

Meeting Summary

Date: May 9, 2025

29 Road Interchange at I-70, NEPA/1601 Project

Meeting Name: TAC Meeting #13a

Meeting Date: February 20, 2025

Attendees:

Invitee	Organization	Invitee	Organization
Kevin King	Mesa County	Melanie Bishop	FHU
Scott Mai	Mesa County	John Dibble	FHU
Daniel Larkin	Mesa County	Paul Brown	FHU
Laura Page	Mesa County	Cady Dawson	FHU
Trent Prall	Grand Junction	Alex Pulley	FHU
Eric Mocko	Grand Junction	Amanda Cushing	FHU
Ajin Hu	FHWA	Jason Huddle	CDOT
Dana Brosig	RTPO	Rob Beck	CDOT
Rachel Peterson	RTPO	Zane Znamenacek	CDOT
Troy Halouska	CDOT	Dave Cesark	CDOT
		Mark Bunnell	CDOT

Note: Not all details that were included in the presentation are shown in this summary, but comments and discussion brought up during the presentation are included; discussion is denoted as **blue** text. Data that was received following the meeting is denoted in **pink** text.

Meeting materials can be found at the end of this meeting summary.

Meeting Summary



Meeting Goal:

Present results requested in CDOT I-70 Workshop and present the results of the 29 Road and Patterson Road workshop.

Agenda:

Welcome and Introductions

FHWA Updates

- ▶ The FHWA Colorado Division has lost about half of its staff. It will take time for the remaining employees to adjust to the reduced staffing levels, get caught up, and respond to inquiries.

Project Status

- ▶ Moving forward despite the failed ballot measure in November 2024
- ▶ Working to gain CDOT and FHWA consensus
- ▶ Revising SLS for CDOT review and submittal to the Transportation Commission

CDOT Workshop Outcomes (October 2024)

- ▶ I-70 as a Local Road
 - ▶ **Perception:** 45% of I-70 trips are local trips (I-70 between 29 Road and Horizon Drive). Refer to TAC #1 and TAC #11.
 - ▶ **Conclusion:** About 20% of I-70 trips are local trips.
- ▶ I-70 as a Local Road: F½ Road
 - ▶ **Perception:** The F½ Road connection through Matchett Park would reduce I-70 local trips.
 - ▶ **Conclusion:** The F ½ Road connection has little effect on I-70 local trips (see meeting presentation).

Meeting Summary

- **Post-Meeting Question:** FHU received a question from CDOT regarding the statements above:

I have one issue with the meeting information and summary. As I stated in the TAC 13 meeting, the "45% of I-70 trips are local trips" that I discussed in the October 2024 meeting has been misrepresented in the TAC Mtg 13a meeting materials and subsequent summary. The 45% statistic is the average percentage of 1) traffic getting on at 29 Rd going westbound that will get off at Horizon Dr and 2) traffic getting on at Horizon Dr going eastbound that will get off at 29 Rd. The average includes the AM peak, PM peak, and daily volumes from the travel model. Below is the data and calculations from the SLS that support the 45% statistic.

I am not disputing the 20% statistic presented in the Meeting Materials; the 20% is a different statistic than what I focused on in the October 2024 meeting. I was focused on the traffic getting on at 29 Rd going westbound that would get off at Horizon Dr that is a major contributor to the LOS E / F on westbound I-70 in the 2045 AM Peak Hour. The calculations below show that in the year 2025 AM peak 58% (771 of 1,337 – highlighted in yellow) of the traffic getting on I-70 at 29 Rd going westbound will exit at Horizon Dr. If this 58% was not using I-70 as a local road (i.e. just traveling ~1.5 miles on I-70) would I-70 westbound not be congested (LOS D or better) in the 2045 AM peak hour? In the October 2024 meeting I chose to focus on the overall average of 45%, but I should have just focused on the 58% in the AM peak hour, because the AM peak congestion led to the project team proposing the auxiliary lane option which then creates the weaving issue on the I-70 curve just east of Horizon Dr. In summary, the 45% statistic is not a perception and the meeting information and summary should reflect this.

