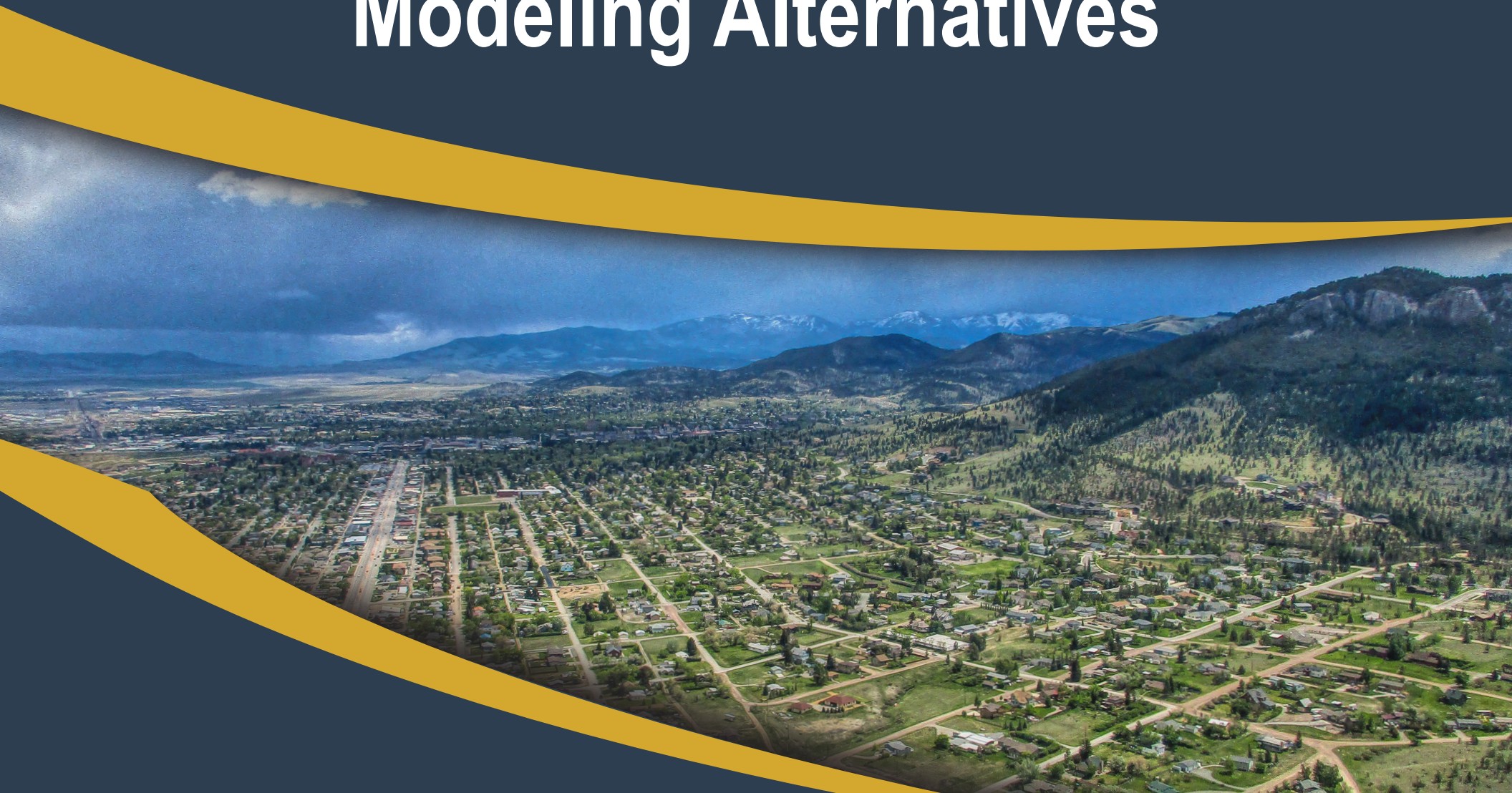


APPENDIX E: Modeling Alternatives



Greater
Helena **MPO**
Long Range Transportation Plan

Modeling Alternatives

TECHNICAL MEMORANDUM



May 26, 2026



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Modeling Alternatives

1.0 INTRODUCTION

A travel demand model was developed by the Montana Department of Transportation (MDT) Multimodal Planning Bureau for the Greater Helena Area using *TransCAD* software. The model includes the entire Greater Helena Metropolitan Planning Organization (MPO) planning boundary as well as parts of surrounding counties including western portions of Broadwater County, northern portions of Jefferson County, and approximately the southern third of Lewis and Clark County. This expanded region allowed employment and other impacts from outside of the immediate planning area to be modeled, contributing to the overall strength of the model.

The model used industry-accepted methodologies and data from the MDT Geospatial Information Section, Census Bureau, and Montana Department of Labor and Industry to baseline traffic conditions in 2022. A comparison of the model to known 2022 traffic data was performed to calibrate and validate the model to best represent 2022 conditions.

After developing the baseline 2022 model, future conditions were developed to evaluate the planning year 2046. As detailed in the *Existing and Projected Conditions Memorandum*, housing units and jobs were allocated to census blocks to distribute growth that has occurred since 2022 or is projected to occur by the year 2046. Known roadway infrastructure projects which will change the capacity or function of the roadway and are expected to be constructed within the next five years ("committed" projects) were also included in the 2046 future model. The model assumes that traffic characteristics will remain similar to those that are seen today.

Using the base 2046 model, the effects of various network improvements were analyzed. In coordination with the MPO and MDT, a set of eight alternative modeling scenarios were developed. The scenarios include roadway capacity modifications, changes in functional classification, or new roadway links in areas where transportation needs presently exist, or where future investment may be needed as a result of expected population/employment growth.

The alternatives presented in this memorandum are for modeling purposes only and are not actual project recommendations by themselves. The analysis of these alternatives was made to give a theoretical idea of how certain network modifications made to the transportation system may affect the overall network and surrounding area. Should projects arise in the future along these corridors, design alternatives to those discussed in this report will need to be further analyzed to determine the appropriate configuration of the roadways.





2.0 ALTERNATIVE SCENARIOS

Nine modeling scenarios were developed for the purpose of this exercise, as illustrated in **Figure 2.1** and listed below. The alternative scenarios generally create new links or change the capacity of existing facilities within a particular area of the MPO. Because all scenarios involve new links and/or roadway capacity modifications, the scenario analysis is focused on how traffic volumes are shifted throughout the major street network within the study area.

- **Alternative 1:** Custer Avenue Expansion
- **Alternative 2:** North Helena Network Buildout
- **Alternative 3:** Montana Avenue Grade Separation and Road Diet – Option A
- **Alternative 4:** Montana Avenue Grade Separation and Road Diet – Option B
- **Alternative 5:** East Side Arterial and Network Buildout
- **Alternative 5b:** East Side Arterial and Network Buildout #2
- **Alternative 6:** Airport Road Extension – Option A
- **Alternative 7:** Airport Road Extension – Option B
- **Alternative 8:** East Helena Connections

The following sections provide narrative descriptions of the proposed modifications for each alternative, along with a tabular description of the results. The modeling of each alternative scenario was completed independently under projected year 2046 conditions assuming that no other modifications to the existing traffic network were made. For comparison purposes, the projected year 2046 modeling results were used as baseline conditions. The results of each alternative scenario run were compared to the baseline 2046 conditions. The percentage change in traffic volumes between the scenario and the base 2046 model was analyzed to understand the anticipated effects of each alternative scenario on the transportation system. These results are intended to inform recommendations in the *Long Range Transportation Plan* (LRTP).



