



Craftsman Village of the Crossroads At Mountain View Meadows Phases 8-10 Traffic Impact Study Update

Helena, Montana



Prepared For:

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Craftsman Village of the Crossroads At Mountain View Meadows Phases 8-10 Traffic Impact Study Helena, Montana

A. EXECUTIVE SUMMARY

The Craftsman Village of the Crossroads at Mountain View Meadows Phases 8-10 is a 40-acre residential development located south of US Highway 12/287 in Helena, Montana. The project would consist of 230 single family residential units and would be accessed from Alpine View Drive and Jeannette Rankin Drive. As proposed Craftsman Village of the Crossroads would produce 2,169 new daily trips in the area at full build-out. Craftsman Village of the Crossroads Phases 8-10 will not affect roadway operations in the area. All nearby intersections will continue to function at acceptable levels of service with the proposed development. No roadway modifications are currently recommended with this project.

B. PROJECT DESCRIPTION

This document studies the possible effects on the surrounding road system from a proposed 40-acre residential development located south of US Highway 12/287 within the City of Helena between Helena and East Helena. The document identifies any traffic mitigation efforts that the development may require. The site is located north of Jeannette Rankin Drive and east of Alice Street.

C. EXISTING CONDITIONS

The proposed development property currently consists of a 40-acre parcel of undeveloped land located south of US Highway 12/287 and north of Jeannette Rankin Drive adjacent to Mountain View Park and the previous phases of the Craftsman Village of the Crossroads which are nearing completion. The topography in this area consists of rolling hills which slope downward to the east. See **Figure 1** for a location map of the proposed development.

Adjacent Roadways

US Highway 12/287 is a four-lane, two-way east/west highway which extends east from Helena. US Highway 12/287 has a five-lane cross-section and the posted speed limit near Crossroads Parkway is 55 MPH which decreases to 45 MPH approximately 0.5 miles west of Crossroads Parkway and at the East. The Highway intersects with Crossroads Parkway at a signalized intersection. Crossroads Parkway has a separated eastbound lane from

Highway 287 at the traffic signal. Traffic counts collected in 2021 by Montana Department of Transportation (MDT) indicate that this section of roadway carries an Average Daily Traffic (ADT) volume of 17,200 vehicles per day (VPD) west of Crossroads Parkway.

Highway 282 is a two-way north/south highway which extends south from Highway 12/287 in East Helena to an overpass at I-15. Highway 282 has a two-lane rural cross-section with a paved width of 28 feet. Near Runkle Parkway the highway has an extended width accommodating a northbound left-turn lane at the intersection. The posted speed limit near Runkle Parkway is 45 MPH and increases to 60 MPH south of Runkle Parkway. Traffic counts collected in 2021 by MDT indicate that this section of roadway carries an Average Daily Traffic (ADT) volume of 1,900 vehicles per day (VPD) south of Manlove Street.

Crossroads Parkway is a north/south, four-lane roadway that extends south from US Highway 12/287 providing residential and commercial access in the area. The road has an urban cross-section with a paved width of 65 feet, which includes left-turn bays at each intersection. The roadway features a central median and has a posted speed limit of 35 MPH. Crossroads Parkway is signal controlled at the intersection with US Highway 12/287.

Alice Street is a two-lane road which provides access to developments south of US Highway 12/287. Alice Street starts in an east/west direction at its intersection with Crossroads Parkway and changes to north/south approximately 0.25 miles east of Crossroads Parkway. The street has variable widths (24, 30, 36 and 40 feet) due to bulb outs along its north/south direction. The posted speed limit on Alice Street is 35 MPH. Data collected by Abelin Transportation Services (ATS) in 2022 indicates that the roadway currently carries 2,100 VPD.

Jeannette Rankin Drive is an east/west, two-lane residential collector street which intersects Alice Street to provide access to homes and the Mountain View Park. Jeannette Rankin Drive has a paved width of 33 feet and is a thru-street with STOP signs at each intersection. Jeannette Rankin Drive has a STOP sign at its intersection with Alice Street. Data collected by ATS in 2022 indicates that the roadway currently carries say 500 VPD.

Runkle Parkway is an east/west, two-lane roadway that extends west from Highway 282 providing residential access in the area. The road has an urban cross-section with a paved width of 42 feet and a posted speed limit of 35 MPH. Runkle Parkway has a central median with designated left-turn lanes at all cross-streets. Runkle Parkway is STOP controlled at the tee-intersection with Highway 282.

Alpine View Drive is a north/south, two-lane road which intersects Runkle Parkway to provide access to the developments in the area. The roadway is currently under construction to City of Helena local road standards.

Figure 1- Proposed Development Site



Traffic Counts

In July 2022 ATS collected traffic data to evaluate current operational characteristics. The data collected includes a peak-hour turning movement count performed at the intersection of Jeannette Rankin Drive and Alice Street and 48-hour traffic counts along Alice Street and Jeannette Ranking Drive. Additional data used for this project was obtained from a February 2021 traffic counting effort by ATS at the intersections of Highway 282 with Runkle Parkway and Alpine View Drive. The raw traffic data is included in **Appendix A** of this report.

Raw traffic data is typically adjusted for seasonal variation in accordance with the data collected from MDT’s permanent traffic data located on Custer Avenue east of York Road

(Station A-079). This count station data indicated that data collected in July 2022 is approximately 116% of the Average Annual Daily Traffic (AADT) in this area. For a conservative result no factorization applied was to the raw data for the analysis of this project.

ATS obtained historic traffic data for US Highway 12 and MT Highway 282 from the MDT. This data is presented in **Table 1**. Based on the available traffic data for these two roadways, traffic volumes in this area have not increased significantly over the past ten years.

Table 1 - Historic Average Daily Traffic Data (Source: MDT)

Location	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Hwy 282 S of Manlove St #25-7B-044	--	--	--	--	1,596	1,583	1,917	1,929	1794	1795
Hwy 12/287 W of Wylie Dr #25-7B-019	18,660	17,520	17,920	17,000	16,540	17,099	17,338	17,251	15,733	17,196

Vehicle speed and volume data was also collected along Alice Street during the July count period. This information suggested that the average vehicle speed on Alice Street north of Jeannette Rankin Drive was 30 MPH with an 85th percentile speed of 37 MPH for all recorded vehicles. In general, vehicle travel speeds on this section are near or slightly above the posted 35 MPH speed limit.

Additional Projects

Aspen View Condominiums Phase 1 & 2 are currently under construction just north of Runkle Parkway along Alpine View Drive. The projects will include 58 condominium units and would produce 424 VPD from both phases. The projected future traffic from this project is included with the overall analysis for the Craftsman Village development.

Level of Service

Using the data collected for this project, ATS conducted a Level of Service (LOS) analysis at area intersections. This evaluation was conducted in accordance with the procedures outlined in the Transportation Research Board’s *Highway Capacity Manual (HCM) - Special Report 209* and the Highway Capacity Software (HCS) version 7.9. Intersections are graded from A to F representing the average delay that a vehicle entering an intersection can expect. Typically, a LOS of C or better is considered acceptable for peak-hour conditions.

Table 2 shows the existing 2022 LOS for the AM and PM peak hours without the traffic from the proposed Craftsman Village of the Crossroads Phases 8-10. The LOS calculations

are included in **Appendix C**. The table shows that the existing intersections along Alice Street and Runkle Parkway are currently operating within acceptable limits. No intersection modifications are currently needed in this area to improve capacity.

Table 2 – 2021 Level of Service Summary (Source: ATS)

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (Sec.)	LOS	Delay (Sec.)	LOS
Highway 282 & Runkle Parkway*	10.8	B	9.0	A
Runkle Parkway & Alpine View*	9.0	A	8.7	A
Alice Street & Jeannette Rankin*	9.2	A	9.0	A

*Northbound/Southbound LOS and Delay or Eastbound/Westbound Side Street LOS and Delay.

D. PROPOSED DEVELOPMENT

The development currently under consideration for this site includes 40 acres of land located west of the previous phases of the Craftsman Village of the Crossroads development and bordered by Jeannette Rankin Drive and Alpine View Drive. Phases 8-10 of the development would include up to 230 single-family residential properties. The project is planned for the development of 70 lots in phases 8 and 9 and 90 lots in Phase 10. Access to the site would be provided through existing approaches from Jeannette Rankin Drive to the west and Alpine View Drive and a new connection to Alice Street at Alpine View Drive would be constructed with Phase 10. These phases of the project are expected to reach full development by 2025. All roads within the development would be constructed to City the Helena standards and will include boulevard sidewalks. The Craftsman Village of the Crossroads phases 8-10 is shown in **Figure 2**.

E. TRIP GENERATION AND ASSIGNMENT

ATS performed a trip generation analysis to determine the anticipated future traffic volumes from the proposed development using the trip generation rates contained in *Trip Generation* (Institute of Transportation Engineers, Eleventh Edition). These rates are the national standard and are based on the most current information available to planners. A vehicle “trip” is defined as any trip that either begins or ends at the development site. ATS determined that the critical traffic impacts on the intersections and roadways would occur during the weekday morning and evening peak hours. According to the ITE trip generation rates, the Craftsman Village of the Crossroads would produce 161 AM peak hour trips, 216 PM peak hour trips, and 2,169 daily trips. See **Table 3** for detailed trip generation information.