Meeting Summary

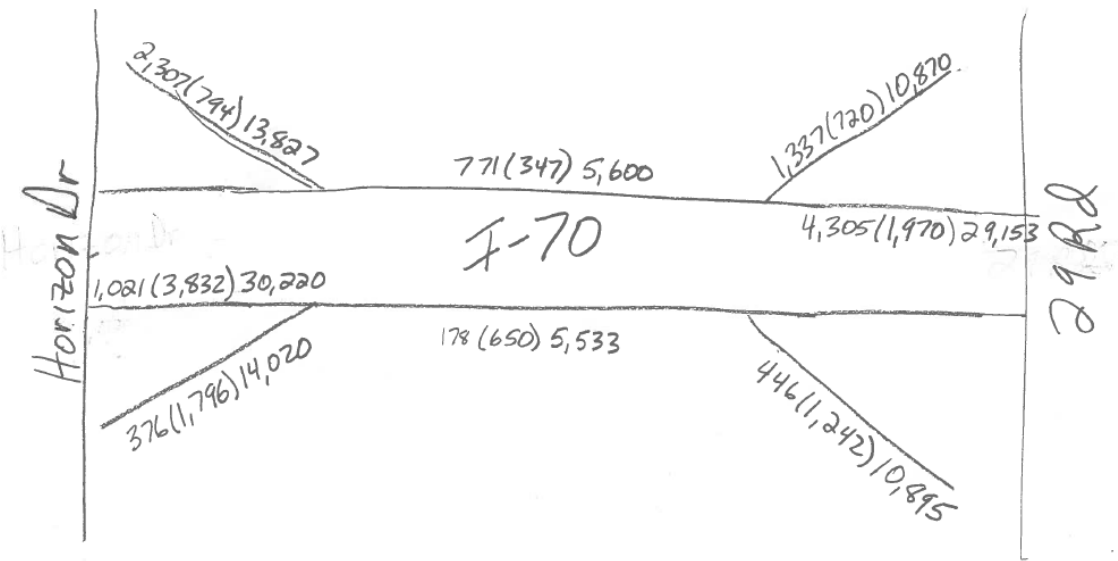


from: July 2024 System Level Study Appendix J (pdf pg # 1557)

	SLINK			Total Volumes			Percentage		
	AM	PM	Daily	AM	PM	Daily	AM	PM	Daily
Trips that will use I-70 between 29 Road and Horizon Drive									
Eastbound I-70	178	650	5,533						
Westbound I-70	771	347	5,600						
Total volumes									
Eastbound I-70				1,021	3,832	30,220	17%	17%	18%
Horizon Drive EB merge				376	1,796	14,020	47%	36%	39%
29 Road EB diverge				446	1,242	10,895	40%	52%	51%
Westbound I-70				4,305	1,970	29,153	18%	18%	19%
29 Road WB merge				1,337	720	10,870	58%	48%	52%
Horizon Drive WB diverge				2,307	794	13,827	33%	44%	41%

The overall average of these percentages is 45%

Traffic Volume Diagram



Post-Meeting Response: FHU and CDOT discussed the different percentages further. The following conclusions were reached:

The 45% number from TAC #1 and TAC #11 reflects the percent of traffic on the WB 29 Road entrance ramp that goes to the WB Horizon Drive exit ramp. This is a measure of **local traffic on the entrance ramp**.

The 20% number shared during this TAC meeting reflects the percent of traffic on I-70 (between the interchanges) that goes from the WB 29 Road entrance ramp to the Horizon Drive exit ramp. This measures **local traffic on I-70**.



Meeting Summary

Both metrics are important to members of the TAC as they make decisions about the project alternatives.

Future Congestion

- ▶ Options discussed:
 - ▶▶ Auxiliary Lane (preferred option in Draft SLS)
 - ▶▶ Collector-Distributor (C-D) Road
 - ▶▶ Braided Ramps
 - ▶▶ 6-lane I-70

Conclusion:

Scenario	15-minute periods and LOS D or worse	Location
Auxiliary Lane	1	West of Horizon Drive
C-D Road	2	Between Clifton and 29 Road
Braided Ramps	1	Between Clifton and 29 Road
	5	West of Horizon Drive
6-lane I-70	1	Between 29 Road and Horizon Drive

Question: Regarding the braided ramps, the five 15-minute periods for the freeway segment to the west of Horizon Drive. I'm intuitively struggling with how that makes sense.

Response: When we remove the level of service bottleneck between 29 Road and Horizon Drive by incorporating additional capacity, either with the braided ramps or the C-D Road, there is additional volume being attracted to I-70 within the travel demand model. With that additional demand on I-70, the freeway segment between Horizon Drive and west to 24 Road picks up additional traffic and it is pushing that level of service down from a LOS C to LOS D and possibly toward a LOS E (even though there is not a LOS E in our analysis).

Meeting Summary

I-70 may have 20 to 30 years of design life left as a four-lane facility.