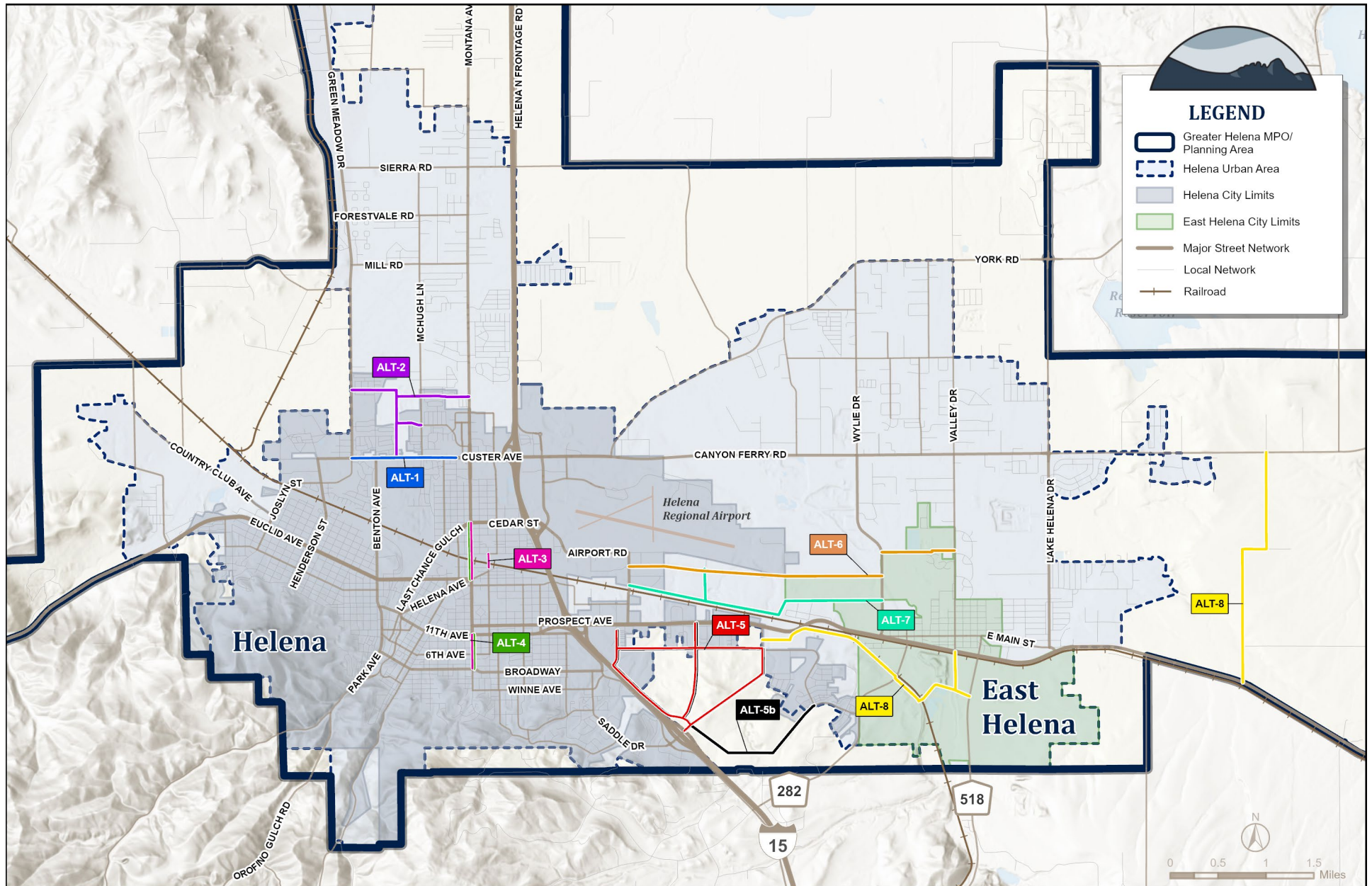


Figure 2.1: Alternative Scenarios



2.1. ALTERNATIVE 1: CUSTER AVENUE EXPANSION

This alternative includes expansion of Custer Avenue to a five-lane principal arterial between National Avenue and Green Meadow Drive to match the capacity east of National Avenue. This scenario aligns with on-going efforts to address congestion issues on Custer Avenue.

The results from Alternative 1, shown in **Table 2.1** and **Figure 2.2**, indicate that expansion of Custer Avenue will more than double traffic volumes in the corridor. Traffic volumes on Montana Avenue and Green Meadow Drive are expected to stay relatively the same, while traffic volumes on McHugh Lane (north of Custer Avenue), Benton Avenue, and Henderson Street are expected to increase. Some traffic is drawn from Mill Street, Cedar Street and Last Chance Gulch in the westbound direction, and Euclid/Lyndale Avenues in both directions.

Table 2.1: Volume Difference (Alternative 1 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 1 Vol. (vpd)	Net Change (vpd)	Approx. % Change
Custer Ave east of Montana Ave	20,500	22,500	2,000	10%
Custer Ave west of Montana Ave	13,500 – 14,900	22,300 – 22,800	7,900 – 8,800	60%
Custer Ave west of McHugh Ln	12,900 – 14,200	20,700 – 21,800	7,600 – 7,800	55%
Custer Ave west of Benton Ave	11,600	17,200	5,600	48%
Custer Ave west of Green Meadow Dr	11,200	12,500	1,300	12%
Montana Ave north of Custer Ave	15,000	14,500	(-500)	-3%
Montana Ave south of Custer Ave	17,600	17,500	(-100)	-1%
McHugh Ln north of Custer Ave	3,700 – 7,600	4,900 – 9,000	1,200 – 1,400	18-32%
McHugh Ln south of Custer Ave	1,800	1,300	(-500)	-28%
Benton Ave south of Custer Ave	6,400	7,000	600	9%
Green Meadow Dr north of Custer Ave	8,500 – 9,000	8,800 – 9,500	300 – 500	5%
Valley Dr/Brady St south of Custer Ave	1,900 – 3,200	3,600 – 4,900	1,700	50-90%
Henderson St south of Custer Ave	7,400 – 8,400	8,600 – 9,000	600 – 1,200	8-14%
Cedar St (I-15 to Montana Ave)	10,100 – 11,000 EB 6,500 – 10,000 WB	9,900 – 10,600 EB 5,800 – 9,300 WB	(-200) – (-400) EB (-700) WB	-2% EB -7-10% WB
Last Chance Gulch (Montana Ave to Lyndale Ave)	10,900 – 11,900 EB 5,000 – 7,100 WB	10,300 – 11,000 EB 3,400 – 5,200 WB	(-600) – (-900) EB (-1,600) – (-1,900) WB	-5-8% EB -30% WB
Lyndale Ave (Last Chance Gulch to Benton Ave)	10,000 – 11,100 EB 11,500 WB	8,500 – 9,500 EB 9,600 WB	(-1,500) – (-1,600) EB (-1,900) WB	-15% EB -16% WB
Euclid Ave (Benton Ave to Henderson St)	9,300 – 10,700 EB 10,600 – 11,400 WB	9,000 – 9,900 EB 9,600 – 10,400 WB	(-300) – (-800) EB (-1,000) WB	-3-7% EB -8% WB
Mill Street (Montana Ave to Green Meadow Dr)	1,100 – 1,400	800 – 900	(-300) – (-500)	-27-36%



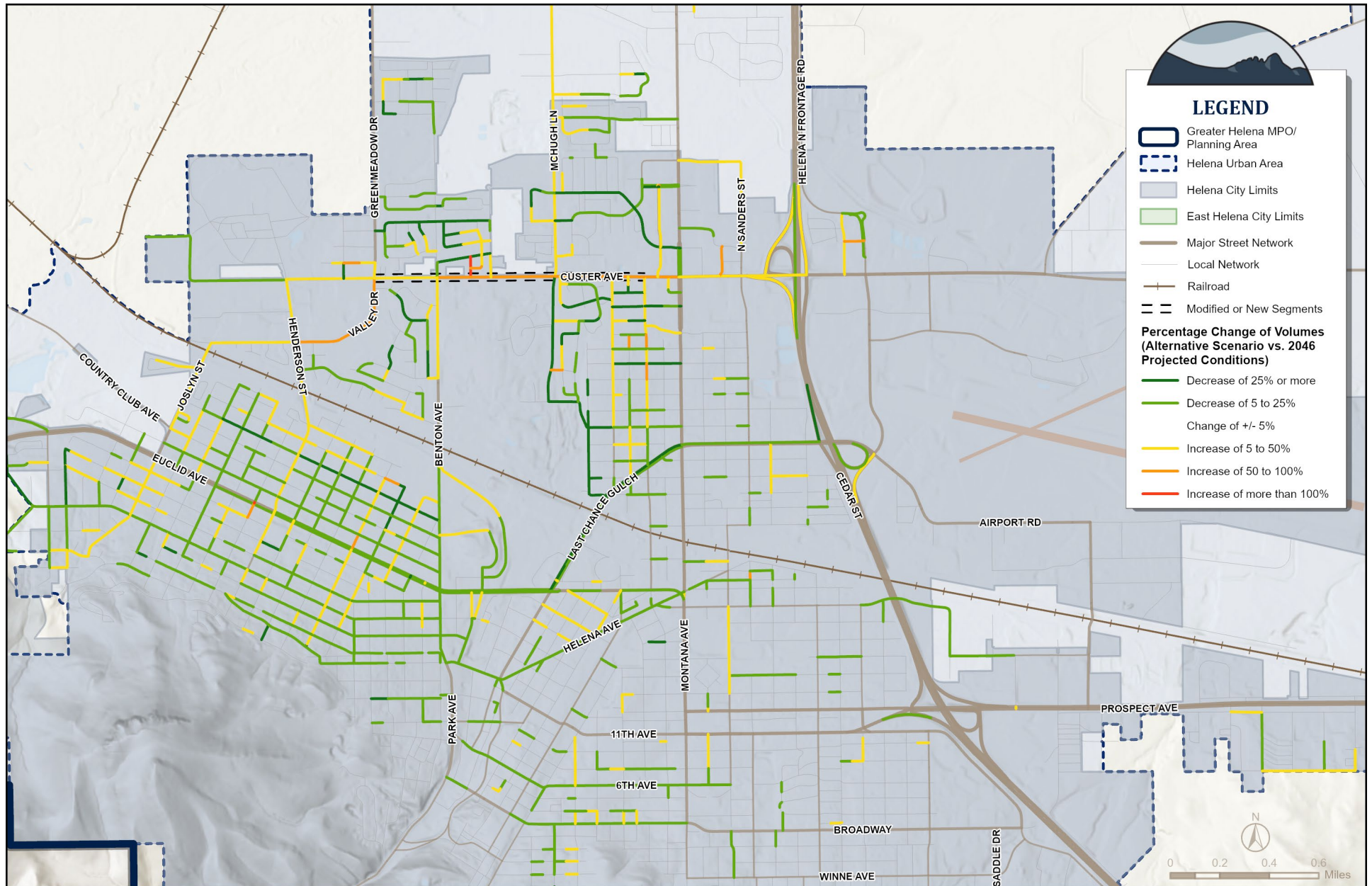


Figure 2.2: Alternative 1 Modeling Results



2.2. ALTERNATIVE 2: NORTH HELENA NETWORK BUILDOUT

This alternative includes new east-west connections north of Custer Avenue as well as an extension of Cooney Drive to help alleviate congestion on Custer Avenue and provide greater connectivity in northern Helena. The alternative includes the following network changes:

- New two-lane major collector connecting Wolf Road to Flagstone Avenue between Green Meadow Drive and Montana Avenue
- Extend Cooney Drive as a two-lane major collector north to the new east-west connection
- Extend Roadrunner Avenue to Cooney Drive as a two-lane major collector

The results from Alternative 2, shown in **Table 2.2** and **Figure 2.3**, indicate that building out the east-west corridors north of Custer Avenue will have a minimal impact on Custer Avenue traffic volumes but could draw some vehicles from Mill Street. By extending Cooney Drive north, some traffic is diverted from McHugh Lane. Fewer vehicles are diverted from Montana Avenue and Green Meadow Drive. The Road Runner Street connection is expected to draw a maximum of 500 vehicles while the Wolf Road to Flagstone Avenue connection is expected to draw 600 to 1,600 vehicles and the Cooney Drive extension draws about 500 additional vehicles.

