

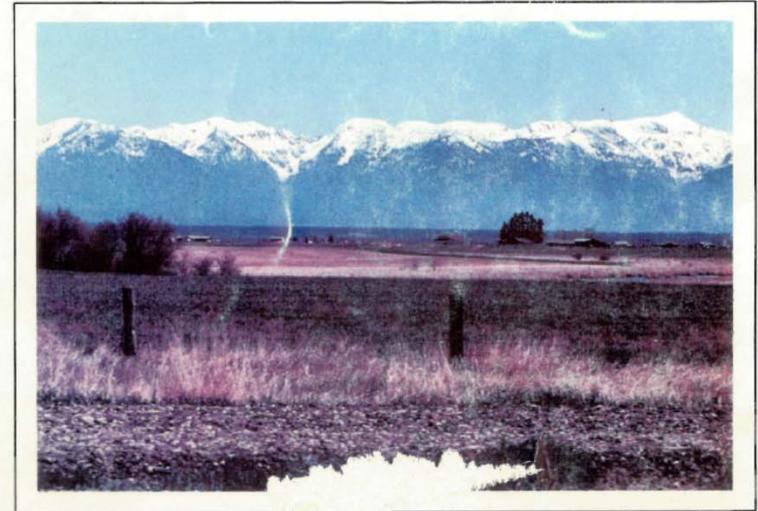
An aerial photograph of a city street intersection. The image shows a grid of streets with residential and commercial buildings, trees, and parking lots. A semi-transparent grey box with a grid pattern is overlaid on the right side of the image, containing the title text. The date 'June 28, 2016' is displayed in a white box with an orange grid pattern in the bottom left corner.

Courthouse Couplet - Kalispell *Traffic Engineering Study*

June 28, 2016

Background

- **1994 US Highway 93 Somers to Whitefish West EIS**
- **Remaining portion between 13th Street and 7th Street**
 - Preferred alternative of two northbound and two southbound lanes
- **Traffic Study prior to design**



US Highway 93 • Somers to Whitefish West

**FINAL
Environmental Impact Statement
and FINAL
Section 4(f) Statement**

VOLUME I

US Department of Transportation
Federal Highway Administration

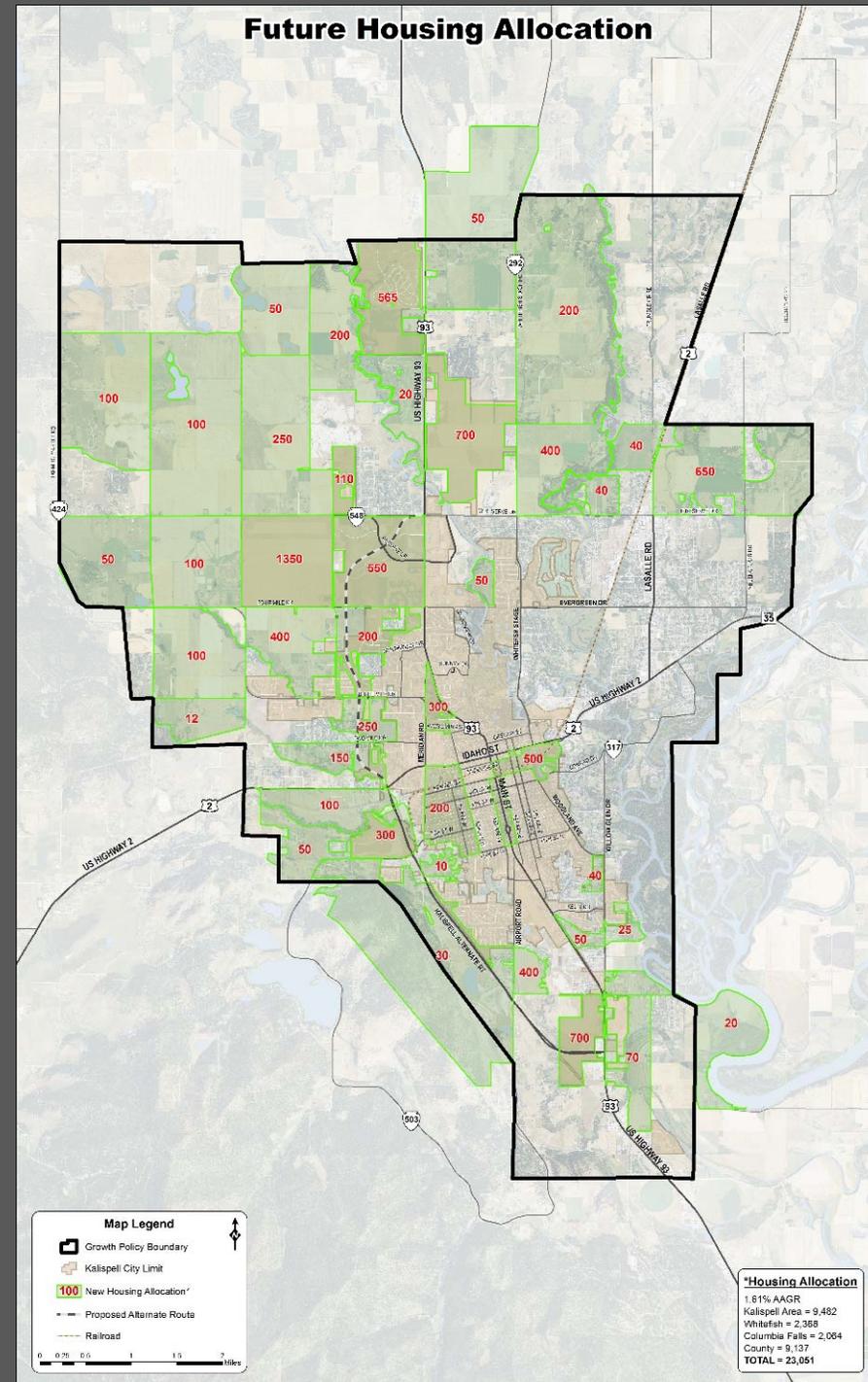
Traffic Engineering Study

- Identify possible lane configurations
- Identify traffic operational and safety issues
- Project future conditions
- Impact of full bypass
- Collaborate with local officials and the public
- Not design details



Work to Date

- Data Collection
- Land Use Workshop
 - Assign future growth
 - With City, County, and MDT
- Travel Demand Modeling
 - Existing Conditions
 - Future E+C (2040)
 - Alternative Scenarios
- Existing and Projected Conditions Analysis
- Outreach to Elected Officials



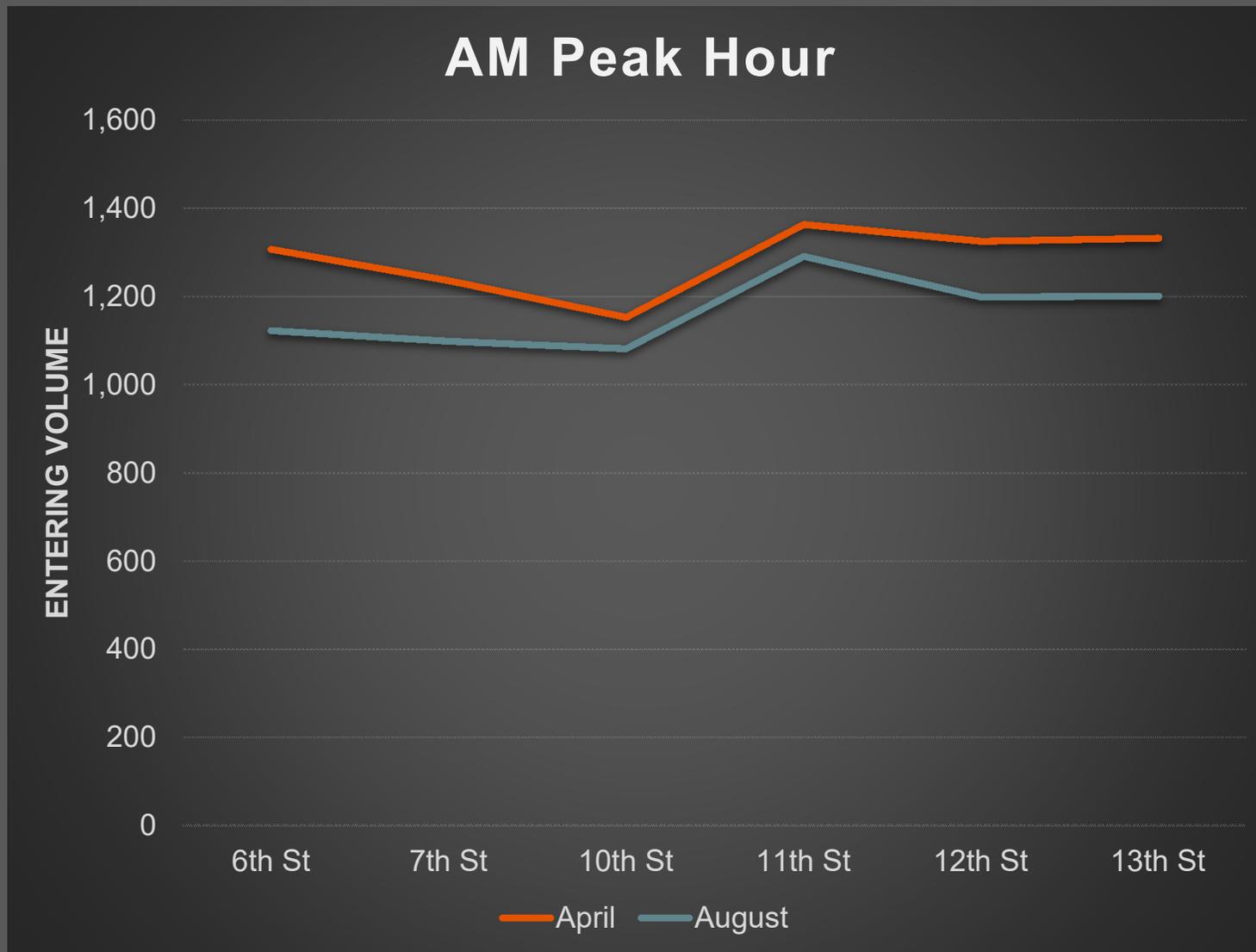
Existing and Projected Traffic Conditions



Existing and Projected Conditions

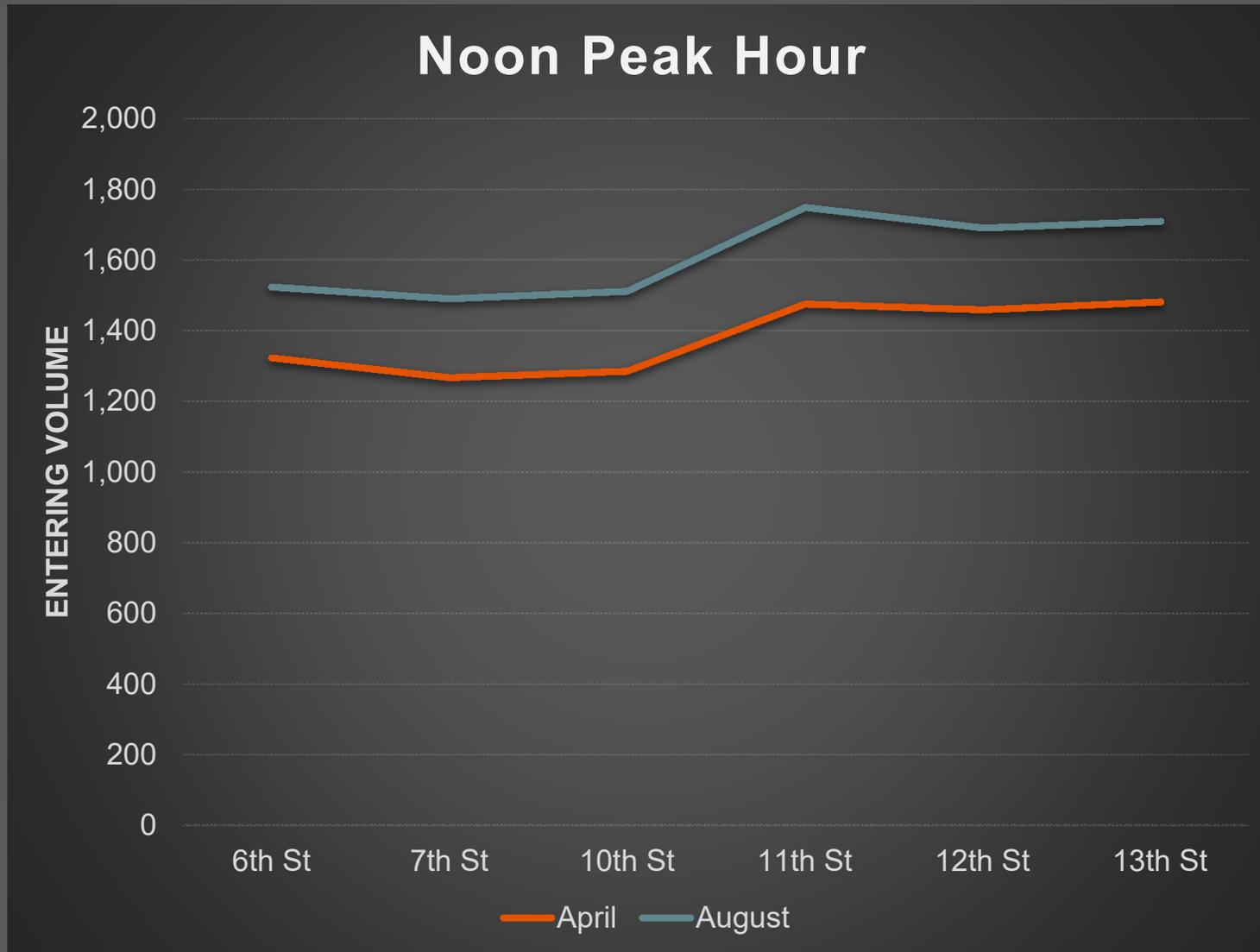
- TMC at 6 intersections
 - Average day (April)
 - Peak summer (August)

