

Traffic Impact Study

McCune Ranch

El Paso County, CO

Prepared for:

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Prepared by:



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October 2, 2018

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Add "PCD File No. SP-18-006"

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1.0 Introduction

The purpose of this Traffic Impact Study (TIS) is to identify project traffic generation characteristics, to identify potential traffic related impacts on the adjacent street system, and to develop mitigation measures required for identified traffic impacts. This TIS is for the proposed McCune Ranch project located at the northwest quadrant of the intersection of Hodgen Road and Meridian Road in El Paso County, CO. See Figure 1: Vicinity Map.

Kellar Engineering LLC (KE) has prepared the TIS to document the results of the project's anticipated traffic conditions in accordance with the El Paso County Engineering Criteria Manual and to identify projected impacts to the transportation system.

2.0 Existing Conditions and Roadway Network

The project site is located at the northwest quadrant of the intersection of Hodgen Road and Meridian Road. Hodgen Road an east-west street arterial with a posted speed of 55 mph adjacent to the project site. Hodgen Road is classified as a Minor Arterial in the 2040 Roadway Plan. Meridian Road is a north-south arterial with a posted speed of 40 mph adjacent to the project site. Meridian Road is classified as a Minor Arterial in the 2040 Roadway Plan. See Appendix D.

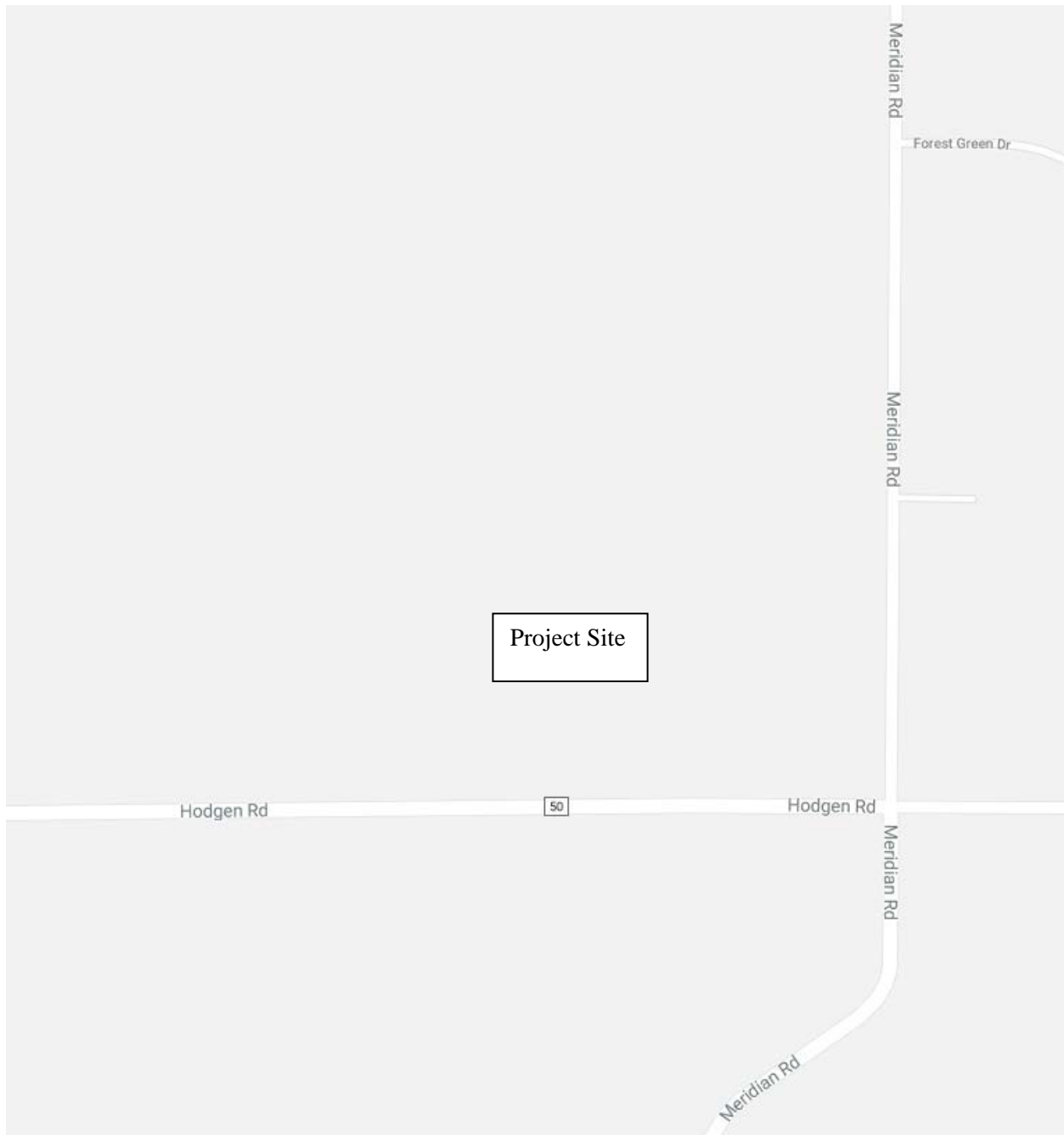
2.1 Existing Traffic Volumes

Existing peak hour traffic volume counts were conducted using data collection cameras on Thursday, August 30, 2018. The traffic counts were conducted during the peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM. These turning movement counts are shown in Figure 3 with the count sheets provided in Appendix A.

See comment on
Section 4.3 (pg 16)

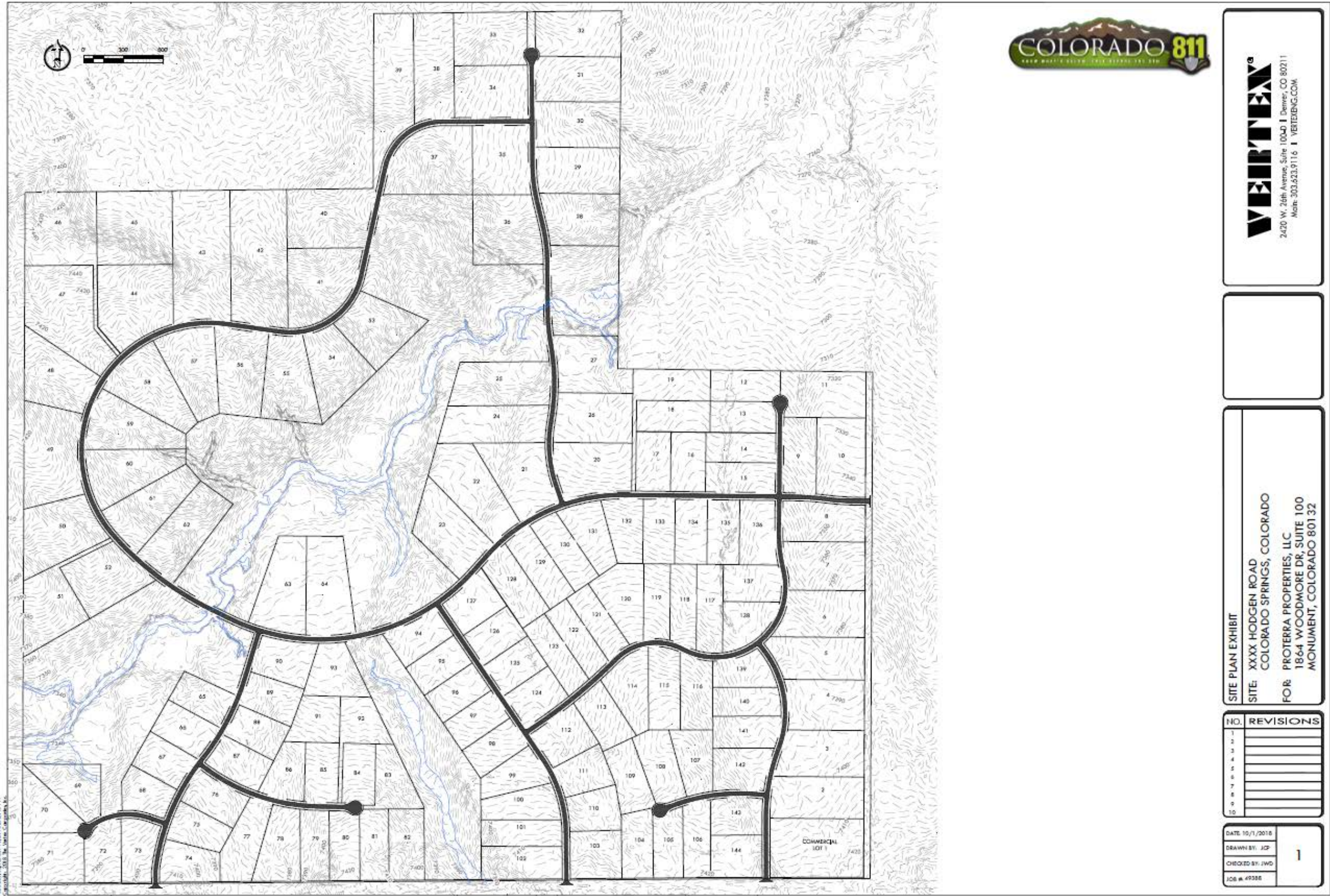
Add a narrative for Bison Meadows Ct and Forest Green Drive. Part of the narrative shall include what assumptions were used to generate the LOS and an explanation why counts were not obtained.

Figure 1: Vicinity Map



Google Maps

Figure 2: Site Plan



3.0 Proposed Development

The proposed development consists of a total of 143 dwelling units of single family residential and an assumed commercial retail use of approximately 15,000 SF. Due to the size of the McCune Ranch project, not all of the 143 lots will likely develop at once. The intersection improvements for each phase will be triggered as the new street connections to Hodgen Road are constructed. See Table 1: Trip Generation, Figure 2: Site Plan, and Section 4.3 Intersection Improvements.

3.1 Trip Generation

Site generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Report* published by the Institute of Transportation Engineers (ITE). ITE has established trip generation rates in nationwide studies of similar land uses. For this study, KE used the ITE 9th Edition Trip Generation Report average trip rates for the traffic associated with this proposed development. Per the ITE, full project build-out of the McCune Ranch Development is anticipated to generate approximately: 2,026 daily weekday trips, 211 AM total peak hour trips, and 184 PM total peak hour trips. Table 1 summarizes the ITE Trip Generation for the proposed development.

Table 1: Trip Generation

ITE Code	Phase	Land Use	Size	Average Daily Trips		AM Peak Hour Trips						PM Peak Hour Trips					
				Rate	Total	Rate	% In	In	% Out	Out	Total	Rate	% In	In	% Out	Out	Total
		Phase 1															
210	Phase 1	Single Family	48 DU	9.52	457	0.75	25%	9	75%	27	36	1.00	63%	30	37%	18	48
		Subtotal Phase 1			457			9		27	36			30		18	48
		Phase 2															
210	Phase 2	Single Family	23 DU	9.52	219	0.75	25%	4	75%	13	17	1.00	63%	14	37%	9	23
		Subtotal Phase 2			219			4		13	17			14		9	23
		Phase 3															
210	Phase 3	Single Family	56 DU	9.52	533	0.75	25%	11	75%	32	43	1.00	63%	35	37%	21	56
826	Phase 3	Retail	15.0 KSF	44.32	665	6.84	48%	49	52%	54	103	2.71	44%	18	56%	23	41
		Subtotal Phase 3			1,198			60		86	146			53		44	97
		Phase 4															
210	Phase 4	Single Family	16 DU	9.52	152	0.75	25%	3	75%	9	12	1.00	63%	10	37%	6	16
		Subtotal Phase 4			152			3		9	12			10		6	16
Total (143 DU + Commercial Lot)					2,026			76		135	211			107		77	184

DU = Dwelling Units
KSF = Thousand Square Feet

Revise. This is really low for a 7.9 acre commercial lot.

