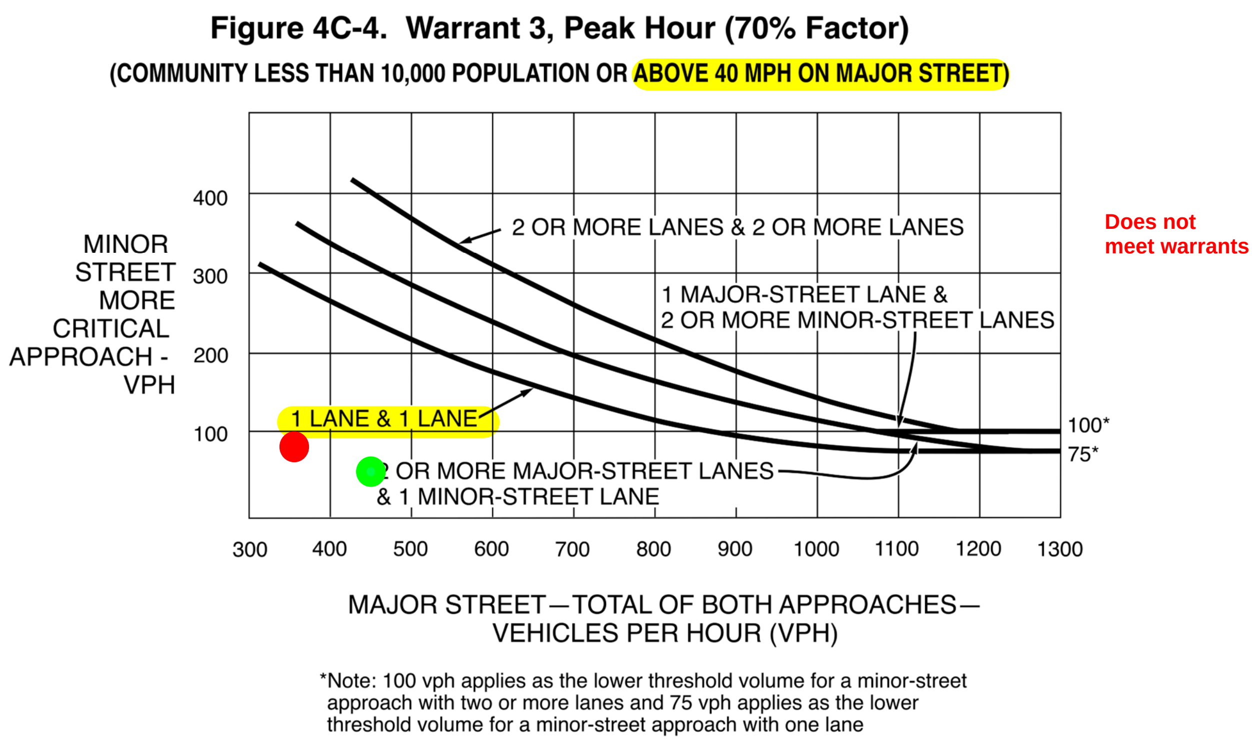
Community less than 10,000 population or above 40 mph on major street					
Number of through lanes on each approach		Total of angle and pedestrian crashes (all severities)[a]		Total of fatal-and-injury angle and pedestrian crashes[a]	
Major Street	Minor Street	Four Legs	Three Legs	Four Legs	Three Legs
1	1	6	5	4	4
2 or more	1	16	13	9	9
2 or more	2 or more	16	13	9	9
1	2 or more	6	5	4	4

[a] Angle crashes include all crashes that occur at an angle and involve one or more vehicles on the major street and one or more vehicles on the minor street

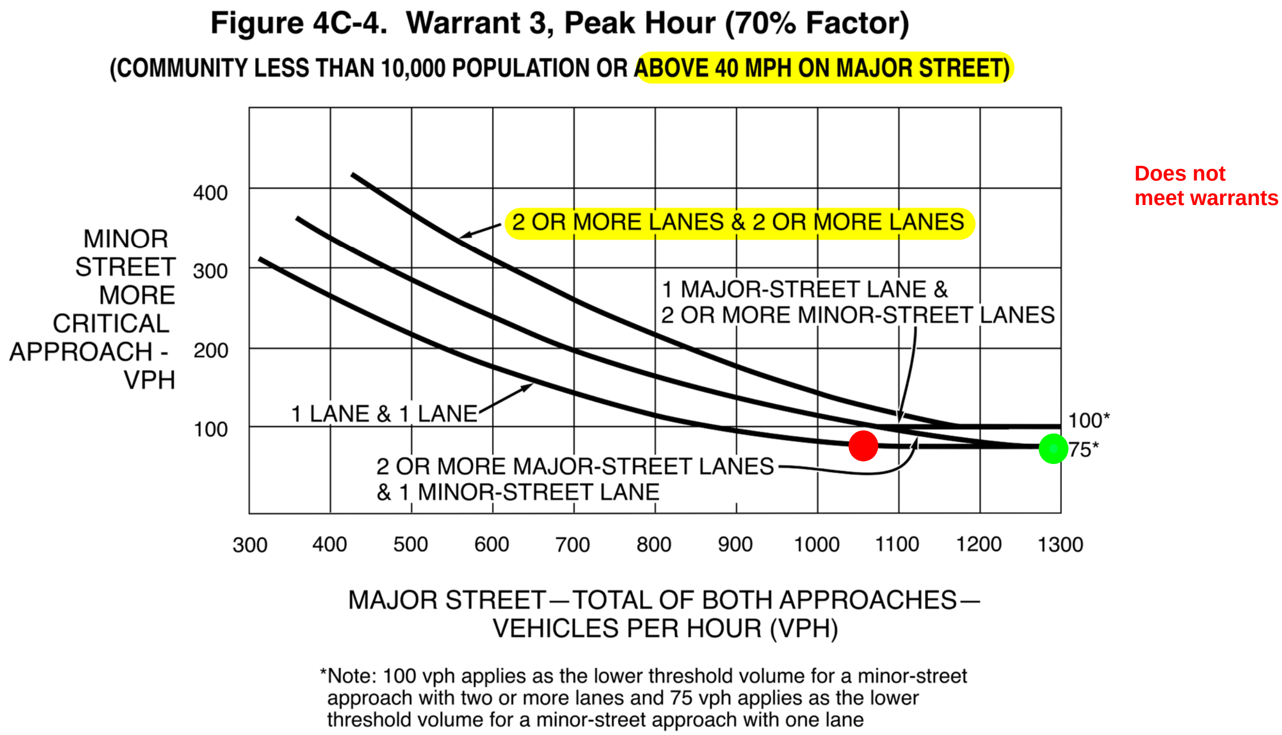
Existing plus Site (Phase 1) - Hook Road/Market Street and MO 291 Access - AM & PM



Existing plus Site (Phase 1) - Hook Road and Legacy Commons Drive - AM & PM



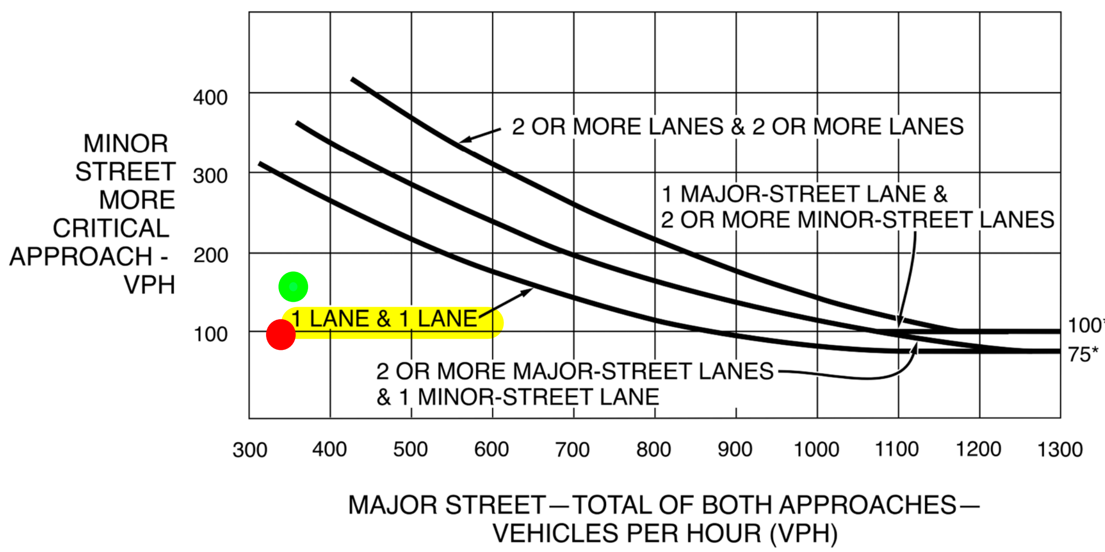
Existing plus Site (Phase 1) - Ward Road and Legacy Ridge Drive - AM & PM



Existing plus Site (Phase 1 & 2) - Hook Road/Market Street and MO 291 Access - AM & PM