Table 2.2: Volume Difference (Alternative 2 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 2 Vol. (vpd)	Net Change (vpd)	Approx. % Change
Custer Ave west of Montana Ave	13,600 – 14,900	13,600 – 15,000	100	1%
Custer Ave west of McHugh Ln	12,900 – 14,200	12,500 – 13,600	(-400) – (-600)	-3-4%
Custer Ave west of Green Meadow Dr	11,200	11,200	0	0%
Montana Ave north of Wolf Rd	12,400	12,500	100	1%
Montana Ave south of Wolf Rd	13,200 – 15,200	13,500 – 15,300	100 - 300	1-2%
McHugh Ln north of Wolf Rd	2,800	1,800	(-1,000)	-36%
McHugh Ln south of Wolf Rd	2,900	2,000	(-900)	-31%
McHugh Ln south of Road Runner St	3,000 – 7,600	2,300 – 6,700	(-700) – (-900)	-12-23%
Green Meadow Dr north of Wolf Rd	7,900	7,900	0	0%
Green Meadow Dr south of Wolf Rd	8,200 – 9,000	8,300 – 9,100	100	1%
Wolf Rd (Montana Ave to McHugh Ln)	300 – 1,500	1,000 – 2,100	600 - 700	40-200%
Wolf Rd (McHugh Ln to Cooney Dr)	--	1,100	1,100	--
Road Runner St east of McHugh Ln	1,700 – 3,200	1,600 – 3,000	(-100) – (-200)	-6%
Road Runner St west of McHugh Ln	0 – 2,000	500 – 2,000	0 - 500	--
Cooney Dr south of Road Runner St	1,800	1,700	(-100)	-6%
Cooney Dr north of Road Runner St	0	500	500	--
Flagstone Ave (Cooney Dr to Green Meadow Dr)	0 – 1,000	1,400 – 1,600	400 – 1,600	160%
Mill St (Montana Ave to Green Meadow Dr)	1,100 – 1,400	1,000 – 1,200	(-100) – (-200)	-10-15%



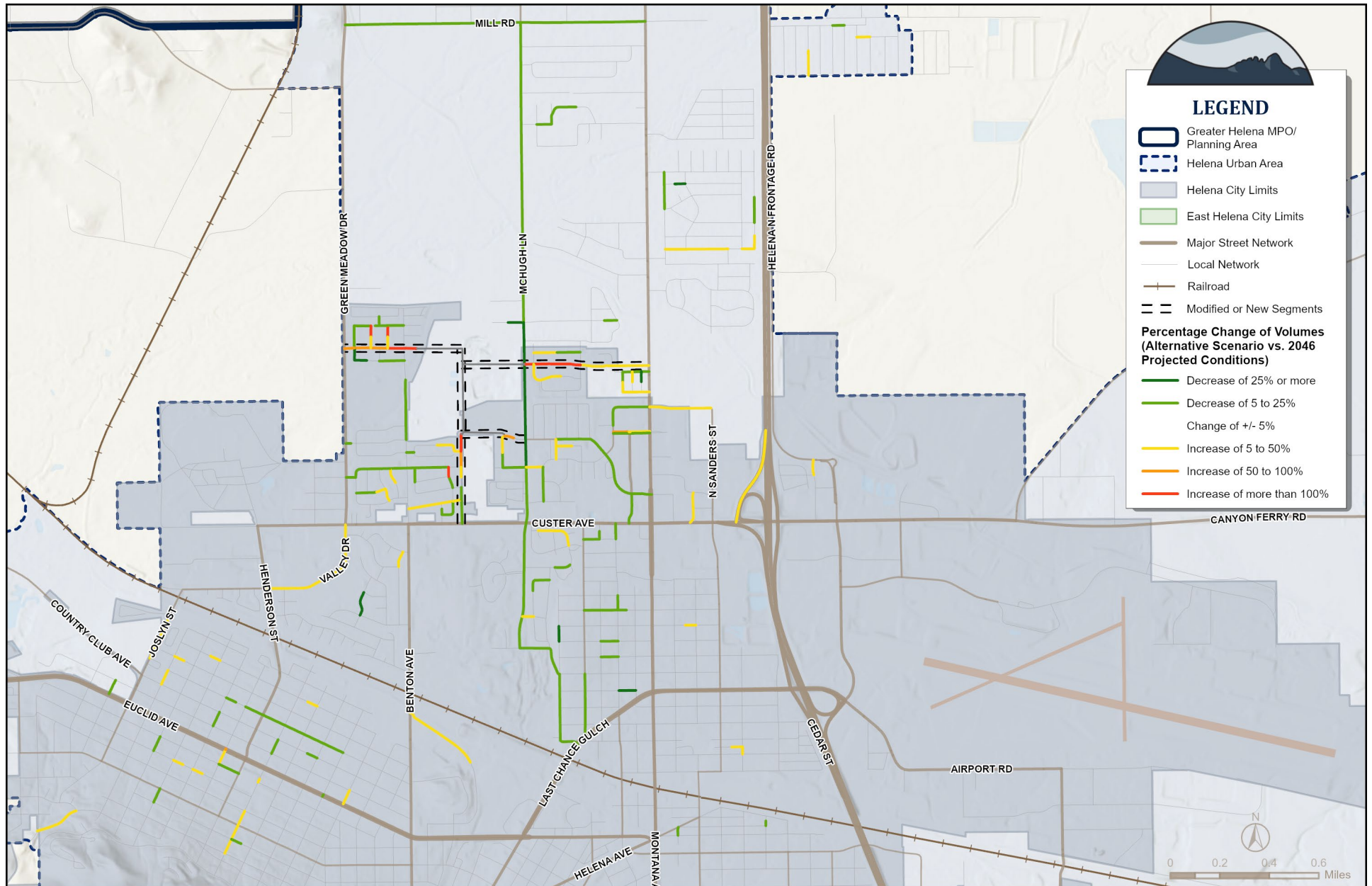


Figure 2.3: Alternative 2 Modeling Results



2.3. ALTERNATIVE 3: MONTANA AVENUE GRADE SEPARATION AND ROAD DIET – OPTION A

This alternative includes a road diet on two sections of Montana Avenue (Broadway Street to Prospect Avenue and Lyndale Avenue to Cedar Street). The section between Prospect Avenue and Lyndale Avenue is part of US 12 and therefore would remain four lanes. Although it is not easily modeled, the scenario assumes that the railroad crossing at Montana Avenue would become grade separated and the railroad crossing at Roberts Street would be closed, as has been proposed in past stakeholder conversations with BNSF. The alternative includes the following:

- Change Montana Avenue (Broadway Street to Prospect Avenue) from a four-lane to three-lane principal arterial
- Change Montana Avenue (Lyndale Avenue to Cedar Street) from a four-lane to three-lane principal arterial
- Close Roberts Street between Bozeman Street and Pheonix Avenue (connection over railroad)

The results from Alternative 3, shown in **Table 2.3** and **Figure 2.4**, indicate that the road diet on Montana Avenue will decrease traffic volumes on all of Montana Avenue, including the segment of US 12 that remains four lanes. Near the Capitol, traffic from Montana Avenue is diverted primarily to Roberts Street, via 6th Avenue, as well as National Avenue. North of Prospect Avenue most traffic is diverted to National Avenue due to the Roberts Street closure and road diet north of Lyndale Avenue. Cooke Street and Last Chance Gulch, especially in the westbound direction, may also see an increase in traffic due to these changes.