Figure 3: Recent Peak Hour Traffic

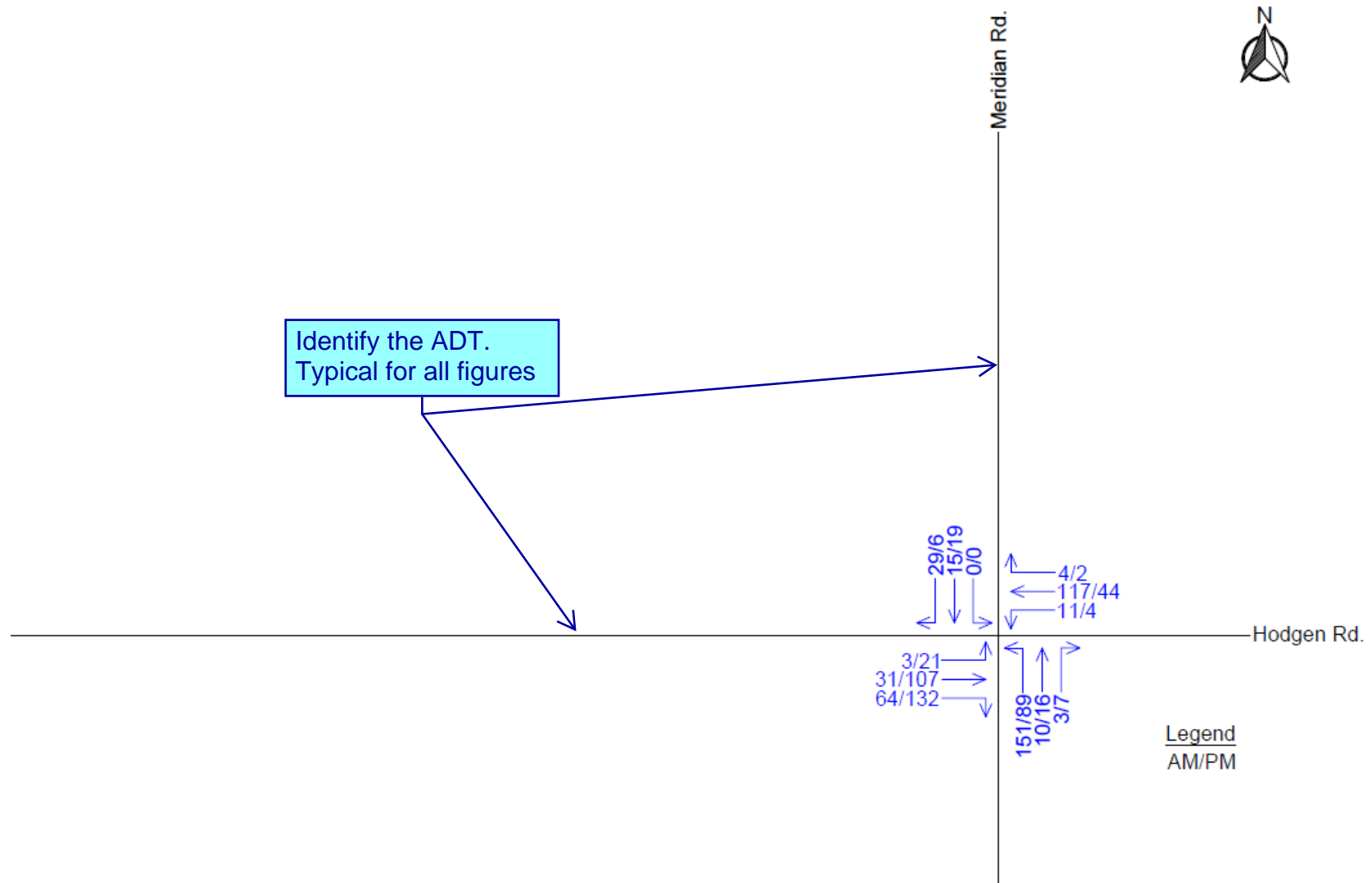


Figure 4: 2020 Background Traffic

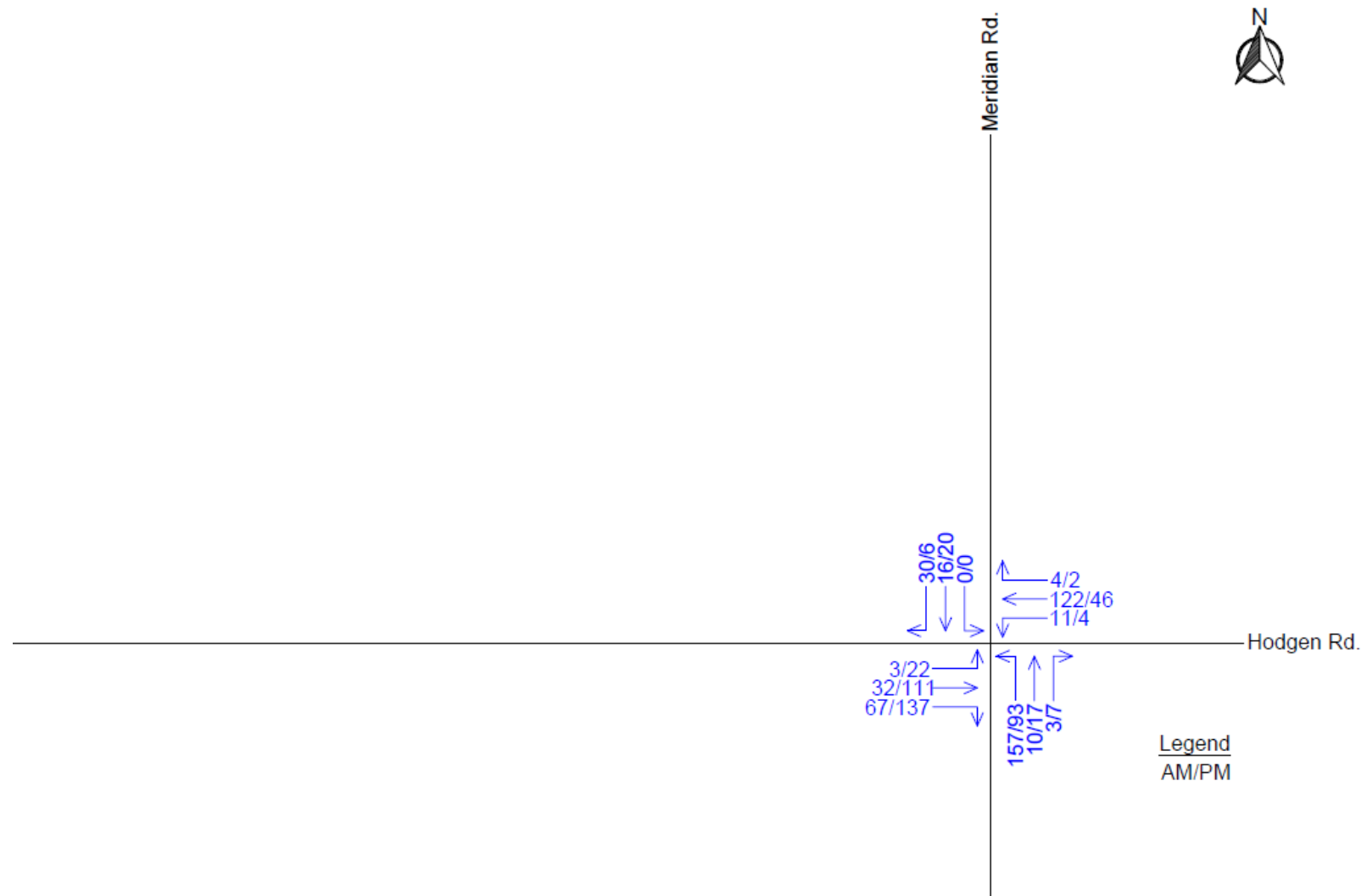


Figure 5: 2045 Background Traffic

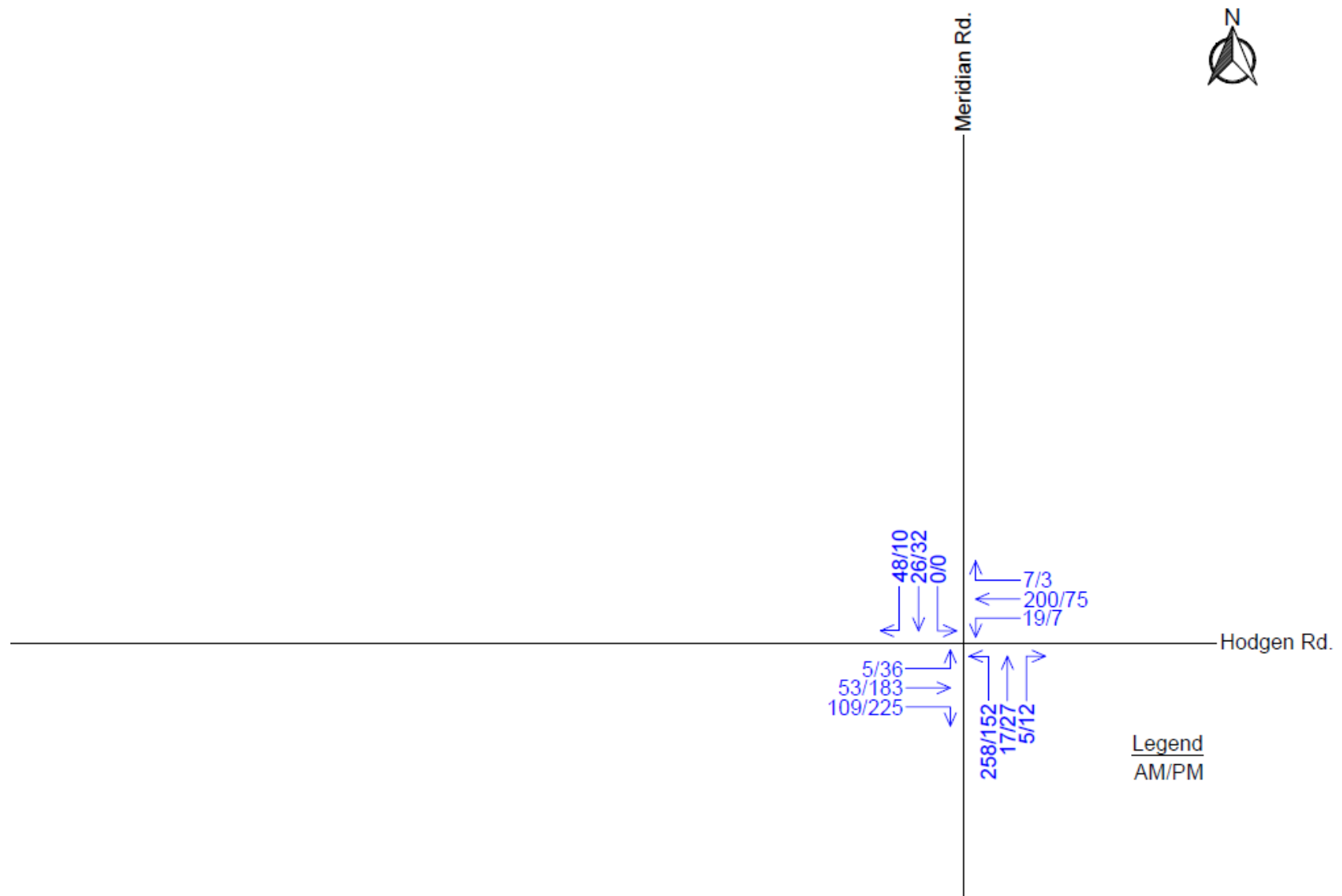


Figure 6: Trip Distribution

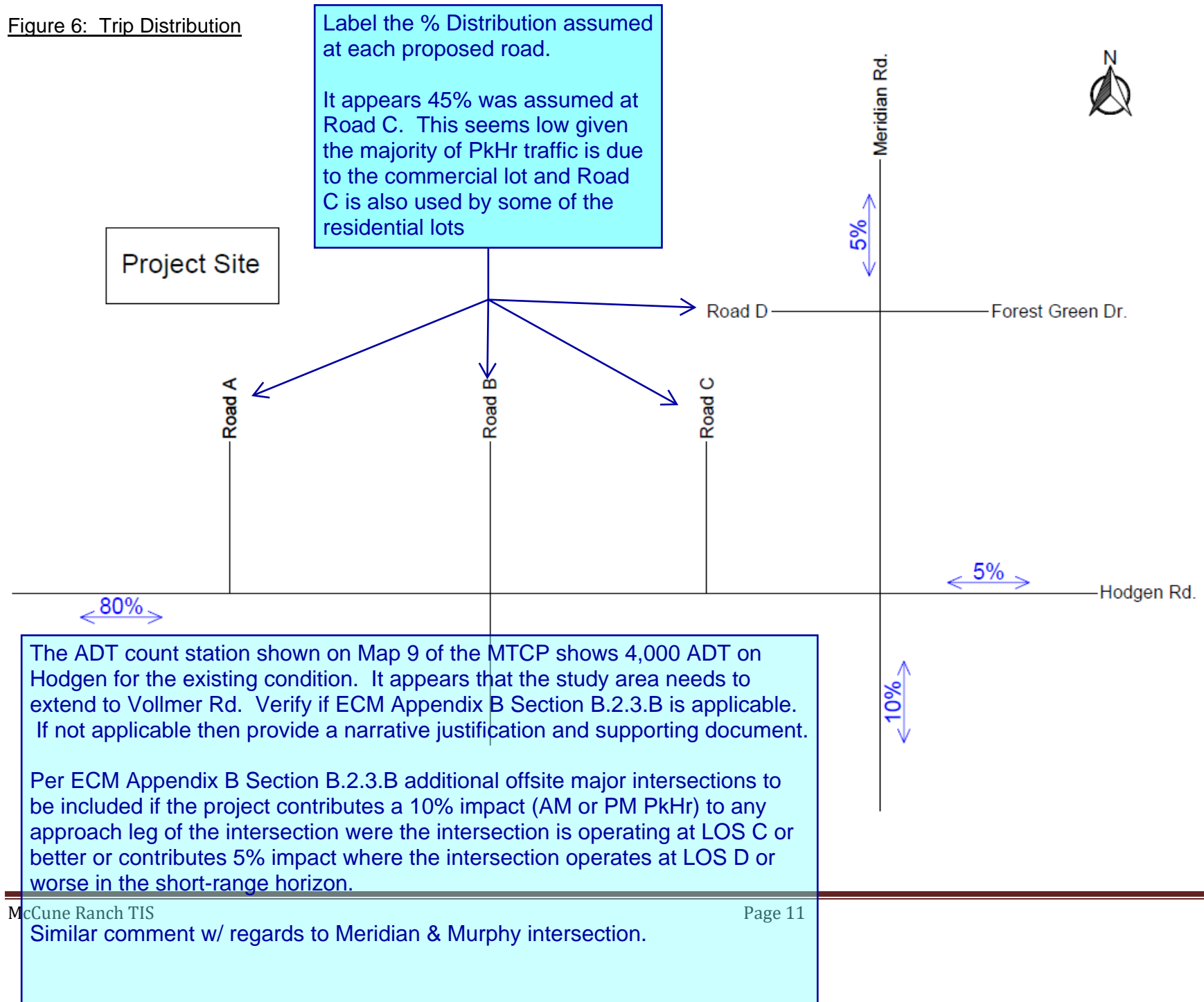


Figure 7: Site Generated Peak Hour Traffic

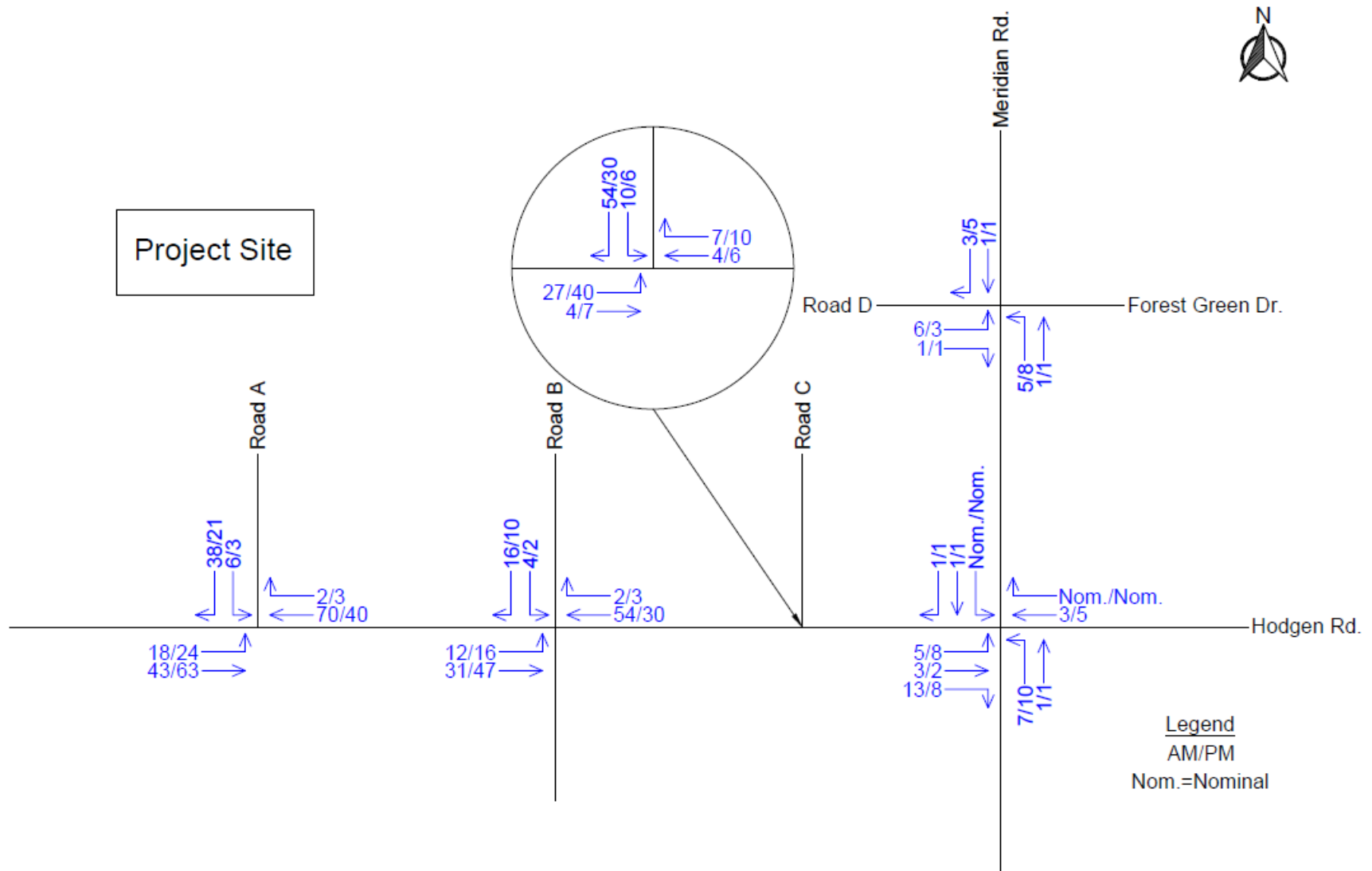


Figure 8: 2020 Short Range Total Traffic

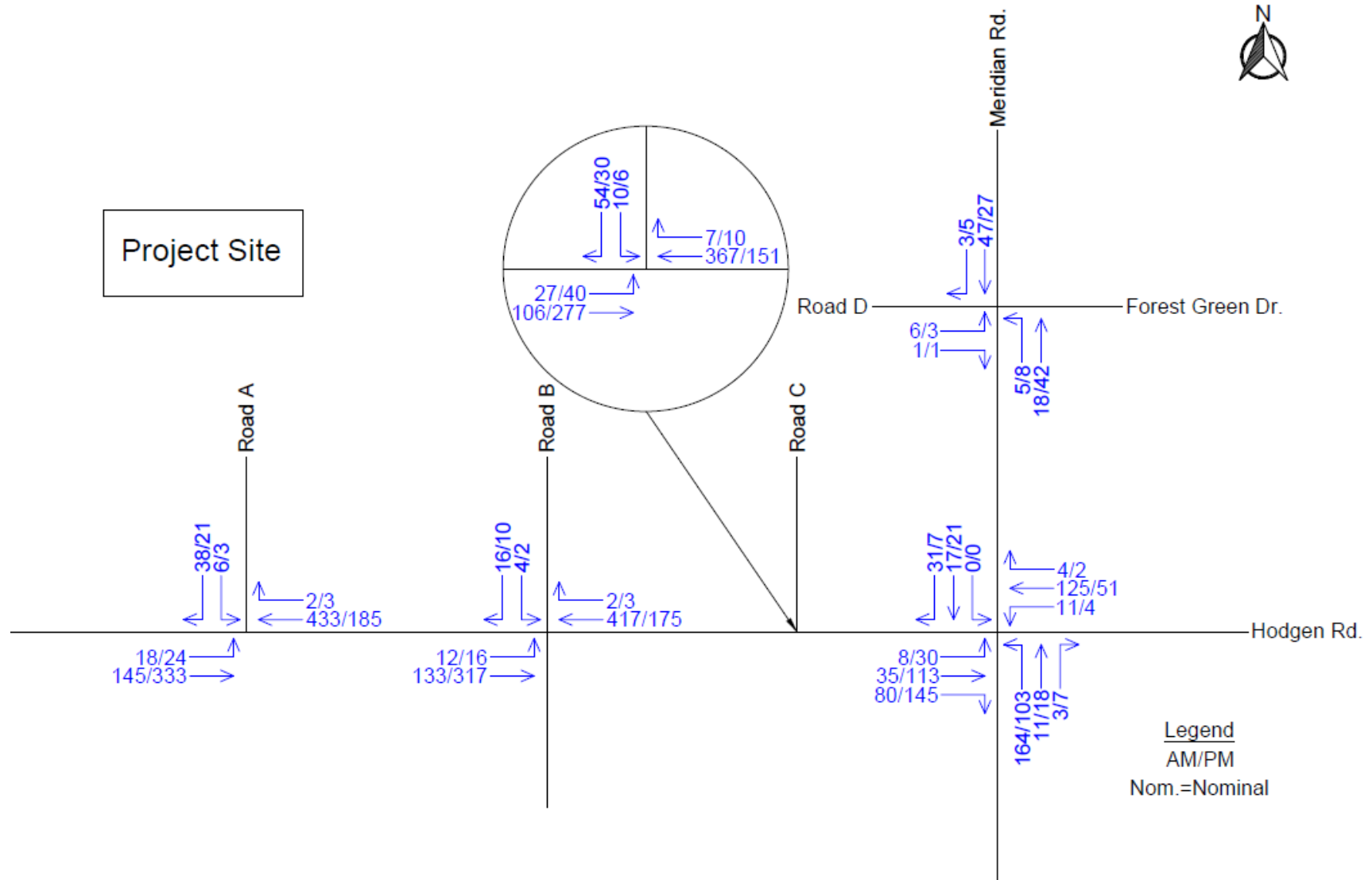
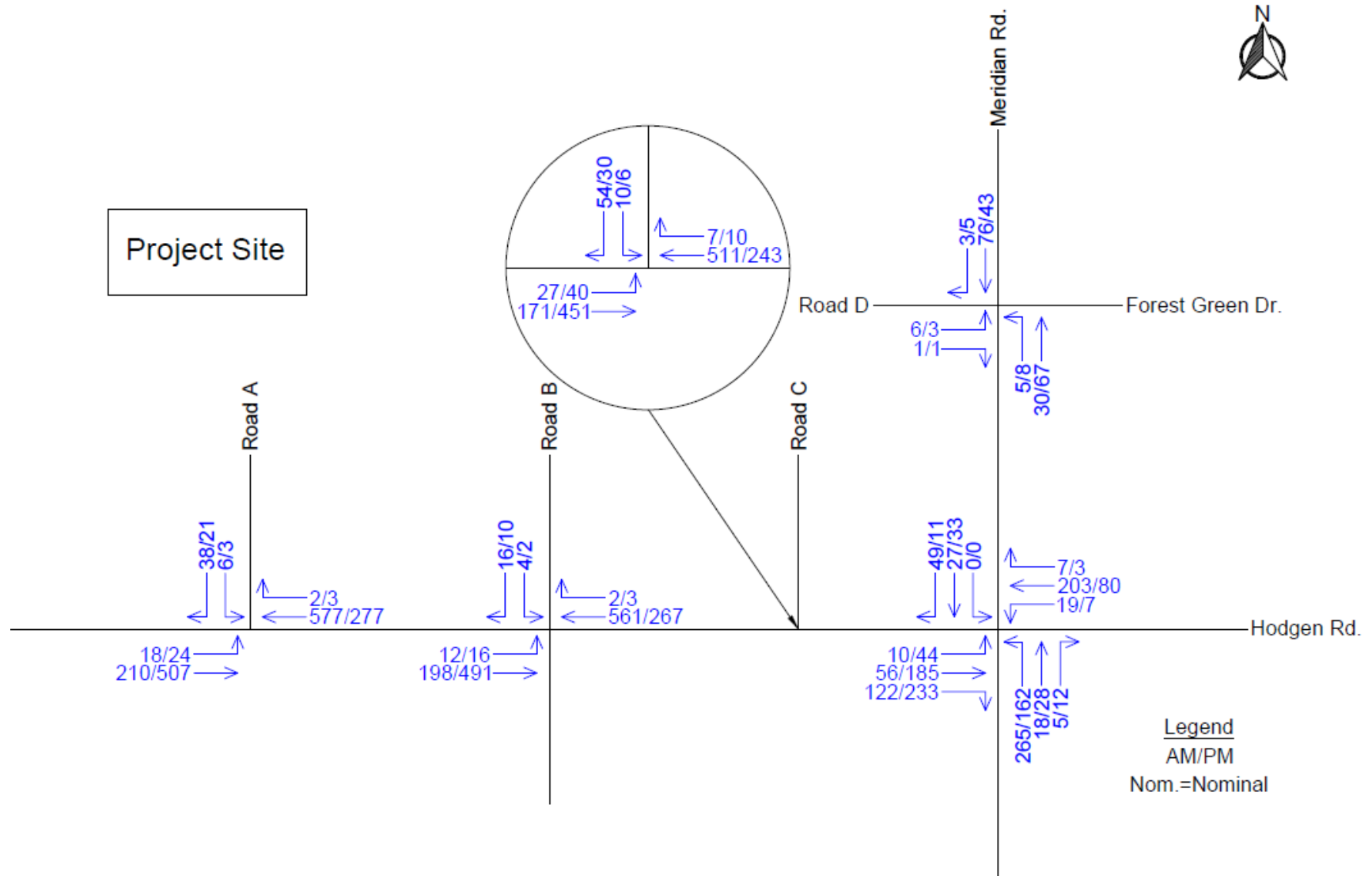


Figure 9: 2045 Long Range Total Traffic



3.2 Trip Distribution

Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns and volumes, anticipated surrounding development areas, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site generated traffic that approaches the site from a given direction and departs the site back to the original source. Figures 6 illustrates the trip distribution used for the project's analysis.

3.3 Traffic Assignment

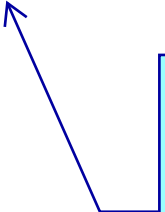
Traffic assignment was obtained by applying the trip distributions to the estimated trip generation of the development. Figures 7 shows the site generated traffic assignment for the project.

3.4 Short Range Total Peak Hour Traffic

Site generated peak hour traffic volumes were added to the background traffic volumes to represent the estimated traffic conditions for the short range 2020 horizon. These background (2020) and short range (2020) total traffic volumes are shown in Figures 4 and 8. The short range analysis year 2020 includes the proposed development for this project plus an increase in background traffic.

3.5 Long Range Total Peak Hour Traffic

Site generated peak hour traffic volumes were added to the background traffic volumes to represent the estimated traffic conditions for the long range 2045 horizon. These background (2045) and long range (2045) total traffic volumes are shown in Figures 5 and 9. The long range analysis year 2045 includes the proposed development for the project plus an increase in background traffic.



Identify the assumptions and the growth rate used. The value calculated for the long range is lower than the MTCP's 2040 projection. Per Map 9 of the MTCP the long range assumed 12,000 ADT on Hodgen between Vollmer Rd and Meridian Rd.

4.0 Traffic Operation Analysis

KE's analysis of traffic operations in the site vicinity was conducted to determine the capacity at the identified intersections. The acknowledged source for determining overall capacity is the 2010 Edition of the Highway Capacity Manual (HCM).

4.1 Analysis Methodology

Capacity analysis results are listed in terms of level of service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. LOS ranges from an A (very little delay) to an F (long delays). A description of the level of service (LOS) for signalized and unsignalized intersections from the 2010 Highway Capacity Manual (HCM) are provided in Appendix B.