Figure 2 – Proposed Development

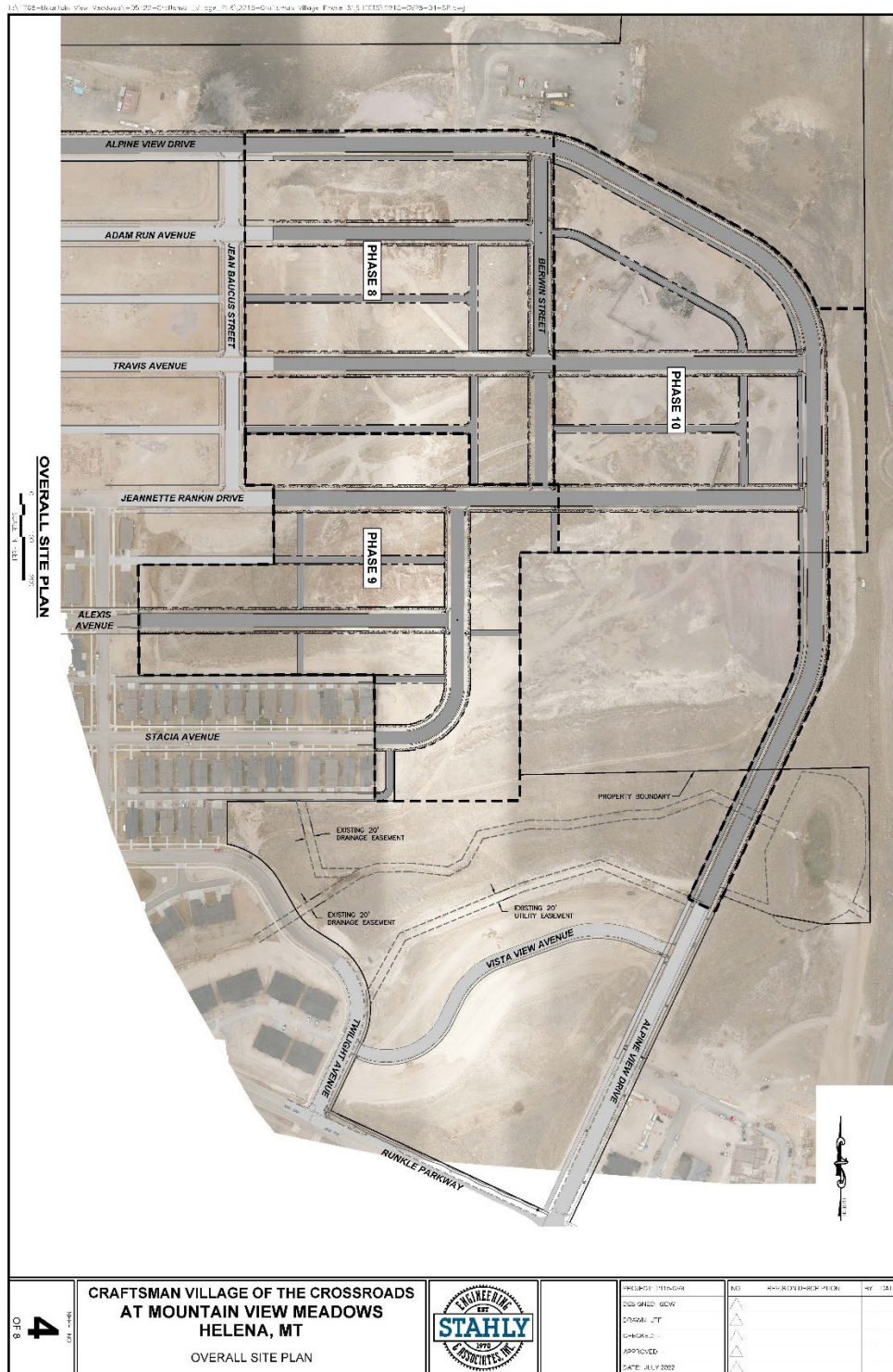


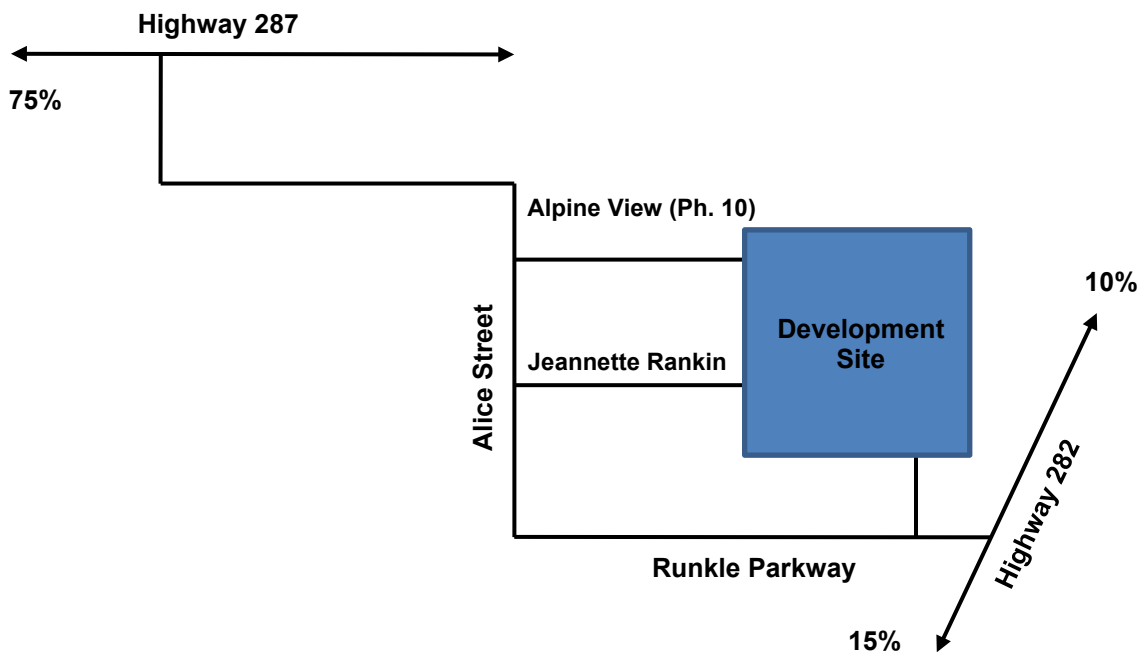
Table 3 - Trip Generation Rates (Source: ATS)

Units	Units	AM Peak Hour Trip Ends per Unit	Total AM Peak Hour Trip Ends	PM Peak Hour Trip Ends per Unit	Total PM Peak Hour Trip Ends	Weekday Trip Ends per Unit	Total Weekday Trip Ends
Single-Family Res. ITE #210	230	0.70	161	0.94	216	9.43	2,169

F. TRIP DISTRIBUTION

The traffic distribution and assignment for the proposed subdivision was based upon the existing ADT volumes along the adjacent roadways and the peak-hour turning volumes. It is expected that 75% of the traffic from the proposed development site would use Jeannette Rankin Drive and Alpine View Drive to reach Alice Street and Highway 287 to the west into Helena, 15% would distribute to the south onto Runkle Parkway and Highway 282 to the south, and 10% would distribute north onto Highway 282 towards East Helena. All traffic directing towards Helena from Phases 8 and 9 of the development would use Jeanette Rankin Drive. This traffic will decrease significantly in Phase 10 with the direction connection of Alpine View Drive to Alice Street. Traffic is expected to distribute onto the surrounding road network as shown on **Figure 3**.

Figure 3 – Trip Distribution



G. TRAFFIC IMPACTS OUTSIDE OF THE DEVELOPMENT

Using the trip generation and trip distribution numbers, ATS determined the future Level of Service for the area intersections. The anticipated intersection LOS with the Craftsman Village of the Crossroads Phases 8-10 is shown in **Tables 4**. These calculations are based on the projected model volumes included in **Appendix B** of this report and includes the projected traffic from the 58 units from the Aspen View Condominiums Phases 1&2 currently under construction.

Table 4 indicates that the construction of the Craftsman Village of the Crossroads Phases 8-10 will have little effect on the traffic conditions within the area. All area intersections will continue to function at LOS B or better at full build-out and no additional mitigation measures will be needed to improve intersection capacity. Both the intersections of Twilight Avenue and Alpine View Drive with Runkle Parkway have existing center left-turn lanes which will provide reserve operational capacity for these intersections well into the future. Based on the existing and projected traffic volumes along Alice Street, no additional turning lanes would be required at the intersections with Alpine View Drive or Jeannette Rankin Drive.

Total traffic volumes on Alice Street and Crossroads Parkway will increase by 1,600 VPD to a total of 3,700 VPD which is well within the capacity of a collector roadway. Traffic volume along the southern portion of Alpine View Drive will increase by approximately 500 VPD. The project will initially increase traffic volumes along Jeannette Rankin Drive (collector roadway) by approximately 1,000 VPD with Phases 8 & 9 which will increase the total traffic along Jeannette Rankin Drive to 1,500 VPD. With the connection of Alpine View Drive to Alice Street with Phase 10 of the project, traffic volumes along Jeannette Rankin Drive will decrease to approximately 800 VPD.

**Table 4 –Level of Service Summary
With the Craftsman Village of the Crossroads Phases 8-10 (Source: ATS)**

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (Sec.)	LOS	Delay (Sec.)	LOS
Highway 282 & Runkle Parkway	11.3	B	9.7	A
Runkle Parkway & Alpine View*	9.0/9.7	A/A	8.8/8.8	A/A
Alice Street & Alpine View	9.7	A	9.6	A
Alice Street & Jeannette Rankin	9.4	A	9.3	A

*Northbound/Southbound LOS and Delay.

H. IMPACT SUMMARY & RECOMMENDATIONS

As proposed Craftsman Village of the Crossroads would produce 2,169 new daily trips in the area at full build-out. Craftsman Village of the Crossroads Phases 8-10 will not affect roadway operations in the area. All nearby intersections will continue to function at acceptable levels of service with the proposed development. No roadway modifications are currently recommended with this project.