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

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



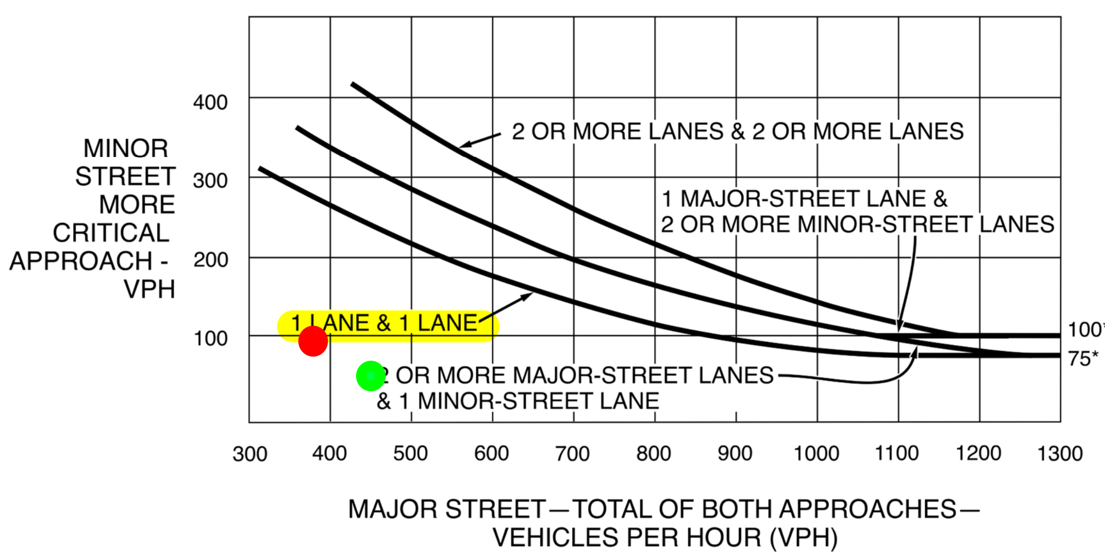
Does not meet warrants

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

Existing plus Site (Phase 1 & 2) - Hook Road and Legacy Commons Drive - AM & PM

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

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



Does not meet warrants

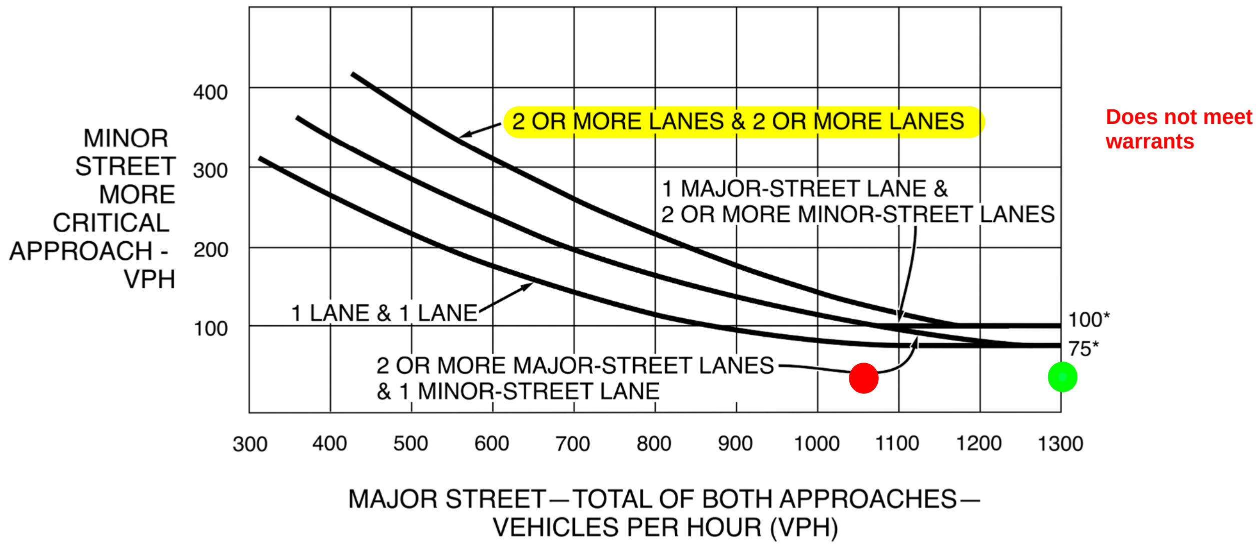
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

Existing plus Site (Phase 1 & 2) - Ward Rd and Reunion Drive - AM & PM

*right-turn reduction due to WB right-turn lane

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

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



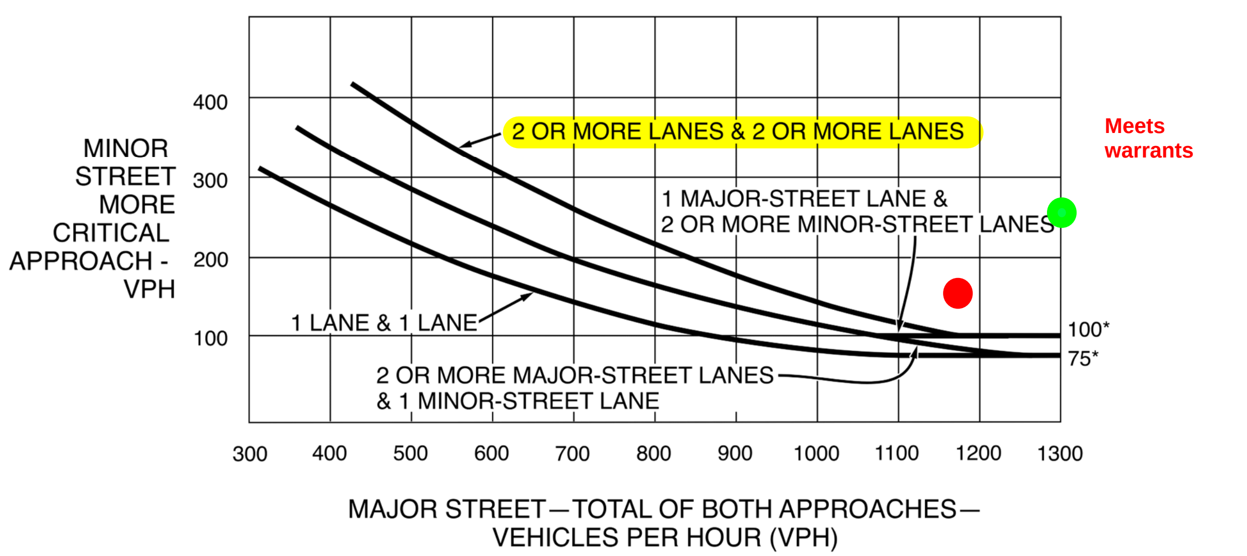
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

Existing plus Site (Phase 1 & 2) - Ward Rd and Legacy Ridge Drive - AM & PM

*right-turn reduction due to WB right-turn lane

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

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

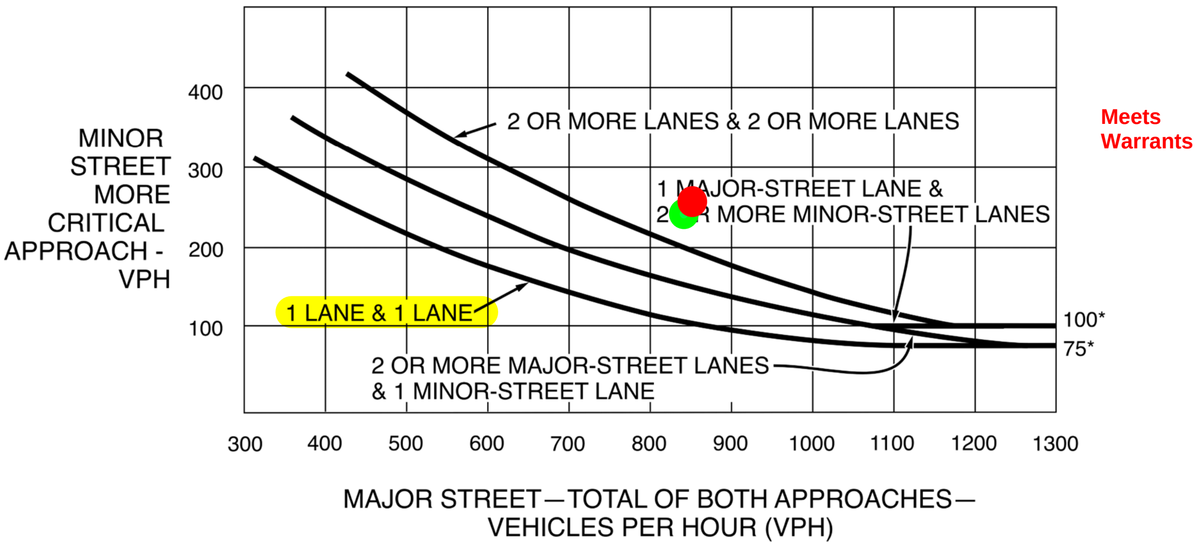


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

Future - Hook Road/Market Street and MO 291 Access - AM & PM

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

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

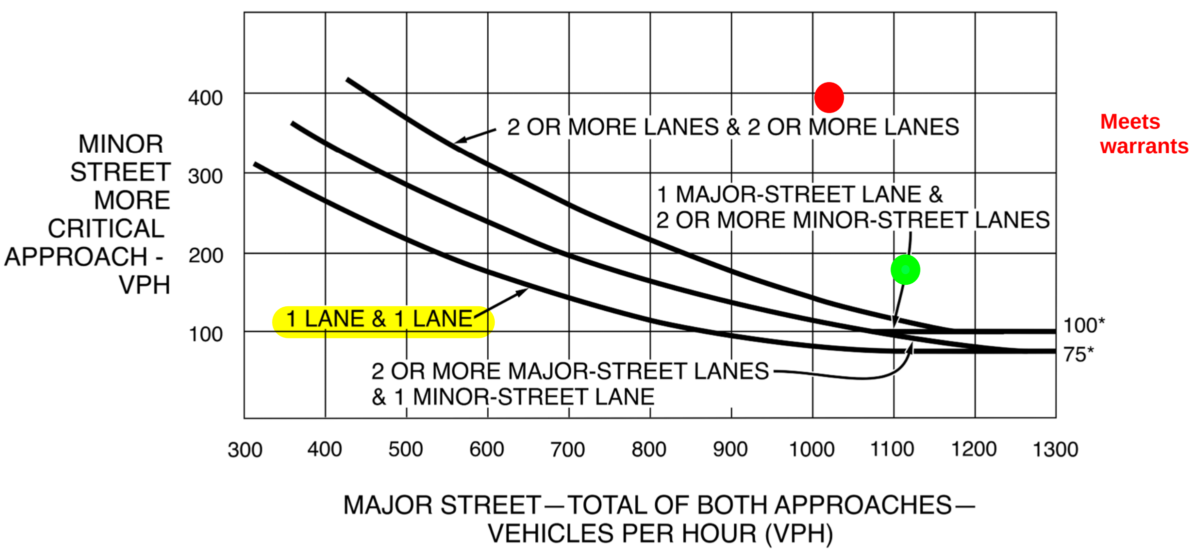


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

Future - Hook Road and Legacy Commons Drive - AM & PM

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

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

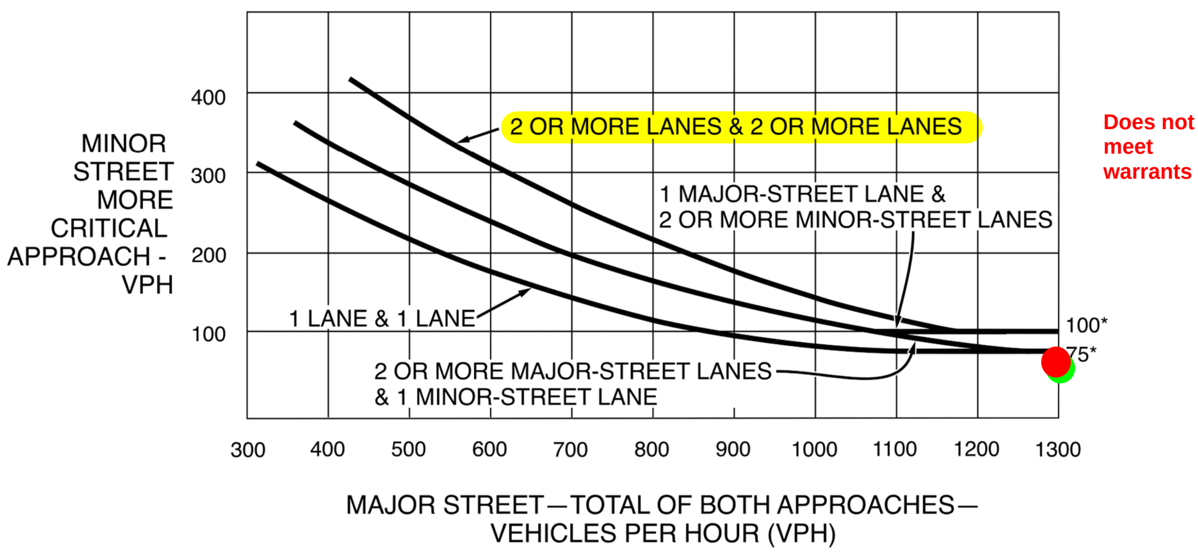


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

Future - Ward Rd and Reunion Drive - AM & PM
*right-turn reduction due to WB right-turn lane