4.2 Intersection Operational Analysis

Operational analysis was performed for the short range 2020 horizon and the long range 2045 horizon. The calculations for this analysis are provided in Appendix E. Using the short range and long range total traffic volumes, the project's study intersections are projected to operate acceptably. See Table 5 and Table 6 for the 2020 Short Range Total and 2045 Long Range Total Peak Hour Operation.

4.3 Intersection Improvements

Double check the criteria (ECM 2.3.7.D). The left turn decel lane for a minor arterial should be 25 vph and right turn decel lane is 50 vph. A right turn acceleration lane is generally not required.

The auxiliary lane analysis for the study intersections were conducted using the criteria in the El Paso County Engineering Criteria Manual. Based upon this criteria, a left-turn deceleration lane is required in Hodgen Road at an intersection with a projected peak hour ingress turning volume greater than 10 vph. Additionally, a right-turn deceleration lane is required in Hodgen Road at an intersection with a projected peak hour ingress turning volume greater than 25 vph, and a right-turn acceleration lane is required in Hodgen Road at an intersection with a projected peak egress turning volume greater than 50 vph. Additionally, a left-turn deceleration lane is required in Meridian Road at an intersection with a projected peak hour ingress turning volume greater than 25 vph and a right-turn deceleration lane is required in Meridian Road at an intersection with a projected peak hour ingress turning volume greater than 50 vph.

Based upon the projected distribution of traffic of the development and the projected 2020 Short Range Total traffic volumes, the following are the auxiliary lane recommendations for the McCune Ranch Project.

Phase 1 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Phase 2 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Phase 3 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road C. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Phase 4 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road C. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

1. Per ECM Table 2-26 the Bay Taper is "Special Design" instead of an actual value. Explain how you came up with the 240' bay taper length.

2. The 290 is the lane length portion of the required deceleration. Identify the additional required Storage Length component per Table 2-30. See ECM Figure 2-25 for design elements for left turn lanes.

Update all auxiliary lanes accordingly.

Total Project Build-out Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road C. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Table 2: Recent Peak Hour Operation

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Meridian Road/Hodgen Road	EB Left	A	A
	EB Thru	A	A
	EB Right	A	A
	EB Approach	A	A