Entering Volume Comparison



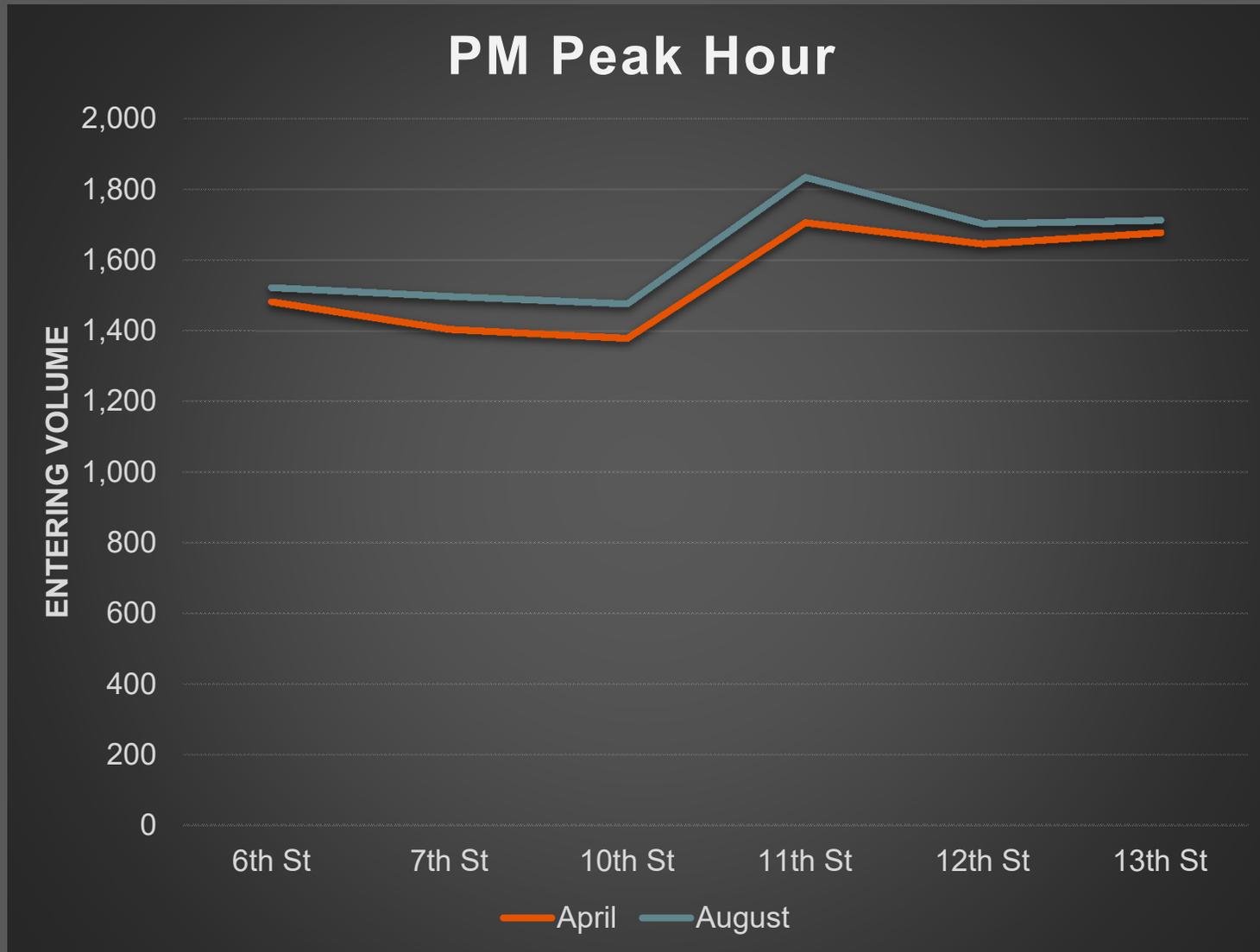
- April volumes greater than August
- 9.3% decrease in August

Entering Volume Comparison



- August volumes greater than April
- 16.6% increase in August volumes

Entering Volume Comparison



- August and April volumes are similar
- 4.8% increase in August
- Highest Volumes throughout the day

Existing Level of Service



Intersection LOS

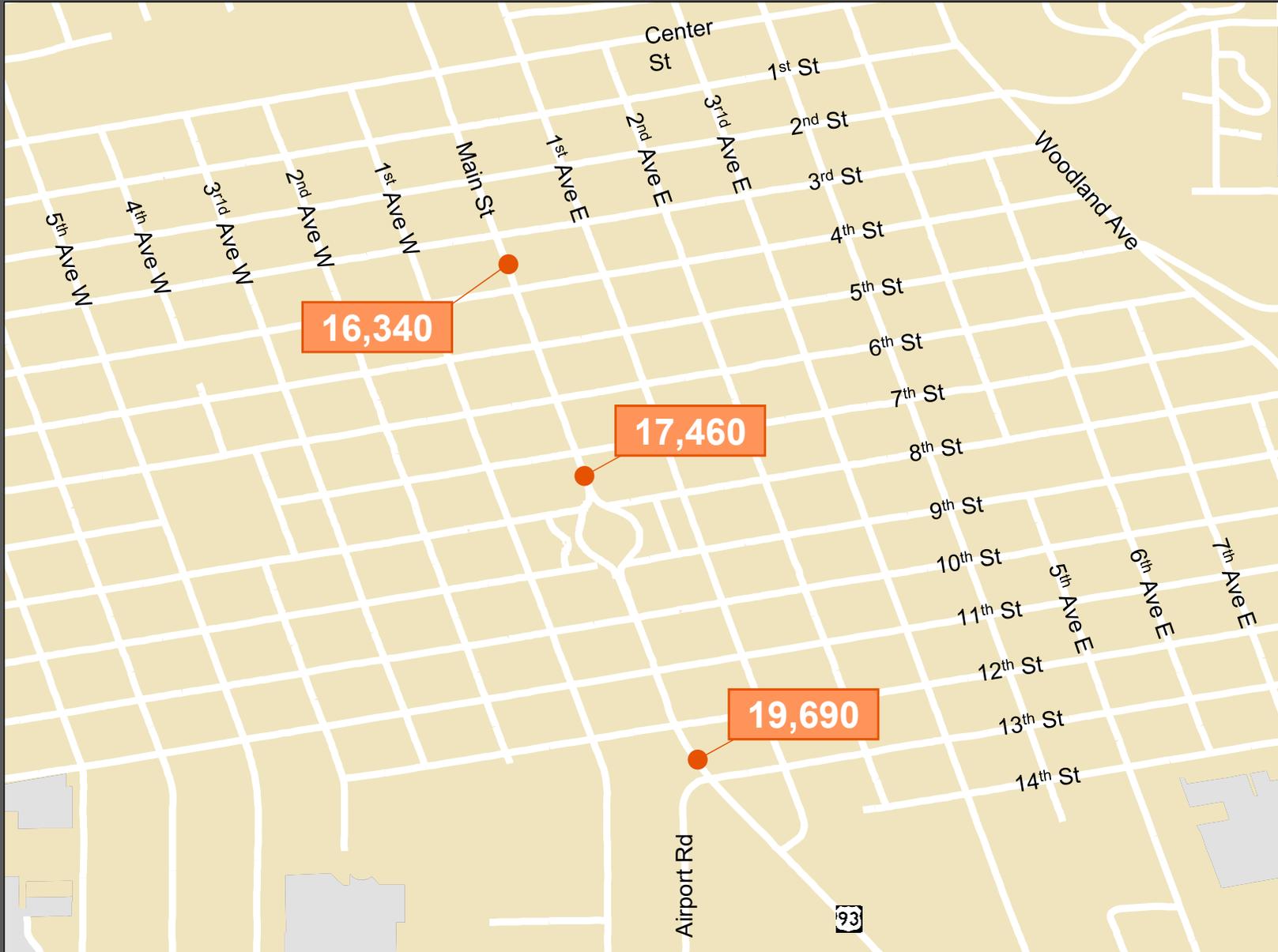
Signalized



Unsignalized



Existing AADT (2013)



Projected Traffic Conditions (Corridor-level)

HISTORIC GROWTH

- 1.04% over past 20 years
- -1.16% over past 10 years
- -2.06% over past 5 years
- Impact of partial bypass

TRAVEL DEMAND MODEL

- No Action
 - 0.36%
 - Restricted growth along corridor due to capacity constraints
 - Impacts of full bypass
- Additional Capacity
 - 1.45%
 - More reflective of demand

Growth rate used for future corridor projections:

- 1.00%

Projected Level of Service



Intersection LOS

Signalized

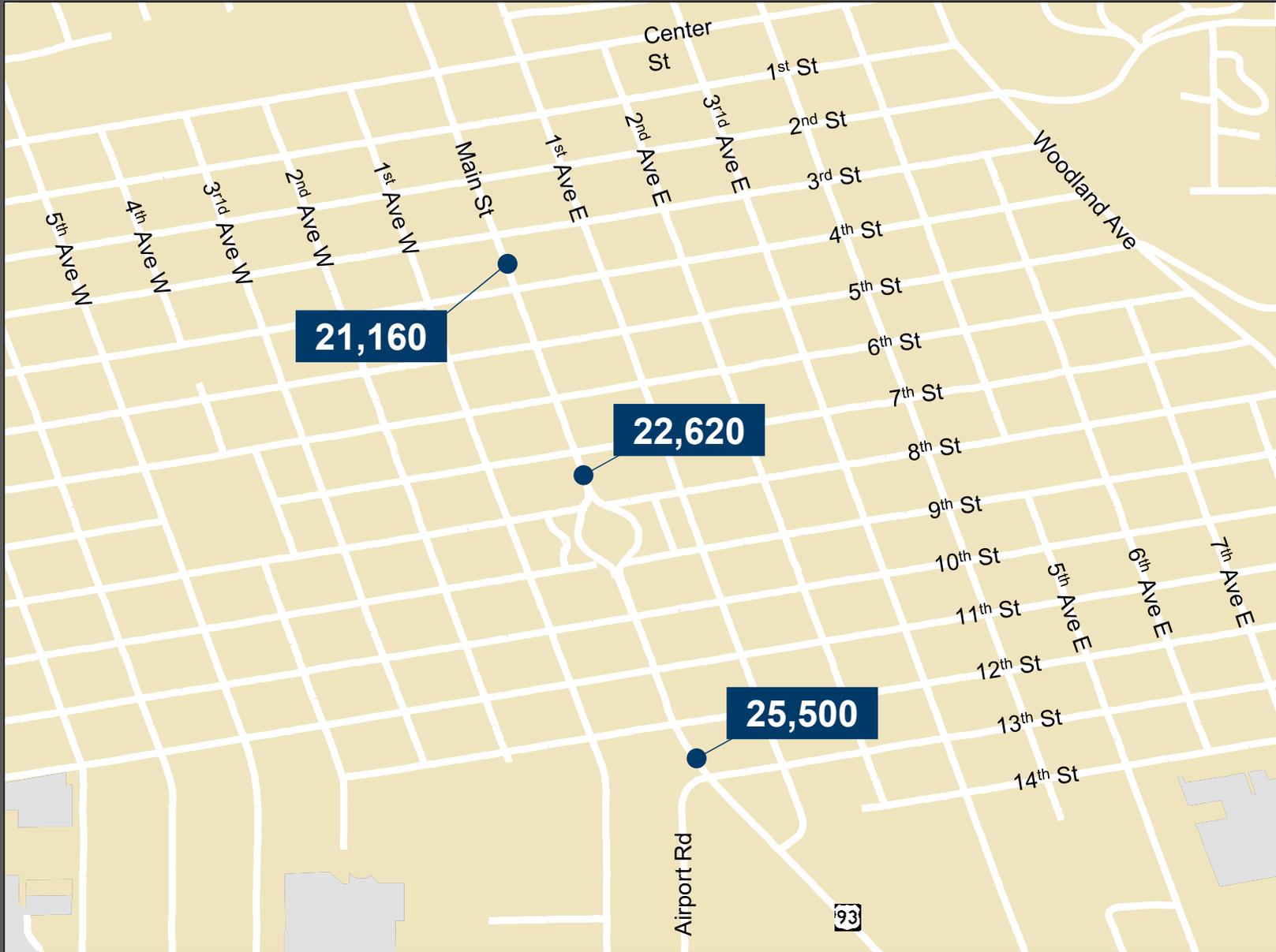


Unsignalized



Using 1.0%
AAGR

Projected AADT (2040)