APPENDIX A

Traffic Data

Turning Movement Count

All Vehicles

Location MountainView

Date 7-19 PM and 7-20 AM

	Northbound				Southbound				Eastbound				Westbound				TOTAL	
	Left	Thr	Right	Peds	Left	Thr	Right	Peds	Left	Thr	Right	Peds	Left	Thr	Right	Peds		
7:00 - 7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 - 7:30	0	13	0	0	5	4	0	0	0	0	0	0	0	0	7	0	0	29
7:30 - 7:45	0	18	0	0	5	6	0	0	0	0	0	0	1	0	6	0	0	36
7:45 - 8:00	0	20	4	0	9	7	0	0	0	0	0	0	2	0	8	0	0	50
8:00 - 8:15	0	15	0	0	5	6	0	0	0	0	0	0	1	0	3	0	0	30
8:15 - 8:30	0	13	1	0	9	3	0	0	0	0	0	0	0	0	8	0	0	34
8:30 - 8:45	0	15	1	0	9	11	0	0	0	0	0	0	0	0	3	0	0	39
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 - 1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 - 1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30 - 1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45 - 2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 - 2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 - 2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 - 2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 - 3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 - 3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 - 3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 - 3:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 - 4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 - 4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 - 4:30	0	11	0	0	2	18	0	0	0	0	0	0	0	0	5	0	0	36
4:30 - 4:45	0	14	2	0	2	16	0	0	0	0	0	0	0	0	9	0	0	43
4:45 - 5:00	0	11	0	0	1	11	0	0	0	0	0	0	0	0	5	0	0	28
5:00 - 5:15	0	17	1	0	9	13	0	0	0	0	0	0	0	0	8	0	0	48
5:15 - 5:30	0	13	0	0	9	14	0	0	0	0	0	0	2	0	14	0	0	52
5:30 - 5:45	0	10	0	0	7	21	0	0	0	0	0	0	0	0	3	0	0	41
5:45 - 6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 - 6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 - 6:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 - 6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 - 7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	170	9	0	72	130	0	0	0	0	0	0	6	0	79	0	0	466

Abelin Traffic Services

130 S. Howie Street
Helena, MT 59601

File Name : RunkleAlpineTMC
Site Code : 00000000
Start Date : 2/24/2021
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

Start Time	ALPINE VEIW Southbound					RUNKLE Westbound					ALPINE VEIW Northbound					RUNKLE Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
*** BREAK ***																					
07:30 AM	0	0	0	0	0	0	1	1	0	2	1	1	1	0	3	0	10	0	0	10	15
07:45 AM	0	0	0	0	0	0	4	0	0	4	3	0	1	0	4	0	21	0	0	21	29
Total	0	0	0	0	0	0	5	1	0	6	4	1	2	0	7	0	31	0	0	31	44
08:00 AM	0	0	0	0	0	0	8	0	0	8	1	0	0	0	1	0	15	0	0	15	24
08:15 AM	0	0	0	0	0	0	4	1	0	5	1	0	1	0	2	6	8	0	0	14	21
*** BREAK ***																					
Total	0	0	0	0	0	0	12	1	0	13	2	0	1	0	3	6	23	0	0	29	45
*** BREAK ***																					
04:30 PM	0	0	0	0	0	0	5	1	0	6	2	0	1	2	5	0	6	0	0	6	17
04:45 PM	0	0	0	0	0	0	13	2	1	16	1	0	0	0	1	1	9	0	1	11	28
Total	0	0	0	0	0	0	18	3	1	22	3	0	1	2	6	1	15	0	1	17	45
05:00 PM	0	0	0	0	0	0	15	3	0	18	2	0	1	0	3	0	3	2	0	5	26
05:15 PM	0	0	0	0	0	0	12	2	0	14	0	0	0	0	0	0	4	0	0	4	18
*** BREAK ***																					
Grand Total	0	0	0	0	0	0	62	10	1	73	11	1	5	2	19	7	76	2	1	86	178
Apprch %	0	0	0	0	0	0	84.9	13.7	1.4		57.9	5.3	26.3	10.5		8.1	88.4	2.3	1.2		
Total %	0	0	0	0	0	0	34.8	5.6	0.6	41	6.2	0.6	2.8	1.1	10.7	3.9	42.7	1.1	0.6	48.3	
Unshifted	0	0	0	0	0	0	62	10	1	73	11	1	5	2	19	7	76	2	1	86	178
% Unshifted	0	0	0	0	0	0	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

For Project: AliceStreet Helena
 Project Notes:
 Location/Name: Merged
 Report Generated: 8/3/2022 09:06
 Speed Intervals: 1 MPH
 Time Intervals: Instant
 Traffic Report From: 7/19/2022 10:00:00 through 7/21/2022 11:59:59
 85th Percentile Speed: 37 MPH
 85th Percentile Vehicles: 3703
 Max Speed: 67 MPH on 7/19/2022 17:26:37
 Total Vehicles: 4357
 AADT: 2091

Volumes - weekly counts

Time	5 Day	7 Day
Average Daily	1452	1452
AM Peak	186	186
PM Peak	196	196

Speed

Speed Limit: 35
 85th Percentile Speed: 37
 50th Percentile Speed: 31
 10 MPH Pace Interval: 28.0 MPH to 38.0 MPH
 Average Speed: 29.54

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Count over limit	N/A	324	502	174	N/A	N/A	N/A
% over limit	N/A	22.7	23.2	22.7	N/A	N/A	N/A
Avg Speeder	N/A	38.5	38.6	38.6	N/A	N/A	N/A

Class Counts

	Number	%
VEH_SM	101	2.3
VEH_MED	4107	94.3
VEH_LG	149	3.4
[VEH_SM=motorcycle,	VEH_MED = sedan,	VEH_LG = truck]

Merged Weekly Counts
AliceStreet Helena

from Tue-Jul-19-2022-10-00-AM to Thu-Jul-21-2022-11-59-AM

	7/18/2022	to	7/24/2022							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	7/18/2022	7/19/2022	7/20/2022	7/21/2022	7/22/2022	7/23/2022	7/24/2022	Day Avg	Avg	Avg Speed
0 - 1	*	*	4	3	*	*	*	3.5	0	33.5
1 - 2	*	*	2	1	*	*	*	1.5	0	31.5
2 - 3	*	*	1	2	*	*	*	1.5	0	32
3 - 4	*	*	5	4	*	*	*	4.5	0	36
4 - 5	*	*	4	4	*	*	*	4	0	30
5 - 6	*	*	36	38	*	*	*	37	0	35.9
6 - 7	*	*	71	51	*	*	*	61	0	37.25
7 - 8	*	*	191	182	*	*	*	186.5	0	36.3
8 - 9	*	*	164	137	*	*	*	150.5	0	36.2
9 - 10	*	*	116	113	*	*	*	114.5	0	36.65
10 - 11	*	18	151	109	*	*	*	92.67	0	35.13
11 - 12	*	165	149	122	*	*	*	145.33	0	36.37
12 - 13	*	177	215	*	*	*	*	196	0	36.35
13 - 14	*	127	160	*	*	*	*	143.5	0	36.7
14 - 15	*	112	122	*	*	*	*	117	0	36.7
15 - 16	*	148	115	*	*	*	*	131.5	0	35.75
16 - 17	*	158	189	*	*	*	*	173.5	0	36.75
17 - 18	*	221	166	*	*	*	*	193.5	0	36.95
18 - 19	*	90	91	*	*	*	*	90.5	0	37.3
19 - 20	*	81	65	*	*	*	*	73	0	37.65
20 - 21	*	72	45	*	*	*	*	58.5	0	36.5
21 - 22	*	39	61	*	*	*	*	50	0	35.5
22 - 23	*	21	29	*	*	*	*	25	0	35
23 - 24	*	1	9	*	*	*	*	5	0	32.5
Totals	0	1430	2161	766	0	0	0			
% of Total	0%	32.82%	49.6%	17.58%	0%	0%	0%			

For Project: Jeannette Rankin Helena
 Project Notes:
 Location/Name: Merged
 Report Generated: 8/3/2022 09:12
 Speed Intervals: 1 MPH
 Time Intervals: Instant
 Traffic Report From: 7/19/2022 10:00:00 through 7/21/2022 11:59:59
 85th Percentile Speed: 28 MPH
 85th Percentile Vehicles: 839
 Max Speed: 43 MPH on 7/20/2022 11:29:54
 Total Vehicles: 987
 AADT: 473

Volumes - weekly counts

Time	5 Day	7 Day
Average Daily	329	329
AM Peak	48	48
PM Peak	51	51

Speed

Speed Limit: 35
 85th Percentile Speed: 28
 50th Percentile Speed: 23
 10 MPH Pace Interval: 18.0 MPH to 28.0 MPH
 Average Speed: 23.04

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Count over limit	N/A	3	10	5	N/A	N/A	N/A
% over limit	N/A	0.9	2.1	2.7	N/A	N/A	N/A
Avg Speeder	N/A	38.0	38.4	40.6	N/A	N/A	N/A

Class Counts

	Number	%
VEH_SM	70	7.1
VEH_MED	883	89.5
VEH_LG	34	3.4
[VEH_SM=motorcycle,	VEH_MED = sedan,	VEH_LG = truck]