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

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

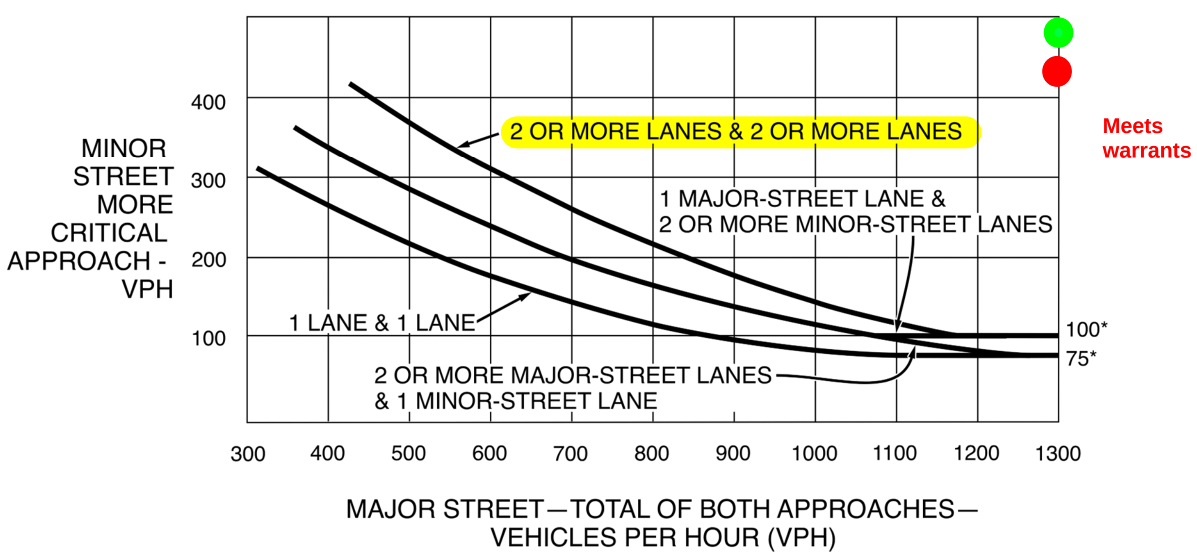


*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane

Future - Ward Rd and Legacy Ridge Drive - AM & PM
*right-turn reduction due to WB right-turn lane

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

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



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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	277	47	42	31	98	277	30	987	70	383
v/c Ratio	0.78	0.09	0.09	0.08	0.19	0.56	0.05	0.45	0.25	0.18
Control Delay	43.1	21.4	7.0	21.4	22.8	21.7	8.9	10.4	12.6	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.1	21.4	7.0	21.4	22.8	21.7	8.9	10.4	12.6	7.4
Queue Length 50th (ft)	131	18	0	12	38	84	5	126	15	35
Queue Length 95th (ft)	136	29	10	21	49	84	17	169	42	63
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	638	919	802	667	919	823	602	2177	278	2135
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	0.43	0.05	0.05	0.05	0.11	0.34	0.05	0.45	0.25	0.18

Intersection Summary

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

AM Existing

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	30	27	19	61	172	21	688	3	54	241	54
Future Volume (veh/h)	177	30	27	19	61	172	21	688	3	54	241	54
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	277	47	42	31	98	277	30	983	4	70	313	70
Peak Hour Factor	0.64	0.64	0.64	0.62	0.62	0.62	0.70	0.70	0.70	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	384	632	536	500	632	536	588	2040	8	308	1626	359
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.56	0.56	0.56	0.56	0.56	0.56
Sat Flow, veh/h	1008	1870	1585	1308	1870	1585	1000	3630	15	570	2894	638
Grp Volume(v), veh/h	277	47	42	31	98	277	30	481	506	70	190	193
Grp Sat Flow(s),veh/h/ln	1008	1870	1585	1308	1870	1585	1000	1777	1868	570	1777	1755
Q Serve(g_s), s	23.8	1.5	1.6	1.5	3.3	12.6	1.4	14.6	14.6	7.6	4.7	4.8
Cycle Q Clear(g_c), s	27.1	1.5	1.6	3.0	3.3	12.6	6.2	14.6	14.6	22.2	4.7	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		0.36
Lane Grp Cap(c), veh/h	384	632	536	500	632	536	588	999	1050	308	999	987
V/C Ratio(X)	0.72	0.07	0.08	0.06	0.16	0.52	0.05	0.48	0.48	0.23	0.19	0.20
Avail Cap(c_a), veh/h	497	843	714	647	843	714	588	999	1050	308	999	987
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.3	20.2	20.2	21.2	20.8	23.9	11.2	11.8	11.8	18.5	9.7	9.7
Incr Delay (d2), s/veh	3.6	0.0	0.1	0.1	0.1	0.8	0.2	1.7	1.6	1.7	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	5.7	0.6	0.6	0.4	1.4	4.5	0.3	5.8	6.0	1.1	1.7	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	20.3	20.3	21.3	20.9	24.6	11.4	13.5	13.4	20.2	10.1	10.1
LnGrp LOS	C	C	C	C	C	C	B	B	B	C	B	B
Approach Vol, veh/h		366			406			1017			453	
Approach Delay, s/veh		30.6			23.5			13.4			11.7	
Approach LOS		C			C			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.0		34.9		55.0		34.9				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		50.5		40.5		50.5		40.5				
Max Q Clear Time (g_c+I1), s		16.6		29.1		24.2		14.6				
Green Ext Time (p_c), s		7.9		1.3		2.8		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			B									

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	221	348	356	576	451	369
v/c Ratio	0.68	0.60	0.51	0.23	0.24	0.37
Control Delay	44.1	8.3	7.9	5.1	13.5	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	8.3	7.9	5.1	13.5	3.0
Queue Length 50th (ft)	115	0	59	47	66	0
Queue Length 95th (ft)	99	0	91	66	108	23
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	575	749	851	2522	1847	1002
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	0.38	0.46	0.42	0.23	0.24	0.37

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	181	249	403	347	284
Future Volume (veh/h)	115	181	249	403	347	284
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	221	348	356	576	451	369
Peak Hour Factor	0.52	0.52	0.70	0.70	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	437	389	572	2344	1738	775
Arrive On Green	0.25	0.25	0.12	0.66	0.49	0.49
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	221	348	356	576	451	369
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	10.1	20.1	8.7	6.2	7.0	14.7
Cycle Q Clear(g_c), s	10.1	20.1	8.7	6.2	7.0	14.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	437	389	572	2344	1738	775
V/C Ratio(X)	0.51	0.89	0.62	0.25	0.26	0.48
Avail Cap(c_a), veh/h	536	477	832	2344	1738	775
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	30.8	34.6	8.9	6.6	14.2	16.1
Incr Delay (d2), s/veh	0.9	16.7	1.1	0.3	0.4	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	17.9	3.2	2.2	2.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.7	51.3	10.0	6.8	14.5	18.2
LnGrp LOS	C	D	B	A	B	B
Approach Vol, veh/h	569			932	820	
Approach Delay, s/veh	43.7			8.0	16.2	
Approach LOS	D			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		67.0		27.8	16.1	50.9
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		62.5		28.5	25.5	32.5
Max Q Clear Time (g_c+I1), s		8.2		22.1	10.7	16.7
Green Ext Time (p_c), s		4.6		1.2	1.0	3.6

Intersection Summary			
HCM 6th Ctrl Delay			19.6
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	3.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	49	45	193	3	29	67
Future Vol, veh/h	49	45	193	3	29	67
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	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	51	224	3	36	83

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	381	226	0	0	227	0
Stage 1	226	-	-	-	-	-
Stage 2	155	-	-	-	-	-
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	621	813	-	-	1341	-
Stage 1	812	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	604	813	-	-	1341	-
Mov Cap-2 Maneuver	604	-	-	-	-	-
Stage 1	812	-	-	-	-	-
Stage 2	849	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	2.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	689	1341	-
HCM Lane V/C Ratio	-	-	0.155	0.027	-
HCM Control Delay (s)	-	-	11.2	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	141	82	64	34	115	98	58	533	83	764
v/c Ratio	0.63	0.25	0.19	0.15	0.35	0.27	0.13	0.21	0.14	0.31
Control Delay	42.6	28.7	8.8	27.5	30.7	8.1	5.5	4.6	5.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	28.7	8.8	27.5	30.7	8.1	5.5	4.6	5.3	4.9
Queue Length 50th (ft)	63	34	0	14	49	0	7	38	11	55
Queue Length 95th (ft)	112	67	27	36	91	35	25	73	33	106
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	587	859	765	604	859	783	461	2509	601	2458
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	0.24	0.10	0.08	0.06	0.13	0.13	0.13	0.21	0.14	0.31

Intersection Summary

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

PM Existing

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	70	54	30	101	86	52	469	5	78	590	128
Future Volume (veh/h)	120	70	54	30	101	86	52	469	5	78	590	128
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	141	82	64	34	115	98	58	527	6	83	628	136
Peak Hour Factor	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	385	327	301	385	327	507	2452	28	636	1980	428
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	1168	1870	1585	1242	1870	1585	703	3599	41	871	2906	628
Grp Volume(v), veh/h	141	82	64	34	115	98	58	260	273	83	384	380
Grp Sat Flow(s),veh/h/ln	1168	1870	1585	1242	1870	1585	703	1777	1863	871	1777	1757
Q Serve(g_s), s	9.3	2.9	2.7	1.9	4.2	4.2	2.9	4.4	4.4	3.1	7.0	7.0
Cycle Q Clear(g_c), s	13.4	2.9	2.7	4.8	4.2	4.2	10.0	4.4	4.4	7.5	7.0	7.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.36
Lane Grp Cap(c), veh/h	270	385	327	301	385	327	507	1211	1270	636	1211	1197
V/C Ratio(X)	0.52	0.21	0.20	0.11	0.30	0.30	0.11	0.21	0.21	0.13	0.32	0.32
Avail Cap(c_a), veh/h	563	854	723	612	854	723	507	1211	1270	636	1211	1197
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.5	26.4	26.3	28.3	26.9	26.9	7.2	4.8	4.8	6.2	5.2	5.2
Incr Delay (d2), s/veh	1.6	0.3	0.3	0.2	0.4	0.5	0.5	0.4	0.4	0.4	0.7	0.7
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	2.6	1.2	1.0	0.5	1.8	1.5	0.5	1.4	1.5	0.5	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	26.6	26.6	28.5	27.3	27.4	7.7	5.2	5.1	6.6	5.9	5.9
LnGrp LOS	C	C	C	C	C	C	A	A	A	A	A	A
Approach Vol, veh/h		287			247			591			847	
Approach Delay, s/veh		30.3			27.5			5.4			5.9	
Approach LOS		C			C			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.0		21.0		59.0		21.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		54.5		36.5		54.5		36.5				
Max Q Clear Time (g_c+I1), s		12.0		15.4		9.5		6.8				
Green Ext Time (p_c), s		4.1		1.0		5.5		1.0				

Intersection Summary			
HCM 6th Ctrl Delay			12.0
HCM 6th LOS			B

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	56	78	12	746	820	12
v/c Ratio	0.35	0.36	0.02	0.25	0.28	0.01
Control Delay	42.9	13.9	2.2	2.3	3.5	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.9	13.9	2.2	2.3	3.5	2.3
Queue Length 50th (ft)	30	0	1	38	43	0
Queue Length 95th (ft)	22	0	4	63	125	6
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	464	472	595	2976	2892	1296
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	0.17	0.02	0.25	0.28	0.01