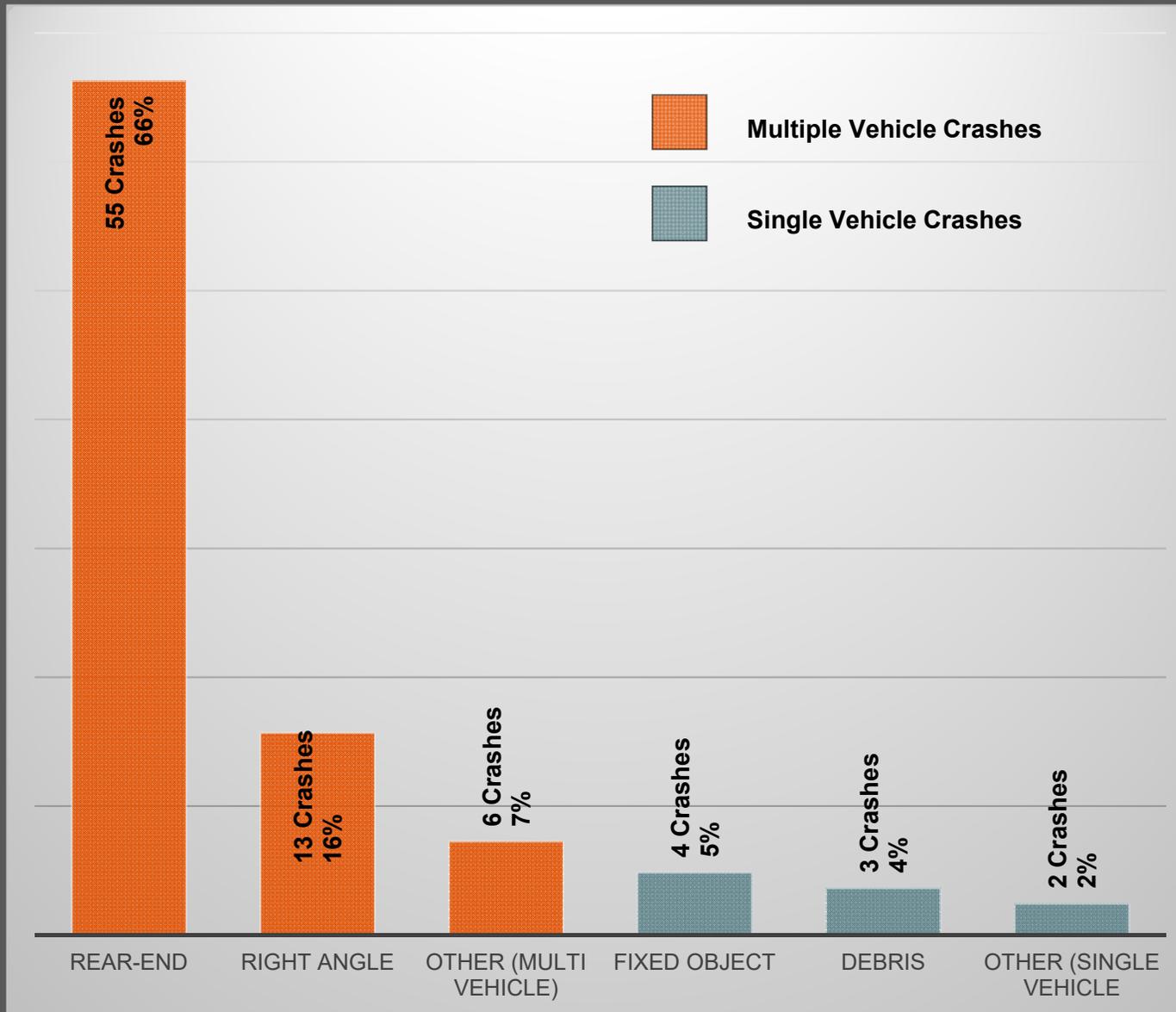


Using 1.0%
AAGR

Safety

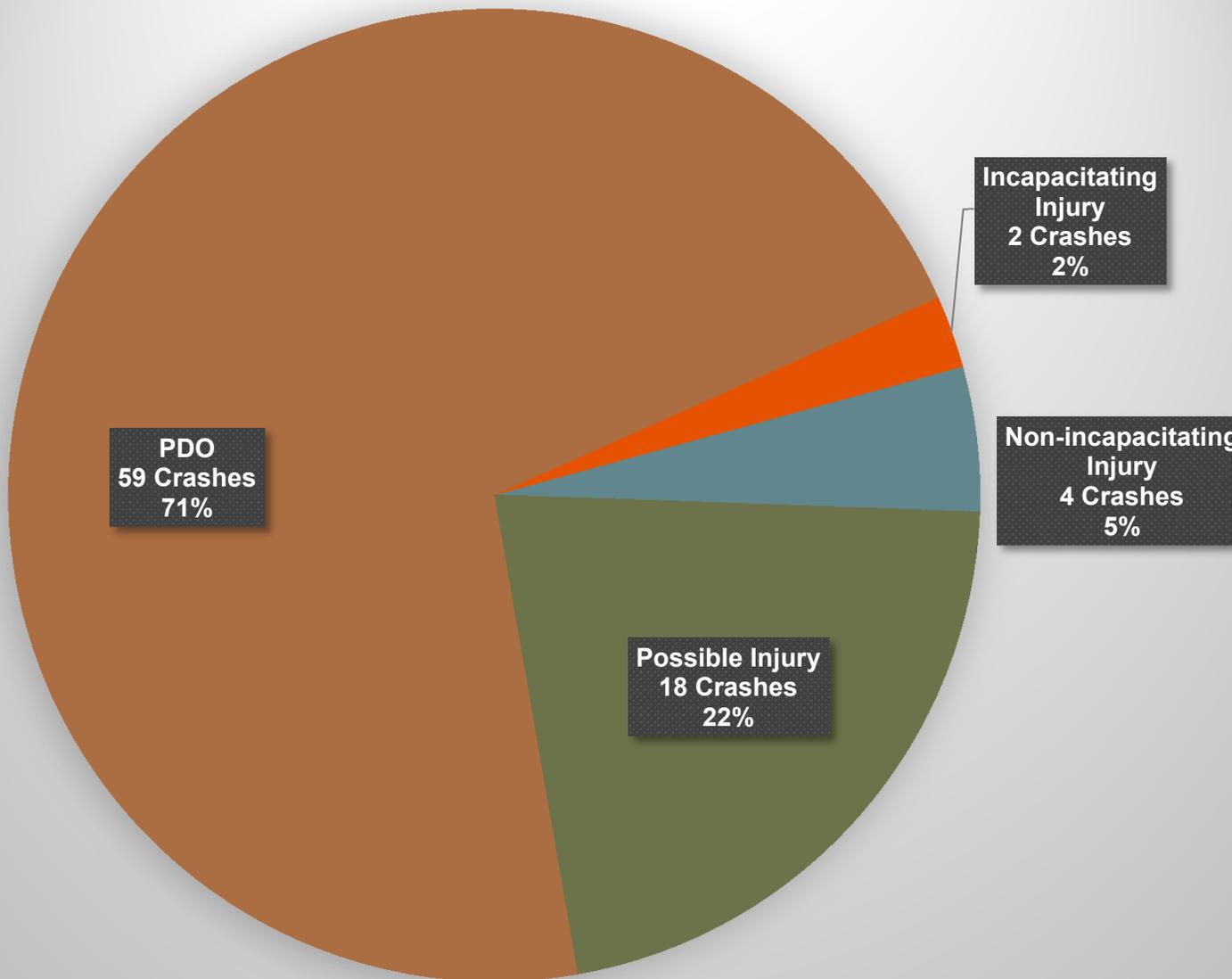
JANUARY 1, 2010 THROUGH DECEMBER 31, 2014

Crash Type



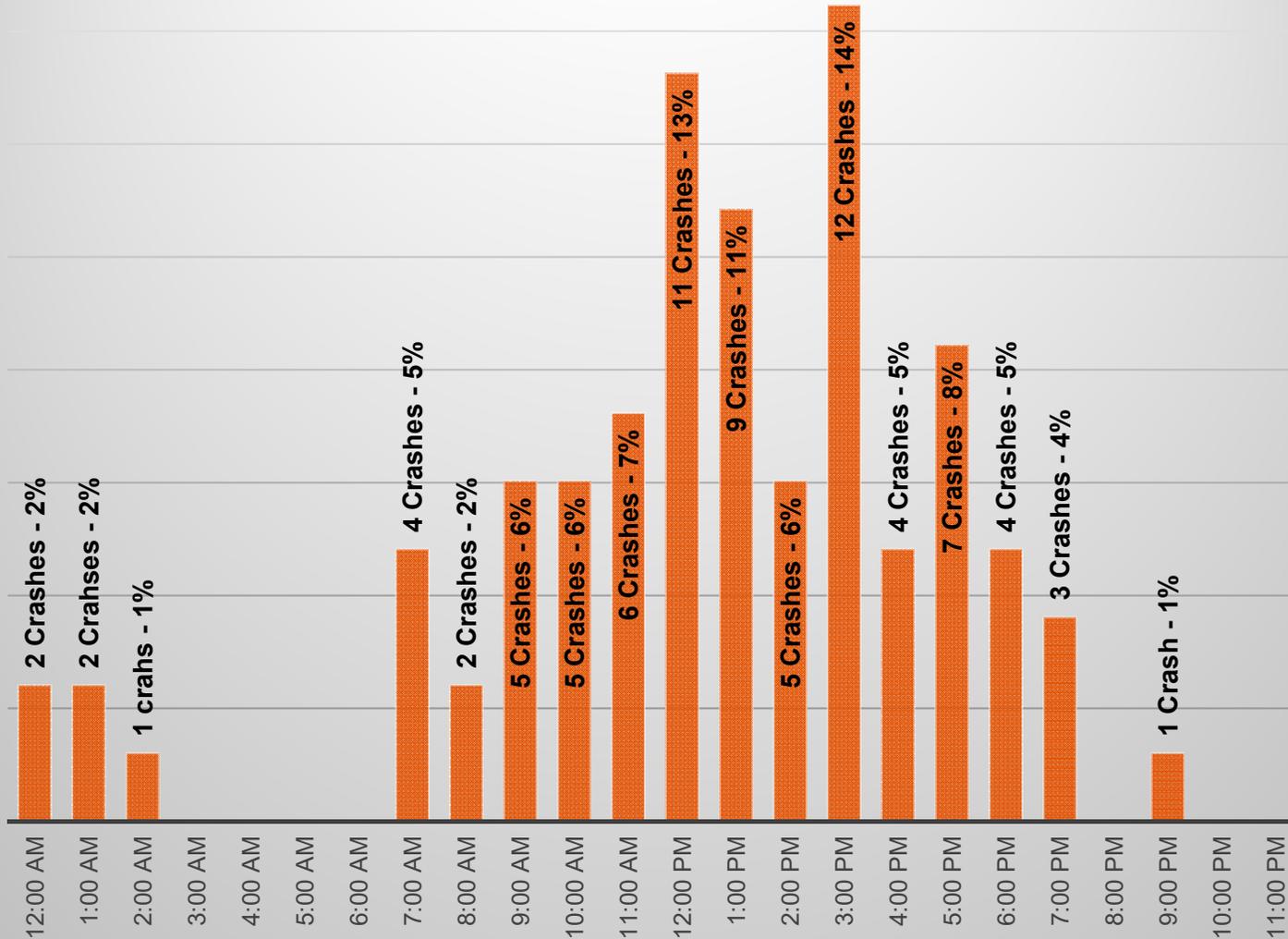
- 83 reported crashes
- 89% involved multiple vehicles

Crash Severity



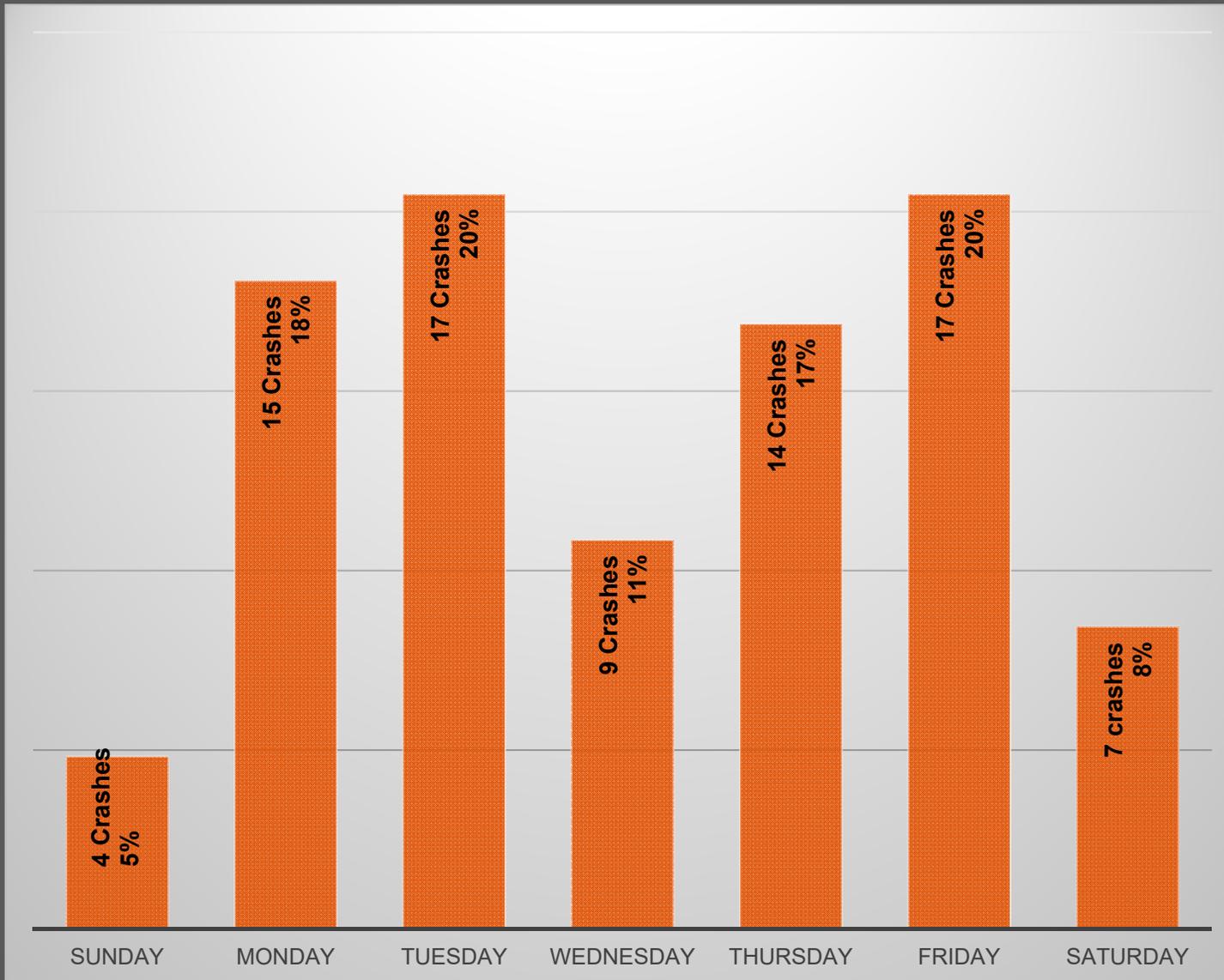
- Approximately 2% severe crashes

Crashes by Time of Day



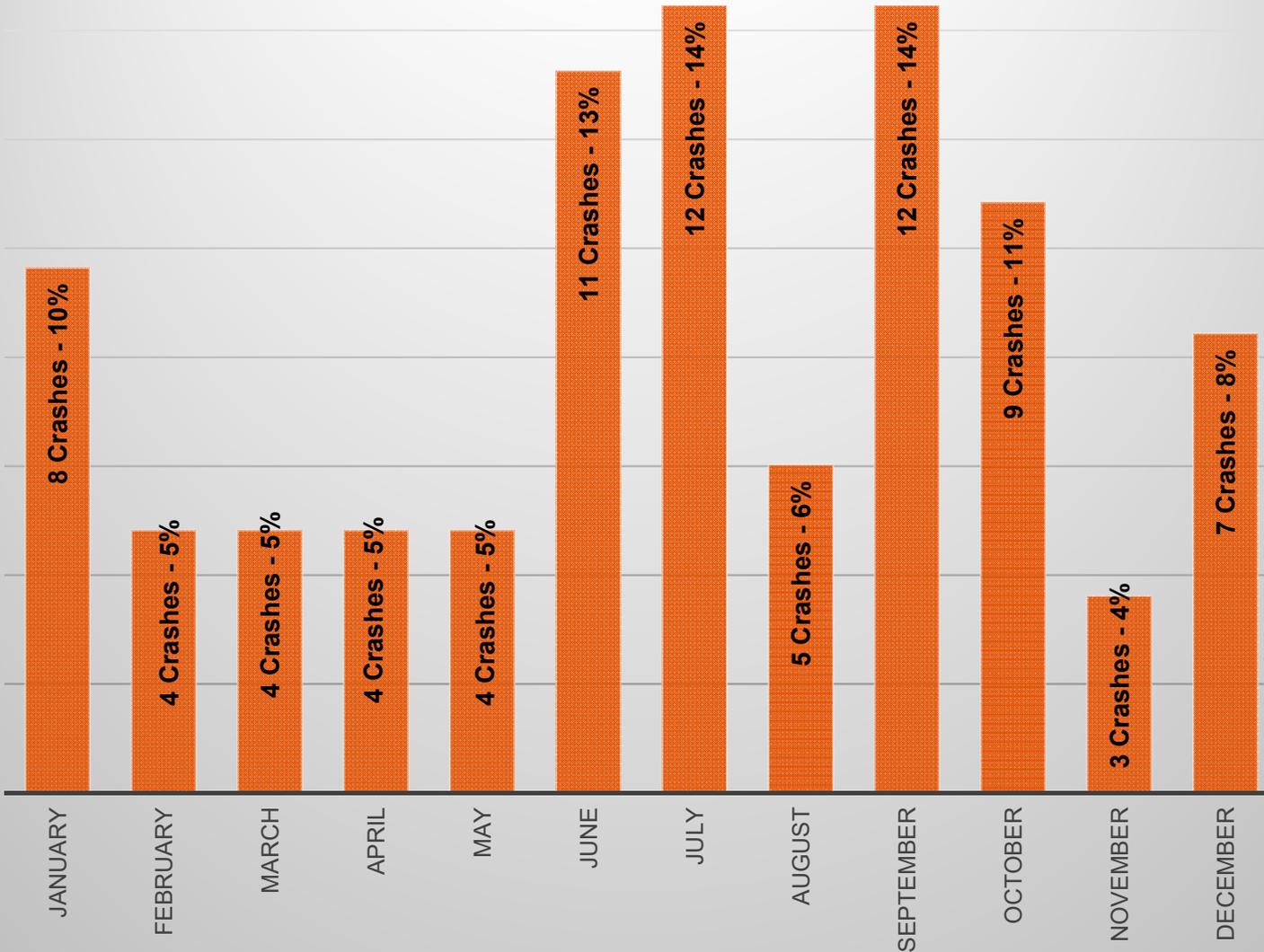
- 24% during noon peak hour
- Peak during school pick-up time