Table 2.3: Volume Difference (Alternative 3 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 3 Vol. (vpd)	Net Change (vpd)	Approx. % Change
Montana Ave (Broadway St to Prospect Ave)	8,200 – 13,500	7,200 – 10,500	(-1,000) – (-3,000)	-12-22%
Montana Ave (Prospect Ave to Lyndale Ave)	17,500 – 24,800	12,700 – 22,900	(-1,900) - (-4,800)	-8-27%
Montana Ave (Lyndale Ave to Cedar St)	15,800 – 16,200	12,600 – 12,800	(-3,200) – (-3,400)	-20%
Lyndale Ave (Montana Ave to Last Chance Gulch)	12,900 – 15,300	12,300 – 14,600	(-600) – (-700)	-5%
6 th Ave (Montana Ave to Roberts St)	900	2,100	1,200	133%
Roberts St (6 th Ave to Prospect Ave)	1,500 – 2,200	2,600 – 3,500	900 – 1,300	60%
Roberts St (Prospect Ave to Bozeman St)	1,100 – 2,200	400 – 1,700	(-500) - (-700)	-32-45%
Bozeman St (Roberts St to Montana Ave)	350 – 900	450 – 950	50 – 100	2-10%
Pheonix St (Roberts St to Montana Ave)	600 – 750	900 – 1,300	300 – 550	50-75%
Cooke St (Pheonix St to Cedar St)	150 -1,250	150 – 1,350	0 – 100	0-8%
National Ave (Last Chance Gulch to Lyndale Ave)	1,100 – 1,500	1,900 – 2,600	800 – 900	60-75%
National Ave (Lyndale Ave to Prospect Ave)	500 – 1,100	700 – 1,400	200 – 300	30-40%
National Ave (Prospect Ave to Broadway St)	200 – 350	250 – 1,250	50 – 900	25-250%
Last Chance Gulch (Cedar St to Lyndale Ave)	10,900 – 11,900 EB 5,000 – 7,100 WB	11,400 – 12,400 EB 7,100 – 8,800 WB	500 EB 1,100 – 2,100 WB	5% EB 15-40% WB



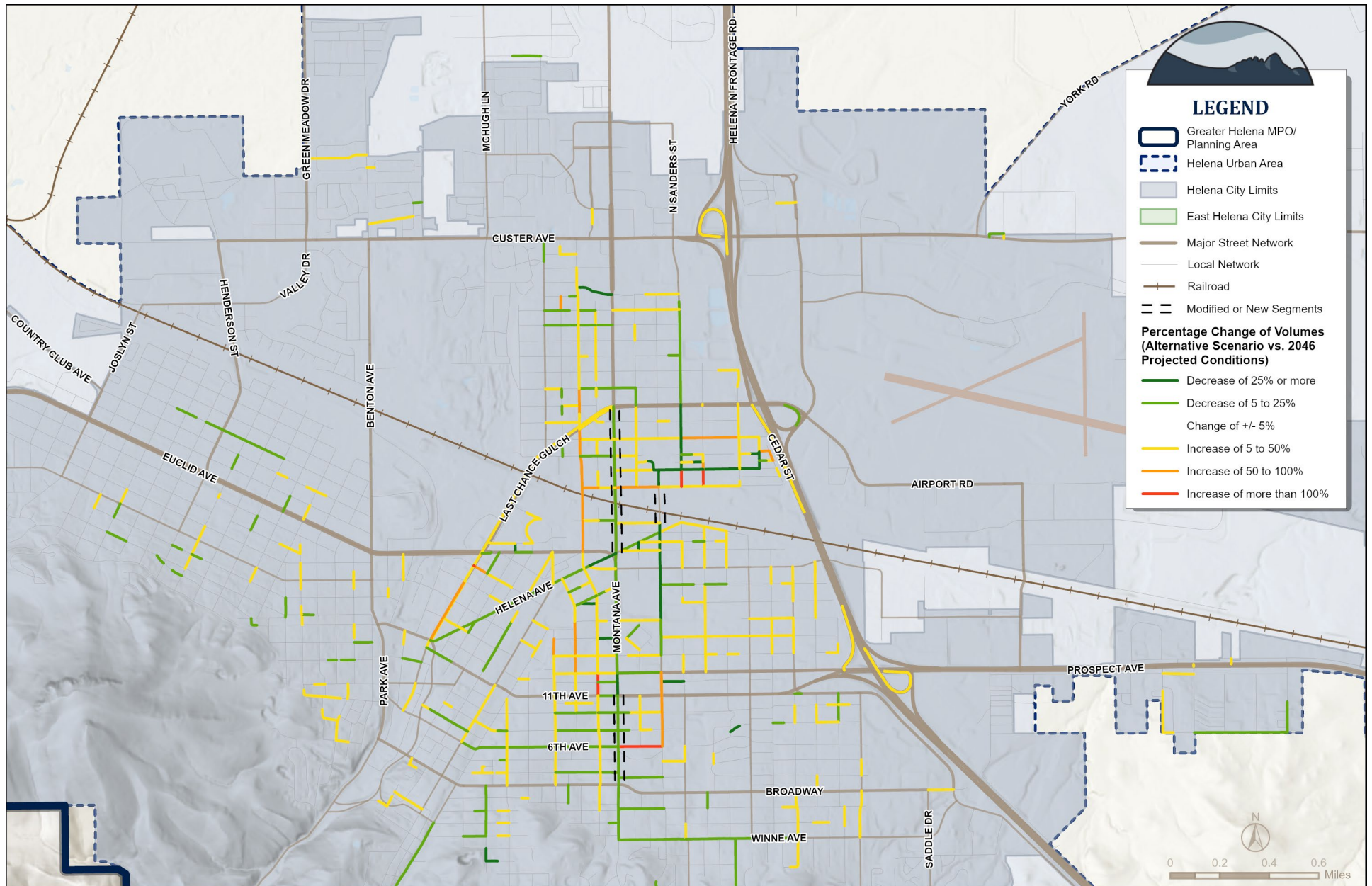


Figure 2.4: Alternative 3 Modeling Results





2.4. ALTERNATIVE 4: MONTANA AVENUE GRADE SEPARATION AND ROAD DIET – OPTION B

This alternative includes the same network changes as Alternative 3; however, the Roberts Street railroad crossing remains open to traffic, as desired by the City of Helena.

The results from Alternative 4, shown in **Table 2.4** and **Figure 2.5**, show similar shifts in traffic to Alternative 3, though decreases on Montana Avenue are not quite as large due to the Roberts Street connection remaining open. Both 6th Avenue and Roberts Street still accommodate the majority of the shift in traffic from Montana Avenue near the Capitol due to the road diet while traffic on Roberts Street north of Prospect Avenue experiences an increase in traffic rather than a decrease as seen in Alternative 3. National Avenue and westbound Last Chance Gulch also still experience increases in traffic, though the increases are not quite as large as in Alternative 3, since Roberts Street remains open to accommodate some of the north-south traffic that is shifted off Montana Avenue.

Table 2.4: Volume Difference (Alternative 4 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 4 Vol. (vpd)	Net Change (vpd)	Approx. % Change
Montana Ave (Broadway St to Prospect Ave)	8,200 – 13,500	7,400 – 10,500	(-800) – (-3,000)	-10-20%
Montana Ave (Prospect Ave to Lyndale Ave)	17,500 – 24,800	12,800 – 22,800	(-2,000) – (-4,700)	-15-30%
Montana Ave (Lyndale Ave to Cedar St)	15,800 – 16,200	11,900 – 12,400	(-3,800) – (-3,900)	-25%
Lyndale Ave (Montana Ave to Last Chance Gulch)	12,900 – 15,300	12,300 – 14,800	(-500) – (-600)	-3-5%
6 th Ave (Montana Ave to Roberts St)	900	1,900	1,000	110%
Roberts St (6 th Ave to Prospect Ave)	1,500 – 2,200	2,500 – 3,500	1,000 – 1,300	60-66%
Roberts St (Prospect Ave to Walnut St)	1,100 – 2,200	1,400 – 2,900	300 – 700	27-35%
Bozeman St (Roberts St to Montana Ave)	350 – 900	500 – 700	(-200) – 150	-20 - +40%
Cooke St (Pheonix St to Cedar St)	150 - 1,250	150 – 1,350	0 – 100	0-8%
National Ave (Last Chance Gulch to Lyndale Ave)	1,100 – 1,500	1,650 – 2,100	550 – 600	40-50%
National Ave (Lyndale Ave to Prospect Ave)	500 – 1,100	600 – 1,300	100 – 200	20%
National Ave (Prospect Ave to Broadway St)	200 – 350	250 – 450	50 – 100	25%
Last Chance Gulch (Cedar St to Lyndale Ave)	10,900 – 11,900 EB 5,000 – 7,100 WB	11,400 – 12,300 EB 6,600 – 8,600 WB	400 – 500 EB 1,500 – 1,600 WB	3-5% EB 20-30% WB