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	25	11	664	771	11
Future Volume (veh/h)	18	25	11	664	771	11
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	56	78	12	746	820	12
Peak Hour Factor	0.32	0.32	0.89	0.89	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	129	115	558	2908	2662	1187
Arrive On Green	0.07	0.07	0.01	0.82	0.75	0.75
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	56	78	12	746	820	12
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	2.5	4.0	0.1	4.0	6.2	0.2
Cycle Q Clear(g_c), s	2.5	4.0	0.1	4.0	6.2	0.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	129	115	558	2908	2662	1187
V/C Ratio(X)	0.43	0.68	0.02	0.26	0.31	0.01
Avail Cap(c_a), veh/h	507	452	715	2908	2662	1187
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	36.6	37.3	2.3	1.7	3.4	2.6
Incr Delay (d2), s/veh	2.3	6.8	0.0	0.2	0.3	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	1.1	3.7	0.0	0.7	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.9	44.1	2.3	1.9	3.7	2.6
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	134			758	832	
Approach Delay, s/veh	41.9			1.9	3.7	
Approach LOS	D			A	A	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		72.0		10.5	5.7	66.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		67.5		23.5	8.5	54.5
Max Q Clear Time (g_c+I1), s		6.0		6.0	2.1	8.2
Green Ext Time (p_c), s		6.3		0.3	0.0	6.1

Intersection Summary				
HCM 6th Ctrl Delay			5.9	
HCM 6th LOS			A	

Intersection						
Int Delay, s/veh	4.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	120	37	125	3	29	133
Future Vol, veh/h	120	37	125	3	29	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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	42	145	3	36	164

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	383	147	0	0	148	0
Stage 1	147	-	-	-	-	-
Stage 2	236	-	-	-	-	-
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	620	900	-	-	1434	-
Stage 1	880	-	-	-	-	-
Stage 2	803	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	603	900	-	-	1434	-
Mov Cap-2 Maneuver	603	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	654	1434	-
HCM Lane V/C Ratio	-	-	0.273	0.025	-
HCM Control Delay (s)	-	-	12.6	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	277	58	42	31	116	366	30	1081	84	392
v/c Ratio	0.80	0.11	0.06	0.08	0.23	0.55	0.05	0.63	0.28	0.21
Control Delay	47.3	23.7	2.1	23.4	25.3	21.5	9.0	20.3	10.8	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	23.7	2.1	23.4	25.3	21.5	9.0	20.3	10.8	11.8
Queue Length 50th (ft)	144	24	0	13	50	146	6	220	17	53
Queue Length 95th (ft)	147	36	1	22	61	126	16	262	39	83
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	525	770	648	553	770	792	574	1713	428	1869
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	0.53	0.08	0.06	0.06	0.15	0.46	0.05	0.63	0.20	0.21

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	37	27	19	72	227	21	754	3	65	248	54
Future Volume (veh/h)	177	37	27	19	72	227	21	754	3	65	248	54
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	277	58	42	31	116	366	30	1077	4	84	322	70
Peak Hour Factor	0.64	0.64	0.64	0.62	0.62	0.62	0.70	0.70	0.70	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	365	675	617	515	675	645	527	1650	6	273	1373	295
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.03	0.45	0.45	0.05	0.47	0.47
Sat Flow, veh/h	913	1870	1585	1295	1870	1585	1781	3631	13	1781	2910	624
Grp Volume(v), veh/h	277	58	42	31	116	366	30	527	554	84	195	197
Grp Sat Flow(s),veh/h/ln	913	1870	1585	1295	1870	1585	1781	1777	1868	1781	1777	1758
Q Serve(g_s), s	28.9	2.0	1.6	1.6	4.1	17.3	0.9	22.4	22.4	2.4	6.3	6.5
Cycle Q Clear(g_c), s	33.0	2.0	1.6	3.6	4.1	17.3	0.9	22.4	22.4	2.4	6.3	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		0.36
Lane Grp Cap(c), veh/h	365	675	617	515	675	645	527	807	849	273	839	830
V/C Ratio(X)	0.76	0.09	0.07	0.06	0.17	0.57	0.06	0.65	0.65	0.31	0.23	0.24
Avail Cap(c_a), veh/h	369	683	624	520	683	652	569	807	849	457	839	830
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	20.5	18.6	21.7	21.2	22.2	13.3	20.6	20.6	15.8	15.2	15.3
Incr Delay (d2), s/veh	8.8	0.1	0.0	0.0	0.1	1.1	0.0	4.1	3.9	0.6	0.6	0.7
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	6.8	0.8	0.6	0.5	1.7	6.1	0.3	9.8	10.3	0.9	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.2	20.6	18.7	21.7	21.3	23.4	13.4	24.7	24.5	16.4	15.9	15.9
LnGrp LOS	D	C	B	C	C	C	B	C	C	B	B	B
Approach Vol, veh/h		377			513			1111			476	
Approach Delay, s/veh		35.5			22.8			24.3			16.0	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	48.7		39.6	7.3	50.4		39.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.5	36.5		35.5	5.1	45.9		35.5				
Max Q Clear Time (g_c+I1), s	4.4	24.4		35.0	2.9	8.5		19.3				
Green Ext Time (p_c), s	0.1	5.6		0.1	0.0	2.2		1.7				

Intersection Summary			
HCM 6th Ctrl Delay			24.1
HCM 6th LOS			C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	221	362	419	686	465	369
v/c Ratio	0.62	0.59	0.61	0.29	0.33	0.43
Control Delay	32.0	7.2	10.0	5.7	17.2	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	7.2	10.0	5.7	17.2	4.5
Queue Length 50th (ft)	83	0	63	51	65	0
Queue Length 95th (ft)	76	0	100	73	117	31
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	566	753	813	2346	1412	853
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	0.39	0.48	0.52	0.29	0.33	0.43

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	188	293	480	358	284
Future Volume (veh/h)	115	188	293	480	358	284
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	221	362	419	686	465	369
Peak Hour Factor	0.52	0.52	0.70	0.70	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	460	410	595	2192	1366	609
Arrive On Green	0.26	0.26	0.17	0.62	0.38	0.38
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	221	362	419	686	465	369
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	7.6	15.8	9.3	6.6	6.7	13.5
Cycle Q Clear(g_c), s	7.6	15.8	9.3	6.6	6.7	13.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	460	410	595	2192	1366	609
V/C Ratio(X)	0.48	0.88	0.70	0.31	0.34	0.61
Avail Cap(c_a), veh/h	531	472	823	2192	1366	609
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	22.6	25.7	9.7	6.6	15.7	17.8
Incr Delay (d2), s/veh	0.8	16.2	1.6	0.4	0.7	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	1.8	3.3	2.2	2.5	5.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	23.4	41.9	11.3	6.9	16.4	22.3
LnGrp LOS	C	D	B	A	B	C
Approach Vol, veh/h	583			1105	834	
Approach Delay, s/veh	34.9			8.6	19.0	
Approach LOS	C			A	B	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		49.0		23.1	16.8	32.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		44.5		21.5	21.5	18.5
Max Q Clear Time (g_c+I1), s		8.6		17.8	11.3	15.5
Green Ext Time (p_c), s		5.4		0.8	1.0	1.3

Intersection Summary			
HCM 6th Ctrl Delay			18.1
HCM 6th LOS			B

Intersection						
Int Delay, s/veh	3.4					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	53	45	200	3	40	78
Future Vol, veh/h	53	45	200	3	40	78
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	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	51	233	3	49	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	429	235	0	0	236	0
Stage 1	235	-	-	-	-	-
Stage 2	194	-	-	-	-	-
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	583	804	-	-	1331	-
Stage 1	804	-	-	-	-	-
Stage 2	839	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	560	804	-	-	1331	-
Mov Cap-2 Maneuver	560	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	806	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.7	0	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	651	1331	-
HCM Lane V/C Ratio	-	-	0.171	0.037	-
HCM Control Delay (s)	-	-	11.7	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	87	18	11	242	66	22
Future Vol, veh/h	87	18	11	242	66	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	62	62	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	28	18	390	72	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	562	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	426	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1414	-	488	913
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	659	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1414	-	482	913
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	650	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	546	-	-	1414	-
HCM Lane V/C Ratio	0.175	-	-	0.013	-
HCM Control Delay (s)	13	-	-	7.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	33	745	11	7	294
Future Vol, veh/h	0	33	745	11	7	294
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	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	70	70	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	36	1064	16	9	382

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	532	0	0	1080	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	492	-	-	641	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	492	-	-	641	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	492	641	-
HCM Lane V/C Ratio	-	-	0.073	0.014	-
HCM Control Delay (s)	-	-	12.9	10.7	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	33	723	22	15	287
Future Vol, veh/h	55	33	723	22	15	287
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	0	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	36	939	29	19	373

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1164	470	0	0	968	0
Stage 1	939	-	-	-	-	-
Stage 2	225	-	-	-	-	-
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	188	540	-	-	707	-
Stage 1	341	-	-	-	-	-
Stage 2	791	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	183	540	-	-	707	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	770	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.7	0	0.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	183	540	707	-
HCM Lane V/C Ratio	-	-	0.327	0.066	0.028	-
HCM Control Delay (s)	-	-	33.9	12.1	10.2	-
HCM Lane LOS	-	-	D	B	B	-
HCM 95th %tile Q(veh)	-	-	1.3	0.2	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	141	95	76	34	123	106	58	589	154	800
v/c Ratio	0.66	0.29	0.14	0.15	0.37	0.18	0.12	0.30	0.26	0.38
Control Delay	47.3	32.1	5.7	30.4	33.6	4.7	5.3	10.9	5.7	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.3	32.1	5.7	30.4	33.6	4.7	5.3	10.9	5.7	10.0
Queue Length 50th (ft)	71	44	0	15	58	0	7	77	21	104
Queue Length 95th (ft)	123	82	24	40	105	29	23	139	52	180
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	439	674	564	468	674	820	504	1982	773	2106
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	0.32	0.14	0.13	0.07	0.18	0.13	0.12	0.30	0.20	0.38