	WB Left	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	NB Left	B	B
	NB Thru/Right	B	B
	NB Approach	B	B
	SB Left/Thru/Right	A	B
	SB Approach	A	B
	Overall	A	A

Table 3: 2020 Background Peak Hour Operation

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Meridian Road/Hodgen Road	EB Left	A	A
	EB Thru	A	A
	EB Right	A	A
	EB Approach	A	A
	WB Left	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	NB Left	B	B
	NB Thru/Right	B	B
	NB Approach	B	B
	SB Left/Thru/Right	A	B
	SB Approach	A	B
	Overall	A	A

Table 4: 2045 Background Peak Hour Operation

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Meridian Road/Hodgen Road	EB Left	A	A
	EB Thru	A	A
	EB Right	A	A
	EB Approach	A	A
	WB Left	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	NB Left	C	B
	NB Thru/Right	B	B
	NB Approach	C	B
	SB Left/Thru/Right	B	B
	SB Approach	B	B
	Overall	A	A

Table 5: 2020 Short Range Peak Hour Operation

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Meridian Road/Hodgen Road	EB Left	A	A
	EB Thru	A	A
	EB Right	A	A
	EB Approach	A	A
	WB Left	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	NB Left	B	B
	NB Thru/Right	B	B
	NB Approach	B	B
	SB Left/Thru/Right	A	B
	SB Approach	A	B
	Overall	A	A

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Hodgen Road/Road A	EB Left	A	A
	EB Thru	A	A
	EB Approach	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	SB Left/Right	B	B
	SB Approach	B	B
	Overall	A	A

Table 5: 2020 Short Range Peak Hour Operation (Continued...)

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Hodgen Rd./Road B /Bison Meadows Court	EB Left	A	A
	EB Thru/Right	A	A
	EB Approach	A	A
	WB Left/Thru/Right	A	A
	WB Approach	A	A
	NB Left/Thru/Right	C	B
	NB Approach	C	B
	SB Left/Thru/Right	B	B
	SB Approach	B	B
	Overall	A	A

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Hodgen Road/Road C	EB Left	A	A
	EB Thru	A	A
	EB Approach	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	SB Left/Right	B	B
	SB Approach	B	B
	Overall	A	A

Table 5: 2020 Short Range Peak Hour Operation (Continued...)

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Meridian Road/Road D /Forest Green Dr.	EB Left/Thru/Right	A	A
	EB Approach	A	A
	WB Left/Thru/Right	A	A
	WB Approach	A	A
	NB Left/Thru/Right	A	A
	NB Approach	A	A
	SB Left/Thru/Right	A	A
	SB Approach	A	A
	Overall	A	A

Table 6: 2045 Long Range Peak Hour Operation

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Meridian Road/Hodgen Road	EB Left	A	A
	EB Thru	A	A
	EB Right	A	A
	EB Approach	A	A
	WB Left	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	NB Left	C	C
	NB Thru/Right	B	B
	NB Approach	C	B
	SB Left/Thru/Right	B	B
	SB Approach	B	B
	Overall	A	A

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Hodgen Road/Road A	EB Left	A	A
	EB Thru	A	A
	EB Approach	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	SB Left/Right	B	B
	SB Approach	B	B
	Overall	A	A

Table 6: 2045 Long Range Peak Hour Operation (Continued...)