Crashes by Day of Week



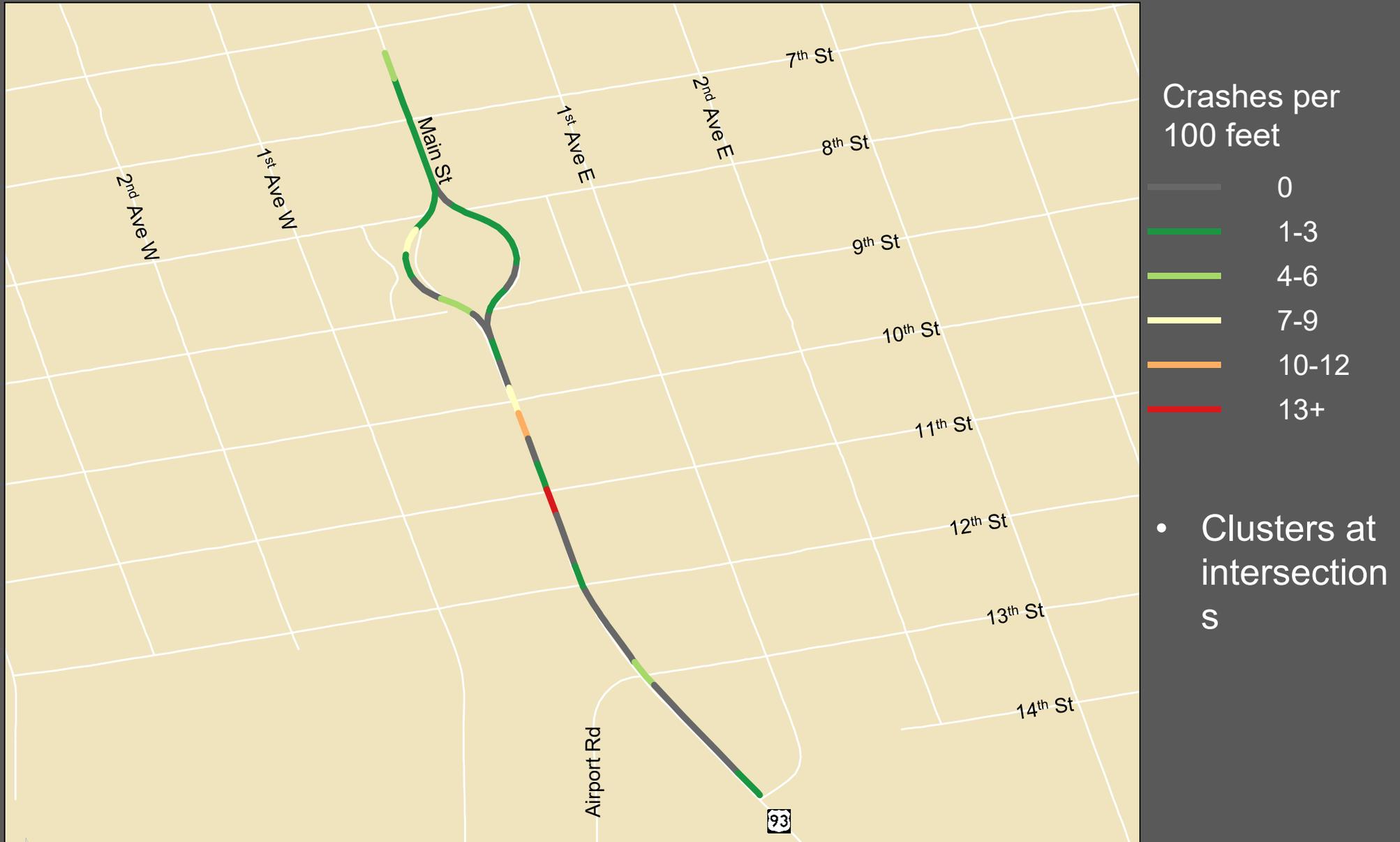
- Smallest percentage during weekend

Crashes by Month of Year



- Peak during summer

Study Area Crash Density



Alternative Scenarios

8 SCENARIOS INCLUDING BASELINE

Alternative Scenarios

Alt 1 – Baseline

- Full bypass, no additional changes

Alt 2 – Two Travel Lanes with TWLTL / Left-turn lanes

- Between 13th Street E and Center St

Alt 3 – Four Travel Lanes with TWLTL / Left-turn lanes

- Between 13th Street E and Center St

Alt 4 – One-way Couplet (A)

- US 93 2 travel lanes with TWLTL / left-turn lanes
- 1st Ave E one-way NB
- 1st Ave W one-way SB
- Improvements to Center St and 12th St E

Alt 5 – One-way Couplet (B)

- US 93 one-way SB
- 1st Ave E one-way NB
- Improvements to Center St

Alt 6 – One-way Couplet (C)

- US 93 one-way NB
- 1st Ave W one-way SB
- Improvements to Center St and 12th St E