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	81	65	30	108	93	52	519	5	145	624	128
Future Volume (veh/h)	120	81	65	30	108	93	52	519	5	145	624	128
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	141	95	76	34	123	106	58	583	6	154	664	136
Peak Hour Factor	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	262	391	401	288	391	428	481	2055	21	597	1724	353
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.04	0.57	0.57	0.06	0.59	0.59
Sat Flow, veh/h	1152	1870	1585	1214	1870	1585	1781	3603	37	1781	2938	601
Grp Volume(v), veh/h	141	95	76	34	123	106	58	287	302	154	401	399
Grp Sat Flow(s),veh/h/ln	1152	1870	1585	1214	1870	1585	1781	1777	1864	1781	1777	1762
Q Serve(g_s), s	10.0	3.6	3.2	2.0	4.7	4.4	1.1	7.0	7.0	2.9	10.2	10.2
Cycle Q Clear(g_c), s	14.7	3.6	3.2	5.6	4.7	4.4	1.1	7.0	7.0	2.9	10.2	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.34
Lane Grp Cap(c), veh/h	262	391	401	288	391	428	481	1013	1063	597	1043	1034
V/C Ratio(X)	0.54	0.24	0.19	0.12	0.31	0.25	0.12	0.28	0.28	0.26	0.38	0.39
Avail Cap(c_a), veh/h	424	654	624	459	654	651	561	1013	1063	921	1043	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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.5	27.8	24.7	30.1	28.2	24.1	7.0	9.3	9.3	6.6	9.3	9.3
Incr Delay (d2), s/veh	1.7	0.3	0.2	0.2	0.5	0.3	0.1	0.7	0.7	0.2	1.1	1.1
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	2.7	1.5	1.1	0.6	2.0	1.6	0.4	2.7	2.8	0.9	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	28.1	24.9	30.3	28.7	24.4	7.1	10.0	10.0	6.9	10.4	10.4
LnGrp LOS	D	C	C	C	C	C	A	A	A	A	B	B
Approach Vol, veh/h		312			263			647			954	
Approach Delay, s/veh		31.0			27.2			9.7			9.8	
Approach LOS		C			C			A			A	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.6	52.6		22.1	8.2	54.0		22.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.5	36.5		29.5	7.5	49.5		29.5				
Max Q Clear Time (g_c+I1), s	4.9	9.0		16.7	3.1	12.2		7.6				
Green Ext Time (p_c), s	0.3	3.8		1.0	0.0	5.1		1.0				
Intersection Summary												
HCM 6th Ctrl Delay			14.9									
HCM 6th LOS			B									

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	56	113	12	811	916	12
v/c Ratio	0.35	0.46	0.02	0.28	0.33	0.01
Control Delay	42.3	13.6	2.2	2.6	3.9	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.3	13.6	2.2	2.6	3.9	2.3
Queue Length 50th (ft)	29	0	1	42	50	0
Queue Length 95th (ft)	22	0	4	70	144	6
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	462	497	521	2860	2776	1244
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	0.23	0.02	0.28	0.33	0.01

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	36	11	722	861	11
Future Volume (veh/h)	18	36	11	722	861	11
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	56	112	12	811	916	12
Peak Hour Factor	0.32	0.32	0.89	0.89	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	170	151	495	2836	2596	1158
Arrive On Green	0.10	0.10	0.01	0.80	0.73	0.73
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	56	112	12	811	916	12
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	2.5	5.8	0.1	5.0	7.9	0.2
Cycle Q Clear(g_c), s	2.5	5.8	0.1	5.0	7.9	0.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	170	151	495	2836	2596	1158
V/C Ratio(X)	0.33	0.74	0.02	0.29	0.35	0.01
Avail Cap(c_a), veh/h	495	440	627	2836	2596	1158
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	35.7	37.2	2.9	2.2	4.1	3.1
Incr Delay (d2), s/veh	1.1	6.9	0.0	0.3	0.4	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	1.1	5.3	0.0	1.1	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.8	44.2	2.9	2.5	4.5	3.1
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	168			823	928	
Approach Delay, s/veh	41.7			2.5	4.5	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		72.0		12.6	5.7	66.3
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		67.5		23.5	7.5	55.5
Max Q Clear Time (g_c+I1), s		7.0		7.8	2.1	9.9
Green Ext Time (p_c), s		7.1		0.4	0.0	7.1
Intersection Summary						
HCM 6th Ctrl Delay			6.9			
HCM 6th LOS			A			

Intersection	
Int Delay, s/veh	5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	120	48	136	3	36	140
Future Vol, veh/h	120	48	136	3	36	140
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	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	55	158	3	44	173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	421	160	0	0	161	0
Stage 1	160	-	-	-	-	-
Stage 2	261	-	-	-	-	-
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	589	885	-	-	1418	-
Stage 1	869	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	569	885	-	-	1418	-
Mov Cap-2 Maneuver	569	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	756	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	634	1418	-
HCM Lane V/C Ratio	-	-	0.301	0.031	-
HCM Control Delay (s)	-	-	13.1	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.1	-

Intersection						
Int Delay, s/veh	1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	78	22	162	14	14
Future Vol, veh/h	153	78	22	162	14	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	96	26	188	15	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	285	0	429	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1277	-	583	853
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1277	-	571	853
Mov Cap-2 Maneuver	-	-	-	-	571	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	684	-	-	1277	-
HCM Lane V/C Ratio	0.044	-	-	0.02	-
HCM Control Delay (s)	10.5	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.4					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	29	548	34	22	696
Future Vol, veh/h	0	29	548	34	22	696
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	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	89	89	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	32	616	38	23	740

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	308	0	0	654	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	688	-	-	929	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	688	-	-	929	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	688	929	-
HCM Lane V/C Ratio	-	-	0.046	0.025	-
HCM Control Delay (s)	-	-	10.5	9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	22	560	34	22	674
Future Vol, veh/h	58	22	560	34	22	674
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	0	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	89	89	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	63	24	629	38	23	717

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1034	315	0	0	667	0
Stage 1	629	-	-	-	-	-
Stage 2	405	-	-	-	-	-
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	228	681	-	-	919	-
Stage 1	494	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	222	681	-	-	919	-
Mov Cap-2 Maneuver	222	-	-	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	626	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.8	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	222	681	919	-
HCM Lane V/C Ratio	-	-	0.284	0.035	0.025	-
HCM Control Delay (s)	-	-	27.5	10.5	9	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	1.1	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	277	103	42	31	135	465	30	1185	139	430
v/c Ratio	0.82	0.20	0.06	0.09	0.26	0.67	0.06	0.72	0.48	0.23
Control Delay	49.9	24.7	2.1	23.3	25.6	23.7	9.5	24.6	15.5	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	24.7	2.1	23.3	25.6	23.7	9.5	24.6	15.5	12.3
Queue Length 50th (ft)	146	44	0	13	59	201	6	265	29	62
Queue Length 95th (ft)	149	57	1	22	69	151	16	321	59	93
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	497	764	655	527	764	795	536	1636	388	1860
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	0.56	0.13	0.06	0.06	0.18	0.58	0.06	0.72	0.36	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	66	27	19	84	288	21	827	3	107	277	54
Future Volume (veh/h)	177	66	27	19	84	288	21	827	3	107	277	54
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	277	103	42	31	135	465	30	1181	4	139	360	70
Peak Hour Factor	0.64	0.64	0.64	0.62	0.62	0.62	0.70	0.70	0.70	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	331	680	621	479	680	675	504	1583	5	263	1397	269
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.03	0.44	0.44	0.06	0.47	0.47
Sat Flow, veh/h	819	1870	1585	1243	1870	1585	1781	3633	12	1781	2972	572
Grp Volume(v), veh/h	277	103	42	31	135	465	30	578	607	139	214	216
Grp Sat Flow(s),veh/h/ln	819	1870	1585	1243	1870	1585	1781	1777	1868	1781	1777	1767
Q Serve(g_s), s	30.7	3.6	1.6	1.7	4.8	23.3	0.9	26.6	26.6	4.1	7.1	7.2
Cycle Q Clear(g_c), s	35.5	3.6	1.6	5.3	4.8	23.3	0.9	26.6	26.6	4.1	7.1	7.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		0.32
Lane Grp Cap(c), veh/h	331	680	621	479	680	675	504	774	814	263	835	830
V/C Ratio(X)	0.84	0.15	0.07	0.06	0.20	0.69	0.06	0.75	0.75	0.53	0.26	0.26
Avail Cap(c_a), veh/h	331	680	621	479	680	675	546	774	814	416	835	830
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.6	20.9	18.6	22.7	21.3	22.8	14.3	23.0	23.0	18.3	15.6	15.6
Incr Delay (d2), s/veh	17.0	0.1	0.0	0.1	0.1	3.0	0.0	6.5	6.2	1.6	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	1.5	0.6	0.5	2.0	8.5	0.4	12.0	12.6	1.6	2.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.6	21.0	18.6	22.8	21.5	25.7	14.4	29.5	29.2	20.0	16.3	16.4
LnGrp LOS	D	C	B	C	C	C	B	C	C	B	B	B
Approach Vol, veh/h		422			631			1215			569	
Approach Delay, s/veh		40.9			24.7			29.0			17.2	
Approach LOS		D			C			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	47.1		40.0	7.3	50.4		40.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	14.5	36.5		35.5	5.1	45.9		35.5				
Max Q Clear Time (g_c+I1), s	6.1	28.6		37.5	2.9	9.2		25.3				
Green Ext Time (p_c), s	0.2	4.6		0.0	0.0	2.4		1.9				

Intersection Summary			
HCM 6th Ctrl Delay			27.4
HCM 6th LOS			C

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	221	417	587	807	519	438
v/c Ratio	0.65	0.65	0.78	0.33	0.41	0.52
Control Delay	38.3	8.2	16.3	5.8	23.4	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	8.2	16.3	5.8	23.4	5.4
Queue Length 50th (ft)	101	0	109	68	100	0
Queue Length 95th (ft)	89	0	156	92	152	31
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	595	809	859	2449	1262	846
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	0.37	0.52	0.68	0.33	0.41	0.52

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	217	411	565	400	337
Future Volume (veh/h)	115	217	411	565	400	337
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	221	417	587	807	519	438
Peak Hour Factor	0.52	0.52	0.70	0.70	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	506	450	634	2184	1140	508
Arrive On Green	0.28	0.28	0.24	0.61	0.32	0.32
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	221	417	587	807	519	438
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	9.0	22.7	18.0	10.0	10.3	23.0
Cycle Q Clear(g_c), s	9.0	22.7	18.0	10.0	10.3	23.0
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	506	450	634	2184	1140	508
V/C Ratio(X)	0.44	0.93	0.93	0.37	0.46	0.86
Avail Cap(c_a), veh/h	532	474	794	2184	1140	508
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	26.0	30.9	14.7	8.5	24.0	28.3
Incr Delay (d2), s/veh	0.6	23.8	14.5	0.5	1.3	17.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	20.6	9.0	3.6	4.2	10.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.6	54.7	29.3	9.0	25.3	45.5
LnGrp LOS	C	D	C	A	C	D
Approach Vol, veh/h	638			1394	957	
Approach Delay, s/veh	44.9			17.5	34.5	
Approach LOS	D			B	C	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		59.0		29.7	26.1	32.9
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		54.5		26.5	29.5	20.5
Max Q Clear Time (g_c+I1), s		12.0		24.7	20.0	25.0
Green Ext Time (p_c), s		6.8		0.5	1.5	0.0

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

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	45	229	3	52	90
Future Vol, veh/h	67	45	229	3	52	90
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	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	51	266	3	64	111

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	507	268	0	0	269	0
Stage 1	268	-	-	-	-	-
Stage 2	239	-	-	-	-	-
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	525	771	-	-	1295	-
Stage 1	777	-	-	-	-	-
Stage 2	801	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	497	771	-	-	1295	-
Mov Cap-2 Maneuver	497	-	-	-	-	-
Stage 1	777	-	-	-	-	-
Stage 2	759	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	2.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	580	1295	-
HCM Lane V/C Ratio	-	-	0.219	0.05	-
HCM Control Delay (s)	-	-	12.9	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	123	53	0	381	0	23
Future Vol, veh/h	123	53	0	381	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	62	62	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	192	83	0	615	0	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	192
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	850
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	850
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	850	-	-	-
HCM Lane V/C Ratio	0.029	-	-	-
HCM Control Delay (s)	9.4	-	-	-
HCM Lane LOS	A	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	36	53	242	139	23
Future Vol, veh/h	110	36	53	242	139	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	62	62	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	172	56	85	390	151	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	228	0	732	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	560	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1340	-	388	872
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1340	-	364	872
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	536	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	21.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	397	-	-	1340	-
HCM Lane V/C Ratio	0.444	-	-	0.064	-
HCM Control Delay (s)	21.1	-	-	7.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	2.2	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	69	781	53	18	305
Future Vol, veh/h	0	69	781	53	18	305
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	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	70	70	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	75	1116	76	23	396