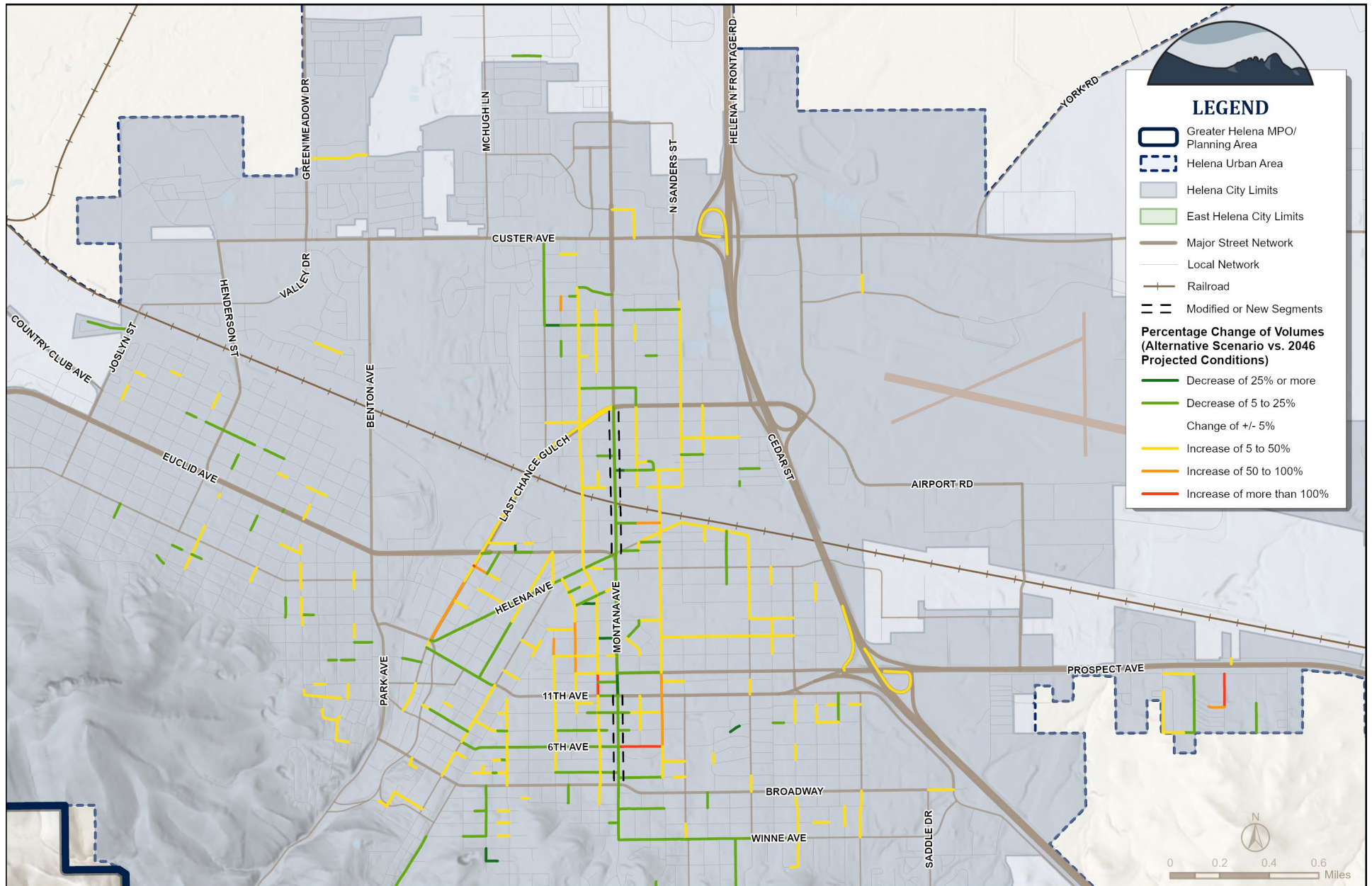


Figure 2.5: Alternative 4 Modeling Results



2.5. ALTERNATIVE 5: EAST SIDE ARTERIAL AND NETWORK BUILDOUT

This alternative includes completion of the East Side Arterial that has long been discussed in Helena and recently received grant funding for design. The new arterial will extend between the South Helena Interchange and Crossroads Parkway near Mountain View Meadows. The scenario also includes buildout of the transportation network within the Padbury Ranch property which is expected to become a large mixed-use development over the planning horizon. The alternative includes the following network changes:

- Connect the South Helena Interchange to Crossroads Parkway with a four-lane minor arterial (East Side Arterial)
- Connect 18th Street to the East Side Arterial via a two-lane major collector
- Complete Alice Street between 18th Street and Crossroads Parkway as a two-lane major collector
- Connect Lola Street to the 18th Street extension as a two-lane major collector

The results from Alternative 5, shown in **Table 2.5** and **Figure 2.6**, indicate that the East Side Arterial and other network connections are expected to draw some traffic off Prospect Avenue and Highway 518. However, the East Side Arterial also facilitates easier access to I-15, causing increases in Interstate traffic. Additionally, increases in traffic on Highway 282 and on US 12 between Highway 282 and Crossroads Parkway are projected, possibly due to better internal site connectivity in the most rapidly growing area of the MPO.

Table 2.5: Volume Difference (Alternative 5 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 5 Vol. (vpd)	Net Change (vpd)	Approx. % Change
East Side Arterial (Interchange to Crossroads Pkwy)	0	5,400 – 7,800	5,400 – 7,800	--
Crossroads Pkwy (Alice St to Prospect Ave)	5,700	2,500	(-3,200)	-60%
18 th St (Prospect Ave to Alice St)	3,000 – 4,700	4,400 – 5,500	1,200 – 1,400	45%
18 th St Extension (Alice St to East Side Arterial)	0 – 2,000	300 – 1,800	(-200) – 1,000	-10%+
Alice St (18 th St to Lola St)	0 – 2,200	2,600 – 3,250	600 – 2,800	30%+
Alice St (Lola St to Crossroads Pkwy)	0 – 600	1,300 – 1,400	800 – 1,400	150%+
Lola St (Prospect Ave to 18 th St Extension)	1,650 – 2,800	1,300 – 1,800	(-350) – (-1,000)	-20-35%
US12/Prospect Ave (Wylie Dr to Crossroads Pkwy)	12,300 – 12,700 EB 12,400 – 12,800 WB	13,000 – 13,500 EB 12,500 – 13,000 WB	700 – 800 EB 100 – 200 WB	6% EB 1% WB
US 12/Prospect Ave (Crossroads Pkwy to I-15)	13,500 – 14,700 EB 11,100 – 15,000 WB	12,400 – 13,700 EB 9,600 – 12,500 WB	(-1,000) – (-1,100) EB (-2,500) – (-1,500) WB	-7-12% EB -1-15% WB
I-15 (Capitol to South Helena Interchanges)	10,100 SB 10,900 NB	11,900 SB 12,200 NB	1,800 SB 1,300 NB	17% SB 12% NB
I-15 (South Helena to Montana City Interchanges)	8,300 SB 8,400 NB	8,350 SB 8,100 NB	50 SB (-300) NB	1% SB -4% NB
Saddle Dr (I-15 to Winne Ave)	2,600 – 4,600	3,000 – 5,300	400 – 700	10-15%
Hwy 282 (US 12 to I-15)	5,600 – 9,400	7,600 – 9,600	200 – 2,000	2-36%
Hwy 518 (US-12 to I-15)	5,600 – 10,000	4,600 – 9,000	(-1,000)	-10-20%



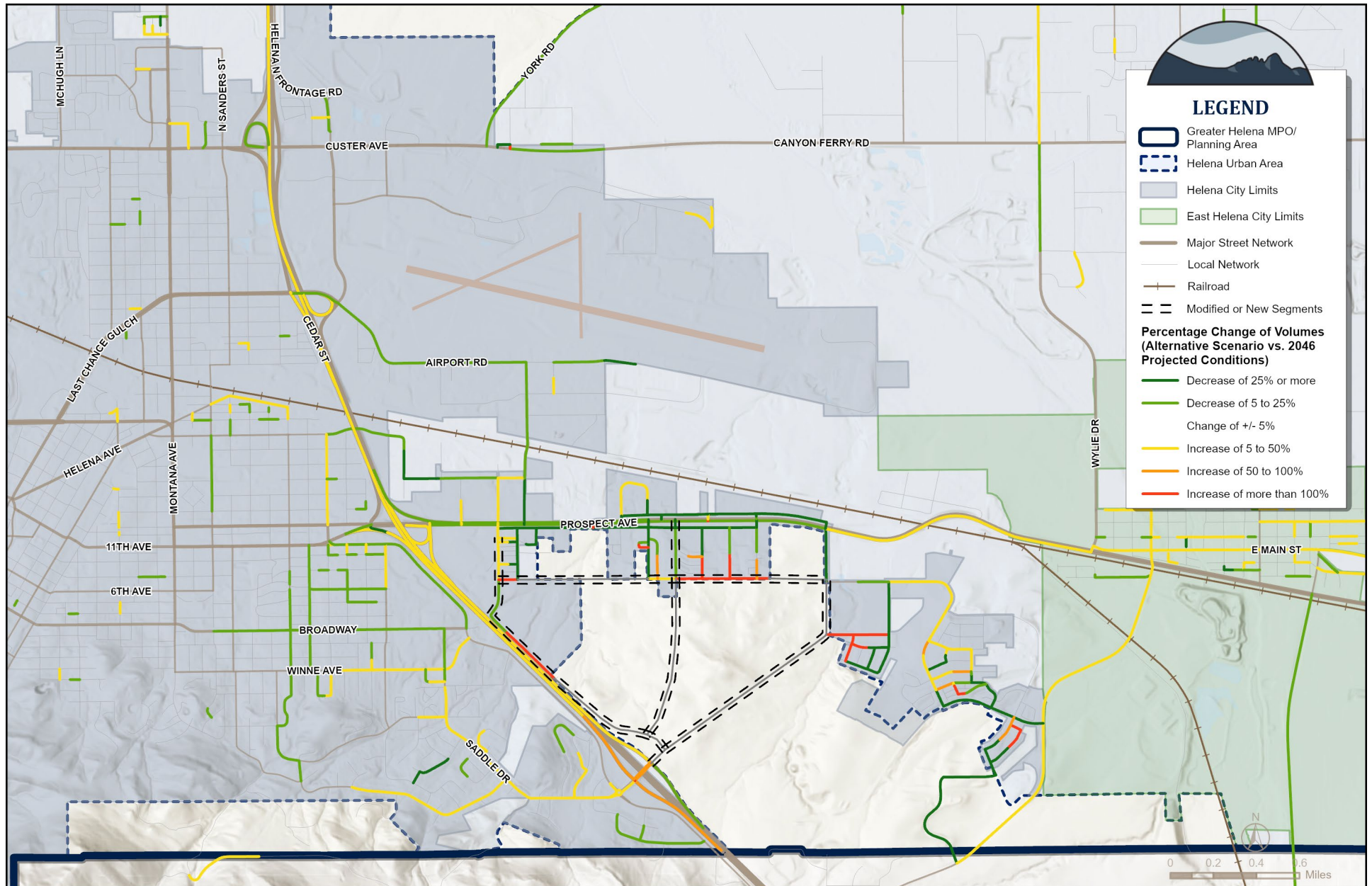


Figure 2.6: Alternative 5 Modeling Results





2.6. ALTERNATIVE 5B: EAST SIDE ARTERIAL AND NETWORK BUILDOUT #2

This alternative includes a supplemental run of Alternative 5 which includes the addition of the Runkle Parkway extension connecting Mountain View Meadows to the East Side Arterial as a two-lane major collector.