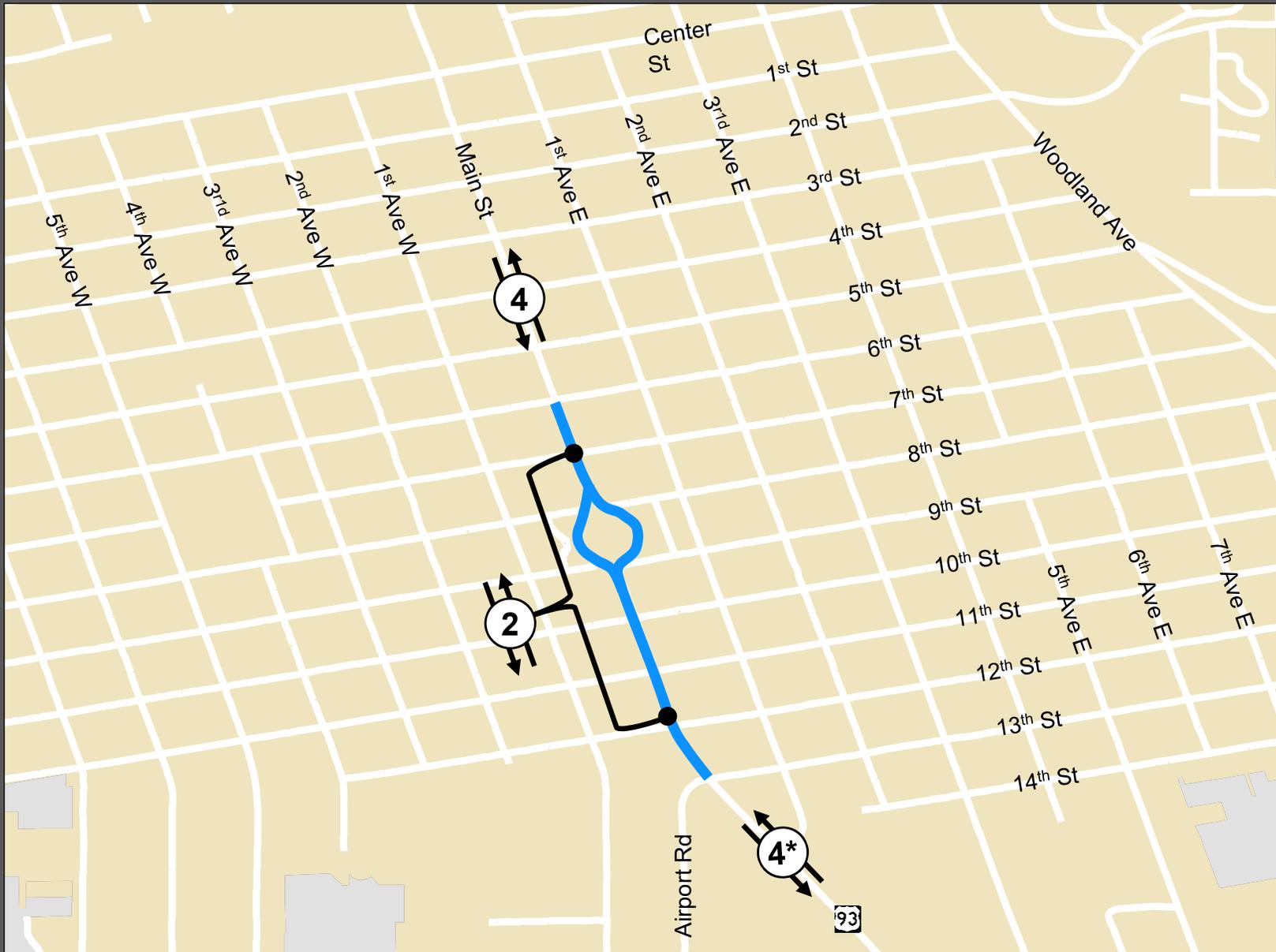
Alt 7 – Willow Glen Upgrade

- 2-lane with TWLTL / left-turn lanes

Alt 8 – Willow Glen Upgrade and US 93 2-lane with TWLTL / Left-turn lanes

- Combined Alt 2 and Alt 7

Alternative 1: Baseline



Extent of proposed changes



Directions of travel and number of lanes



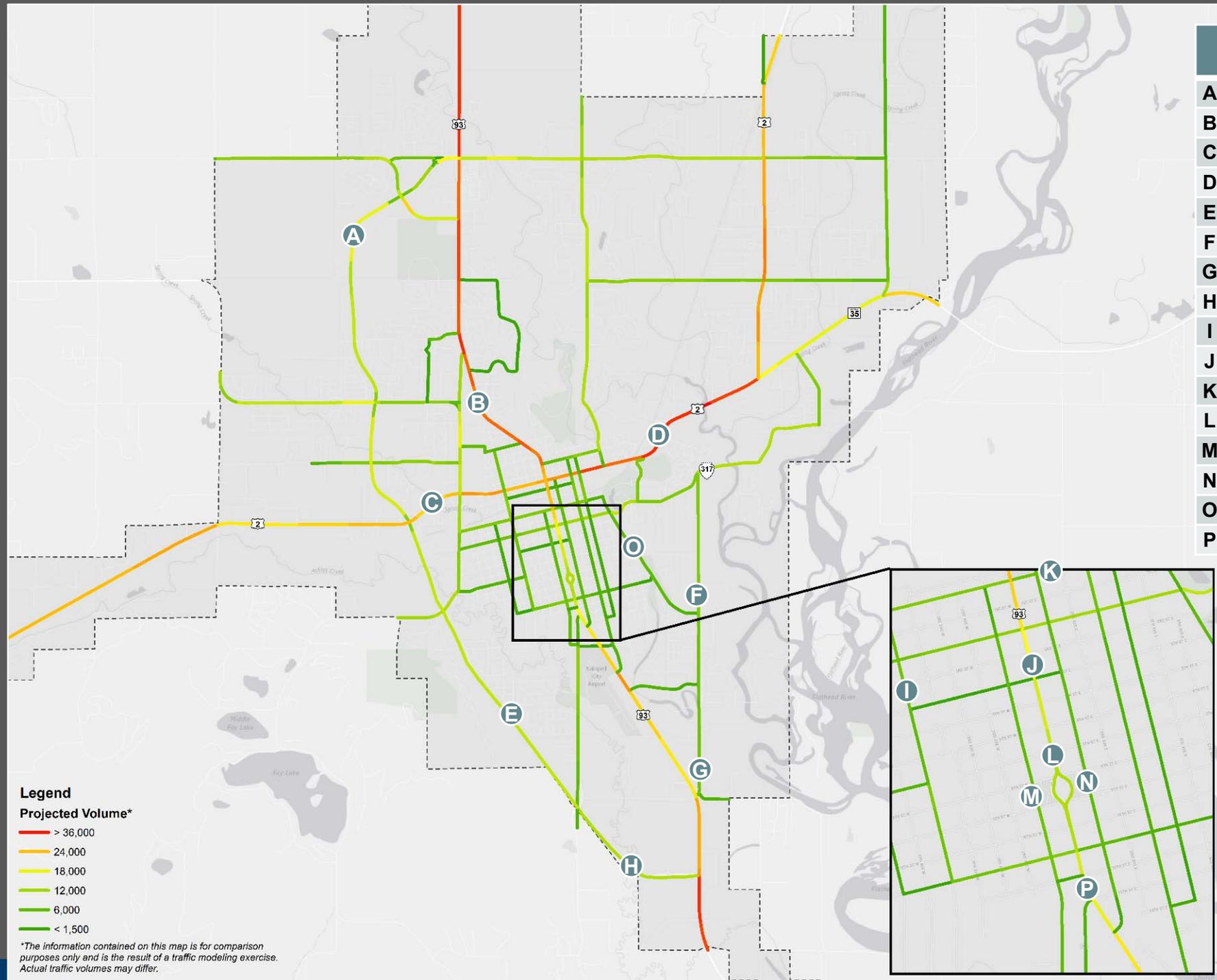
Kalispell city limits

*Also includes TWLTL and/or left-turn bays

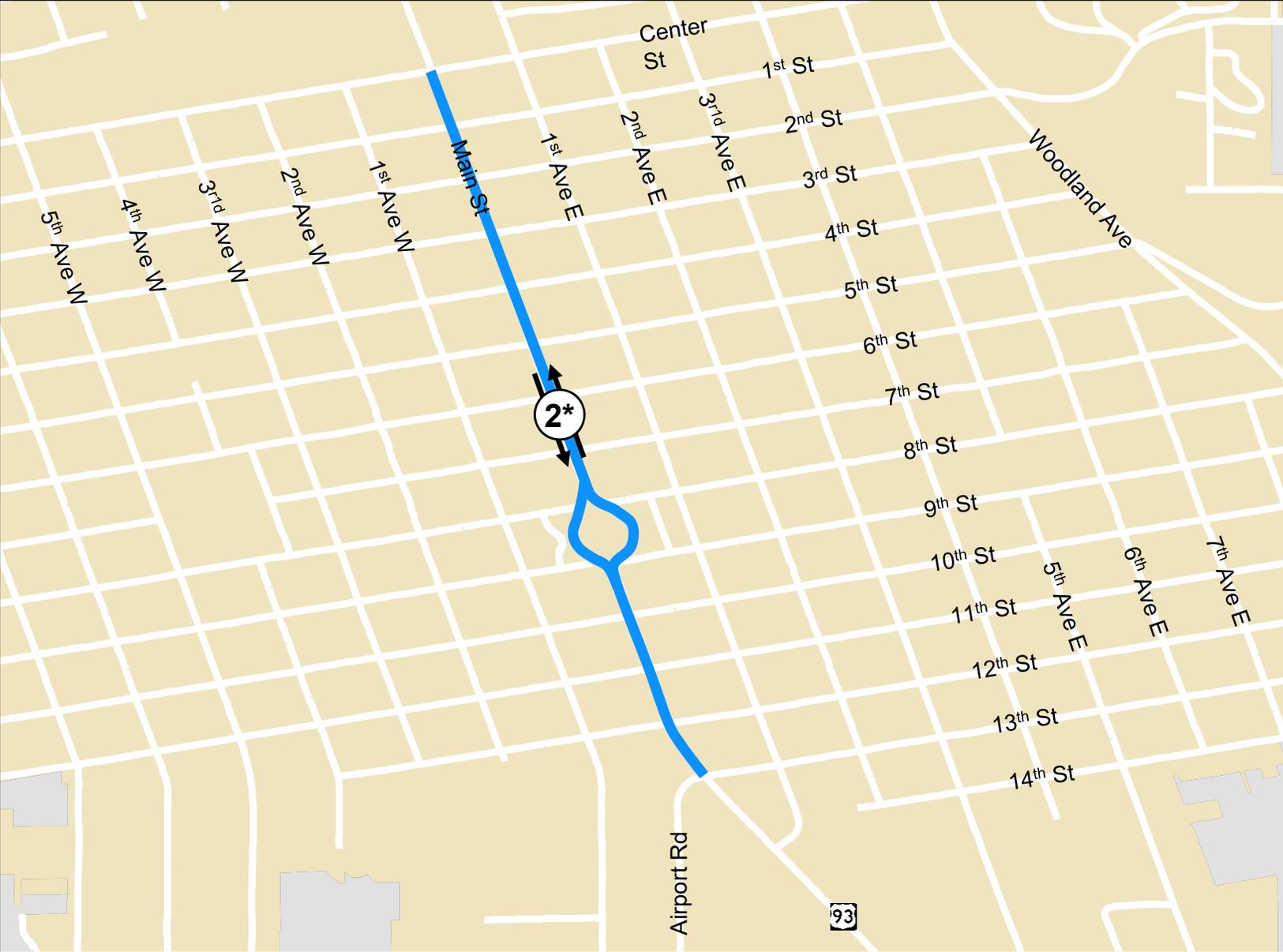
Alternative 1: Baseline

	Existing Volume	Projected Volume
A	-	17,340*
B	26,060	34,730
C	15,890	19,090
D	26,990	34,300
E	6,190	15,590
F	3,880	8,680
G	3,720	8,500
H	4,320	12,250
I	3,650	5,630
J	16,340	17,500
K	4,980	11,320
L	17,460	18,010
M	3,900	5,170
N	3,350	5,080
O	4,560	5,600
P	19,690	23,900

* Model Volume



Alternative 2: Two Travel Lanes



Extent of proposed changes



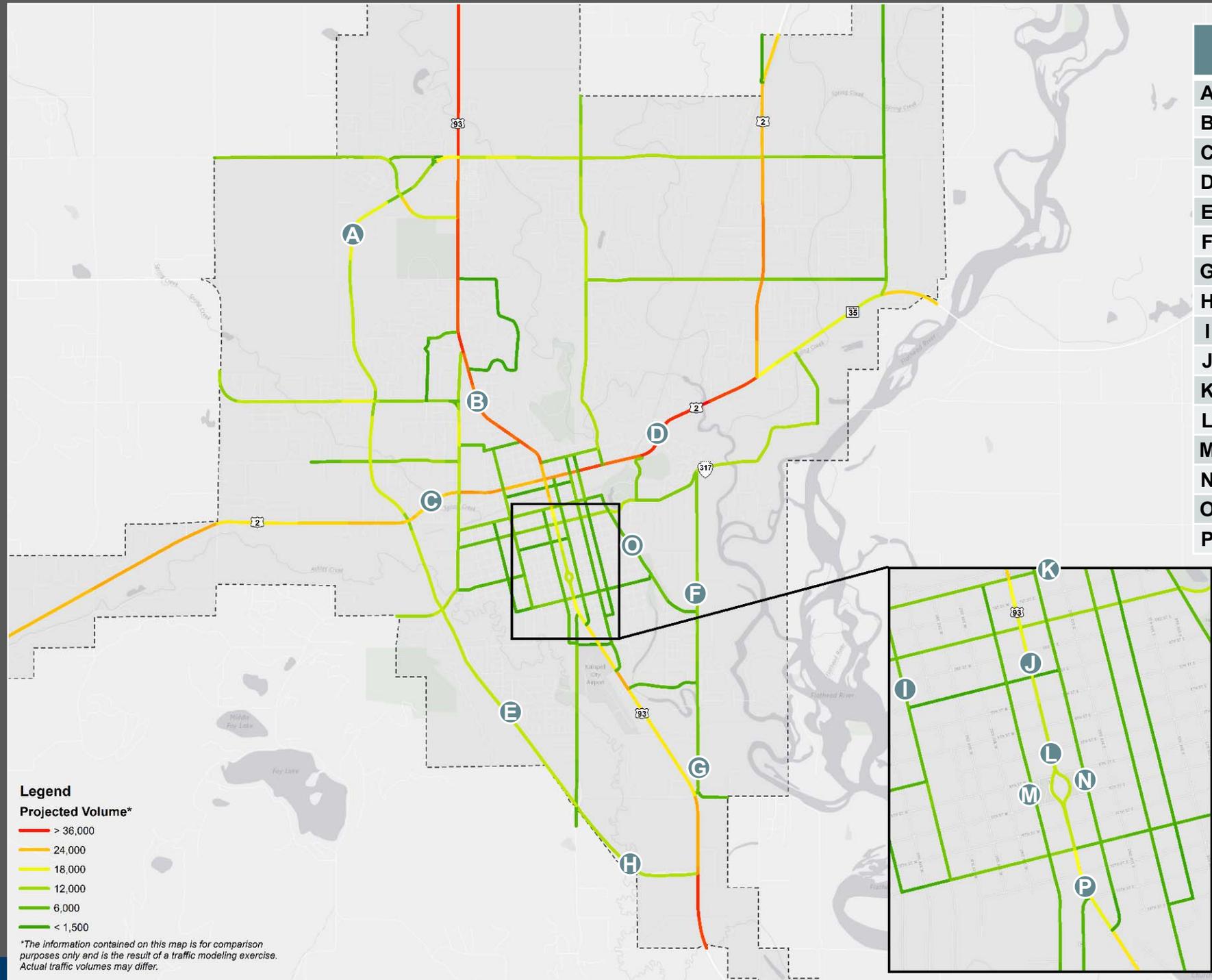
Directions of travel and number of lanes



Kalispell city limits

*Also includes TWLTL and/or left-turn bays

Alternative 2: Two Travel Lanes



	Existing Volume	Projected Volume
A	-	17,570*
B	26,060	34,730
C	15,890	19,020
D	26,990	34,240
E	6,190	15,570
F	3,880	9,050
G	3,720	9,110
H	4,320	12,300
I	3,650	5,750
J	16,340	16,070
K	4,980	11,420
L	17,460	18,410
M	3,900	4,820
N	3,350	4,710
O	4,560	6,000
P	19,690	24,980

* Model Volume

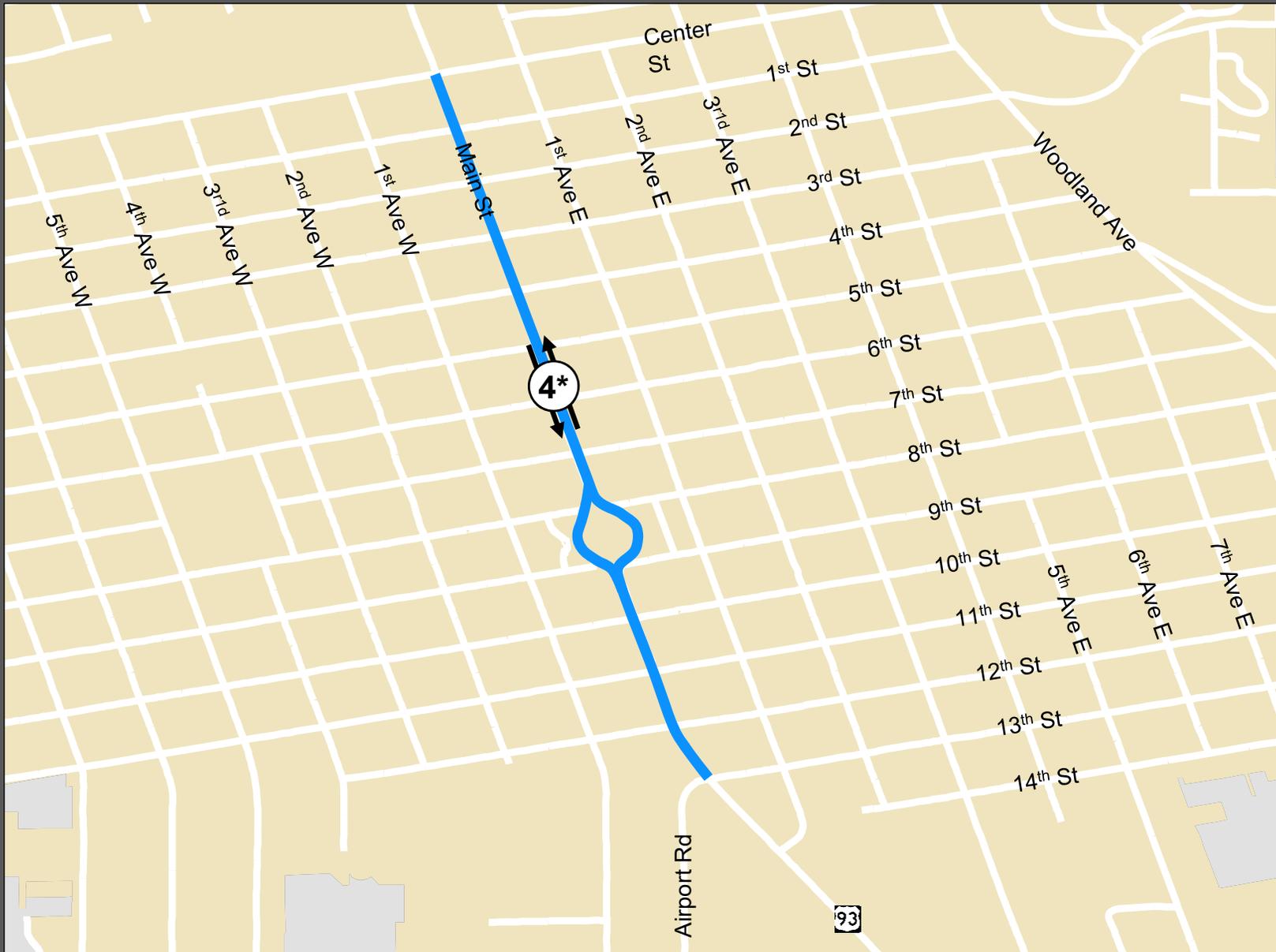
Legend

Projected Volume*

- > 36,000
- 24,000
- 18,000
- 12,000
- 6,000
- < 1,500

*The information contained on this map is for comparison purposes only and is the result of a traffic modeling exercise. Actual traffic volumes may differ.

Alternative 3: Four Travel Lanes



Extent of proposed changes



Directions of travel and number of lanes



Kalispell city limits

*Also includes TWLTL and/or left-turn bays

Alternative 3: Four Travel Lanes

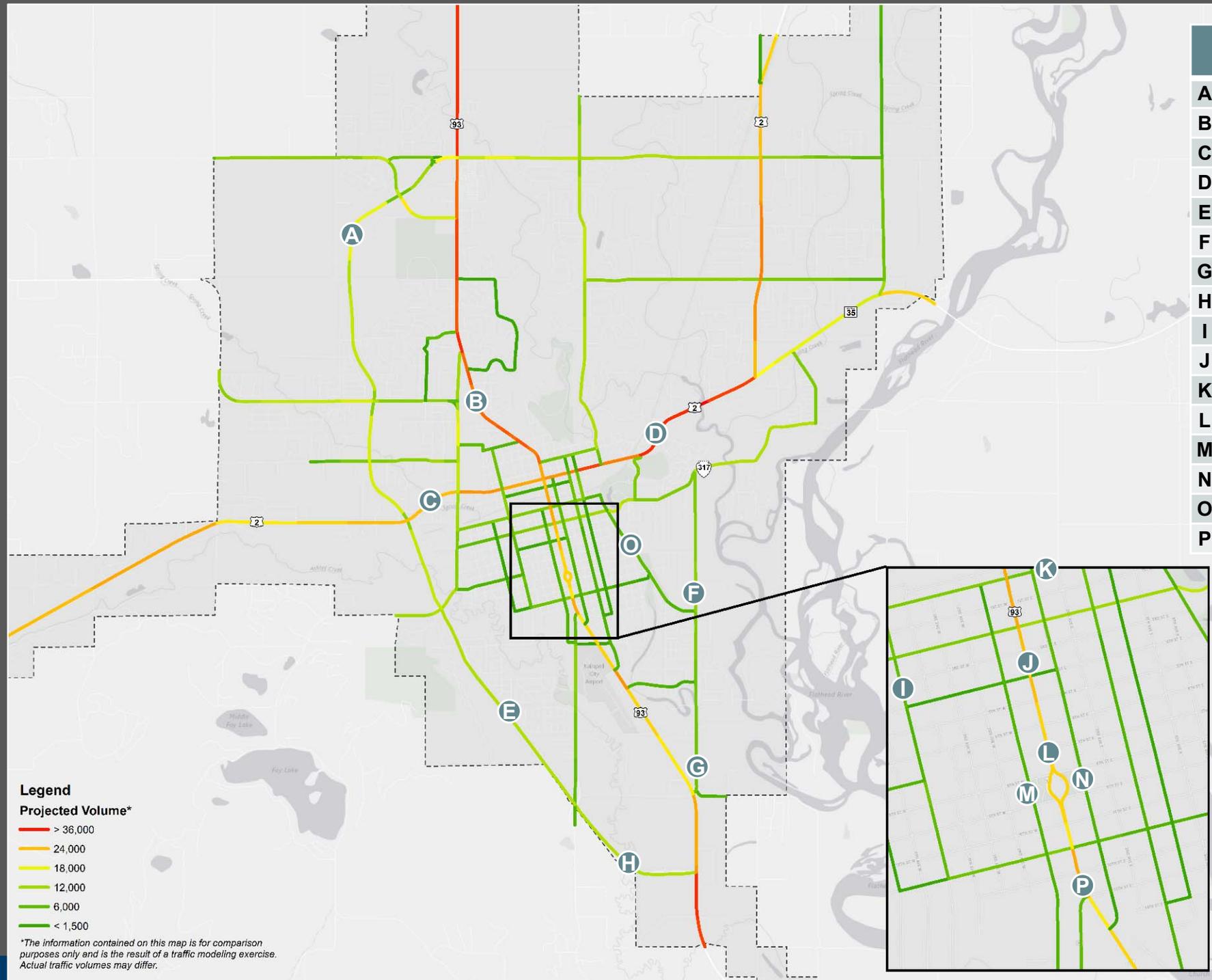
	Existing Volume	Projected Volume
A	-	17,250*
B	26,060	34,830
C	15,890	18,890
D	26,990	34,090
E	6,190	15,280
F	3,880	9,110
G	3,720	9,180
H	4,320	12,010
I	3,650	4,800
J	16,340	22,870
K	4,980	11,470
L	17,460	28,390
M	3,900	3,640
N	3,350	3,390
O	4,560	5,290
P	19,690	31,270