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	558	0	0	1192	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	473	-	-	581	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	473	-	-	581	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	14		0		0.6	
HCM LOS	B					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	473	581	-
HCM Lane V/C Ratio	-	-	0.159	0.04	-
HCM Control Delay (s)	-	-	14	11.5	-
HCM Lane LOS	-	-	B	B	-
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	8.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	116	69	765	107	18	287
Future Vol, veh/h	116	69	765	107	18	287
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	0	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	70	70	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	126	75	1093	153	23	373

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1326	547	0	0	1246	0
Stage 1	1093	-	-	-	-	-
Stage 2	233	-	-	-	-	-
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	147	481	-	-	554	-
Stage 1	283	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	141	481	-	-	554	-
Mov Cap-2 Maneuver	141	-	-	-	-	-
Stage 1	283	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	74.7	0	0.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	141	481	554	-
HCM Lane V/C Ratio	-	-	0.894	0.156	0.042	-
HCM Control Delay (s)	-	-	110.9	13.9	11.8	-
HCM Lane LOS	-	-	F	B	B	-
HCM 95th %tile Q(veh)	-	-	6	0.5	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	126	75	1093	153	23	373
v/c Ratio	0.53	0.27	0.44	0.13	0.06	0.14
Control Delay	41.0	10.4	7.2	1.7	3.6	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	10.4	7.2	1.7	3.6	3.2
Queue Length 50th (ft)	59	0	80	0	2	21
Queue Length 95th (ft)	110	35	151	10	8	34
Internal Link Dist (ft)	373		632			770
Turn Bay Length (ft)				250	250	
Base Capacity (vph)	455	462	2501	1163	414	2683
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	0.28	0.16	0.44	0.13	0.06	0.14

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	116	69	765	107	18	287		
Future Volume (veh/h)	116	69	765	107	18	287		
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	126	75	1093	153	23	373		
Peak Hour Factor	0.92	0.92	0.70	0.70	0.77	0.77		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	177	158	2479	1106	391	2779		
Arrive On Green	0.10	0.10	0.70	0.70	0.03	0.78		
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647		
Grp Volume(v), veh/h	126	75	1093	153	23	373		
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777		
Q Serve(g_s), s	5.2	3.4	10.2	2.5	0.3	1.9		
Cycle Q Clear(g_c), s	5.2	3.4	10.2	2.5	0.3	1.9		
Prop In Lane	1.00	1.00		1.00	1.00			
Lane Grp Cap(c), veh/h	177	158	2479	1106	391	2779		
V/C Ratio(X)	0.71	0.48	0.44	0.14	0.06	0.13		
Avail Cap(c_a), veh/h	503	448	2479	1106	498	2779		
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	33.2	32.4	5.0	3.8	3.7	2.0		
Incr Delay (d2), s/veh	5.2	2.2	0.6	0.3	0.1	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	2.4	1.4	3.0	0.7	0.1	0.3		
Unsig. Movement Delay, s/veh								
LnGrp Delay(d),s/veh	38.4	34.6	5.6	4.1	3.7	2.1		
LnGrp LOS	D	C	A	A	A	A		
Approach Vol, veh/h	201		1246			396		
Approach Delay, s/veh	36.9		5.4			2.2		
Approach LOS	D		A			A		
Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	6.4	57.6				64.0		12.1
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	6.5	48.5				59.5		21.5
Max Q Clear Time (g_c+I1), s	2.3	12.2				3.9		7.2
Green Ext Time (p_c), s	0.0	10.9				2.4		0.5

Intersection Summary		
HCM 6th Ctrl Delay		8.2
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	141	114	95	34	141	124	58	716	256	850
v/c Ratio	0.68	0.34	0.17	0.15	0.42	0.20	0.13	0.38	0.48	0.41
Control Delay	49.7	32.6	5.3	30.2	34.2	7.8	5.9	13.3	8.0	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.7	32.6	5.3	30.2	34.2	7.8	5.9	13.3	8.0	10.5
Queue Length 50th (ft)	71	54	0	15	67	15	8	106	38	116
Queue Length 95th (ft)	124	95	27	39	118	44	24	193	88	199
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	406	670	583	452	670	813	477	1887	700	2097
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	0.35	0.17	0.16	0.08	0.21	0.15	0.12	0.38	0.37	0.41

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	97	81	30	124	109	52	632	5	241	671	128
Future Volume (veh/h)	120	97	81	30	124	109	52	632	5	241	671	128
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	141	114	95	34	141	124	58	710	6	256	714	136
Peak Hour Factor	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	414	420	284	414	494	450	1916	16	551	1720	327
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	0.04	0.53	0.53	0.09	0.58	0.58
Sat Flow, veh/h	1114	1870	1585	1173	1870	1585	1781	3611	31	1781	2978	567
Grp Volume(v), veh/h	141	114	95	34	141	124	58	349	367	256	426	424
Grp Sat Flow(s),veh/h/ln	1114	1870	1585	1173	1870	1585	1781	1777	1865	1781	1777	1768
Q Serve(g_s), s	10.5	4.3	4.0	2.1	5.4	5.0	1.2	9.8	9.8	5.2	11.4	11.4
Cycle Q Clear(g_c), s	15.9	4.3	4.0	6.5	5.4	5.0	1.2	9.8	9.8	5.2	11.4	11.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		0.32
Lane Grp Cap(c), veh/h	260	414	420	284	414	494	450	943	990	551	1026	1021
V/C Ratio(X)	0.54	0.28	0.23	0.12	0.34	0.25	0.13	0.37	0.37	0.46	0.42	0.42
Avail Cap(c_a), veh/h	397	644	615	428	644	689	528	943	990	816	1026	1021
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.8	27.7	24.6	30.3	28.1	22.0	8.4	11.8	11.8	7.7	10.1	10.1
Incr Delay (d2), s/veh	1.8	0.4	0.3	0.2	0.5	0.3	0.1	1.1	1.1	0.6	1.2	1.2
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	2.8	1.9	1.4	0.6	2.3	1.8	0.4	3.9	4.1	1.6	4.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	28.0	24.9	30.5	28.6	22.3	8.5	12.9	12.8	8.3	11.3	11.3
LnGrp LOS	D	C	C	C	C	C	A	B	B	A	B	B
Approach Vol, veh/h		350			299			774			1106	
Approach Delay, s/veh		30.6			26.2			12.5			10.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.3	50.0		23.5	8.2	54.0		23.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	20.5	36.5		29.5	7.5	49.5		29.5				
Max Q Clear Time (g_c+I1), s	7.2	11.8		17.9	3.2	13.4		8.5				
Green Ext Time (p_c), s	0.6	4.7		1.1	0.0	5.5		1.1				

Intersection Summary		
HCM 6th Ctrl Delay		15.8
HCM 6th LOS		B

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	56	163	12	956	1051	12
v/c Ratio	0.34	0.55	0.03	0.34	0.38	0.01
Control Delay	41.4	13.7	2.3	2.8	4.2	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.4	13.7	2.3	2.8	4.2	2.4
Queue Length 50th (ft)	28	0	1	52	60	0
Queue Length 95th (ft)	22	0	4	88	175	5
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	471	541	465	2847	2763	1238
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	0.30	0.03	0.34	0.38	0.01

Intersection Summary

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	52	11	851	988	11
Future Volume (veh/h)	18	52	11	851	988	11
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	56	162	12	956	1051	12
Peak Hour Factor	0.32	0.32	0.89	0.89	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	227	202	416	2736	2502	1116
Arrive On Green	0.13	0.13	0.01	0.77	0.70	0.70
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	56	162	12	956	1051	12
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	2.5	8.7	0.2	7.4	10.9	0.2
Cycle Q Clear(g_c), s	2.5	8.7	0.2	7.4	10.9	0.2
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	227	202	416	2736	2502	1116
V/C Ratio(X)	0.25	0.80	0.03	0.35	0.42	0.01
Avail Cap(c_a), veh/h	477	425	542	2736	2502	1116
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	34.5	37.2	3.9	3.2	5.5	3.9
Incr Delay (d2), s/veh	0.6	7.2	0.0	0.4	0.5	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	1.1	7.8	0.0	1.9	2.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.0	44.4	4.0	3.5	6.0	3.9
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	218			968	1063	
Approach Delay, s/veh	42.0			3.5	5.9	
Approach LOS	D			A	A	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		72.0		15.7	5.8	66.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		67.5		23.5	7.5	55.5
Max Q Clear Time (g_c+I1), s		9.4		10.7	2.2	12.9
Green Ext Time (p_c), s		8.9		0.5	0.0	8.6
Intersection Summary						
HCM 6th Ctrl Delay			8.4			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	5.4					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	120	64	152	3	52	156
Future Vol, veh/h	120	64	152	3	52	156
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	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	136	73	177	3	64	193

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	500	179	0	0	180	0
Stage 1	179	-	-	-	-	-
Stage 2	321	-	-	-	-	-
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	530	864	-	-	1396	-
Stage 1	852	-	-	-	-	-
Stage 2	735	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	503	864	-	-	1396	-
Mov Cap-2 Maneuver	503	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	589	1396	-
HCM Lane V/C Ratio	-	-	0.355	0.046	-
HCM Control Delay (s)	-	-	14.4	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0.1	-

Intersection						
Int Delay, s/veh	0.4					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	234	108	0	209	0	23
Future Vol, veh/h	234	108	0	209	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	289	133	0	243	0	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	289
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	750
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	750
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	750	-	-	-
HCM Lane V/C Ratio	0.033	-	-	-
HCM Control Delay (s)	10	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	176	81	54	162	47	23
Future Vol, veh/h	176	81	54	162	47	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	100	63	188	51	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	317	0	531	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	314	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1243	-	509	823
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1243	-	483	823
Mov Cap-2 Maneuver	-	-	-	-	483	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	559	-	-	1243	-
HCM Lane V/C Ratio	0.136	-	-	0.051	-
HCM Control Delay (s)	12.5	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.9					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	70	619	54	54	728
Future Vol, veh/h	0	70	619	54	54	728
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	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	89	89	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	76	696	61	57	774

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	348	0	0	757	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	648	-	-	850	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	648	-	-	850	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	648	850	-
HCM Lane V/C Ratio	-	-	0.117	0.068	-
HCM Control Delay (s)	-	-	11.3	9.5	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-

Intersection	
Int Delay, s/veh	17.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	187	93	580	108	54	674
Future Vol, veh/h	187	93	580	108	54	674
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	0	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	89	89	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	203	101	652	121	57	717

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1125	326	0	0	773	0
Stage 1	652	-	-	-	-	-
Stage 2	473	-	-	-	-	-
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	~ 199	670	-	-	838	-
Stage 1	480	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 185	670	-	-	838	-
Mov Cap-2 Maneuver	~ 185	-	-	-	-	-
Stage 1	480	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	102.1		0		0.7	
HCM LOS	F					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	185	670	838	-
HCM Lane V/C Ratio	-	-	1.099	0.151	0.069	-
HCM Control Delay (s)	-	-	147.2	11.3	9.6	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	9.9	0.5	0.2	-