The results from Alternative 5b, shown in **Table 2.6** and **Figure 2.7**, show similar changes in traffic to Alternative 5, though decreases on US 12 west of Crossroads Parkway are larger due to the extension of Runkle Parkway. Like Alternative 5, the network through the Padbury Ranch property will draw traffic from Highway 518 and US 12/Prospect Avenue. Likewise, the Runkle Parkway extension directly shifts about 3,300 trips from Alice Street and Crossroads Parkway. Slight increases on US 12 (Wylie Dr to Crossroads Pkwy) and Highway 282 are projected, likely because of the increased interconnectivity of the network. The extension of Runkle Parkway allows easier access to the interstate, increasing the overall traffic on I-15 North of the South Helena interchange.

Table 2.6: Volume Difference (Alternative 5b vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 5 Vol. (vpd)	Net Change (vpd)	Approx. % Change
East Side Arterial (Interchange to Crossroads Pkwy)	0	4,700 – 8,900	4,700 – 8,900	--
Runkle Pkwy Extension (S Alice St to East Side Arterial)	0	3,300	3,300	--
Crossroads Pkwy (Alice St to Prospect Ave)	5,700	2,400	(-3,300)	-60%
18 th St (Prospect Ave to Alice St)	3,000 – 4,700	4,400 – 5,400	800 – 1,500	45%
18 th St Extension (Alice St to East Side Arterial)	0 – 1,000	400 – 1,700	(-200) - 1,000	-15%+
Alice St (18 th St to Lola St)	0 – 2,250	2,600 – 3,150	450 – 2,650	30%+
Alice St (Lola St to Crossroads Pkwy)	0 - 600	1,200 – 1,300	600 – 1,300	120%+
Lola St (Prospect Ave to 18 th St Extension)	0 – 2,350	700 – 1,900	(-300) – 700	-20%+
US12/Prospect Ave (Wylie Dr to Crossroads Pkwy)	12,300 – 12,700 EB 12,400 – 12,800 WB	12,900 – 13,400 EB 12,400 – 12,800 WB	630 – 660 EB 0 WB	5% EB 0% WB
US 12/Prospect Ave (Crossroads Pkwy to I-15)	13,500 – 16,300 EB 11,100 – 17,200 WB	12,300 – 15,900 EB 9,500 – 15,200 WB	(-2,200) - (-400) EB (-2,500) - 0 WB	-3-(-14)% EB -17-0% WB
I-15 (Capitol to South Helena Interchanges)	10,100 SB 10,900 NB	12,100 SB 12,500 NB	2,000 SB 1,600 NB	20% SB 14% NB
I-15 (South Helena to Montana City Interchanges)	8,300 SB 8,400 NB	8,300 SB 8,000 NB	0 SB (-400) NB	0% SB -5% NB
Saddle Dr (I-15 to Winne Ave)	2,600 – 4,600	2,500 – 5,300	(-150) - 700	-5-15%
Hwy 282 (US 12 to I-15)	5,600 – 9,400	7,300 – 8,800	(-600) - 2,300	-7-42%
Hwy 518 (US-12 to I-15)	5,600 – 10,000	4,600 – 9,000	(-1,000)	-10-20%



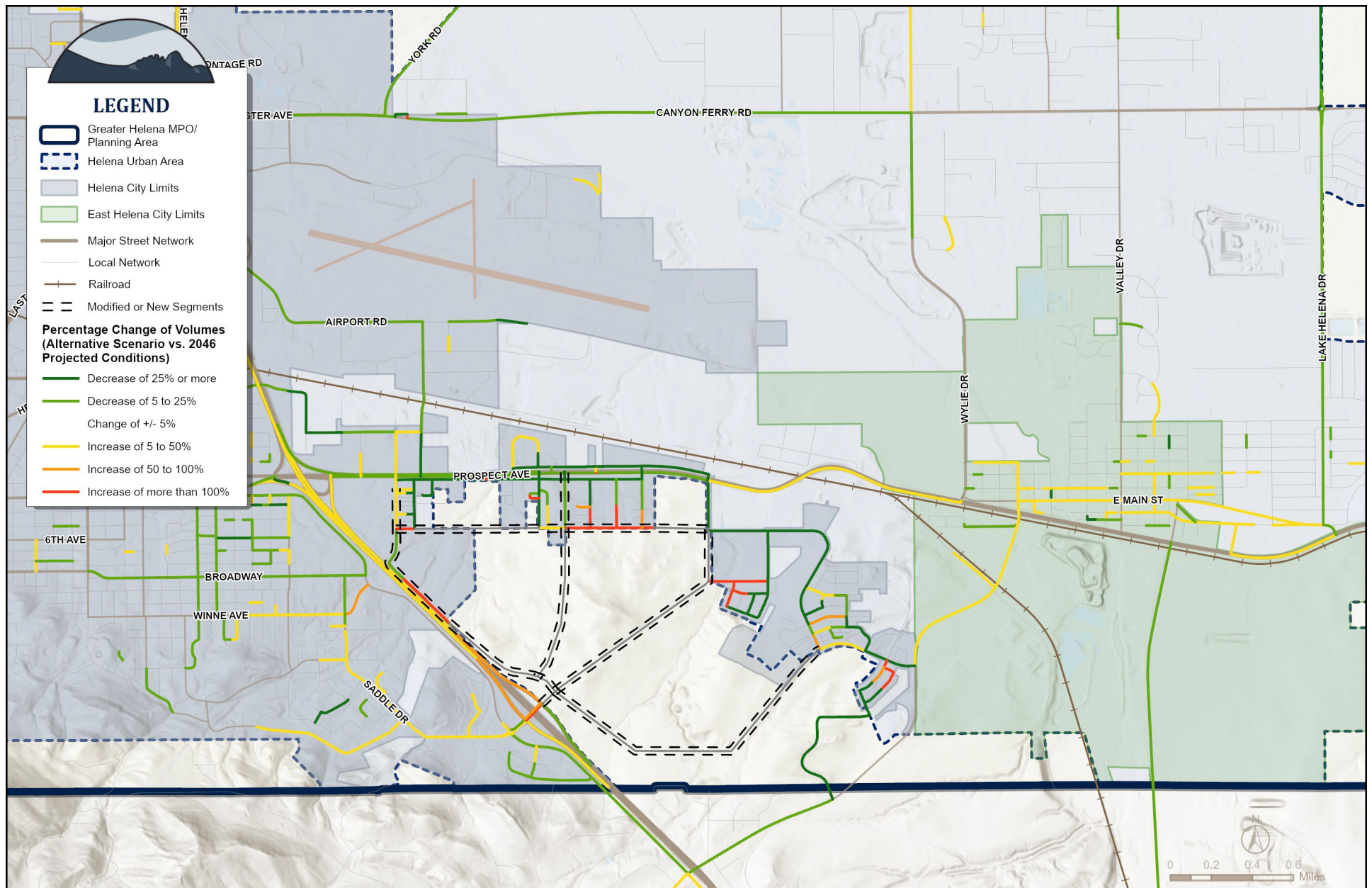


Figure 2.7: Alternative 5b Modeling Results



2.7. ALTERNATIVE 6: AIRPORT ROAD EXTENSION – OPTION A

This alternative includes development of new east-west connections between the Helena Regional Airport and Valley Drive to help alleviate congestion on US 12. The alternative includes the following network changes:

- Extend Bozeman Avenue as a two-lane minor arterial between Carter Drive and Wylie Drive
- New two-lane minor arterial connection between Wylie Drive and Valley Drive via Plant Road (south side of East Helena High School)

The results from Alternative 6, shown in **Table 2.7** and **Figure 2.8**, indicate that the new east-west connection between Helena and East Helena helps decrease traffic volumes on both US 12/Prospect Avenue and Canyon Ferry Road, but increases traffic on Airport Road. North-south, traffic volumes on Wylie Drive are expected to increase, while volumes on Valley Drive, Lake Helena Drive, and Carter Drive are expected to decrease to some degree.

Table 2.7: Volume Difference (Alternative 6 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 6 Vol. (vpd)	Net Change (vpd)	Approx. % Change
Bozeman Ave (Carter Dr to Existing End)	400 – 1,700	1,800 – 5,400	1,400 – 4,700	25-685%
Bozeman Ave (Existing End to Wylie Dr)	--	5,200	5,200	--
Plant Rd (Wylie Dr to Valley Rd)	--	3,000	3,000	--
Airport Rd (I-15 to Carter Dr)	6,400 – 7,800	8,100 – 9,200	1,400 – 1,700	20-30%
Carter Dr (Airport Rd to Prospect Ave)	4,800 – 5,600	3,300 – 4,500	(-1,100) – (-1,500)	-15-20%
US 12/Prospect Ave (Carter Dr to Wylie Dr)	12,300 – 15,400 EB 12,400 – 14,900 WB	11,500 – 14,900 EB 11,400 – 14,200 WB	(-500) – (-800) EB (-700) – (-1,000) WB	-3-6% EB -5-8% WB
US 12/Prospect Ave (Wylie Dr to Valley Dr)	10,900 – 11,000 EB 8,800 – 10,700 WB	10,500 – 10,700 EB 9,100 – 10,600 WB	(-300) – (-400) EB (-100) – 300 WB	-2-4% +/-4% WB
Lake Helena Dr (Canyon Ferry Rd to US 12)	4,000 – 5,400	3,100 – 4,400	(-900) – (-1,000)	-15-25%
Valley Dr (Canyon Ferry Rd to Plant Rd)	3,800 – 4,000	3,300 – 3,700	(-300) – (-500)	-6-25%
Valley Dr (Plant Rd to US 12)	4,800 – 5,800	3,800 – 4,800	(-1,000)	-20%
Wylie Dr (Canyon Ferry Rd to Plant Rd)	6,500 – 6,700	6,700 – 7,100	200 – 400	4-8%
Wylie Dr (Plant Rd to US 12)	6,600 – 7,300	8,200 – 8,900	1,600	20-30%
Canyon Ferry Rd (York Rd to Wylie Dr)	12,500 – 13,500	12,000 – 12,800	(-700) – (-500)	-1-5%
Canyon Ferry Rd (Wylie Dr to Valley Rd)	11,200 – 11,900	10,500 – 11,200	(-700)	-6%