* Model Volume

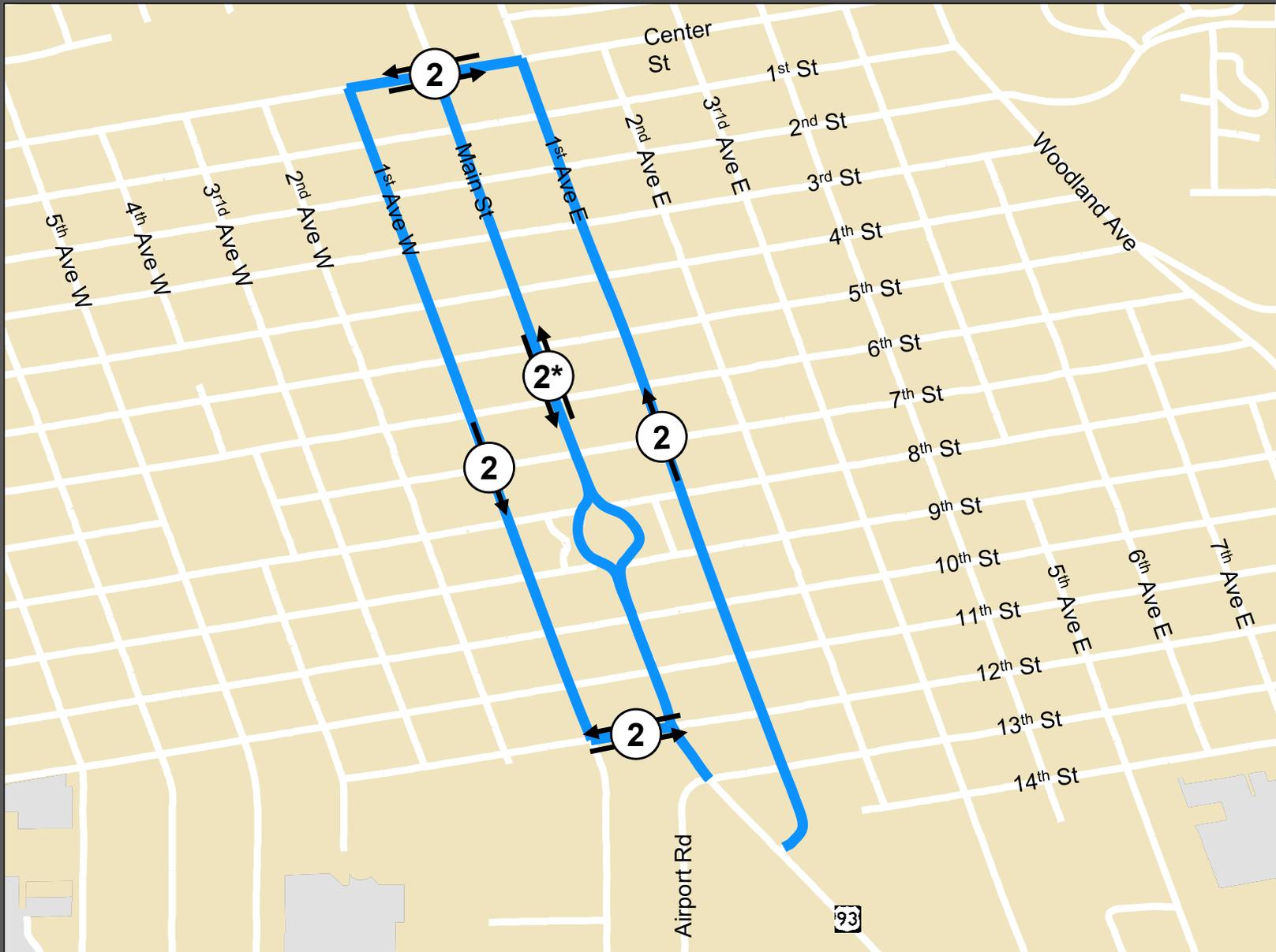
Legend

- Projected Volume*
- > 36,000
 - 24,000
 - 18,000
 - 12,000
 - 6,000
 - < 1,500

*The information contained on this map is for comparison purposes only and is the result of a traffic modeling exercise. Actual traffic volumes may differ.



Alternative 4: One-way Couplet (A)



Extent of proposed changes



Directions of travel and number of lanes



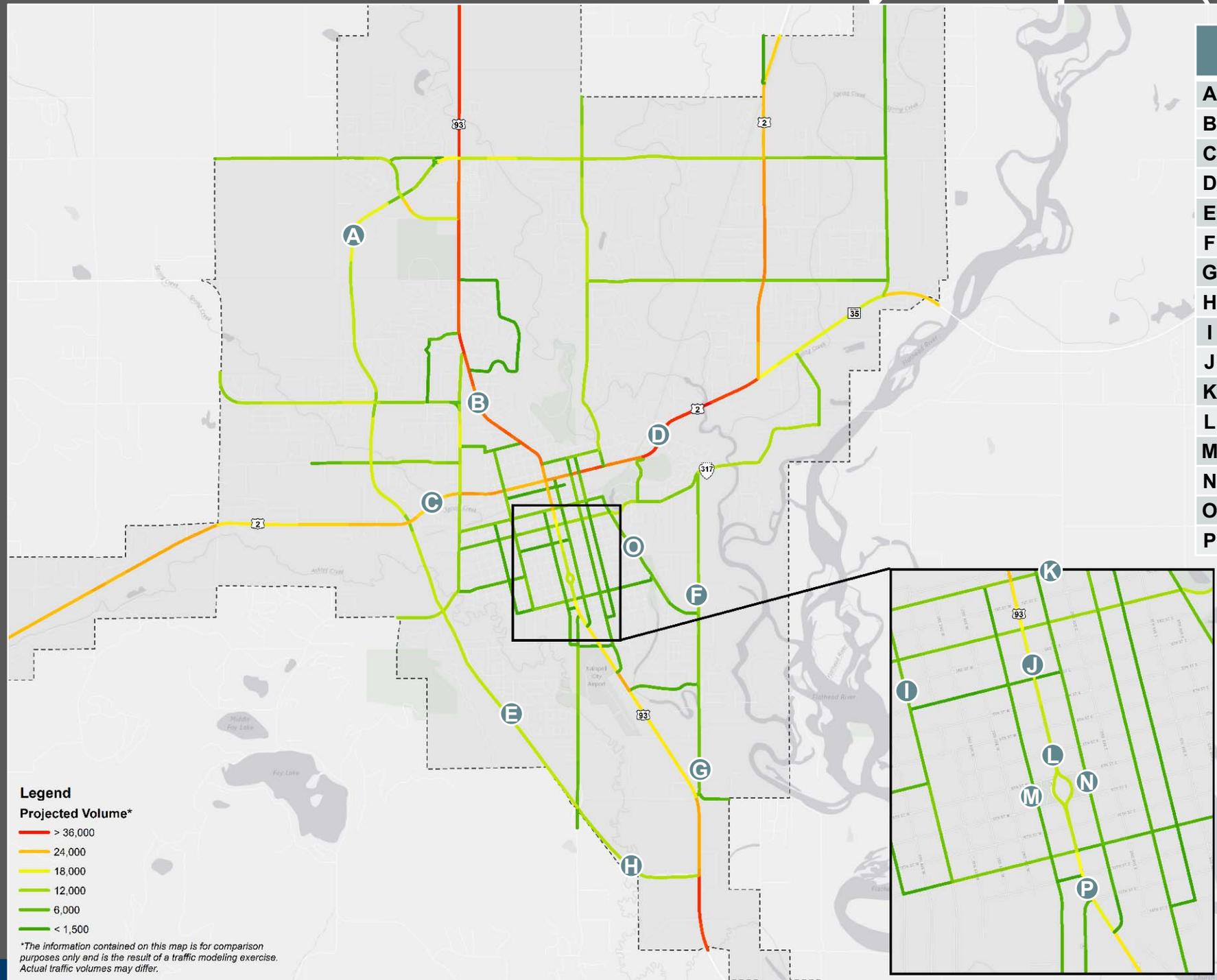
Kalispell city limits

*Also includes TWLTL and/or left-turn bays

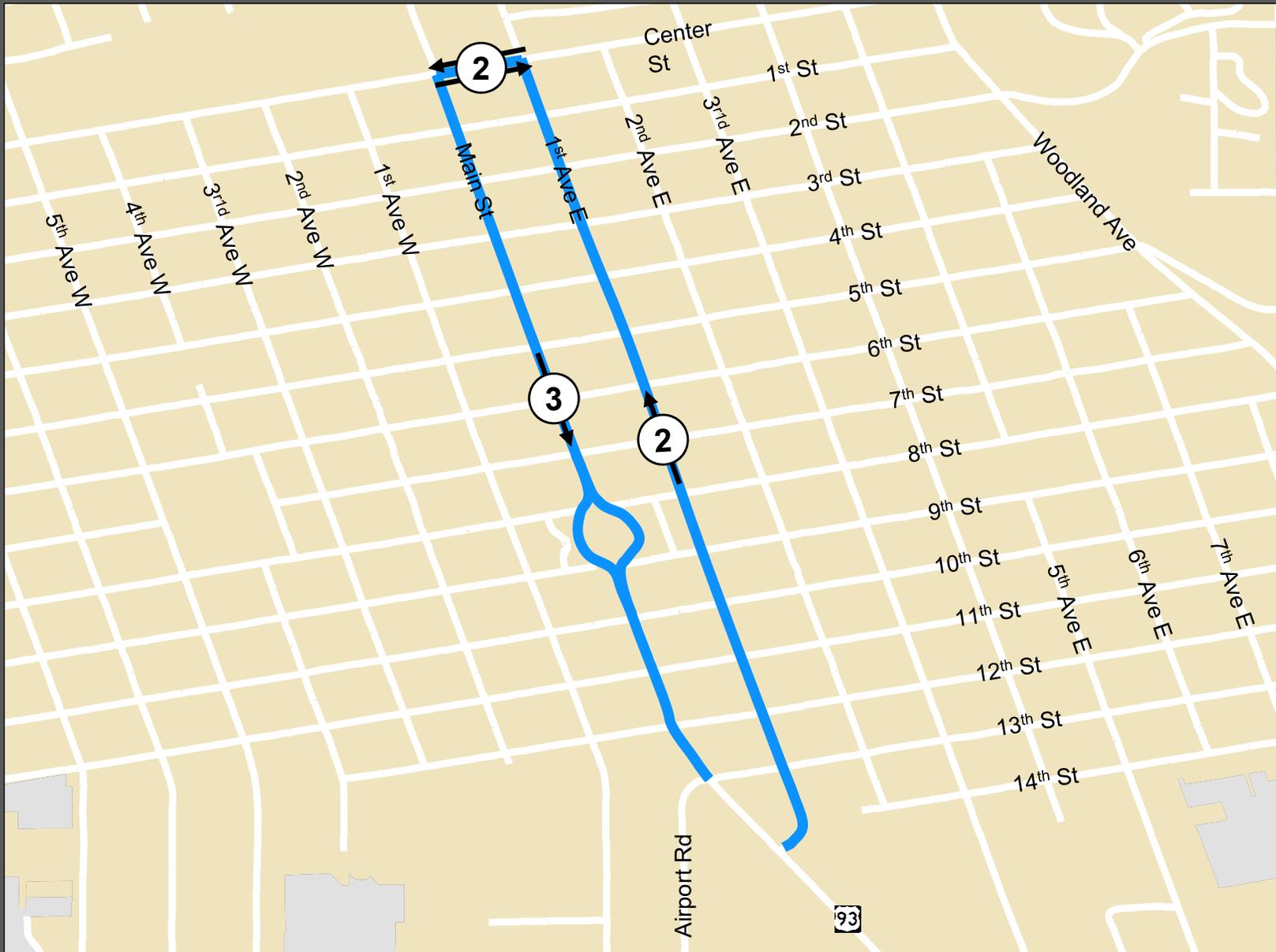
Alternative 4: One-way Couplet (A)

	Existing Volume	Projected Volume
A	-	17,240*
B	26,060	35,300
C	15,890	18,610
D	26,990	33,940
E	6,190	15,560
F	3,880	9,210
G	3,720	9,250
H	4,320	12,210
I	3,650	5,870
J	16,340	16,610
K	4,980	10,810
L	17,460	18,540
M	3,900	3,530
N	3,350	4,630
O	4,560	6,160
P	19,690	25,670

* Model Volume



Alternative 5: One-way Couplet (B)




Extent of proposed changes


Directions of travel and number of lanes


Kalispell city limits

*Also includes TWLTL and/or left-turn bays

Alternative 5: One-way Couplet (B)