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	203	101	652	121	57	717
v/c Ratio	0.64	0.27	0.30	0.12	0.10	0.29
Control Delay	38.3	7.8	9.1	2.5	4.9	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	7.8	9.1	2.5	4.9	5.1
Queue Length 50th (ft)	88	0	80	0	7	54
Queue Length 95th (ft)	152	36	136	24	21	101
Internal Link Dist (ft)	373		632			770
Turn Bay Length (ft)				250	250	
Base Capacity (vph)	649	645	2182	1022	617	2490
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	0.16	0.30	0.12	0.09	0.29

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	187	93	580	108	54	674
Future Volume (veh/h)	187	93	580	108	54	674
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	203	101	652	121	57	717
Peak Hour Factor	0.92	0.92	0.89	0.89	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	265	236	2194	978	554	2583
Arrive On Green	0.15	0.15	0.62	0.62	0.05	0.73
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	203	101	652	121	57	717
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	7.9	4.2	6.2	2.3	0.8	5.0
Cycle Q Clear(g_c), s	7.9	4.2	6.2	2.3	0.8	5.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	265	236	2194	978	554	2583
V/C Ratio(X)	0.77	0.43	0.30	0.12	0.10	0.28
Avail Cap(c_a), veh/h	703	625	2194	978	704	2583
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	29.5	28.0	6.5	5.7	4.5	3.4
Incr Delay (d2), s/veh	4.6	1.2	0.3	0.3	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	1.6	2.0	0.7	0.2	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.2	29.2	6.8	6.0	4.6	3.6
LnGrp LOS	C	C	A	A	A	A
Approach Vol, veh/h	304		773			774
Approach Delay, s/veh	32.5		6.7			3.7
Approach LOS	C		A			A

Timer - Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	7.9	49.1				57.0		15.2
Change Period (Y+Rc), s	4.5	4.5				4.5		4.5
Max Green Setting (Gmax), s	9.5	38.5				52.5		28.5
Max Q Clear Time (g_c+I1), s	2.8	8.2				7.0		9.9
Green Ext Time (p_c), s	0.0	5.4				5.1		0.9

Intersection Summary			
HCM 6th Ctrl Delay			9.7
HCM 6th LOS			A

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	623	236	95	69	316	1098	67	2726	322	972
v/c Ratio	2.41	0.37	0.13	0.21	0.50	1.44	0.25	1.78	1.39	0.57
Control Delay	664.4	26.9	4.8	25.6	29.4	230.1	12.6	377.6	225.3	19.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	664.4	26.9	4.8	25.6	29.4	230.1	12.6	377.6	225.3	19.5
Queue Length 50th (ft)	~658	112	3	31	158	~959	18	~1376	~227	223
Queue Length 95th (ft)	#569	119	12	43	151	#668	28	#1055	#312	227
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	259	637	742	326	637	763	267	1531	231	1712
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	2.41	0.37	0.13	0.21	0.50	1.44	0.25	1.78	1.39	0.57

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	399	151	61	43	196	681	47	1901	7	248	627	122
Future Volume (veh/h)	399	151	61	43	196	681	47	1901	7	248	627	122
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	623	236	95	69	316	1098	67	2716	10	322	814	158
Peak Hour Factor	0.64	0.64	0.64	0.62	0.62	0.62	0.70	0.70	0.70	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	151	640	609	331	640	685	312	1572	6	232	1427	277
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.04	0.43	0.43	0.09	0.48	0.48
Sat Flow, veh/h	380	1870	1585	1049	1870	1585	1781	3631	13	1781	2968	576
Grp Volume(v), veh/h	623	236	95	69	316	1098	67	1328	1398	322	487	485
Grp Sat Flow(s),veh/h/ln	380	1870	1585	1049	1870	1585	1781	1777	1868	1781	1777	1767
Q Serve(g_s), s	20.8	9.5	3.9	5.3	13.4	34.2	2.1	43.3	43.3	9.0	19.6	19.6
Cycle Q Clear(g_c), s	34.2	9.5	3.9	14.8	13.4	34.2	2.1	43.3	43.3	9.0	19.6	19.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		0.33
Lane Grp Cap(c), veh/h	151	640	609	331	640	685	312	769	809	232	854	849
V/C Ratio(X)	4.12	0.37	0.16	0.21	0.49	1.60	0.21	1.73	1.73	1.39	0.57	0.57
Avail Cap(c_a), veh/h	151	640	609	331	640	685	327	769	809	232	854	849
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	24.8	20.2	30.3	26.0	28.4	15.6	28.3	28.4	29.9	18.6	18.6
Incr Delay (d2), s/veh	1420.5	0.4	0.1	0.3	0.6	278.4	0.3	332.2	333.0	198.1	2.8	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	63.3	4.0	1.4	1.3	5.7	67.7	0.8	88.4	93.1	18.3	8.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	1465.0	25.1	20.3	30.7	26.6	306.8	15.9	360.6	361.3	228.1	21.3	21.4
LnGrp LOS	F	C	C	C	C	F	B	F	F	F	C	C
Approach Vol, veh/h		954			1483			2793			1294	
Approach Delay, s/veh		965.0			234.3			352.7			72.8	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.5	47.8		38.7	8.7	52.6		38.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	9.0	43.3		34.2	5.1	47.2		34.2				
Max Q Clear Time (g_c+I1), s	11.0	45.3		36.2	4.1	21.6		36.2				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	6.2		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			359.8
HCM 6th LOS			F

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	498	946	1137	1881	1181	831
v/c Ratio	1.19	1.10	1.55	0.77	1.23	1.11
Control Delay	145.8	76.3	281.2	15.3	151.9	89.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	145.8	76.3	281.2	15.3	151.9	89.2
Queue Length 50th (ft)	~464	~428	~1201	463	~595	~475
Queue Length 95th (ft)	271	0	#991	332	#567	#490
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	420	861	733	2433	958	746
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	1.19	1.10	1.55	0.77	1.23	1.11

Intersection Summary

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

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	259	492	796	1317	909	640
Future Volume (veh/h)	259	492	796	1317	909	640
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	498	946	1137	1881	1181	831
Peak Hour Factor	0.52	0.52	0.70	0.70	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	423	376	735	2443	962	429
Arrive On Green	0.24	0.24	0.38	0.69	0.27	0.27
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	498	946	1137	1881	1181	831
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	28.5	28.5	45.5	42.2	32.5	32.5
Cycle Q Clear(g_c), s	28.5	28.5	45.5	42.2	32.5	32.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	423	376	735	2443	962	429
V/C Ratio(X)	1.18	2.51	1.55	0.77	1.23	1.94
Avail Cap(c_a), veh/h	423	376	735	2443	962	429
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	45.8	45.7	32.1	12.4	43.8	43.7
Incr Delay (d2), s/veh	101.8	688.7	252.5	2.4	111.4	429.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.5	94.1	71.1	15.8	28.6	63.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	147.6	734.4	284.6	14.9	155.2	473.4
LnGrp LOS	F	F	F	B	F	F
Approach Vol, veh/h	1444			3018	2012	
Approach Delay, s/veh	532.0			116.5	286.6	
Approach LOS	F			F	F	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		87.0		33.0	50.0	37.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		82.5		28.5	45.5	32.5
Max Q Clear Time (g_c+I1), s		44.2		30.5	47.5	34.5
Green Ext Time (p_c), s		23.1		0.0	0.0	0.0

Intersection Summary		
HCM 6th Ctrl Delay		262.0
HCM 6th LOS		F

Intersection	
Int Delay, s/veh	22.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	101	153	519	7	124	210
Future Vol, veh/h	101	153	519	7	124	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	115	174	603	8	153	259

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1172	607	0	0	611	0
Stage 1	607	-	-	-	-	-
Stage 2	565	-	-	-	-	-
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	213	496	-	-	968	-
Stage 1	544	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	174	496	-	-	968	-
Mov Cap-2 Maneuver	174	-	-	-	-	-
Stage 1	544	-	-	-	-	-
Stage 2	464	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	95.3	0	3.5
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	286	968	-
HCM Lane V/C Ratio	-	-	1.009	0.158	-
HCM Control Delay (s)	-	-	95.3	9.4	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	10.6	0.6	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	280	126	0	895	0	59
Future Vol, veh/h	280	126	0	895	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	62	62	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	438	197	0	1444	0	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	438
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	619
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	619
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	619	-	-	-
HCM Lane V/C Ratio	0.104	-	-	-
HCM Control Delay (s)	11.5	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

Intersection	
Int Delay, s/veh	378.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	255	83	126	546	350	59
Future Vol, veh/h	255	83	126	546	350	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	62	62	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	398	130	203	881	380	64

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	528	0	1685	398
Stage 1	-	-	-	-	398	-
Stage 2	-	-	-	-	1287	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1039	-	~ 103	652
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	~ 259	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1039	-	~ 83	652
Mov Cap-2 Maneuver	-	-	-	-	~ 83	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	~ 208	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	$ 1745.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	95	-	-	1039	-
HCM Lane V/C Ratio	4.68	-	-	0.196	-
HCM Control Delay (s)	$ 1745.6	-	-	9.3	-
HCM Lane LOS	F	-	-	A	-
HCM 95th %tile Q(veh)	47.2	-	-	0.7	-

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

Intersection	
Int Delay, s/veh	10.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	176	1782	126	43	690
Future Vol, veh/h	0	176	1782	126	43	690
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	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	70	70	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	191	2546	180	56	896

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	1273	0	0	2726	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	~ 158	-	-	146	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	~ 158	-	-	146	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	196.3	0	2.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	158	146	-
HCM Lane V/C Ratio	-	-	1.211	0.382	-
HCM Control Delay (s)	-	-	196.3	44.2	-
HCM Lane LOS	-	-	F	E	-
HCM 95th %tile Q(veh)	-	-	10.8	1.6	-

Notes

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

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	318	191	2474	361	56	840
v/c Ratio	0.88	0.58	1.02	0.30	0.63	0.34
Control Delay	58.8	36.9	37.4	1.2	45.5	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.8	36.9	37.4	1.2	45.5	5.9
Queue Length 50th (ft)	164	88	~685	0	14	84
Queue Length 95th (ft)	#305	156	397	5	#69	91
Internal Link Dist (ft)	373		632			770
Turn Bay Length (ft)				250	250	
Base Capacity (vph)	377	343	2435	1201	89	2435
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	0.84	0.56	1.02	0.30	0.63	0.34

Intersection Summary

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

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	293	176	1732	253	43	647
Future Volume (veh/h)	293	176	1732	253	43	647
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	318	191	2474	361	56	840
Peak Hour Factor	0.92	0.92	0.70	0.70	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	358	319	2458	1096	86	2458
Arrive On Green	0.20	0.20	0.69	0.69	0.69	0.69
Sat Flow, veh/h	1781	1585	3647	1585	94	3647
Grp Volume(v), veh/h	318	191	2474	361	56	840
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	94	1777
Q Serve(g_s), s	14.6	9.2	58.0	7.6	0.0	8.0
Cycle Q Clear(g_c), s	14.6	9.2	58.0	7.6	58.0	8.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	358	319	2458	1096	86	2458
V/C Ratio(X)	0.89	0.60	1.01	0.33	0.65	0.34
Avail Cap(c_a), veh/h	382	340	2458	1096	86	2458
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	32.6	30.4	12.9	5.2	41.9	5.2
Incr Delay (d2), s/veh	20.8	2.6	19.8	0.8	32.6	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	3.6	23.9	2.3	1.9	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	53.3	33.0	32.7	6.0	74.5	5.6
LnGrp LOS	D	C	F	A	E	A
Approach Vol, veh/h	509		2835			896
Approach Delay, s/veh	45.7		29.3			9.9
Approach LOS	D		C			A