Merged Weekly Counts
 Jeannette Rankin Helena

from Tue-Jul-19-2022-10-00-AM to Thu-Jul-21-2022-11-59-AM

	7/18/2022	to	7/24/2022							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	Week	Weekend	Week Day 85%
Hour	7/18/2022	7/19/2022	7/20/2022	7/21/2022	7/22/2022	7/23/2022	7/24/2022	Day Avg	Avg	Avg Speed
0 - 1	*	*	1	0	*	*	*	0.5	0	21
1 - 2	*	*	0	0	*	*	*	0	0	0
2 - 3	*	*	0	0	*	*	*	0	0	0
3 - 4	*	*	0	1	*	*	*	0.5	0	23
4 - 5	*	*	1	1	*	*	*	1	0	20.5
5 - 6	*	*	8	8	*	*	*	8	0	30
6 - 7	*	*	15	12	*	*	*	13.5	0	27.5
7 - 8	*	*	45	47	*	*	*	46	0	28.6
8 - 9	*	*	51	45	*	*	*	48	0	28.5
9 - 10	*	*	21	24	*	*	*	22.5	0	27
10 - 11	*	9	27	24	*	*	*	20	0	26.33
11 - 12	*	51	38	21	*	*	*	36.67	0	25.93
12 - 13	*	48	54	*	*	*	*	51	0	27.1
13 - 14	*	32	42	*	*	*	*	37	0	26.75
14 - 15	*	18	25	*	*	*	*	21.5	0	25.75
15 - 16	*	31	28	*	*	*	*	29.5	0	28.75
16 - 17	*	31	40	*	*	*	*	35.5	0	28.5
17 - 18	*	48	24	*	*	*	*	36	0	27.1
18 - 19	*	11	20	*	*	*	*	15.5	0	29.75
19 - 20	*	15	10	*	*	*	*	12.5	0	29
20 - 21	*	13	10	*	*	*	*	11.5	0	27
21 - 22	*	10	14	*	*	*	*	12	0	28
22 - 23	*	4	7	*	*	*	*	5.5	0	25.75
23 - 24	*	0	2	*	*	*	*	1	0	24
Totals	0	321	483	183	0	0	0			
% of Total	0%	32.52%	48.94%	18.54%	0%	0%	0%			

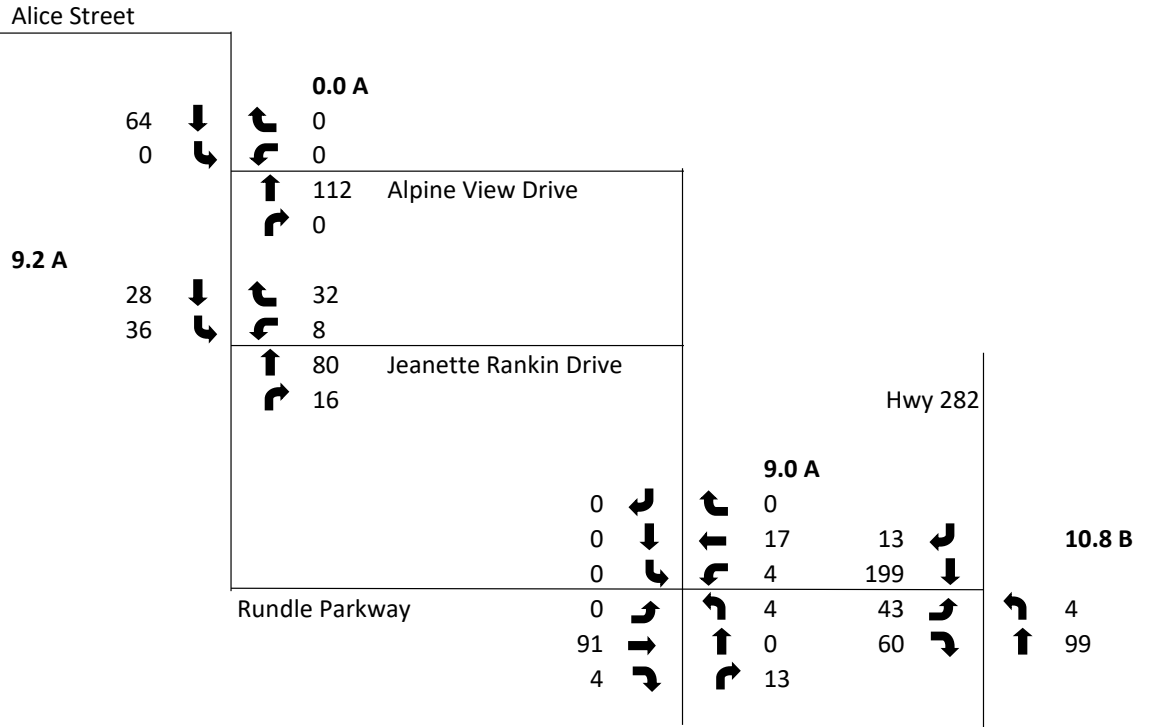
APPENDIX B

Traffic Model

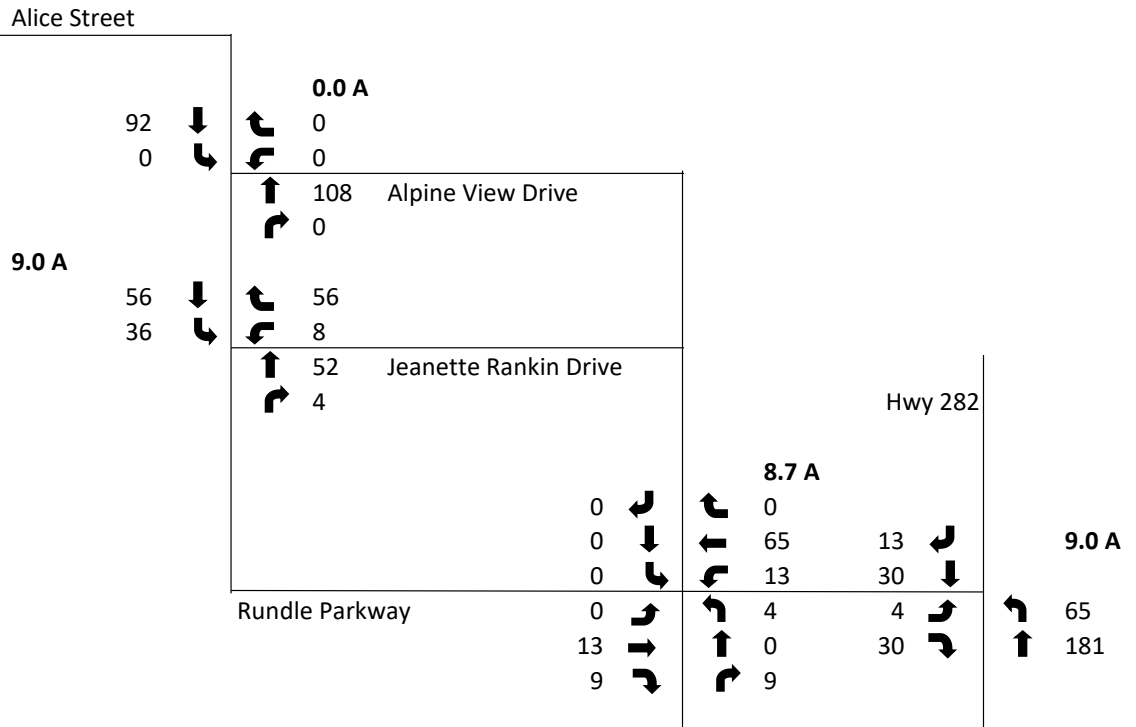
Craftsman Village Phases 8-10

Seasonal Factor 1.08

Traffic Model
Existing 2022
AM Peak Hour
(15 Min x 4)

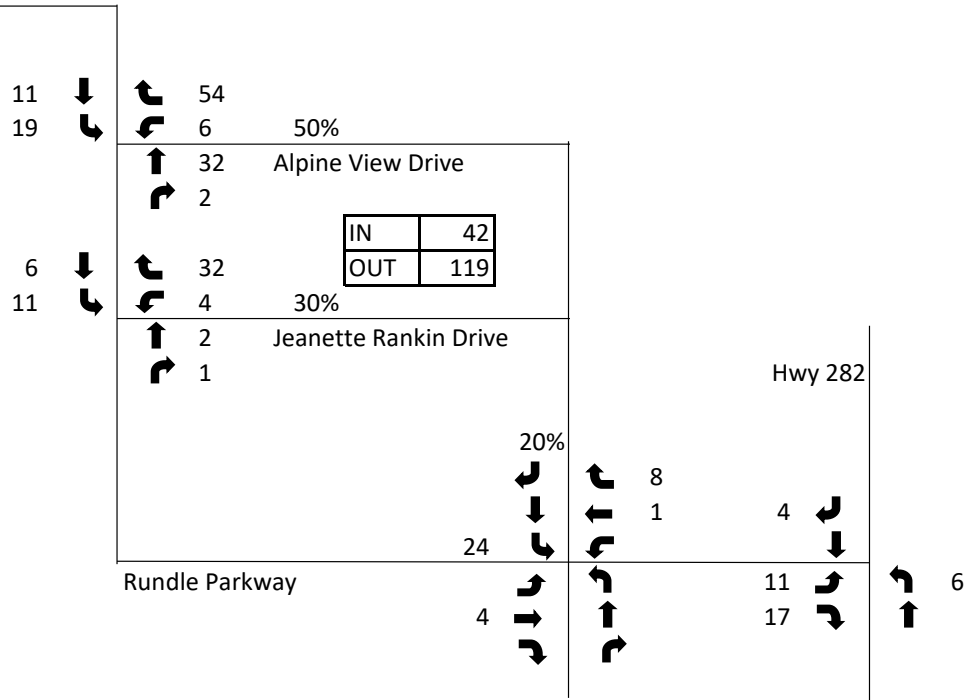


Traffic Model
Existing 2022
PM Peak Hour
(15 Min x 4)