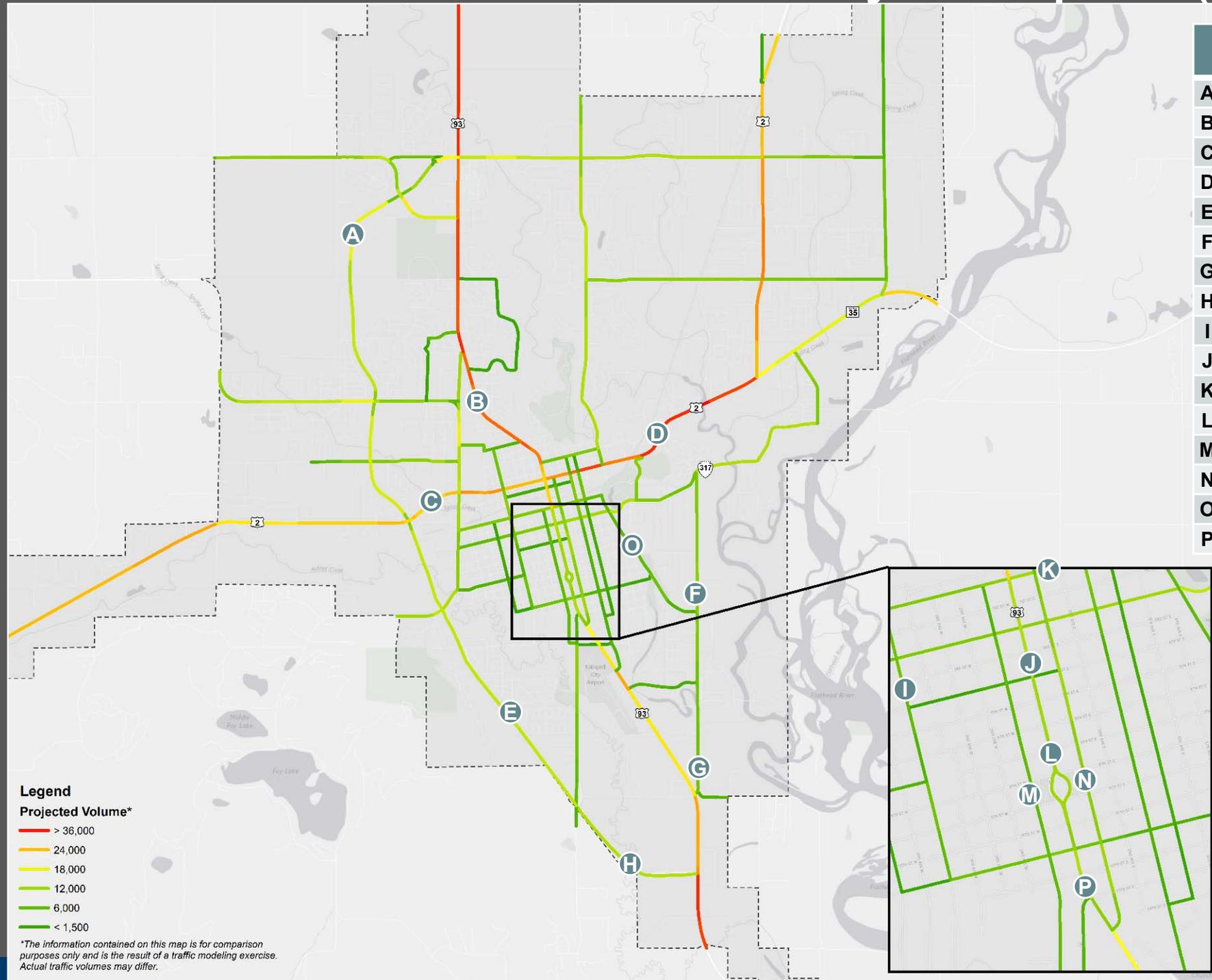
	Existing Volume	Projected Volume
A	-	17,400*
B	26,060	34,600
C	15,890	18,530
D	26,990	34,020
E	6,190	15,750
F	3,880	9,040
G	3,720	9,040
H	4,320	12,500
I	3,650	5,140
J	16,340	12,640
K	4,980	10,700
L	17,460	14,950
M	3,900	4,350
N	3,350	8,690
O	4,560	5,970
P	19,690	15,950

* Model Volume

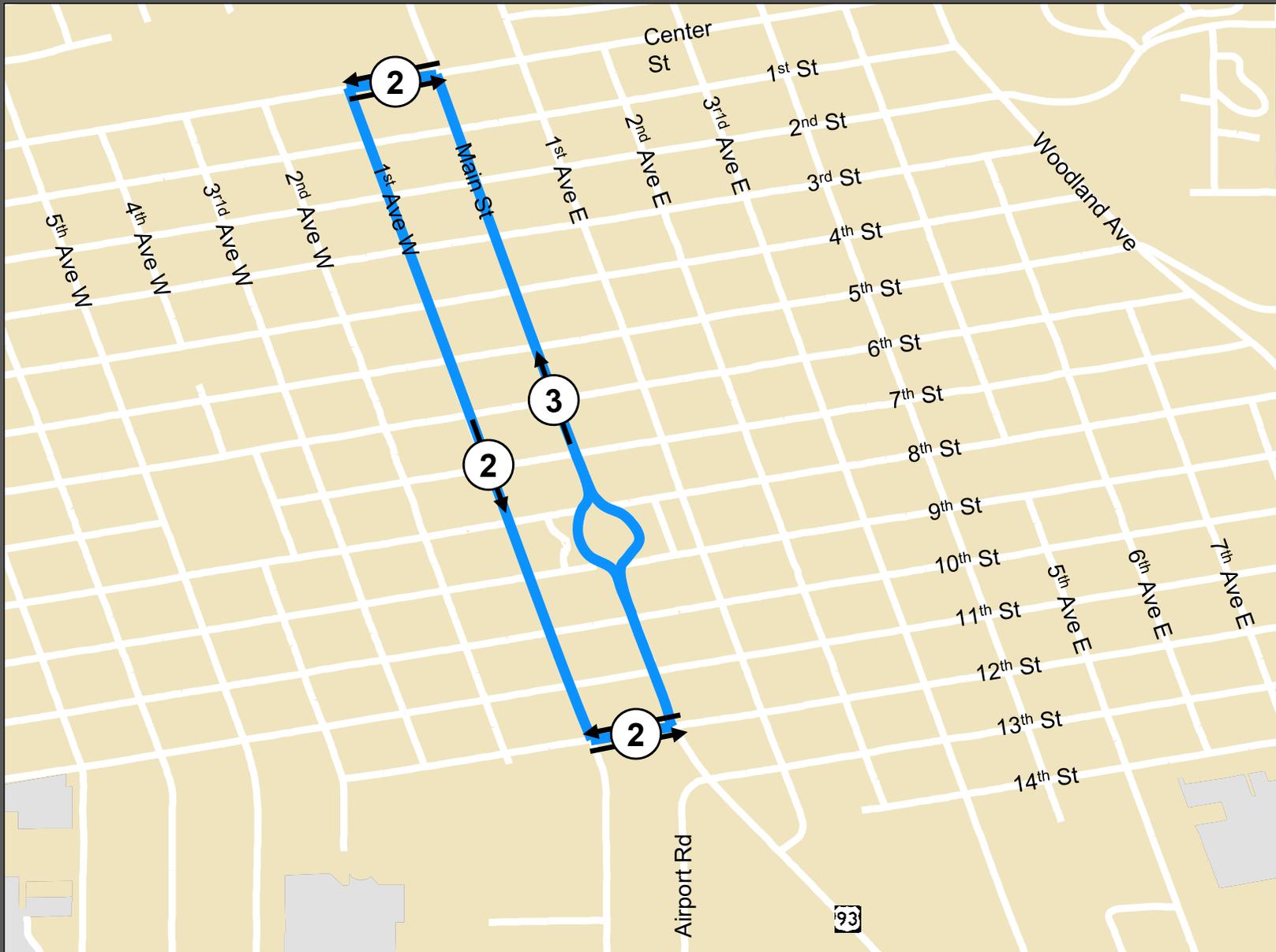
Legend

- Projected Volume*
- > 36,000
 - 24,000
 - 18,000
 - 12,000
 - 6,000
 - < 1,500

*The information contained on this map is for comparison purposes only and is the result of a traffic modeling exercise. Actual traffic volumes may differ.



Alternative 6: One-way Couplet (C)



Extent of proposed changes



Directions of travel and number of lanes



Kalispell city limits

*Also includes TWLTL and/or left-turn bays

Alternative 6: One-way Couplet (C)

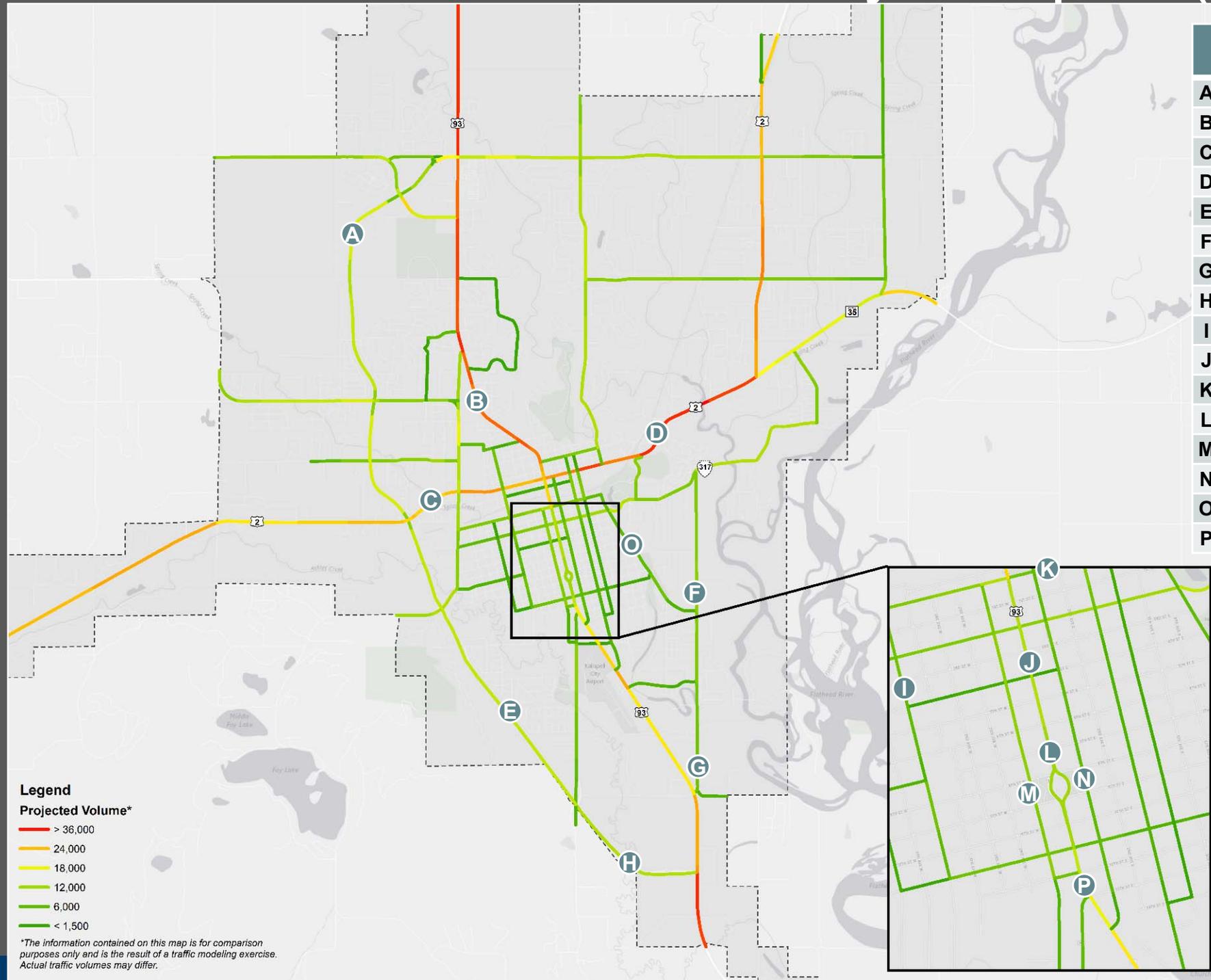
	Existing Volume	Projected Volume
A	-	16,980*
B	26,060	35,360
C	15,890	18,900
D	26,990	34,070
E	6,190	15,510
F	3,880	9,220
G	3,720	9,170
H	4,320	12,270
I	3,650	5,180
J	16,340	12,640
K	4,980	11,410
L	17,460	15,600
M	3,900	7,380
N	3,350	4,650
O	4,560	5,910
P	19,690	25,440

* Model Volume

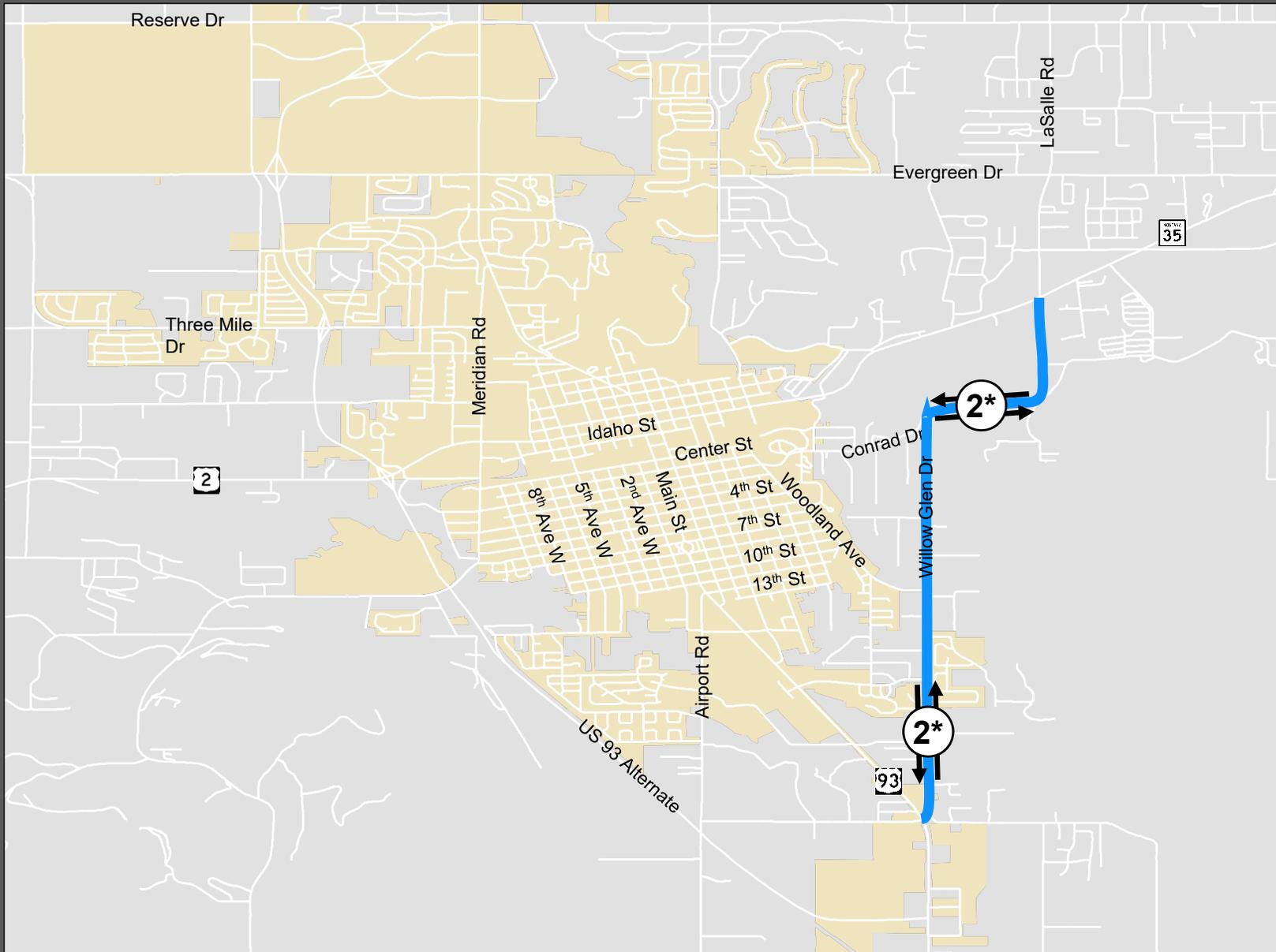
Legend

- Projected Volume***
- > 36,000
 - 24,000
 - 18,000
 - 12,000
 - 6,000
 - < 1,500

*The information contained on this map is for comparison purposes only and is the result of a traffic modeling exercise. Actual traffic volumes may differ.