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Hodgen Rd./Road B /Bison Meadows Court	EB Left	A	A
	EB Thru/Right	A	A
	EB Approach	A	A
	WB Left/Thru/Right	A	A
	WB Approach	A	A
	NB Left/Thru/Right	C	C
	NB Approach	C	C
	SB Left/Thru/Right	B	B
	SB Approach	B	B
	Overall	A	A

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Hodgen Road/Road C	EB Left	A	A
	EB Thru	A	A
	EB Approach	A	A
	WB Thru/Right	A	A
	WB Approach	A	A
	SB Left/Right	B	B
	SB Approach	B	B
	Overall	A	A

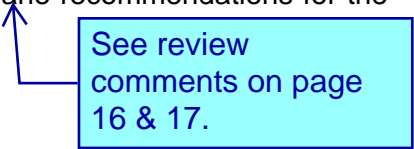
Table 6: 2045 Long Range Peak Hour Operation (Continued...)

Intersection	Movement	Level of Service (LOS)	
		AM	PM
		LOS	LOS
Meridian Road/Road D /Forest Green Dr.	EB Left/Thru/Right	A	A
	EB Approach	A	A
	WB Left/Thru/Right	A	A
	WB Approach	A	A
	NB Left/Thru/Right	A	A
	NB Approach	A	A
	SB Left/Thru/Right	A	A
	SB Approach	A	A
	Overall	A	A

5.0 Findings:

Based upon the analysis presented in this TIS, the McCune Ranch project located at the northwest quadrant of the intersection of Hodgen Road and Meridian Road in El Paso County, CO will be able to be successfully meet El Paso County's requirements with the below recommended street improvements. All study intersections are projected to operate acceptably upon full development project. See Appendix E for Synchro 9 outputs.

Based upon the projected distribution of traffic for the development and the projected 2020 Short Range Total traffic volumes, the following are the auxiliary lane recommendations for the McCune Ranch Project.



See review
comments on page
16 & 17.

Phase 1 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Phase 2 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Phase 3 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road C. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Phase 4 Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road C. Minimum total

length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Total Project Build-out Intersection Improvements:

- Eastbound left-turn lane at the intersection of Hodgen Road/Road A. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road B. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.
- Eastbound left-turn lane at the intersection of Hodgen Road/Road C. Minimum total length = 530' (240' bay taper + 290' full width) with a 12' minimum lane width.

Project Findings:

- Total build-out of the McCune Ranch project is anticipated to generate approximately 2,026 daily weekday trips, 211 AM total peak hour trips, and 184 PM total peak hour trips.
- The study intersections will operate acceptably with the development of the McCune Ranch project and background traffic in the 2020 Short Range and 2045 Long Range future.
- The proposed site access points (Road A, Road B, Road C, and Road D) are full-movements access points to Hodgen Road and Meridian Road. The proposed access point of Road C to Hodgen Road is less than 0.25 mile spacing (approximately 780' measured to center of intersection). The other proposed site access points (Road A, Road B, and Road D) have more than 0.25 mile intersection spacing. While the intersection spacing of Road C is less than 1,320' (0.25 mile), the access point location is appropriate from a traffic engineering perspective. Typically, the 1,320' (0.25 mile) access spacing on arterials is to provide for acceleration lanes and deceleration lanes for all traffic scenarios on arterials. For the McCune Ranch project, acceleration lanes are not triggered per the El Paso County Engineering Criteria Manual and all of the required deceleration lanes are able to be designed and constructed with the project's proposed full-movement access spacing. Therefore, the proposed access point locations are appropriate from a traffic engineering and safety aspect. See Section 4.3 Intersection Improvements.
- Traffic signal warrants are not anticipated to be warranted at the study intersections with the full development of the McCune Ranch project and background traffic in the 2020

Short Range future and the 2045 Long Range future.

- The proposed project's site access, layout, proposed land use, and size is appropriate from a traffic engineering perspective.
- Based upon projected traffic volumes the following are the year 2045 roadway classifications for the streets adjacent to and within the McCune Ranch project.
 - a) Hodgen Road – Minor Arterial
 - b) Meridian Road – Minor Arterial
 - c) Road A – Local
 - d) Road B – Local
 - e) Road C – Local
 - f) Road D – Local

Add a section regarding sight distance. State what the sight distance is for every affected access and whether the criteria is met. If it can't be met, then identify the required modification to meet criteria.

Add a reference section and list any other studies that would have been conducted within the past five years. State whether the current study is consistent with those studies and explain any discrepancies.

State what the current applicable Transportation Impact Fees are and what option the developer will be selecting for payment (Full, PID 1, PID 2).

List all deviations from the ECM that the applicant will be making.

Include the attached engineer's certification page with the engineer's stamp, signature, and date after the cover sheet. (attached)



APPENDICES:

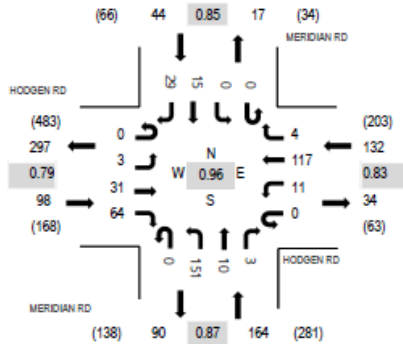
Appendix A: Traffic Counts



(303) 216-2439
www.alltrafficdata.net

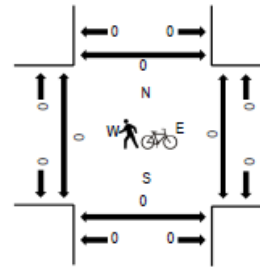
Location: 1 MERIDIAN RD & HODGEN RD AM
Date and Start Time: Thursday, August 30, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

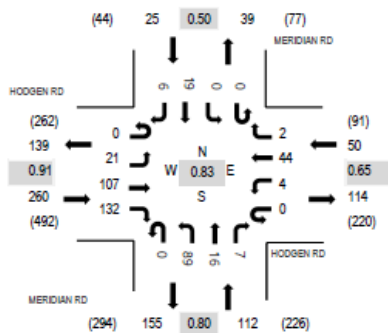
Interval Start Time	HODGEN RD Eastbound				HODGEN RD Westbound				MERIDIAN RD Northbound				MERIDIAN RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	11	19	0	2	27	0	0	35	2	0	0	0	6	7	110	438	0	0	0	0
7:15 AM	0	1	5	14	0	3	32	0	0	44	2	1	0	0	0	6	108	406	0	0	0	0
7:30 AM	0	0	10	16	0	5	32	3	0	34	0	2	0	0	5	7	114	371	0	0	0	0
7:45 AM	0	1	5	15	0	1	26	1	0	38	6	0	0	0	4	9	106	328	0	0	0	0
8:00 AM	0	3	6	10	0	1	22	0	0	26	5	0	0	0	3	2	78	280	0	0	0	0
8:15 AM	0	2	8	6	0	1	21	0	0	26	3	0	0	0	2	4	73		0	0	0	0
8:30 AM	0	0	7	8	0	0	12	0	0	34	2	0	0	0	2	6	71		0	0	0	0
8:45 AM	0	1	8	11	0	2	12	0	0	20	1	0	0	0	2	1	58		0	0	0	0
Count Total	0	9	60	99	0	15	184	4	0	257	21	3	0	0	24	42	718		0	0	0	0
Peak Hour	0	3	31	64	0	11	117	4	0	151	10	3	0	0	15	29	438		0	0	0	0



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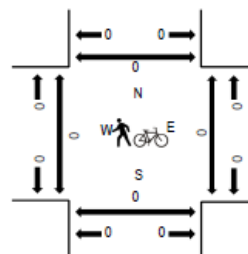
Location: 1 MERIDIAN RD & HODGEN RD PM
Date and Start Time: Thursday, August 30, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	HODGEN RD Eastbound				HODGEN RD Westbound				MERIDIAN RD Northbound				MERIDIAN RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	3	18	28	0	0	10	0	0	19	8	2	0	0	4	2	94	417	0	0	0	0
4:15 PM	0	4	16	26	0	1	10	0	0	23	2	1	0	0	2	0	85	397	0	0	0	0
4:30 PM	0	4	32	29	0	1	5	0	0	31	6	1	0	0	5	0	114	447	0	0	0	0
4:45 PM	0	5	27	41	0	1	19	0	0	21	5	2	0	0	2	1	124	442	0	0	0	0
5:00 PM	0	5	16	27	0	0	9	0	0	10	2	2	0	0	2	1	74	436	0	0	0	0
5:15 PM	0	7	32	35	0	2	11	2	0	27	3	2	0	0	10	4	135		0	0	0	0
5:30 PM	0	4	31	38	0	1	6	1	0	17	4	4	0	1	1	1	109		0	0	0	0
5:45 PM	0	7	27	30	0	3	9	0	0	23	5	6	0	0	5	3	118		0	0	0	0
Count Total	0	39	199	254	0	9	79	3	0	171	35	20	0	1	31	12	853		0	0	0	0
Peak Hour	0	21	107	132	0	4	44	2	0	89	16	7	0	0	19	6	447		0	0	0	0

Appendix B: Level of Service (LOS) Table

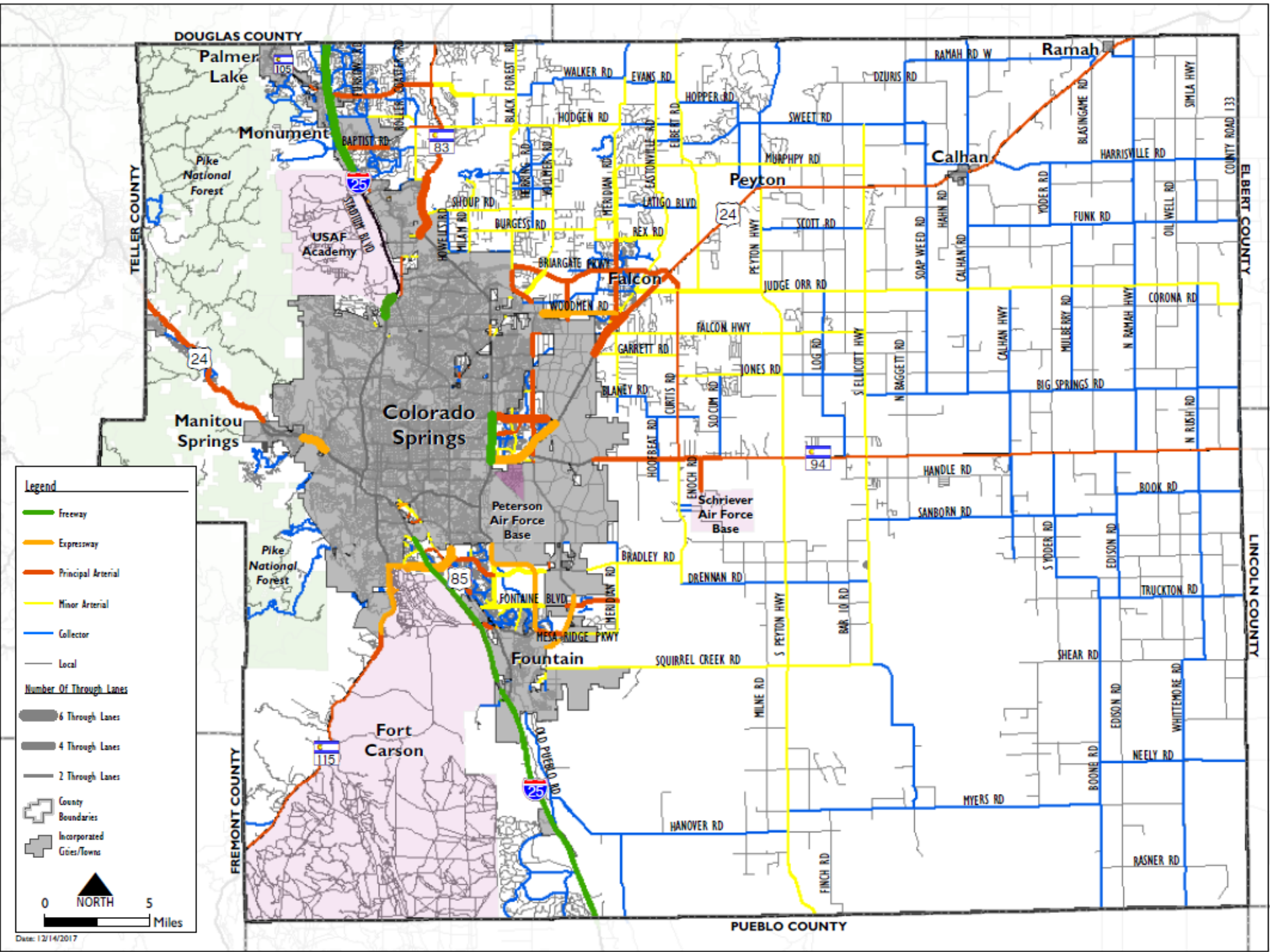
Level of Service Definitions

Level of Service	Signalized Intersection	Unsignalized Intersection
(LOS)	Average Total Delay	Average Total Delay
	(sec/veh)	(sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Appendix C: Aerial Image