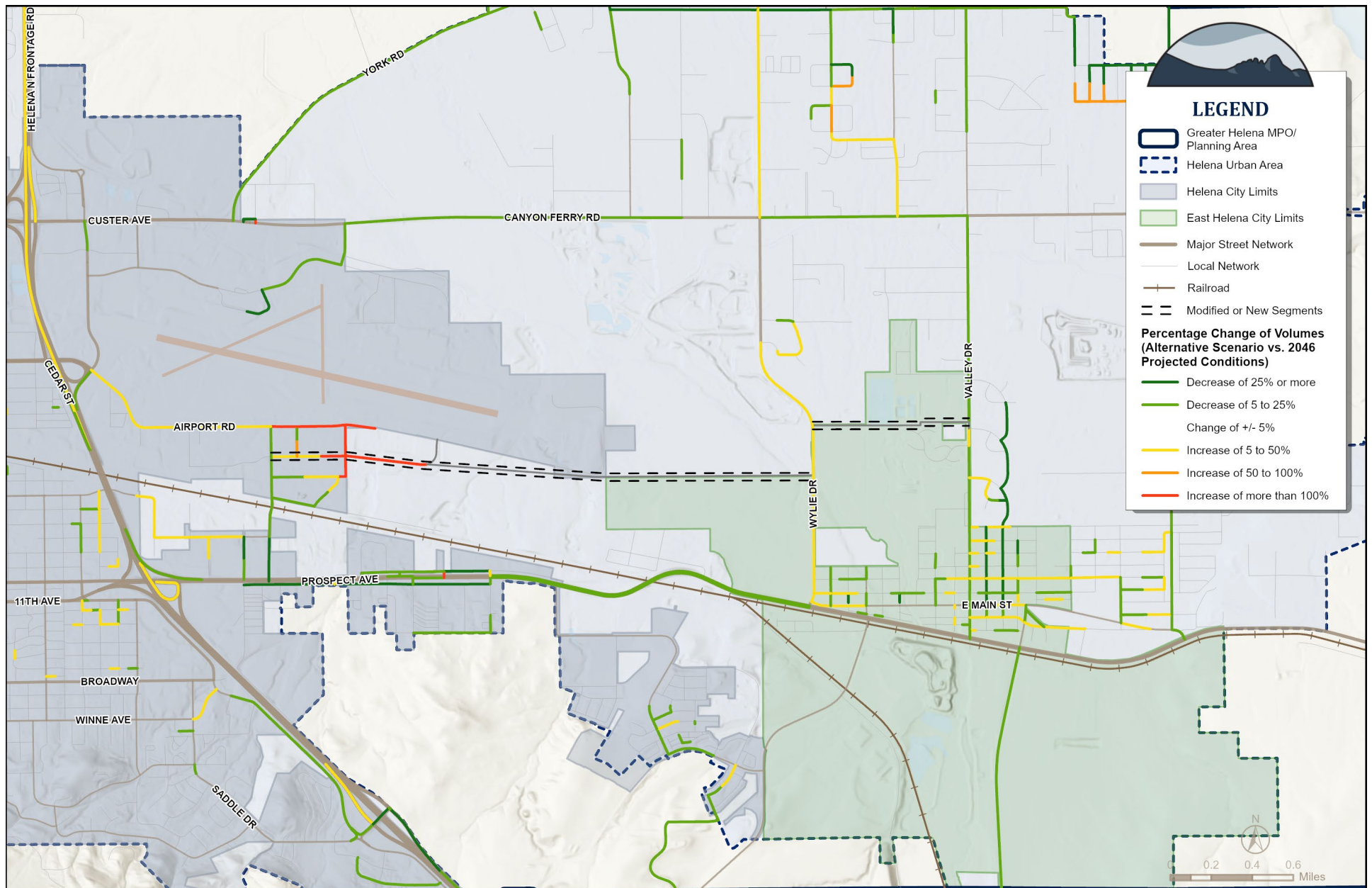


Figure 2.8: Alternative 6 Modeling Results



2.8. ALTERNATIVE 7: AIRPORT ROAD EXTENSION – OPTION B

Alternative 7 is similar in concept to Alternative 6, except it utilizes Rock Ledge Drive instead of Bozeman Avenue to complete the connection to Wylie Drive, as has been proposed by the Helena Regional Airport. Additionally, a north-south connection between Bozeman Avenue and Rock Ledge Drive helps build out the network near the airport. The alternative includes the following network changes:

- Extend Rock Ledge Drive as a two-lane minor arterial between Carter Drive and Wylie Drive
- Connect Bozeman Avenue to Rock Ledge Drive with a new two-lane major collector
- New two-lane minor arterial connection between Wylie Drive and Valley Drive via Plant Road (south side of East Helena High School)

The results from Alternative 7, shown in **Table 2.8** and **Figure 2.9**, indicate that using Rock Ledge Drive as the east-west connection draws about 1,000 more vehicles than the Bozeman Avenue connection. The Plant Road connection draws the same amount of traffic in both scenarios. Coincidentally, Alternative 7 pulls more traffic from US 12/Prospect Avenue but similar amounts of traffic on the north/south connections, compared to Alternative 6.

Table 2.8: Volume Difference (Alternative 7 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 7 Vol. (vpd)	Net Change (vpd)	Approx. % Change
Rock Ledge Dr (Carter Dr to Exiting End)	200 – 650	5,900 – 6,100	5,700 – 5,450	840 – 2580%
Rock Ledge Dr (Exiting End to Wylie Dr)	--	6,200	6,200	--
Bozeman Ave (Carter Dr to Existing End)	400 – 1,700	300 – 1,400	(-300) – (-100)	-10-20%
New Connection (Bozeman Ave to Rock Ledge Dr)	--	400	400	--
Plant Rd (Wylie Dr to Valley Rd)	--	3,100	3,100	--
Airport Rd (I-15 to Carter Dr)	6,400 – 7,800	8,600 – 9,800	2,000 – 2,200	25-35%
Carter Dr (Airport Rd to Rock Ledge Dr)	5,500 – 5,600	8,000 – 8,200	2,500 – 2,600	45%
US 12/Prospect Ave (Carter Dr to Wylie Dr)	12,300 – 15,400 EB 12,400 – 14,900 WB	11,100 – 14,500 EB 11,000 – 13,900 WB	(-900) – (-1,200) EB (-1,000) – (-1,400) WB	-5-10% EB -4-11% WB
US 12/Prospect Ave (Wylie Dr to Valley Dr)	10,900 – 11,000 EB 10,500 – 10,700 WB	10,400 – 10,600 EB 10,200 – 10,700 WB	(-400) – (-500) EB (-300) – 0 WB	-5% EB -1% WB
Lake Helena Dr (Canyon Ferry Rd to US 12)	4,000 – 5,400	3,000 – 4,400	(-1,000)	-20%
Valley Dr (Canyon Ferry Rd to Plant Rd)	3,800 – 4,000	3,100 – 3,700	(-300) – (-700)	-7-20%
Valley Dr (Plant Rd to US 12)	4,800 – 5,800	3,800 – 4,700	(-1,100) – (-1,000)	-20%
Wylie Dr (Canyon Ferry Rd to Plant Rd)	6,500 – 6,700	6,500 – 6,900	0 – 200	0-4%
Wylie Dr (Plant Rd to US 12)	6,600 – 7,300	7,900 – 8,900	1,300 – 1,600	20-33%
Canyon Ferry Rd (York Rd to Wylie Dr)	12,500 – 13,500	11,800 – 12,700	(-800) – (-700)	-6%
Canyon Ferry Rd (Wylie Dr to Valley Rd)	11,200 – 11,900	10,500 – 11,200	(-700)	-6%