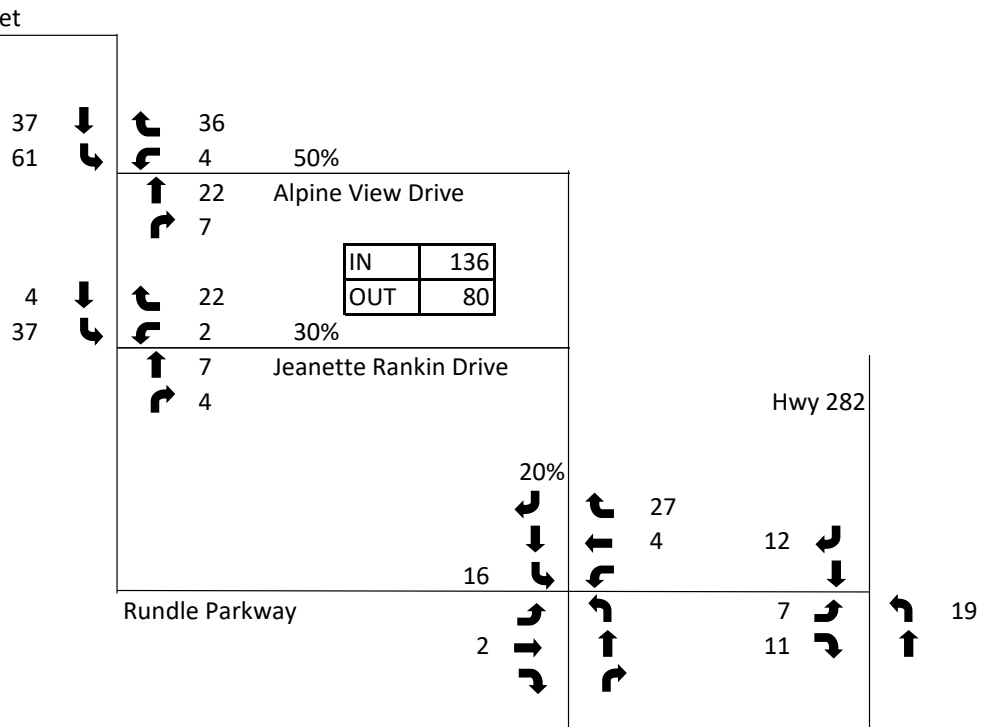


Craftsman Village Phases 8-10

Traffic Model
 Site Generated Traffic
 AM Peak Hour



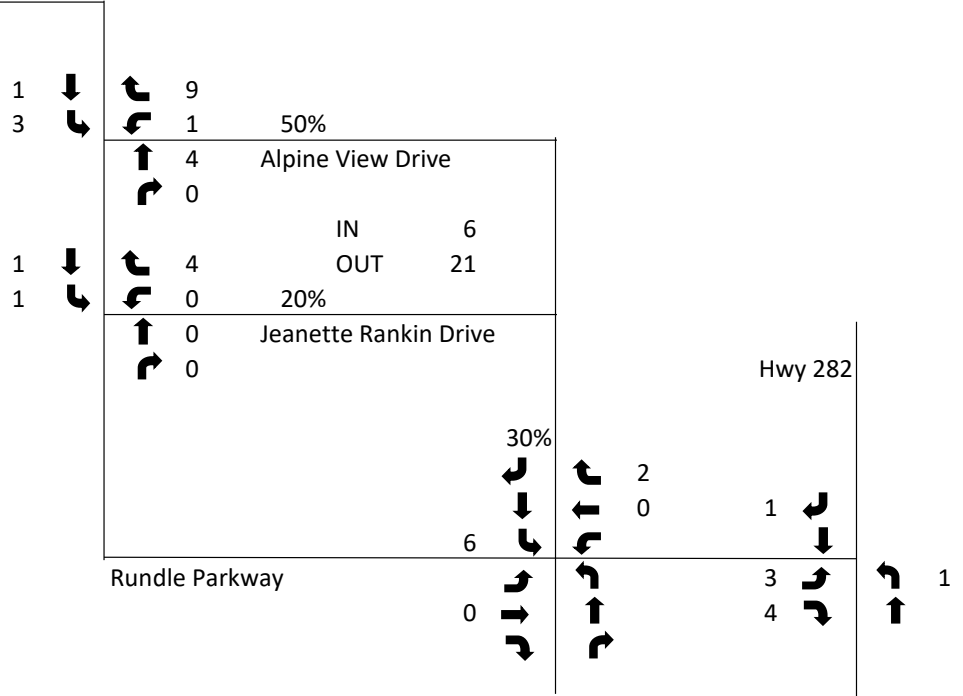
Traffic Model
 Site Generated Traffic
 PM Peak Hour



Craftsman Village Phases 8-10

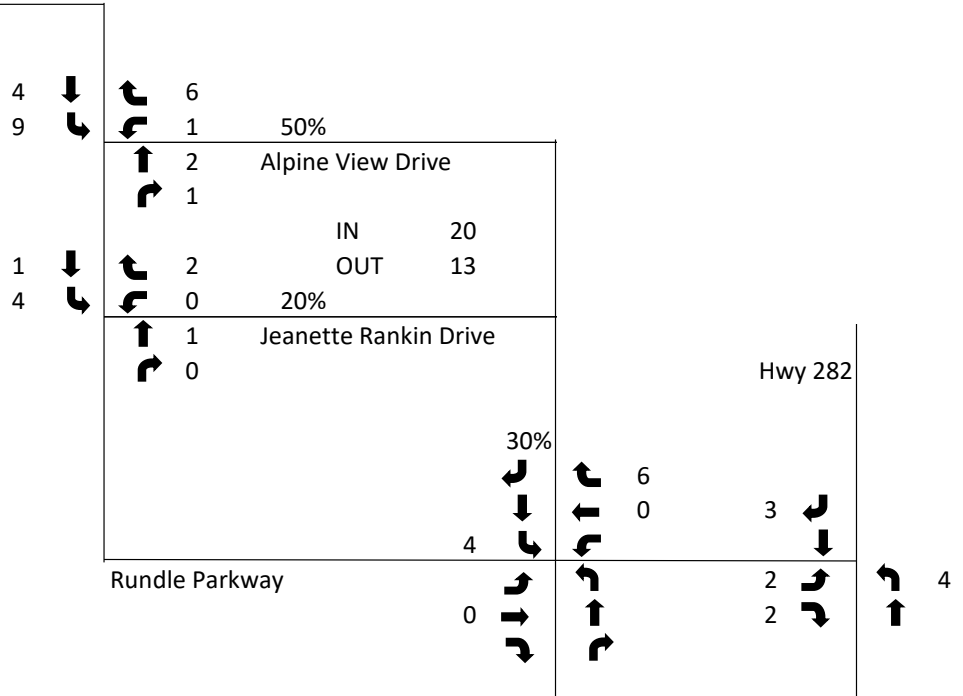
Traffic Model
Aspen View Traffic
AM Peak Hour

Alice Street



Traffic Model
Aspen View Traffic
PM Peak Hour

Alice Street



Traffic Model	Alice Street										
Total Projected Traffic											
AM Peak Hour											
2025	76	↓	↘	63	9.7 A						
	22	↘	↙	7							
	9.4 A		↑	148	Alpine View Drive						
	35	↓	↘	68							
	48	↘	↙	12							
			↑	82	Jeanette Rankin Drive						
			↘	17							
									Hwy 282		
									9.0/9.7 A/A		
			↘	0	↘	10					
			↓	0	↑	19	18	↘	11.3 B		
			↘	30	↘	4	199	↓			
					Rundle Parkway		↘	4	57	↘	11
			↘	95	↑	0	81	↘	↑ 99		
			↘	4	↘	13					

Traffic Model	Alice Street										
Total Projected Traffic											
PM Peak Hour											
2025	132	↓	↘	42	9.6 A						
	70	↘	↙	5							
	9.3 A		↑	132	Alpine View Drive						
	61	↓	↘	80							
	76	↘	↙	11							
			↑	60	Jeanette Rankin Drive						
			↘	8							
									Hwy 282		
									8.8/8.8 A/A		
			↘	0	↘	33					
			↓	0	↑	69	28	↘	9.7 A		
			↘	20	↘	13	30	↓			
					Rundle Parkway		↘	4	13	↘	88
			↘	16	↑	0	44	↘	↑ 181		
			↘	9	↘	9					