Map 14: 2040 Functional Classification



Appendix E: HCM 2010 Calculations (Synchro 9)

Recent AM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	31	64	11	117	4	151	10	3	0	15	29
Future Vol, veh/h	3	31	64	11	117	4	151	10	3	0	15	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	87	87	87	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	36	75	13	138	5	174	11	3	0	18	34









Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	142	0	0	36	0	0	236	212	36	217	210	140
Stage 1	-	-	-	-	-	-	44	44	-	166	166	-
Stage 2	-	-	-	-	-	-	192	168	-	51	44	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1441	-	-	1575	-	-	718	685	1037	739	687	908
Stage 1	-	-	-	-	-	-	970	858	-	836	761	-
Stage 2	-	-	-	-	-	-	810	759	-	962	858	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1441	-	-	1575	-	-	672	677	1037	721	679	908
Mov Cap-2 Maneuver	-	-	-	-	-	-	672	677	-	721	679	-
Stage 1	-	-	-	-	-	-	967	856	-	834	755	-
Stage 2	-	-	-	-	-	-	755	753	-	943	856	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			12			9.7		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	736	1441	-	-	1575	-	-	814
HCM Lane V/C Ratio	0.258	0.02	0.002	-	-	0.008	-	-	0.064
HCM Control Delay (s)	12.2	10	7.5	-	-	7.3	-	-	9.7
HCM Lane LOS	B	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	1	0.1	0	-	-	0	-	-	0.2

Recent PM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	107	132	4	44	2	89	16	7	0	19	6
Future Vol, veh/h	21	107	132	4	44	2	89	16	7	0	19	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	118	145	5	52	2	105	19	8	0	22	7









Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	54	0	0	118	0	0	241	228	118	239	226	53
Stage 1	-	-	-	-	-	-	164	164	-	62	62	-
Stage 2	-	-	-	-	-	-	77	64	-	177	164	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1551	-	-	1470	-	-	713	671	934	715	673	1014
Stage 1	-	-	-	-	-	-	838	762	-	949	843	-
Stage 2	-	-	-	-	-	-	932	842	-	825	762	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1551	-	-	1470	-	-	680	659	934	684	661	1014
Mov Cap-2 Maneuver	-	-	-	-	-	-	680	659	-	684	661	-
Stage 1	-	-	-	-	-	-	826	751	-	935	840	-
Stage 2	-	-	-	-	-	-	898	839	-	785	751	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.6	11.1	10.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	680	724	1551	-	-	1470	-	-	721
HCM Lane V/C Ratio	0.154	0.037	0.015	-	-	0.003	-	-	0.041
HCM Control Delay (s)	11.3	10.2	7.4	-	-	7.5	-	-	10.2
HCM Lane LOS	B	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.5	0.1	0	-	-	0	-	-	0.1

2020 Background AM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	32	67	11	122	4	157	10	3	0	16	30
Future Vol, veh/h	3	32	67	11	122	4	157	10	3	0	16	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	87	87	87	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	38	79	13	144	5	180	11	3	0	19	35









Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	148	0	0	38	0	0	244	219	38	224	217	146
Stage 1	-	-	-	-	-	-	45	45	-	172	172	-
Stage 2	-	-	-	-	-	-	199	174	-	52	45	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1434	-	-	1572	-	-	710	679	1034	732	681	901
Stage 1	-	-	-	-	-	-	969	857	-	830	756	-
Stage 2	-	-	-	-	-	-	803	755	-	961	857	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1434	-	-	1572	-	-	662	672	1034	714	673	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	662	672	-	714	673	-
Stage 1	-	-	-	-	-	-	966	855	-	828	750	-
Stage 2	-	-	-	-	-	-	746	749	-	942	855	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			12.3			9.8		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	662	731	1434	-	-	1572	-	-	806
HCM Lane V/C Ratio	0.273	0.02	0.002	-	-	0.008	-	-	0.067
HCM Control Delay (s)	12.5	10	7.5	-	-	7.3	-	-	9.8
HCM Lane LOS	B	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	1.1	0.1	0	-	-	0	-	-	0.2

2020 Background PM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	111	137	4	46	2	93	17	7	0	20	6
Future Vol, veh/h	22	111	137	4	46	2	93	17	7	0	20	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	87	87	87	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	131	161	5	54	2	107	20	8	0	24	7









Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	56	0	0	131	0	0	262	248	131	261	247	55
Stage 1	-	-	-	-	-	-	182	182	-	65	65	-
Stage 2	-	-	-	-	-	-	80	66	-	196	182	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1549	-	-	1454	-	-	691	655	919	692	655	1012
Stage 1	-	-	-	-	-	-	820	749	-	946	841	-
Stage 2	-	-	-	-	-	-	929	840	-	806	749	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1549	-	-	1454	-	-	657	642	919	660	642	1012
Mov Cap-2 Maneuver	-	-	-	-	-	-	657	642	-	660	642	-
Stage 1	-	-	-	-	-	-	806	736	-	930	838	-
Stage 2	-	-	-	-	-	-	894	837	-	765	736	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.6			11.3			10.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	657	704	1549	-	-	1454	-	-	701
HCM Lane V/C Ratio	0.163	0.039	0.017	-	-	0.003	-	-	0.044
HCM Control Delay (s)	11.5	10.3	7.4	-	-	7.5	-	-	10.4
HCM Lane LOS	B	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0	-	-	0.1

2020 Short Range Total AM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	35	80	11	125	4	164	11	3	0	17	31
Future Vol, veh/h	8	35	80	11	125	4	164	11	3	0	17	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	87	87	87	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	41	94	13	147	5	189	13	3	0	20	36





Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	152	0	0	41	0	0	264	238	41	243	235	149
Stage 1	-	-	-	-	-	-	60	60	-	175	175	-
Stage 2	-	-	-	-	-	-	204	178	-	68	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1429	-	-	1568	-	-	689	663	1030	711	666	898
Stage 1	-	-	-	-	-	-	951	845	-	827	754	-
Stage 2	-	-	-	-	-	-	798	752	-	942	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1429	-	-	1568	-	-	639	653	1030	690	656	898
Mov Cap-2 Maneuver	-	-	-	-	-	-	639	653	-	690	656	-
Stage 1	-	-	-	-	-	-	945	840	-	822	748	-
Stage 2	-	-	-	-	-	-	739	746	-	919	840	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.6			12.8			9.9		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	639	709	1429	-	-	1568	-	-	794
HCM Lane V/C Ratio	0.295	0.023	0.007	-	-	0.008	-	-	0.071
HCM Control Delay (s)	13	10.2	7.5	-	-	7.3	-	-	9.9
HCM Lane LOS	B	B	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	1.2	0.1	0	-	-	0	-	-	0.2






2020 Short Range Total AM Traffic
6: Hodgen Rd. & Road C

09/19/2018

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	106	367	7	10	48
Future Vol, veh/h	27	106	367	7	10	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	125	432	8	12	56
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	440	0	-	0	624	436
Stage 1	-	-	-	-	436	-
Stage 2	-	-	-	-	188	-
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	1120	-	-	-	449	620
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1120	-	-	-	436	620
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	820	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.7	0		12.1		
HCM LOS	B					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1120	-	-	-	578	
HCM Lane V/C Ratio	0.028	-	-	-	0.118	
HCM Control Delay (s)	8.3	-	-	-	12.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	

2020 Short Range Total AM Traffic
8: Bison Meadows Ct/Road B & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	133	0	0	417	2	2	0	0	4	0	21
Future Vol, veh/h	12	133	0	0	417	2	2	0	0	4	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	156	0	0	491	2	2	0	0	5	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	493	0	0	156	0	0	689	678	156	677	677	492
Stage 1	-	-	-	-	-	-	185	185	-	492	492	-
Stage 2	-	-	-	-	-	-	504	493	-	185	185	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1071	-	-	1424	-	-	360	374	890	367	375	577
Stage 1	-	-	-	-	-	-	817	747	-	558	548	-
Stage 2	-	-	-	-	-	-	550	547	-	817	747	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1071	-	-	1424	-	-	341	369	890	363	370	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	369	-	363	370	-
Stage 1	-	-	-	-	-	-	806	737	-	551	548	-
Stage 2	-	-	-	-	-	-	526	547	-	806	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	15.6	12.2
HCM LOS			C	B





Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	341	1071	-	-	1424	-	-	527
HCM Lane V/C Ratio	0.007	0.013	-	-	-	-	-	0.056
HCM Control Delay (s)	15.6	8.4	-	-	0	-	-	12.2
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

2020 Short Range Total AM Traffic
10: Hodgen Rd. & Road A

09/19/2018

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	145	433	2	6	39
Future Vol, veh/h	18	145	433	2	6	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	171	509	2	7	46

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	512	0	0 724 511
Stage 1	-	-	- 511 -
Stage 2	-	-	- 213 -
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	1053	-	- 393 563
Stage 1	-	-	- 602 -
Stage 2	-	-	- 823 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1053	-	- 385 563
Mov Cap-2 Maneuver	-	-	- 385 -
Stage 1	-	-	- 602 -
Stage 2	-	-	- 807 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1053	-	-	-	530
HCM Lane V/C Ratio	0.02	-	-	-	0.1
HCM Control Delay (s)	8.5	-	-	-	12.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3









2020 Short Range Total AM Traffic
12: Meridian Rd. & Road D/Forest Green Dr.

09/19/2018

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	1	4	0	0	5	18	0	0	47	3
Future Vol, veh/h	6	0	1	4	0	0	5	18	0	0	47	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	1	5	0	0	6	21	0	0	55	4
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	90	90	57	91	92	21	59	0	0	21	0	0
Stage 1	57	57	-	33	33	-	-	-	-	-	-	-
Stage 2	33	33	-	58	59	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	895	800	1009	893	798	1056	1545	-	-	1595	-	-
Stage 1	955	847	-	983	868	-	-	-	-	-	-	-
Stage 2	983	868	-	954	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	892	797	1009	889	795	1056	1545	-	-	1595	-	-
Mov Cap-2 Maneuver	892	797	-	889	795	-	-	-	-	-	-	-
Stage 1	951	847	-	979	865	-	-	-	-	-	-	-
Stage 2	979	865	-	953	846	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9		9.1		1.6		0					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1545	-	-	907	889	1595	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.009	0.005	-	-	-				
HCM Control Delay (s)	7.3	0	-	9	9.1	0	-	-				
HCM Lane LOS	A	A	-	A	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-				