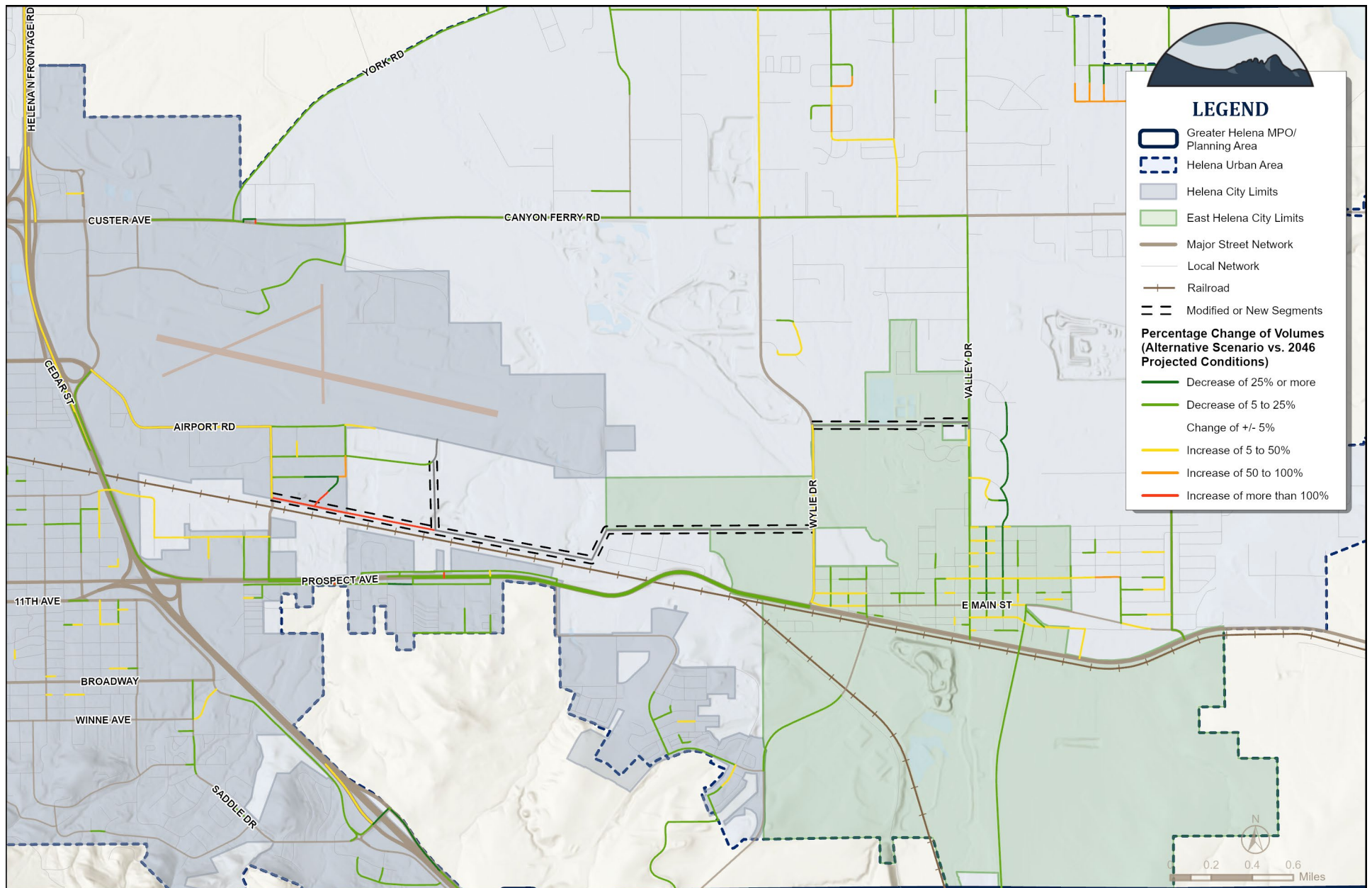


Figure 2.9: Alternative 7 Modeling Results



2.9. ALTERNATIVE 8: EAST HELENA CONNECTIONS

This alternative includes a new connection in East Helena south of US 12 to help accommodate planned development in the Rose Hills and Prickly Pear Estates subdivisions. The alternative includes the following network changes:

- Connect Highway 518 to Highway 282 via the entrance to Prickly Pear Park and Smelter Road using the existing at-grade rail crossing on the southern edge of the former ASARCO smelter site (two-lane major collector)
- Extend Montana Avenue as a two-lane major collector across US 12, tying into the new east-west connector
- Use abandoned North Street roadbed to re-establish a connection between Highway 282 and Crossroads Parkway, tying into Jean Baucus Street (two-lane major collector)
- Upgrade Diehl Lane to a two-lane major collector between US 12 and Canyon Ferry Road

The results from Alternative 8, shown in **Table 2.9** and **Figure 2.10**, indicate that the additional connectivity in East Helena south of US 12 has minor impacts on traffic overall. The new connections draw a maximum of 1,000 vehicles from various other east-west routes in East Helena, with no distinct shifts. Upgraded capacity of Diehl Lane is shown to draw about 50 more vehicles.

Table 2.9: Volume Difference (Alternative 8 vs. 2046 Base)

Location	2046 Base Vol. (vpd)	2046 Alt. 8 Vol. (vpd)	Net Change (vpd)	Approx. % Change
Montana Avenue south of US 12	--	300	300	--
Montana Avenue north of US 12	4,850 - 5,100	4,950 - 5,100	500 - 1,100	1-3%
Highway 518 (US 12 to new connection)	6,100	6,400	300	5%
Highway 518 (south of new connection)	6,100	6,000	(-100)	-1%
New connection (Hwy 518 to railroad crossing)	--	800 - 1,100	800 - 1,100	--
Smelter Ave (railroad crossing to Hwy 282)	3,800	2,900	(-900)	-23%
Hwy 282 south of Smelter Ave	5,600	5,600	0	0%
Hwy 282 north of Smelter Ave	6,300	5,900	(-400)	-6%
North Street (existing segment)	2,000	1,800	(-200)	-13%
North Street (new segment)	--	600	600	--
Crossroads Parkway (North Street to US 12)	5,700	5,800	100	2%
US 12 (Crossroads Parkway to Hwy 282)	11,000 - 12,700 EB 12,400 - 12,800 WB	10,900 - 12,500 EB 12,300 - 12,700 WB	(-100) - (-200) EB (-100) WB	-2% EB -1% WB
US 12 (Hwy 282 to Hwy 518)	9,150 - 10,950 EB 8,800 - 10,700 WB	9,000 - 10,900 EB 8,550 - 10,650 WB	(-50) - (-150) EB (-50) - (-250) WB	-1% EB -3% WB
Main St (Lane Ave to Wylie Dr)	3,500 - 5,300	3,300 - 5,100	(-200)	-4-6%
Diehl Lane (US 12 to Canyon Ferry Rd)	30 - 350	60 - 400	30 - 50	10-100%



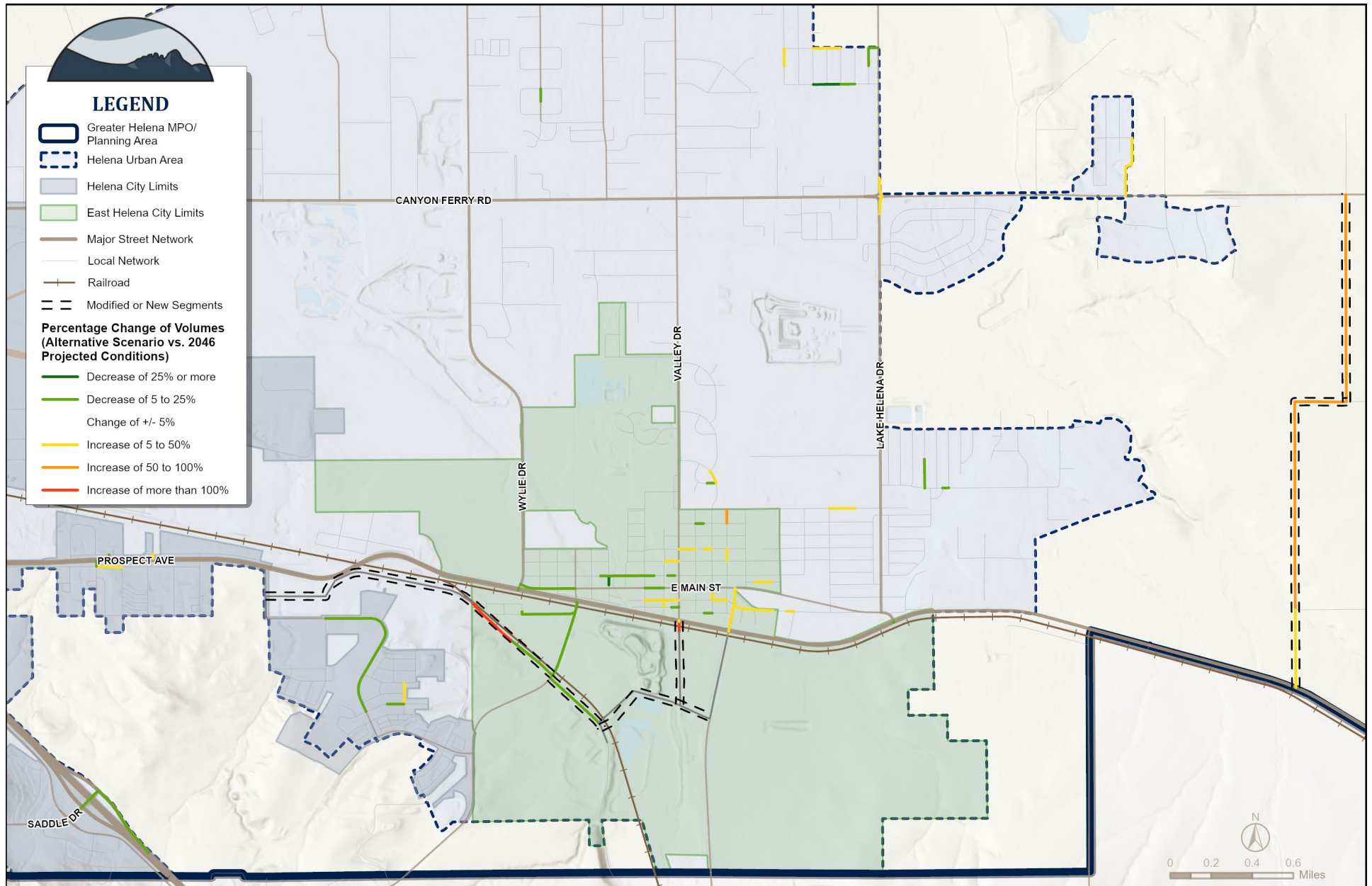


Figure 2.10: Alternative 8 Modeling Results