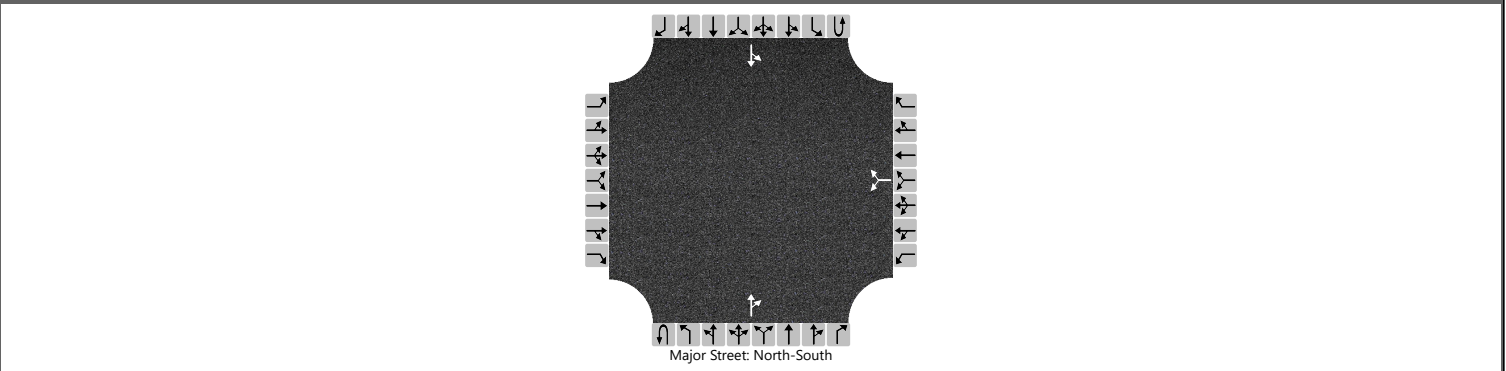
APPENDIX C

LOS Calculations

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA	Intersection	Alice and Rankin				
Agency/Co.	ATS	Jurisdiction	Lewis and Clark				
Date Performed	8/2/2022	East/West Street	Jeannette Rankin				
Analysis Year	2022	North/South Street	Alice				
Time Analyzed	AM peak existing	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						8		32			80	16		36	28	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1	
Critical Headway (sec)						6.43		6.23							4.13	
Base Follow-Up Headway (sec)						3.5		3.3							2.2	
Follow-Up Headway (sec)						3.53		3.33							2.23	

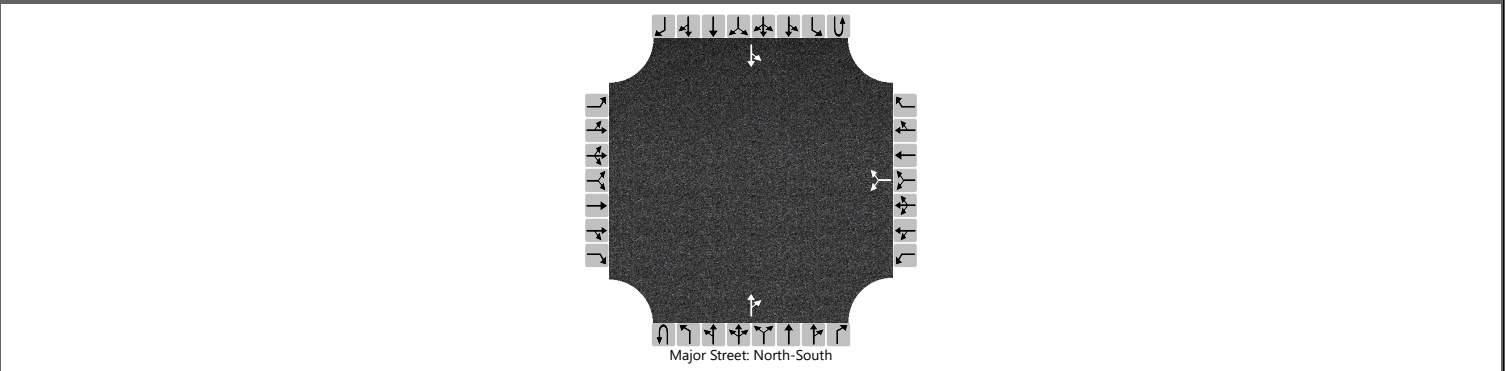
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						43									39	
Capacity, c (veh/h)						911									1481	
v/c Ratio						0.05									0.03	
95% Queue Length, Q ₉₅ (veh)						0.2									0.1	
Control Delay (s/veh)						9.2									7.5	
Level of Service (LOS)						A									A	
Approach Delay (s/veh)						9.2								4.3		
Approach LOS						A										

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RLA	Intersection	Alice and Rankin
Agency/Co.	ATS	Jurisdiction	Lewis and Clark
Date Performed	8/2/2022	East/West Street	Jeannette Rankin
Analysis Year	2022	North/South Street	Alice
Time Analyzed	PM peak existing	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Mountain View		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						8		56			52	4		36	56	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

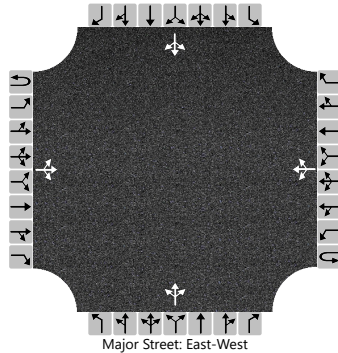
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						70								39		
Capacity, c (veh/h)						967								1536		
v/c Ratio						0.07								0.03		
95% Queue Length, Q ₉₅ (veh)						0.2								0.1		
Control Delay (s/veh)						9.0								7.4		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.0								3.0			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA			Intersection	Rundle and Alpine View		
Agency/Co.	ATS			Jurisdiction	Lewis and Clark		
Date Performed	8/2/2022			East/West Street	Rundle		
Analysis Year	2022			North/South Street	Alpine		
Time Analyzed	PM peak existing			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	1	0	0	0	1	0	0	1	0		0	1	0	
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	13	9		13	65	0		4	0	9		0	0	0
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2			7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23			7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3			3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33			3.53	4.03	3.33

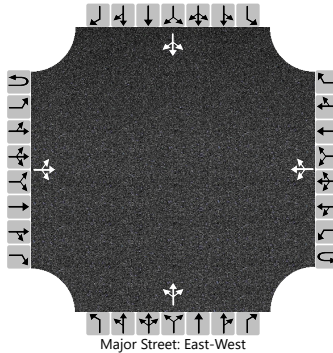
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				14				14						0	
Capacity, c (veh/h)		1523				1584				983							
v/c Ratio		0.00				0.01				0.01							
95% Queue Length, Q ₉₅ (veh)		0.0				0.0				0.0							
Control Delay (s/veh)		7.4				7.3				8.7							
Level of Service (LOS)		A				A				A							
Approach Delay (s/veh)	0.0				1.3				8.7								
Approach LOS									A								

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA			Intersection	Rundle and Alpine View		
Agency/Co.	ATS			Jurisdiction	Lewis and Clark		
Date Performed	8/2/2022			East/West Street	Rundle		
Analysis Year	2022			North/South Street	Alpine		
Time Analyzed	AM peak existing			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Priority																	
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0	
Configuration			LTR				LTR				LTR				LTR		
Volume (veh/h)		0	91	4		4	17	0		4	0	13		0	0	0	
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3	
Proportion Time Blocked																	
Percent Grade (%)										0				0			
Right Turn Channelized																	
Median Type Storage	Undivided																

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

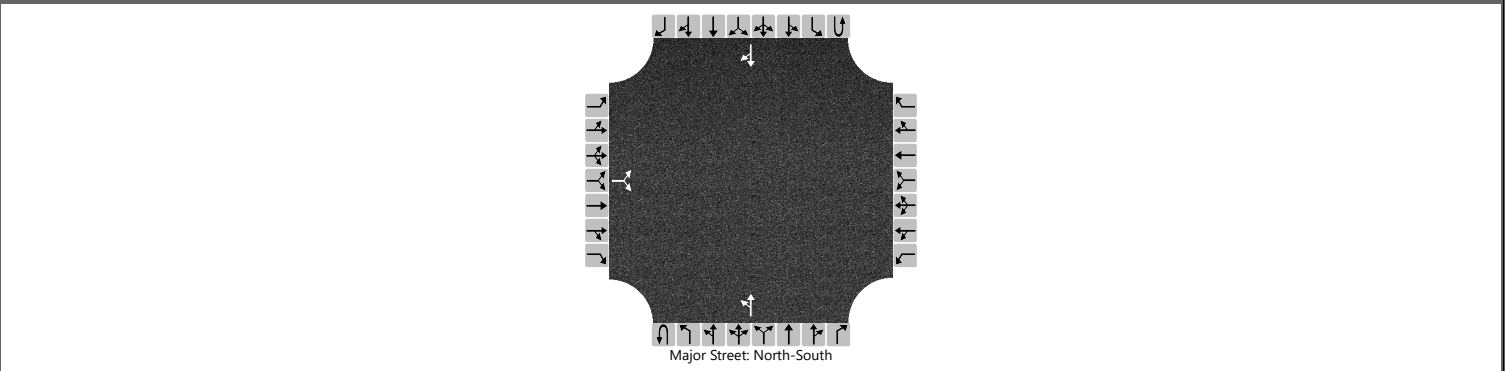
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				4					18					0
Capacity, c (veh/h)		1592				1482					923					
v/c Ratio		0.00				0.00					0.02					
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.1					
Control Delay (s/veh)		7.3				7.4					9.0					
Level of Service (LOS)		A				A					A					
Approach Delay (s/veh)		0.0				1.4				9.0						
Approach LOS										A						

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA			Intersection	Rundle and Hwy 282		
Agency/Co.	ATS			Jurisdiction	Lewis and Clark		
Date Performed	8/2/2022			East/West Street	Rundle		
Analysis Year	2022			North/South Street	Hwy 282		
Time Analyzed	AM peak existing			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		43		60						4	99					199
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

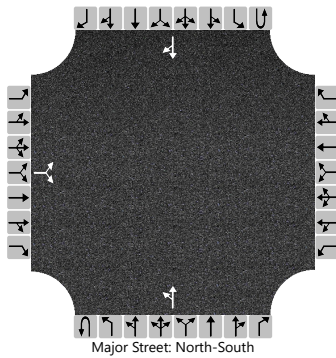
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			112							4						
Capacity, c (veh/h)			737							1332						
v/c Ratio			0.15							0.00						
95% Queue Length, Q ₉₅ (veh)			0.5							0.0						
Control Delay (s/veh)			10.8							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)		10.8								0.3						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA			Intersection	Rundle and Hwy 282		
Agency/Co.	ATS			Jurisdiction	Lewis and Clark		
Date Performed	8/2/2022			East/West Street	Rundle		
Analysis Year	2022			North/South Street	Hwy 282		
Time Analyzed	PM peak existing			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0	
Configuration			LR								LT					TR	
Volume (veh/h)		4		30						65	181					30	13
Percent Heavy Vehicles (%)		3		3						3							
Proportion Time Blocked																	
Percent Grade (%)		0															
Right Turn Channelized																	
Median Type Storage		Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