2020 Short Range Total PM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	113	145	4	51	2	103	18	7	0	21	7
Future Vol, veh/h	30	113	145	4	51	2	103	18	7	0	21	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	124	159	5	60	2	121	21	8	0	25	8





Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	62	0	0	124	0	0	277	262	124	276	261	61
Stage 1	-	-	-	-	-	-	190	190	-	71	71	-
Stage 2	-	-	-	-	-	-	87	72	-	205	190	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1541	-	-	1463	-	-	675	643	927	676	644	1004
Stage 1	-	-	-	-	-	-	812	743	-	939	836	-
Stage 2	-	-	-	-	-	-	921	835	-	797	743	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1541	-	-	1463	-	-	637	627	927	640	628	1004
Mov Cap-2 Maneuver	-	-	-	-	-	-	637	627	-	640	628	-
Stage 1	-	-	-	-	-	-	795	727	-	919	833	-
Stage 2	-	-	-	-	-	-	883	832	-	750	727	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.5			11.7			10.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	637	689	1541	-	-	1463	-	-	693
HCM Lane V/C Ratio	0.19	0.043	0.021	-	-	0.003	-	-	0.048
HCM Control Delay (s)	12	10.5	7.4	-	-	7.5	-	-	10.5
HCM Lane LOS	B	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0.1	0.1	-	-	0	-	-	0.1






2020 Short Range Total PM Traffic
6: Hodgen Rd. & Road C

09/19/2018

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	277	151	10	6	30
Future Vol, veh/h	40	277	151	10	6	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	326	178	12	7	35
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	189	0	-	0	604	184
Stage 1	-	-	-	-	184	-
Stage 2	-	-	-	-	420	-
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	1385	-	-	-	461	858
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	663	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1385	-	-	-	445	858
Mov Cap-2 Maneuver	-	-	-	-	445	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	641	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		10.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1385	-	-	-	743	
HCM Lane V/C Ratio	0.034	-	-	-	0.057	
HCM Control Delay (s)	7.7	-	-	-	10.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

2020 Short Range Total PM Traffic
8: Bison Meadows Ct/Road B & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	317	0	0	175	3	1	0	0	2	0	10
Future Vol, veh/h	16	317	0	0	175	3	1	0	0	2	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	373	0	0	206	4	1	0	0	2	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	209	0	0	373	0	0	625	620	373	619	619	208
Stage 1	-	-	-	-	-	-	411	411	-	208	208	-
Stage 2	-	-	-	-	-	-	214	209	-	411	411	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1362	-	-	1185	-	-	397	404	673	401	404	832
Stage 1	-	-	-	-	-	-	618	595	-	794	730	-
Stage 2	-	-	-	-	-	-	788	729	-	618	595	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1185	-	-	387	398	673	397	398	832
Mov Cap-2 Maneuver	-	-	-	-	-	-	387	398	-	397	398	-
Stage 1	-	-	-	-	-	-	609	587	-	783	730	-
Stage 2	-	-	-	-	-	-	777	729	-	609	587	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	14.3	10.2
HCM LOS			B	B





Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	1362	-	-	1185	-	-	704
HCM Lane V/C Ratio	0.003	0.014	-	-	-	-	-	0.02
HCM Control Delay (s)	14.3	7.7	-	-	0	-	-	10.2
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

2020 Short Range Total PM Traffic
10: Hodgen Rd. & Road A

09/19/2018

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	333	185	3	3	21
Future Vol, veh/h	24	333	185	3	3	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	392	218	4	4	25

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	221	0	0 667 219
Stage 1	-	-	- 219 -
Stage 2	-	-	- 448 -
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	1348	-	- 424 821
Stage 1	-	-	- 817 -
Stage 2	-	-	- 644 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1348	-	- 415 821
Mov Cap-2 Maneuver	-	-	- 415 -
Stage 1	-	-	- 817 -
Stage 2	-	-	- 631 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1348	-	-	-	732
HCM Lane V/C Ratio	0.021	-	-	-	0.039
HCM Control Delay (s)	7.7	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

2020 Short Range Total PM Traffic
12: Meridian Rd. & Road D/Forest Green Dr.

09/19/2018

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	1	1	0	0	8	42	0	0	27	5
Future Vol, veh/h	3	0	1	1	0	0	8	42	0	0	27	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	1	1	0	0	9	49	0	0	32	6









Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	103	103	35	103	106	49	38	0	0	49	0	0
Stage 1	35	35	-	68	68	-	-	-	-	-	-	-
Stage 2	68	68	-	35	38	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	877	787	1038	877	784	1020	1572	-	-	1558	-	-
Stage 1	981	866	-	942	838	-	-	-	-	-	-	-
Stage 2	942	838	-	981	863	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	873	782	1038	872	779	1020	1572	-	-	1558	-	-
Mov Cap-2 Maneuver	873	782	-	872	779	-	-	-	-	-	-	-
Stage 1	975	866	-	936	833	-	-	-	-	-	-	-
Stage 2	936	833	-	980	863	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.1	1.2	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1572	-	-	909 872	1558	-	-
HCM Lane V/C Ratio	0.006	-	-	0.005 0.001	-	-	-
HCM Control Delay (s)	7.3	0	-	9 9.1	0	-	-
HCM Lane LOS	A	A	-	A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-













2045 Background AM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	53	109	19	200	7	258	17	5	0	26	48
Future Vol, veh/h	5	53	109	19	200	7	258	17	5	0	26	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	56	115	20	211	7	272	18	5	0	27	51
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	218	0	0	56	0	0	359	324	56	332	320	214
Stage 1	-	-	-	-	-	-	66	66	-	254	254	-
Stage 2	-	-	-	-	-	-	293	258	-	78	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1352	-	-	1549	-	-	596	594	1011	621	597	826
Stage 1	-	-	-	-	-	-	945	840	-	750	697	-
Stage 2	-	-	-	-	-	-	715	694	-	931	840	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1352	-	-	1549	-	-	533	584	1011	596	587	826
Mov Cap-2 Maneuver	-	-	-	-	-	-	533	584	-	596	587	-
Stage 1	-	-	-	-	-	-	942	837	-	747	688	-
Stage 2	-	-	-	-	-	-	636	685	-	903	837	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			18			10.6		
HCM LOS							C			B		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	533	646	1352	-	-	1549	-	-	723			
HCM Lane V/C Ratio	0.51	0.036	0.004	-	-	0.013	-	-	0.108			
HCM Control Delay (s)	18.6	10.8	7.7	-	-	7.4	-	-	10.6			
HCM Lane LOS	C	B	A	-	-	A	-	-	B			
HCM 95th %tile Q(veh)	2.9	0.1	0	-	-	0	-	-	0.4			

2045 Background PM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	36	183	225	7	75	3	152	27	12	0	32	10
Future Vol, veh/h	36	183	225	7	75	3	152	27	12	0	32	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	38	193	237	7	79	3	160	28	13	0	34	11









Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	82	0	0	193	0	0	385	365	193	384	363	81
Stage 1	-	-	-	-	-	-	268	268	-	95	95	-
Stage 2	-	-	-	-	-	-	117	97	-	289	268	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1380	-	-	573	563	849	574	565	979
Stage 1	-	-	-	-	-	-	738	687	-	912	816	-
Stage 2	-	-	-	-	-	-	888	815	-	719	687	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1515	-	-	1380	-	-	528	546	849	531	548	979
Mov Cap-2 Maneuver	-	-	-	-	-	-	528	546	-	531	548	-
Stage 1	-	-	-	-	-	-	719	670	-	889	812	-
Stage 2	-	-	-	-	-	-	838	811	-	661	670	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.6			14.1			11.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	528	613	1515	-	-	1380	-	-	612
HCM Lane V/C Ratio	0.303	0.067	0.025	-	-	0.005	-	-	0.072
HCM Control Delay (s)	14.8	11.3	7.4	-	-	7.6	-	-	11.3
HCM Lane LOS	B	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.3	0.2	0.1	-	-	0	-	-	0.2

2045 Long Range Total AM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	8.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	56	122	19	203	7	265	18	5	0	27	49
Future Vol, veh/h	10	56	122	19	203	7	265	18	5	0	27	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	59	128	20	214	7	279	19	5	0	28	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	59	0	0	377	341	59	349	337	217
Stage 1	-	-	-	-	-	-	80	80	-	257	257	-
Stage 2	-	-	-	-	-	-	297	261	-	92	80	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1348	-	-	1545	-	-	580	581	1007	606	584	823
Stage 1	-	-	-	-	-	-	929	828	-	748	695	-
Stage 2	-	-	-	-	-	-	712	692	-	915	828	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1545	-	-	515	569	1007	578	572	823
Mov Cap-2 Maneuver	-	-	-	-	-	-	515	569	-	578	572	-
Stage 1	-	-	-	-	-	-	921	821	-	742	686	-
Stage 2	-	-	-	-	-	-	631	683	-	882	821	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.6			19.2			10.7		
HCM LOS							C			B		





Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	515	628	1348	-	-	1545	-	-	712
HCM Lane V/C Ratio	0.542	0.039	0.008	-	-	0.013	-	-	0.112
HCM Control Delay (s)	19.9	11	7.7	-	-	7.4	-	-	10.7
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	3.2	0.1	0	-	-	0	-	-	0.4

2045 Long Range Total AM Traffic
6: Hodgen Rd. & Road C

09/19/2018

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	171	511	7	10	48
Future Vol, veh/h	27	171	511	7	10	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	180	538	7	11	51






Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	545	0	0 779 542
Stage 1	-	-	- 542 -
Stage 2	-	-	- 237 -
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	1024	-	- 364 540
Stage 1	-	-	- 583 -
Stage 2	-	-	- 802 -
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1024	-	- 354 540
Mov Cap-2 Maneuver	-	-	- 354 -
Stage 1	-	-	- 583 -
Stage 2	-	-	- 780 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	13.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1024	-	-	-	495
HCM Lane V/C Ratio	0.028	-	-	-	0.123
HCM Control Delay (s)	8.6	-	-	-	13.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

2045 Long Range Total AM Traffic
8: Bison Meadows Ct/Road B & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	198	0	0	561	2	2	0	0	4	0	21
Future Vol, veh/h	12	198	0	0	561	2	2	0	0	4	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	208	0	0	591	2	2	0	0	4	0	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	593	0	0	208	0	0	837	827	208	826	826	592
Stage 1	-	-	-	-	-	-	234	234	-	592	592	-
Stage 2	-	-	-	-	-	-	603	593	-	234	234	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	983	-	-	1363	-	-	286	307	832	291	307	506
Stage 1	-	-	-	-	-	-	769	711	-	493	494	-
Stage 2	-	-	-	-	-	-	486	493	-	769	711	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	983	-	-	1363	-	-	271	303	832	288	303	506
Mov Cap-2 Maneuver	-	-	-	-	-	-	271	303	-	288	303	-
Stage 1	-	-	-	-	-	-	759	702	-	486	494	-
Stage 2	-	-	-	-	-	-	465	493	-	759	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	18.4	13.5
HCM LOS			C	B





Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	271	983	-	-	1363	-	-	451
HCM Lane V/C Ratio	0.008	0.013	-	-	-	-	-	0.058
HCM Control Delay (s)	18.4	8.7	-	-	0	-	-	13.5
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

2045 Long Range Total AM Traffic
10: Hodgen Rd. & Road A

09/19/2018

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	210	577	2	6	39
Future Vol, veh/h	18	210	577	2	6	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	221	607	2	6	41