Alternative 7: Willow Glen (A)



Extent of proposed changes



Directions of travel and number of lanes



Kalispell city limits

*Also includes TWLTL and/or left-turn bays

Alternative 7: Willow Glen (A)

	Existing Volume	Projected Volume
A	-	16,950*
B	26,060	33,940
C	15,890	18,440
D	26,990	29,880
E	6,190	15,180
F	3,880	13,930
G	3,720	11,800
H	4,320	11,850
I	3,650	4,670
J	16,340	17,000
K	4,980	10,900
L	17,460	17,880
M	3,900	4,320
N	3,350	4,290
O	4,560	5,480
P	19,690	23,200

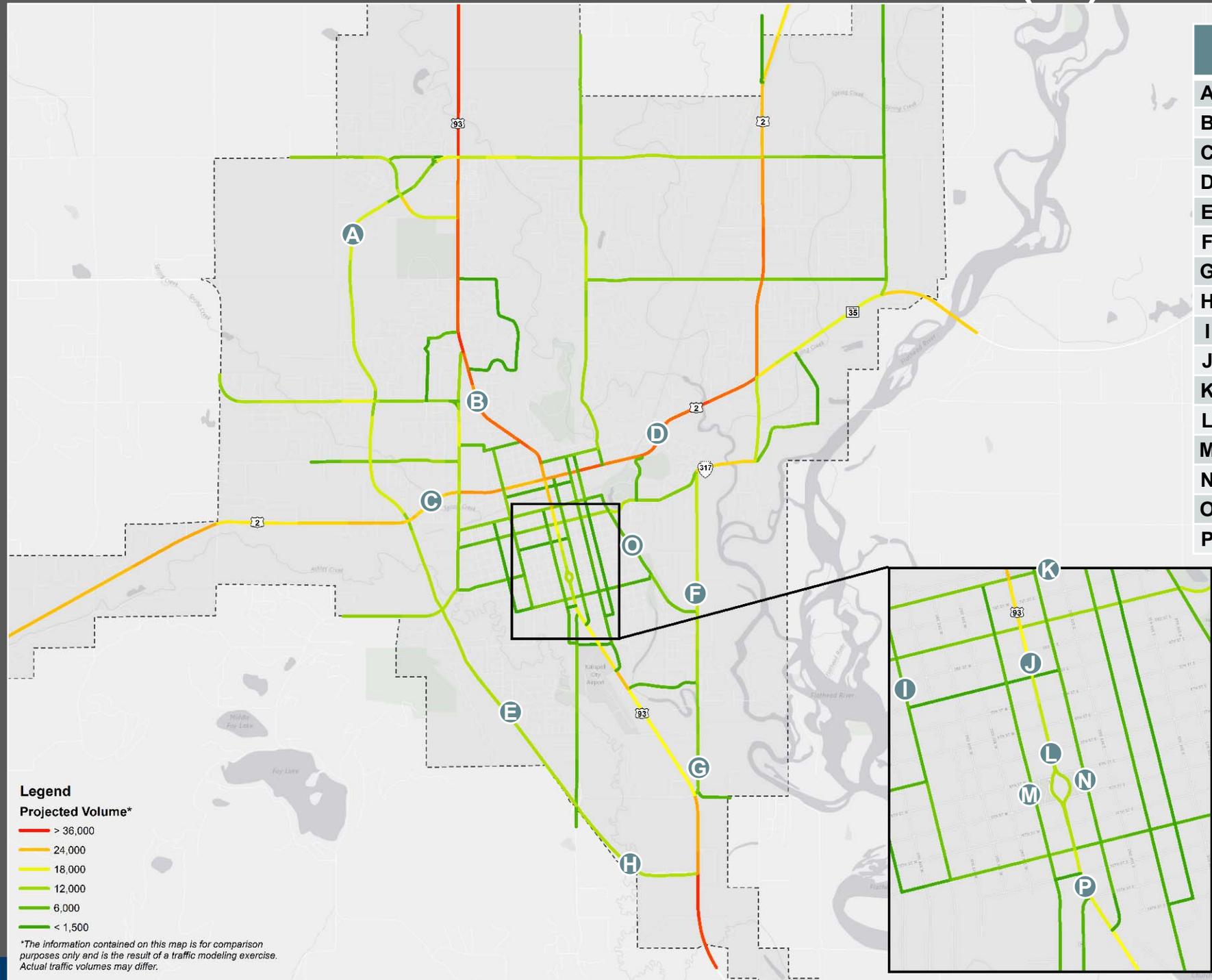
* Model Volume

Legend

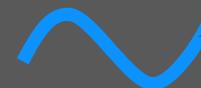
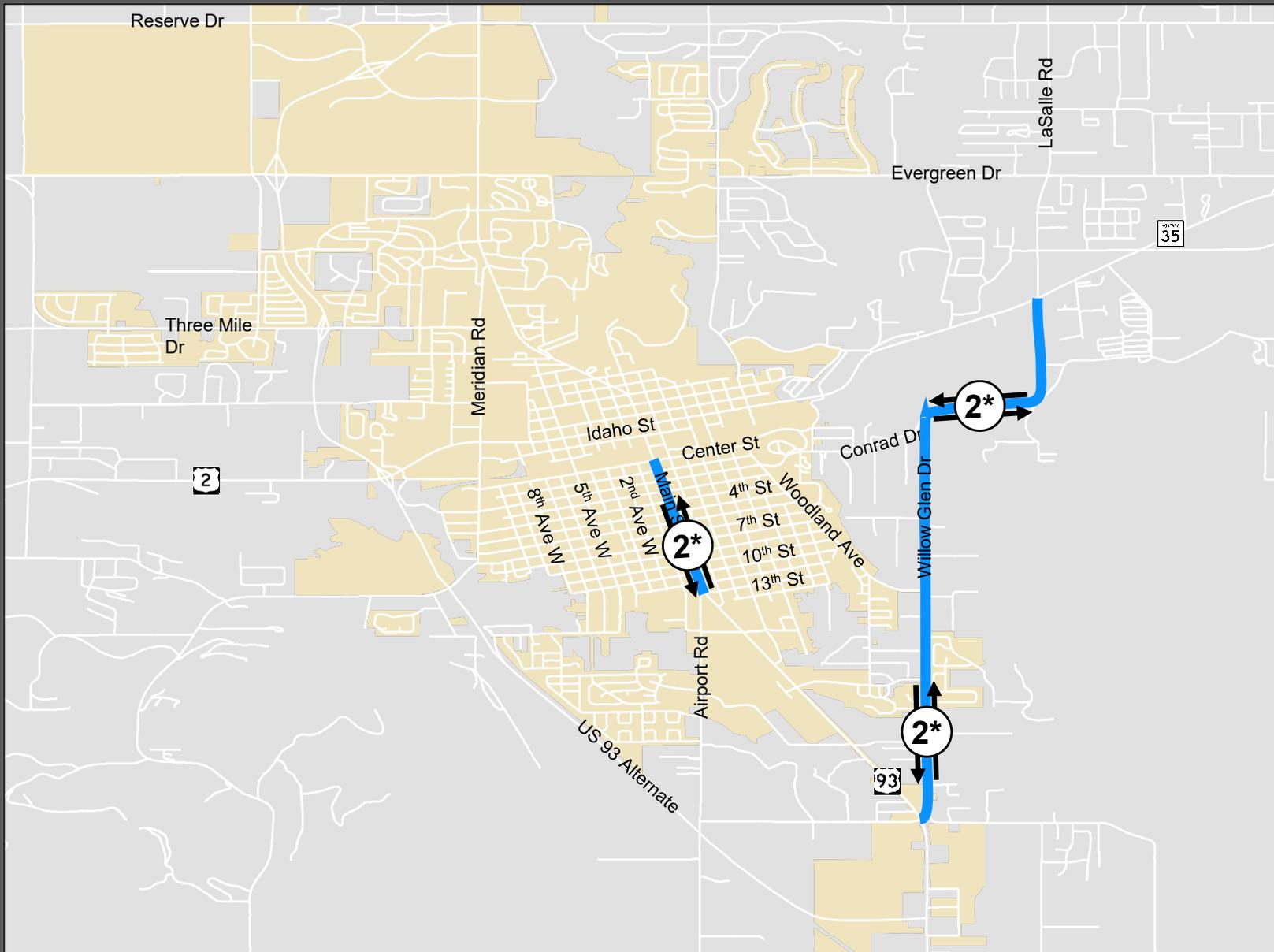
Projected Volume*

- > 36,000
- 24,000
- 18,000
- 12,000
- 6,000
- < 1,500

*The information contained on this map is for comparison purposes only and is the result of a traffic modeling exercise. Actual traffic volumes may differ.



Alternative 8: Willow Glen (B)



Extent of proposed changes



Directions of travel and number of lanes



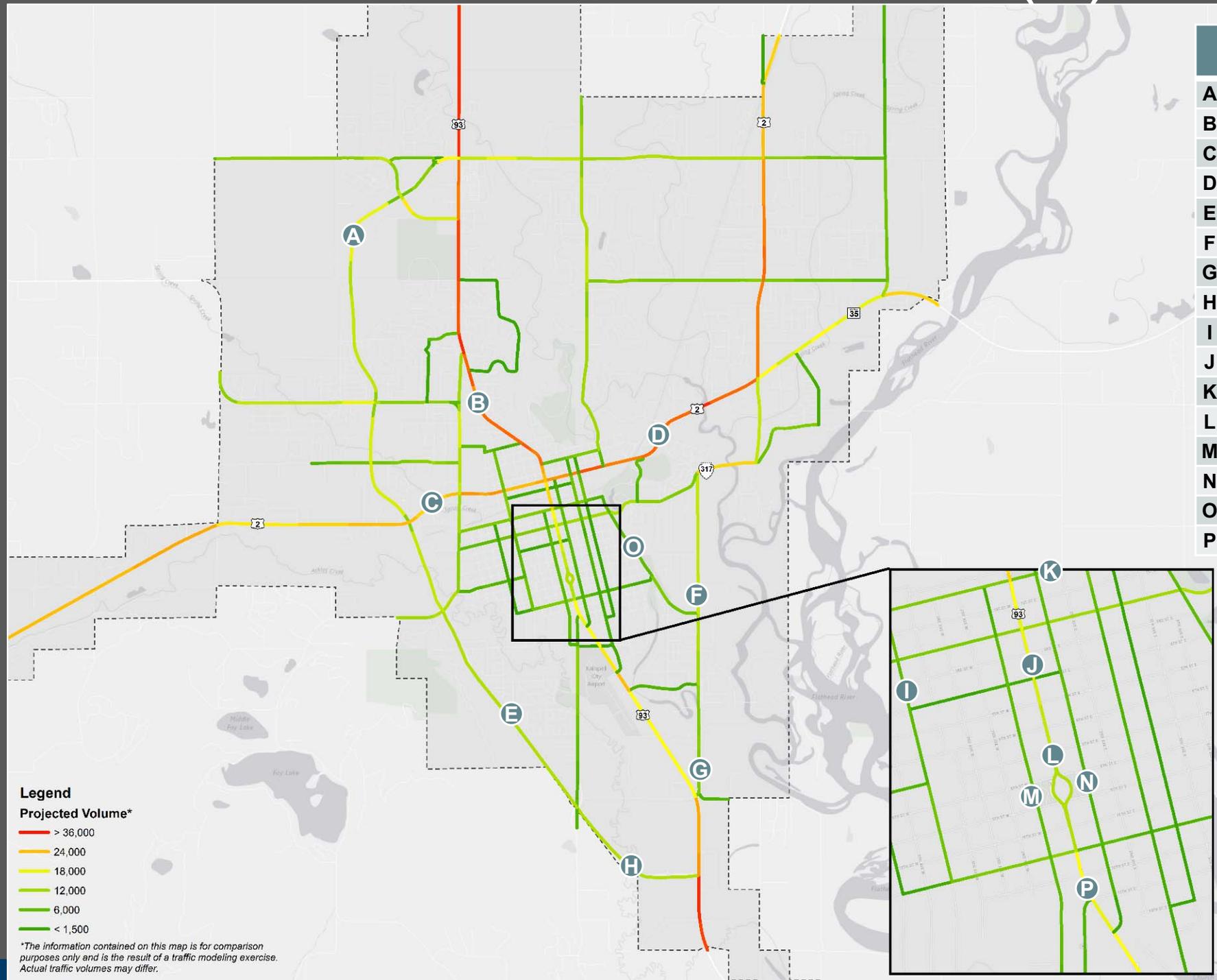
Kalispell city limits

*Also includes TWLTL and/or left-turn bays

Alternative 8: Willow Glen (B)

	Existing Volume	Projected Volume
A	-	17,240*
B	26,060	34,270
C	15,890	19,060
D	26,990	30,020
E	6,190	15,140
F	3,880	14,030
G	3,720	11,830
H	4,320	11,720
I	3,650	5,200
J	16,340	15,750
K	4,980	11,090
L	17,460	18,240
M	3,900	4,450
N	3,350	3,910
O	4,560	5,480
P	19,690	24,410

* Model Volume



Traffic Summary

Road	Location	2013 AADT	2040 Proj.*	2040 Projected AADT							
				Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8
Main St	S of 12th St	19,690	25,500	23,900	24,980	31,270	25,670	15,950	25,440	23,200	24,410
Main St	S of 7th St	17,460	22,620	18,010	18,410	28,390	18,540	14,950	15,600	17,880	18,240
Main St	N of 4th St	16,100	21,160	17,500	16,070	22,870	16,610	12,640	12,640	17,000	15,750
1st Ave E	S of 8th St	3,350	-	5,080	4,710	3,390	4,630	8,690	4,650	4,290	3,910
1st Ave W	N of 9th St	3,900	-	5,170	4,820	3,640	3,530	4,350	7,380	4,320	4,450
Kalispell Alt Rt	N of Airport Rd	6,190	-	15,590	15,570	15,280	15,560	15,750	15,510	15,180	15,140
Kalispell Alt Rt	N of 4 Mile Dr**	-	-	17,340	17,570	17,250	17,240	17,400	16,980	16,950	17,240
Willow Glen	N of Woodland Ave	3,880	-	8,680	9,050	9,110	9,210	9,040	9,220	13,930	14,030

*Based on 1.0% AAGR applied to 2013 AADT

**Model volume used

Conclusion and Next Steps

Next Steps

- **Receive Feedback on Analysis**
 - Narrow down alternatives
- **Funding Considerations**
 - Limitations of existing funding
 - Different funding programs
- **Draft Traffic Report**
 - Present to Elected Officials

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