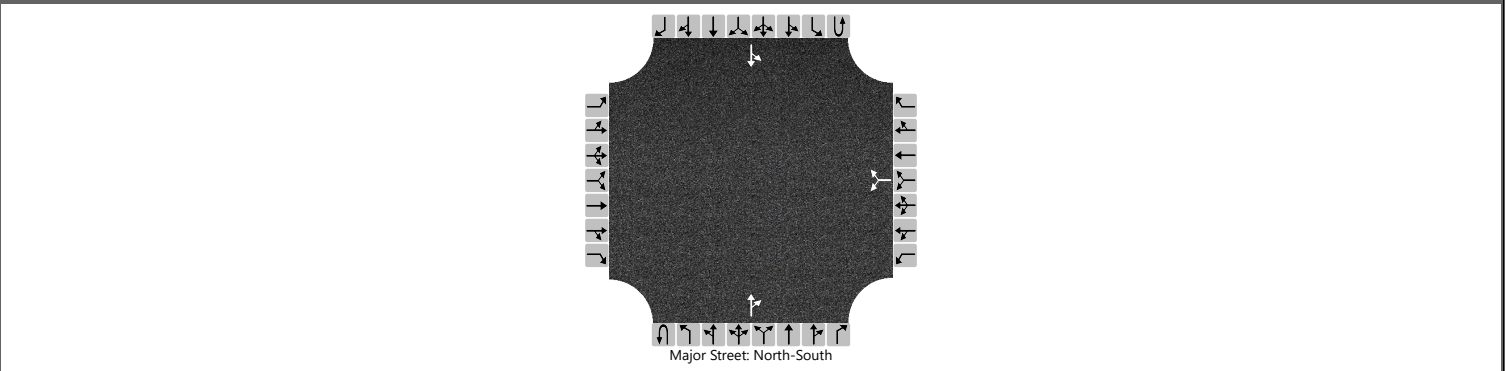
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			37							71						
Capacity, c (veh/h)			946							1554						
v/c Ratio			0.04							0.05						
95% Queue Length, Q ₉₅ (veh)			0.1							0.1						
Control Delay (s/veh)			9.0							7.4						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.0								2.2						
Approach LOS		A														

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA	Intersection	Alice and Alpine View				
Agency/Co.	ATS	Jurisdiction	Lewis and Clark				
Date Performed	8/2/2022	East/West Street	Alpine View				
Analysis Year	2025	North/South Street	Alice				
Time Analyzed	AM peak projected	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						7		67			150	2		22	77	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

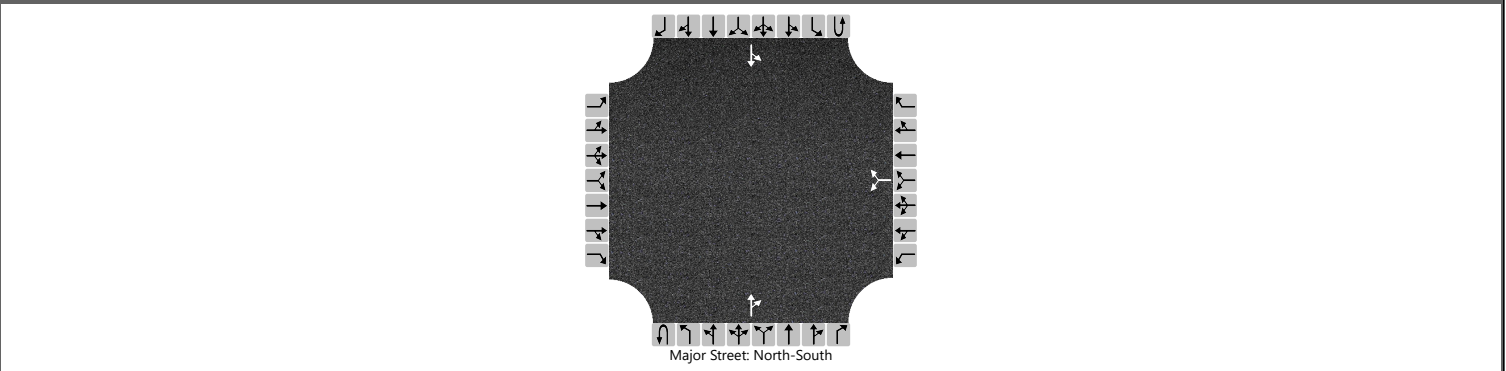
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						80								24		
Capacity, c (veh/h)						854								1407		
v/c Ratio						0.09								0.02		
95% Queue Length, Q ₉₅ (veh)						0.3								0.1		
Control Delay (s/veh)						9.7								7.6		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.7								1.8			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RLA	Intersection	Alice and Alpine View
Agency/Co.	ATS	Jurisdiction	Lewis and Clark
Date Performed	8/2/2022	East/West Street	Alpine View
Analysis Year	2025	North/South Street	Alice
Time Analyzed	PM peak projected	Peak Hour Factor	0.92
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	Mountain View		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						5		44			133	8		74	134	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

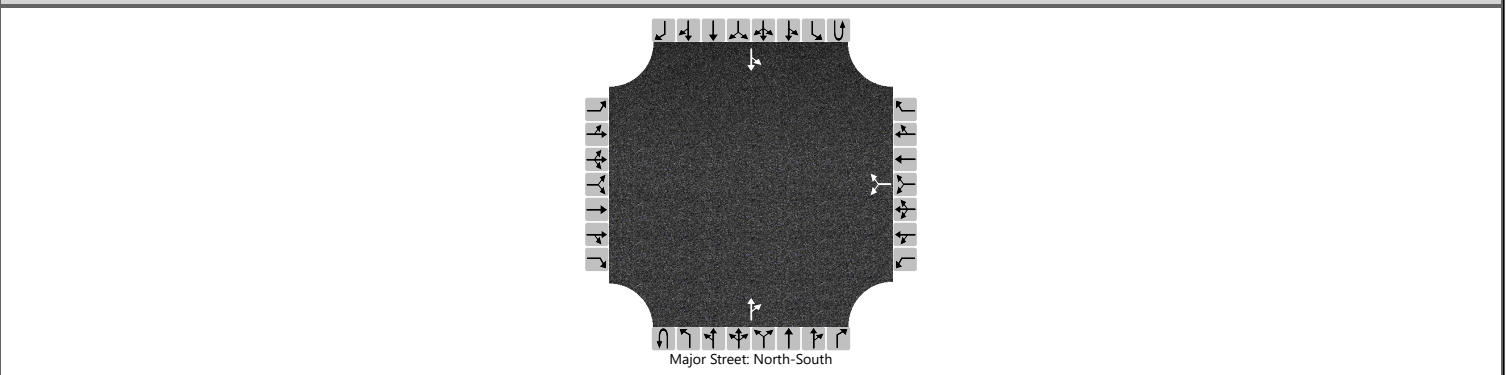
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						53								80			
Capacity, c (veh/h)						835								1421			
v/c Ratio						0.06								0.06			
95% Queue Length, Q ₉₅ (veh)						0.2								0.2			
Control Delay (s/veh)						9.6								7.7			
Level of Service (LOS)						A								A			
Approach Delay (s/veh)						9.6								3.0			
Approach LOS						A											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA	Intersection	Alice and Rankin				
Agency/Co.	ATS	Jurisdiction	Lewis and Clark				
Date Performed	8/2/2022	East/West Street	Jeannette Rankin				
Analysis Year	2025	North/South Street	Alice				
Time Analyzed	AM peak projected	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						12		70			82	17		49	35	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2							4.1		
Critical Headway (sec)						6.43		6.23							4.13		
Base Follow-Up Headway (sec)						3.5		3.3							2.2		
Follow-Up Headway (sec)						3.53		3.33							2.23		

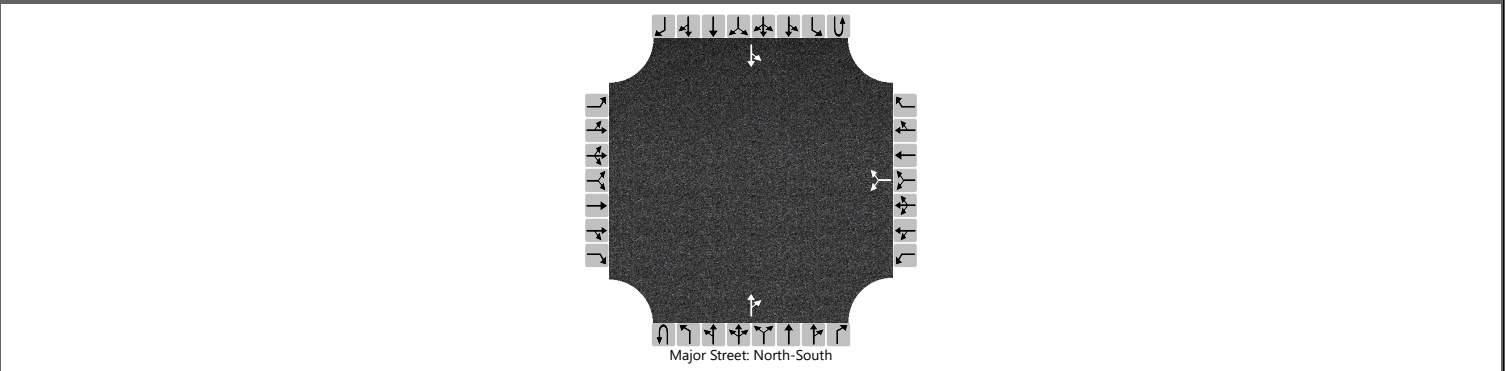
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						89									53		
Capacity, c (veh/h)						910									1477		
v/c Ratio						0.10									0.04		
95% Queue Length, Q ₉₅ (veh)						0.3									0.1		
Control Delay (s/veh)						9.4									7.5		
Level of Service (LOS)						A									A		
Approach Delay (s/veh)						9.4						4.5					
Approach LOS						A											