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	62.5	62.5	21.4
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	58.0	58.0	18.0
Max Q Clear Time (g_c+I1), s	60.0	60.0	16.6
Green Ext Time (p_c), s	0.0	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	319	266	222	77	323	284	131	1647	623	1941
v/c Ratio	1.36	0.44	0.32	0.28	0.53	0.32	0.80	1.31	1.55	1.14
Control Delay	218.7	29.4	14.9	28.4	31.5	12.5	53.2	175.9	286.3	95.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	218.7	29.4	14.9	28.4	31.5	12.5	53.2	175.9	286.3	95.3
Queue Length 50th (ft)	~269	133	63	36	167	87	35	~721	~517	~761
Queue Length 95th (ft)	#405	193	109	74	246	135	#130	#846	#734	#902
Internal Link Dist (ft)		939			331			623		2224
Turn Bay Length (ft)	200		60	185		185	110		110	
Base Capacity (vph)	234	605	702	280	605	885	163	1255	401	1707
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	1.36	0.44	0.32	0.28	0.53	0.32	0.80	1.31	1.55	1.14

Intersection Summary

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	271	226	189	68	284	250	117	1455	11	586	1536	289
Future Volume (veh/h)	271	226	189	68	284	250	117	1455	11	586	1536	289
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	319	266	222	77	323	284	131	1635	12	623	1634	307
Peak Hour Factor	0.85	0.85	0.85	0.88	0.88	0.88	0.89	0.89	0.89	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	608	594	266	608	808	161	1284	9	402	1471	268
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.05	0.35	0.35	0.19	0.49	0.49
Sat Flow, veh/h	813	1870	1585	908	1870	1585	1781	3616	27	1781	3002	547
Grp Volume(v), veh/h	319	266	222	77	323	284	131	803	844	623	946	995
Grp Sat Flow(s),veh/h/ln	813	1870	1585	908	1870	1585	1781	1777	1866	1781	1777	1772
Q Serve(g_s), s	18.4	11.2	10.2	7.3	14.1	10.7	4.7	35.5	35.5	18.5	49.0	49.0
Cycle Q Clear(g_c), s	32.5	11.2	10.2	18.5	14.1	10.7	4.7	35.5	35.5	18.5	49.0	49.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.01	1.00		0.31
Lane Grp Cap(c), veh/h	222	608	594	266	608	808	161	631	662	402	871	868
V/C Ratio(X)	1.44	0.44	0.37	0.29	0.53	0.35	0.81	1.27	1.27	1.55	1.09	1.15
Avail Cap(c_a), veh/h	222	608	594	266	608	808	161	631	662	402	871	868
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	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.8	26.6	22.7	33.8	27.5	14.6	25.4	32.3	32.3	31.2	25.5	25.5
Incr Delay (d2), s/veh	221.1	0.5	0.4	0.6	0.9	0.3	26.2	134.9	135.1	260.2	56.7	79.2
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	19.0	4.8	3.6	1.6	6.1	3.5	3.1	38.3	40.3	33.7	31.8	37.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	264.9	27.1	23.1	34.4	28.4	14.9	51.7	167.2	167.3	291.4	82.2	104.7
LnGrp LOS	F	C	C	C	C	B	D	F	F	F	F	F
Approach Vol, veh/h		807			684			1778			2564	
Approach Delay, s/veh		120.0			23.5			158.7			141.8	
Approach LOS		F			C			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.0	40.0		37.0	9.5	53.5		37.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	18.5	35.5		32.5	5.0	49.0		32.5				
Max Q Clear Time (g_c+I1), s	20.5	37.5		34.5	6.7	51.0		20.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	0.0		2.5				
Intersection Summary												
HCM 6th Ctrl Delay			130.1									
HCM 6th LOS			F									

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	128	388	28	2192	2433	27
v/c Ratio	0.37	1.01	0.17	0.87	1.05	0.03
Control Delay	38.6	80.5	6.3	15.6	52.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	80.5	6.3	15.6	52.9	4.0
Queue Length 50th (ft)	71	~200	5	473	~944	2
Queue Length 95th (ft)	42	51	12	584	#1081	12
Internal Link Dist (ft)	1149			2224	1086	
Turn Bay Length (ft)			185			230
Base Capacity (vph)	345	384	167	2530	2318	1043
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	0.37	1.01	0.17	0.87	1.05	0.03

Intersection Summary

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

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

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	124	25	1951	2287	25
Future Volume (veh/h)	41	124	25	1951	2287	25
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	128	388	28	2192	2433	27
Peak Hour Factor	0.32	0.32	0.89	0.89	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	347	309	120	2541	2285	1019
Arrive On Green	0.19	0.19	0.03	0.71	0.64	0.64
Sat Flow, veh/h	1781	1585	1781	3647	3647	1585
Grp Volume(v), veh/h	128	388	28	2192	2433	27
Grp Sat Flow(s),veh/h/ln	1781	1585	1781	1777	1777	1585
Q Serve(g_s), s	6.2	19.5	0.5	45.9	64.3	0.6
Cycle Q Clear(g_c), s	6.2	19.5	0.5	45.9	64.3	0.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	347	309	120	2541	2285	1019
V/C Ratio(X)	0.37	1.26	0.23	0.86	1.06	0.03
Avail Cap(c_a), veh/h	347	309	170	2541	2285	1019
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	34.9	40.3	26.9	10.6	17.9	6.5
Incr Delay (d2), s/veh	0.7	138.6	1.0	4.2	38.9	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	2.7	27.4	0.5	15.8	32.7	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	35.6	178.9	27.8	14.8	56.7	6.5
LnGrp LOS	D	F	C	B	F	A
Approach Vol, veh/h	516			2220	2460	
Approach Delay, s/veh	143.3			14.9	56.2	
Approach LOS	F			B	E	

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		76.0		24.0	7.2	68.8
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s		71.5		19.5	5.5	61.5
Max Q Clear Time (g_c+I1), s		47.9		21.5	2.5	66.3
Green Ext Time (p_c), s		19.2		0.0	0.0	0.0

Intersection Summary			
HCM 6th Ctrl Delay			47.2
HCM 6th LOS			D

Intersection	
Int Delay, s/veh	159.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	271	151	350	7	122	356
Future Vol, veh/h	271	151	350	7	122	356
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	88	88	86	86	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	308	172	407	8	151	440

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1153	411	0	0	415	0
Stage 1	411	-	-	-	-	-
Stage 2	742	-	-	-	-	-
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	~ 218	641	-	-	1144	-
Stage 1	669	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 180	641	-	-	1144	-
Mov Cap-2 Maneuver	~ 180	-	-	-	-	-
Stage 1	669	-	-	-	-	-
Stage 2	389	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 489.8	0	2.2
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	242	1144	-
HCM Lane V/C Ratio	-	-	1.982	0.132	-
HCM Control Delay (s)	-	-	$ 489.8	8.6	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	34.9	0.5	-

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

Intersection						
Int Delay, s/veh	0.5					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↱		↑		↱
Traffic Vol, veh/h	550	273	0	478	0	56
Future Vol, veh/h	550	273	0	478	0	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	679	337	0	556	0	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	679
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	452
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	452
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	452	-	-	-
HCM Lane V/C Ratio	0.135	-	-	-
HCM Control Delay (s)	14.2	-	-	-
HCM Lane LOS	B	-	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-

Intersection	
Int Delay, s/veh	11.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	401	205	138	365	113	56
Future Vol, veh/h	401	205	138	365	113	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	86	86	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	495	253	160	424	123	61

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	748	0	1239	495
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	744	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	861	-	194	575
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	861	-	158	575
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	383	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	83
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	208	-	-	861	-
HCM Lane V/C Ratio	0.883	-	-	0.186	-
HCM Control Delay (s)	83	-	-	10.1	-
HCM Lane LOS	F	-	-	B	-
HCM 95th %tile Q(veh)	6.9	-	-	0.7	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	169	1414	138	138	1658
Future Vol, veh/h	0	169	1414	138	138	1658
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	-	250	250	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	89	89	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	184	1589	155	147	1764

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	795	0	0	1744	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	330	-	-	356	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	330	-	-	356	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.8	0	1.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	330	356	-
HCM Lane V/C Ratio	-	-	0.557	0.412	-
HCM Control Delay (s)	-	-	28.8	22	-
HCM Lane LOS	-	-	D	C	-
HCM 95th %tile Q(veh)	-	-	3.2	2	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	492	246	1488	307	147	1617
v/c Ratio	1.09	0.56	0.65	0.27	1.07	0.71
Control Delay	102.3	28.7	11.5	1.4	120.8	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.3	28.7	11.5	1.4	120.8	12.7
Queue Length 50th (ft)	~318	96	244	0	~93	283
Queue Length 95th (ft)	#508	173	304	25	#134	361
Internal Link Dist (ft)	373		632			770
Turn Bay Length (ft)				250	250	
Base Capacity (vph)	452	441	2280	1129	137	2280
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	1.09	0.56	0.65	0.27	1.07	0.71

Intersection Summary

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

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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	453	226	1324	273	138	1520
Future Volume (veh/h)	453	226	1324	273	138	1520
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	492	246	1488	307	147	1617
Peak Hour Factor	0.92	0.92	0.89	0.89	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	455	405	2290	1021	182	2290
Arrive On Green	0.26	0.26	0.64	0.64	0.64	0.64
Sat Flow, veh/h	1781	1585	3647	1585	263	3647
Grp Volume(v), veh/h	492	246	1488	307	147	1617
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	263	1777
Q Serve(g_s), s	23.0	12.3	23.1	7.7	34.9	26.7
Cycle Q Clear(g_c), s	23.0	12.3	23.1	7.7	58.0	26.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	455	405	2290	1021	182	2290
V/C Ratio(X)	1.08	0.61	0.65	0.30	0.81	0.71
Avail Cap(c_a), veh/h	455	405	2290	1021	182	2290
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	33.5	29.5	9.8	7.1	32.9	10.4
Incr Delay (d2), s/veh	65.7	2.6	1.4	0.8	30.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.9	4.9	8.1	2.5	4.7	8.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	99.2	32.1	11.2	7.8	63.4	12.3
LnGrp LOS	F	C	B	A	E	B
Approach Vol, veh/h	738		1795			1764
Approach Delay, s/veh	76.8		10.6			16.6
Approach LOS	E		B			B

Timer - Assigned Phs	2	6	8
Phs Duration (G+Y+Rc), s	62.5	62.5	27.5
Change Period (Y+Rc), s	4.5	4.5	4.5
Max Green Setting (Gmax), s	58.0	58.0	23.0
Max Q Clear Time (g_c+I1), s	25.1	60.0	25.0
Green Ext Time (p_c), s	17.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	24.4
HCM 6th LOS	C