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	609	0	0 867 608
Stage 1	-	-	- 608 -
Stage 2	-	-	- 259 -
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	970	-	- 323 496
Stage 1	-	-	- 543 -
Stage 2	-	-	- 784 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	970	-	- 317 496
Mov Cap-2 Maneuver	-	-	- 317 -
Stage 1	-	-	- 543 -
Stage 2	-	-	- 769 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	970	-	-	-	461
HCM Lane V/C Ratio	0.02	-	-	-	0.103
HCM Control Delay (s)	8.8	-	-	-	13.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

2045 Long Range Total AM Traffic
12: Meridian Rd. & Road D/Forest Green Dr.

09/19/2018

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	1	4	0	0	5	30	0	0	76	3
Future Vol, veh/h	6	0	1	4	0	0	5	30	0	0	76	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	1	4	0	0	5	32	0	0	80	3









Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	124	124	82	124	125	32	83	0	0	32	0	0
Stage 1	82	82	-	42	42	-	-	-	-	-	-	-
Stage 2	42	42	-	82	83	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	850	766	978	850	765	1042	1514	-	-	1580	-	-
Stage 1	926	827	-	972	860	-	-	-	-	-	-	-
Stage 2	972	860	-	926	826	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	848	764	978	847	763	1042	1514	-	-	1580	-	-
Mov Cap-2 Maneuver	848	764	-	847	763	-	-	-	-	-	-	-
Stage 1	923	827	-	969	857	-	-	-	-	-	-	-
Stage 2	969	857	-	925	826	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	9.3	1.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1514	-	-	864 847	1580	-	-
HCM Lane V/C Ratio	0.003	-	-	0.009 0.005	-	-	-
HCM Control Delay (s)	7.4	0	-	9.2 9.3	0	-	-
HCM Lane LOS	A	A	-	A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-

2045 Long Range Total PM Traffic
3: Meridian Rd. & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	185	233	7	80	3	162	28	12	0	33	11
Future Vol, veh/h	44	185	233	7	80	3	162	28	12	0	33	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	350	-	280	400	-	-	300	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	195	245	7	84	3	171	29	13	0	35	12





Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	195	0	0	411	389	195	409	388	86
Stage 1	-	-	-	-	-	-	287	287	-	101	101	-
Stage 2	-	-	-	-	-	-	124	102	-	308	287	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1509	-	-	1378	-	-	551	546	846	553	547	973
Stage 1	-	-	-	-	-	-	720	674	-	905	811	-
Stage 2	-	-	-	-	-	-	880	811	-	702	674	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1509	-	-	1378	-	-	503	527	846	507	528	973
Mov Cap-2 Maneuver	-	-	-	-	-	-	503	527	-	507	528	-
Stage 1	-	-	-	-	-	-	698	653	-	877	807	-
Stage 2	-	-	-	-	-	-	828	807	-	640	653	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.6			14.9			11.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	503	594	1509	-	-	1378	-	-	596
HCM Lane V/C Ratio	0.339	0.071	0.031	-	-	0.005	-	-	0.078
HCM Control Delay (s)	15.8	11.5	7.5	-	-	7.6	-	-	11.5
HCM Lane LOS	C	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.5	0.2	0.1	-	-	0	-	-	0.3






2045 Long Range Total PM Traffic
6: Hodgen Rd. & Road C

09/19/2018

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	451	243	10	6	30
Future Vol, veh/h	40	451	243	10	6	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	475	256	11	6	32
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	266	0	-	0	820	261
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	559	-
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	1298	-	-	-	345	778
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1298	-	-	-	334	778
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	553	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.6	0		11		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1298	-	-	-	637	
HCM Lane V/C Ratio	0.032	-	-	-	0.059	
HCM Control Delay (s)	7.9	-	-	-	11	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	

2045 Long Range Total PM Traffic
8: Bison Meadows Ct/Road B & Hodgen Rd.

09/19/2018

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	491	0	0	267	3	1	0	0	2	0	10
Future Vol, veh/h	16	491	0	0	267	3	1	0	0	2	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	290	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	517	0	0	281	3	1	0	0	2	0	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	284	0	0	517	0	0	839	835	517	834	834	283
Stage 1	-	-	-	-	-	-	551	551	-	283	283	-
Stage 2	-	-	-	-	-	-	288	284	-	551	551	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1278	-	-	1049	-	-	285	304	558	288	304	756
Stage 1	-	-	-	-	-	-	519	515	-	724	677	-
Stage 2	-	-	-	-	-	-	720	676	-	519	515	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1278	-	-	1049	-	-	278	300	558	285	300	756
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	300	-	285	300	-
Stage 1	-	-	-	-	-	-	512	508	-	714	677	-
Stage 2	-	-	-	-	-	-	710	676	-	512	508	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	18	11.2
HCM LOS			C	B





Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	278	1278	-	-	1049	-	-	593
HCM Lane V/C Ratio	0.004	0.013	-	-	-	-	-	0.021
HCM Control Delay (s)	18	7.9	-	-	0	-	-	11.2
HCM Lane LOS	C	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

2045 Long Range Total PM Traffic
10: Hodgen Rd. & Road A

09/19/2018

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	24	507	277	3	3	21
Future Vol, veh/h	24	507	277	3	3	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	290	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	534	292	3	3	22

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	295	0	0 877 293
Stage 1	-	-	- 293 -
Stage 2	-	-	- 584 -
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	1266	-	- 319 746
Stage 1	-	-	- 757 -
Stage 2	-	-	- 557 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1266	-	- 313 746
Mov Cap-2 Maneuver	-	-	- 313 -
Stage 1	-	-	- 757 -
Stage 2	-	-	- 546 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1266	-	-	-	636
HCM Lane V/C Ratio	0.02	-	-	-	0.04
HCM Control Delay (s)	7.9	-	-	-	10.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

2045 Long Range Total PM Traffic
12: Meridian Rd. & Road D/Forest Green Dr.

09/19/2018

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	1	1	0	0	8	67	0	0	43	5
Future Vol, veh/h	3	0	1	1	0	0	8	67	0	0	43	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	1	1	0	0	8	71	0	0	45	5

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	135	135	48	135	138	71	51	0	0	71	0	0
Stage 1	48	48	-	87	87	-	-	-	-	-	-	-
Stage 2	87	87	-	48	51	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	836	756	1021	836	753	991	1555	-	-	1529	-	-
Stage 1	965	855	-	921	823	-	-	-	-	-	-	-
Stage 2	921	823	-	965	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	833	752	1021	832	749	991	1555	-	-	1529	-	-
Mov Cap-2 Maneuver	833	752	-	832	749	-	-	-	-	-	-	-
Stage 1	960	855	-	916	819	-	-	-	-	-	-	-
Stage 2	916	819	-	964	852	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		9.3		0.8		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	873 832	1529	-	-
HCM Lane V/C Ratio	0.005	-	-	0.005 0.001	-	-	-
HCM Control Delay (s)	7.3	0	-	9.1 9.3	0	-	-
HCM Lane LOS	A	A	-	A A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0	0	-	-

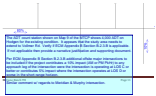
Markup Summary

dsdlaforce (19)



Subject: Callout
Page Label: 8
Author: dsdlaforce
Date: 11/1/2018 1:07:57 PM
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Revise. This is really low for a 7.9 acre commercial lot.

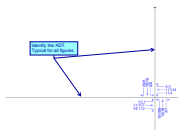


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Page Label: 12
Author: dsdlaforce
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The ADT count station shown on Map 9 of the MTCP shows 4,000 ADT on Hodgen for the existing condition. It appears that the study area needs to extend to Vollmer Rd. Verify if ECM Appendix B Section B.2.3.B is applicable. If not applicable then provide a narrative justification and supporting document.

Per ECM Appendix B Section B.2.3.B additional offsite major intersections to be included if the project contributes a 10% impact (AM or PM PkHr) to any approach leg of the intersection where the intersection is operating at LOS C or better or contributes 5% impact where the intersection operates at LOS D or worse in the short-range horizon.

Similar comment w/ regards to Meridian & Murphy intersection.



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Page Label: 9
Author: dsdlaforce
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Identify the ADT. Typical for all figures

Intersection of Hodgen Road
with a posted speed of 40
is a **Minor Arterial** in the
with a posted speed of 40
is a **Minor Arterial** in the

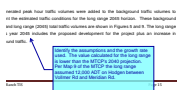
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Minor Arterial

is a **Minor Arterial** in the
with a posted speed of 40
is a **Minor Arterial** in the

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Minor Arterial



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Identify the assumptions and the growth rate used.
The value calculated for the long range is lower than the MTCP's 2040 projection. Per Map 9 of the MTCP the long range assumed 12,000 ADT on Hodgen between Vollmer Rd and Meridian Rd.

d in Hodgen R
an 10 vph. A
action with a p

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10 vph

Hodgen R
an 25 vph, z
a projected

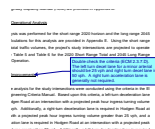
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25 vp

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50 vph.



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Page Label: 17
Author: dsdlaforce
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Double check the criteria (ECM 2.3.7.D). The left turn decel lane for a minor arterial should be 25 vph and right turn decel lane is 50 vph. A right turn acceleration lane is generally not required.

ssified as a Minor Arterial in the
arterial with a posted speed of 40
ssified as a Minor Arterial in the

See comment on
Section 4.3 (pg 16)

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See comment on Section 4.3 (pg 16)

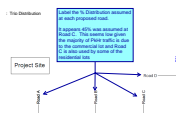


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Page Label: 18
Author: dsdlaforce
Date: 11/1/2018 3:28:36 PM
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1. Per ECM Table 2-26 the Bay Taper is "Special Design" instead of an actual value. Explain how you came up with the 240' bay taper length.

2. The 290 is the lane length portion of the required deceleration. Identify the additional required Storage Length component per Table 2-30. See ECM Figure 2-25 for design elements for left turn lanes.

Update all auxiliary lanes accordingly.



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Page Label: 12
Author: dsdlaforce
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Label the % Distribution assumed at each proposed road.

It appears 45% was assumed at Road C. This seems low given the majority of PkHr traffic is due to the commercial lot and Road C is also used by some of the residential lots

velopment and the projected 2020
illary lane recommendations for the
See review
comments on page
16 & 17.

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Page Label: 28
Author: dsdlaforce
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See review comments on page 16 & 17.



Subject: File Attachment
Page Label: 30
Author: dsdlaforce
Date: 11/1/2018 4:49:37 PM
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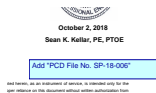


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Author: dsdlaforce
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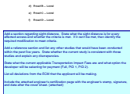
Subject: Callout
Page Label: 4
Author: dsdlaforce
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Add a narrative for Bison Meadows Ct and Forest Green Drive. Part of the narrative shall include what assumptions were used to generate the LOS and an explanation why counts were not obtained.



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Page Label: 1
Author: dsdlaforce
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Add "PCD File No. SP-18-006"



Subject: Text Box
Page Label: 30
Author: dsdlaforce
Date: 11/8/2018 3:52:29 PM
Color: ■

Add a section regarding sight distance. State what the sight distance is for every affected access and whether the criteria is met. If it can't be met, then identify the required modification to meet criteria.

Add a reference section and list any other studies that would have been conducted within the past five years. State whether the current study is consistent with those studies and explain any discrepancies.

State what the current applicable Transportation Impact Fees are and what option the developer will be selecting for payment (Full, PID 1, PID 2).

List all deviations from the ECM that the applicant will be making.

Include the attached engineer's certification page with the engineer's stamp, signature, and date after the cover sheet. (attached)