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA	Intersection	Alice and Rankin				
Agency/Co.	ATS	Jurisdiction	Lewis and Clark				
Date Performed	8/2/2022	East/West Street	Jeannette Rankin				
Analysis Year	2025	North/South Street	Alice				
Time Analyzed	PM peak projected	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						11		81			60	9		78	61	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

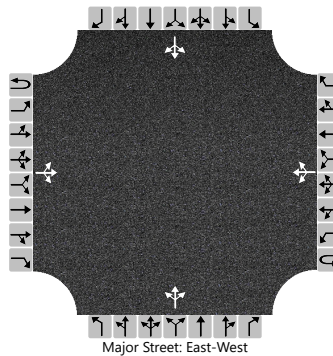
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						100								85		
Capacity, c (veh/h)						930								1518		
v/c Ratio						0.11								0.06		
95% Queue Length, Q ₉₅ (veh)						0.4								0.2		
Control Delay (s/veh)						9.3								7.5		
Level of Service (LOS)						A								A		
Approach Delay (s/veh)					9.3								4.4			
Approach LOS					A											

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	RLA	Intersection	Rundle and Alpine View
Agency/Co.	ATS	Jurisdiction	Lewis and Clark
Date Performed	8/2/2022	East/West Street	Rundle
Analysis Year	2025	North/South Street	Alpine
Time Analyzed	AM peak projected	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Mountain View		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	1	0	0	0	1	0	0	1	0		0	1	0	
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	95	4		4	19	10		4	0	13		32	0	0
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

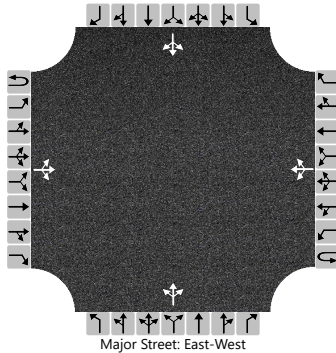
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				4				18				35		
Capacity, c (veh/h)		1574				1477				915				805		
v/c Ratio		0.00				0.00				0.02				0.04		
95% Queue Length, Q ₉₅ (veh)		0.0				0.0				0.1				0.1		
Control Delay (s/veh)		7.3				7.4				9.0				9.7		
Level of Service (LOS)		A				A				A				A		
Approach Delay (s/veh)	0.0				0.9				9.0				9.7			
Approach LOS									A				A			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA			Intersection	Rundle and Alpine View		
Agency/Co.	ATS			Jurisdiction	Lewis and Clark		
Date Performed	8/2/2022			East/West Street	Rundle		
Analysis Year	2025			North/South Street	Alpine		
Time Analyzed	PM peak projected			Peak Hour Factor	0.92		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6	7	8	9		10	11	12	
Priority																
Number of Lanes	0	0	1	0	0	0	1	0	0	1	0		0	1	0	
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	16	9		13	70	35		4	0	9		0	0	21
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.13	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.53	4.03	3.33		3.53	4.03	3.33

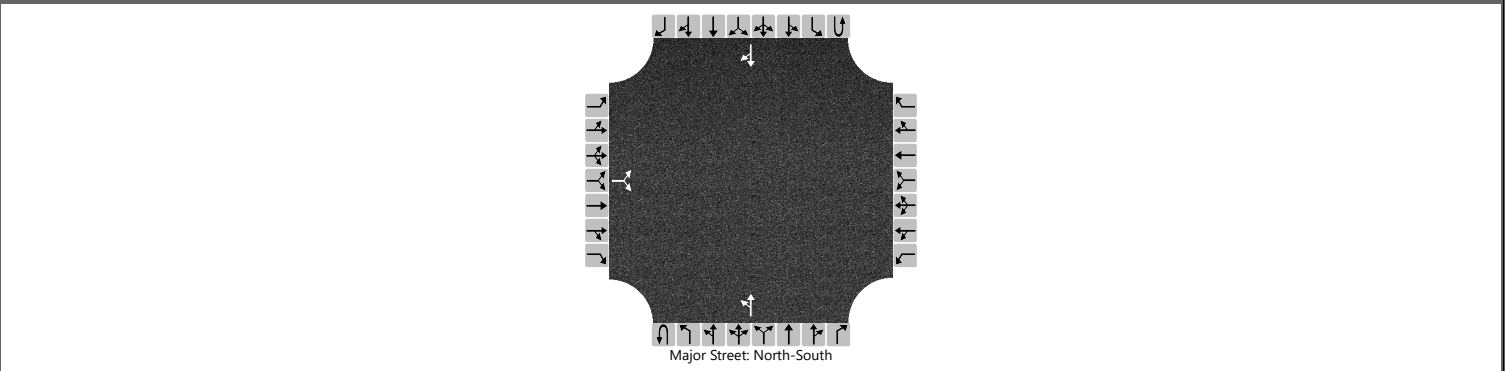
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				14				14						23
Capacity, c (veh/h)		1469				1580				951						959
v/c Ratio		0.00				0.01				0.01						0.02
95% Queue Length, Q ₉₅ (veh)		0.0				0.0				0.0						0.1
Control Delay (s/veh)		7.5				7.3				8.8						8.8
Level of Service (LOS)		A				A				A						A
Approach Delay (s/veh)	0.0				0.9				8.8				8.8			
Approach LOS									A				A			

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA			Intersection	Rundle and Hwy 282		
Agency/Co.	ATS			Jurisdiction	Lewis and Clark		
Date Performed	8/2/2022			East/West Street	Rundle		
Analysis Year	2025			North/South Street	Hwy 282		
Time Analyzed	AM peak projected			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		58		82						11	99					199
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

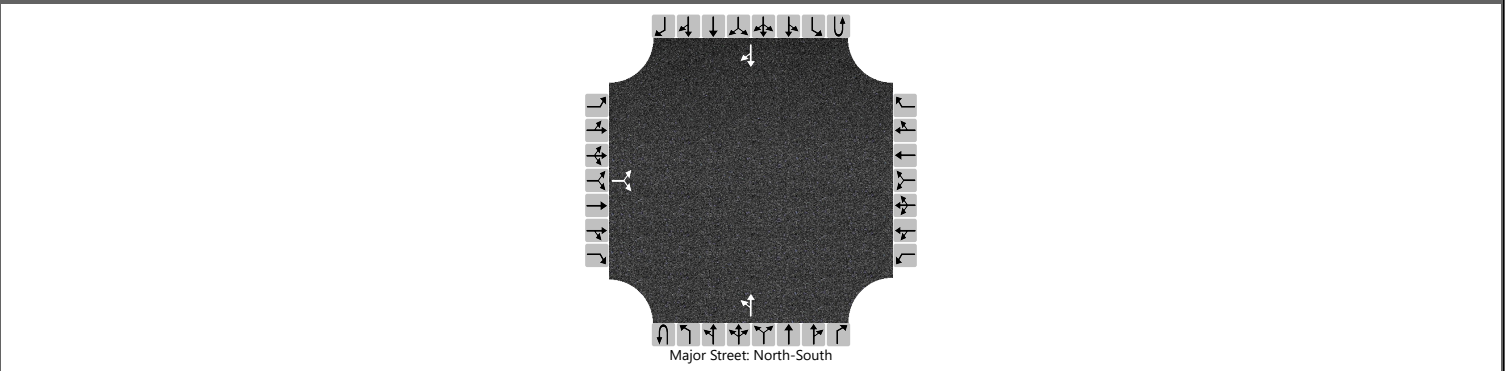
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			152							12						
Capacity, c (veh/h)			726							1325						
v/c Ratio			0.21							0.01						
95% Queue Length, Q ₉₅ (veh)			0.8							0.0						
Control Delay (s/veh)			11.3							7.7						
Level of Service (LOS)			B							A						
Approach Delay (s/veh)		11.3								0.8						
Approach LOS		B														

HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	RLA			Intersection	Rundle and Hwy 282		
Agency/Co.	ATS			Jurisdiction	Lewis and Clark		
Date Performed	8/2/2022			East/West Street	Rundle		
Analysis Year	2025			North/South Street	Hwy 282		
Time Analyzed	PM peak projected			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Mountain View						

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	0	0	0	0	1	0	0	0	1	0
Configuration			LR							LT						TR
Volume (veh/h)		14		44						89	181					30 29
Percent Heavy Vehicles (%)		3		3						3						
Proportion Time Blocked																
Percent Grade (%)		0														
Right Turn Channelized																
Median Type Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.43		6.23						4.13						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.53		3.33						2.23						

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			63							97						
Capacity, c (veh/h)			834							1532						
v/c Ratio			0.08							0.06						
95% Queue Length, Q ₉₅ (veh)			0.2							0.2						
Control Delay (s/veh)			9.7							7.5						
Level of Service (LOS)			A							A						
Approach Delay (s/veh)		9.7								2.8						
Approach LOS		A														