It was mentioned during the workshop that there was a project at 24 Road that may load additional volume onto the freeway, and they were showing some potential freeway operational issues with a four-lane freeway as well.

This graphic shows the same result, just from a different perspective.

During the initial traffic analysis, one 15-minute period for the freeway segment between 29 Road and Horizon Drive was noted to operate poorly and the project team introduced an auxiliary lane as a mitigation. Since then, we've added other options to address this potential operational issue.

Action Item: FHU to review the LOS in terms of densities as it may be just enough change in density of a few tenths that it pushes it over the LOS threshold. This will be reviewed at the next TAC meeting.

Safety: I-70 Curve

- ▶ Changes from the CDOT workshop:
 - ▶▶ Widened inside shoulder: Reduced predicted crashes in HSS
 - ▶▶ Lowered speed limit: No HSS change, no CMF
 - ▶▶ Enhanced curve warning signage: No HSS change, used CMF
 - ▶▶ Moved interchange east: Increased crashes in HSS
- ▶ Overall Result
 - ▶▶ Moving the interchange east increases predicted crashes

Question: I assume that the freeway study limits will stay the same and that the interchange shifts to the east.

Response: Correct, we have the same HSS study area limits (west of Horizon Drive to east of Clifton) and we're moving this proposed interchange around within the study area limits.

Meeting Summary

There are forecasted to be approximately 55,000 vehicles per day on I-70 between Horizon Drive and 29 Road and approximately 35,000 vehicles per day between 29 Road and Clifton. It is simply a function of longer distance at higher volume means more predicted crashes.

Question: Did you calculate crash rates that consider distance?

Response: We did not prepare crash rates for this meeting, but we can calculate them.

Action Item: FHU to calculate crash rates and review at the next TAC meeting.

Post-Meeting Response: The calculated crash rates are shown below and will be shared at a future TAC meeting.

Scenario	Property Damage Only	Fatal and Serious Injury	Total
Auxiliary Lane	1.00	0.65	1.65
C-D Road	1.32	0.90	2.22
Braided Ramps	0.77	0.90	1.17
6-lane I-70	0.88	0.50	1.38

Safety: Overall Network

- ▶ Project Goal: No increase in severe crashes (fatal and serious Injury)

Scenario	Safety Goal Met?	
	Freeway	Network
Auxiliary Lane	No	No
C-D Road	Yes	---
Braided Ramps	Yes	---

Meeting Summary

6-lane I-70	Yes	Yes
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Post-Meeting Response: The table above has been updated with missing information and is presented below.

Scenario	Safety Goal Met?	
	Freeway	Network
Auxiliary Lane	No	No
C-D Road	Yes	No
Braided Ramps	Yes	Yes*
6-lane I-70	Yes	Yes

* - increases crashes in arterial network

Freeway Predicted Crashes (2045)

Scenario	Property Damage Only	Fatal and Serious Injury	Total
No Action	85	38	123
Auxiliary Lane	95	39	134
C-D Road	86	35	120
Braided Ramps	87	35	122
6-lane I-70	90	34	125

Meeting Summary

Study Area Predicated Crashes (2045)

Scenario	Property Damage Only	Fatal and Serious Injury	Total
No Action	147	68	215
Auxiliary Lane	166	71	237
C-D Road	---	---	---
Braided Ramps	---	---	---
6-lane I-70	162	66	228

Post-Meeting Response: The table above has been updated with missing information and is presented below.

Scenario	Property Damage Only	Fatal and Serious Injury	Total
No Action	147	68	215
Auxiliary Lane	166	71	237
C-D Road	159	68	227
Braided Ramps	149	65	214
6-lane I-70	162	66	228

Question: The study area includes Patterson Road and 29 Road, correct?

Response: The freeway safety analysis, like the traffic operations analysis, includes the I-70 study area from west of Horizon Drive to east of Clifton. The arterial network includes Patterson Road from 27½ Road to I-70B, 27½ Road from Horizon Drive to Patterson Road, 29 Road from I-70 to Patterson Road, 30 Road from G Road near the Canal to

Meeting Summary

Patterson Road, I-70B from I-70 to F Road (also known as Patterson Road), and F½ Road between 29 Road and I-70B.

Move Interchange to the east

- ▶ Re-evaluated one option previously not carried forward during Level 2 Screening
- ▶ Developed additional options
 - ▶▶ Four options & one sub-option
 - ▶▶ Used substation as eastern boundary
 - ▶▶ Included 550-foot Access Control Line to identify options

Question: On all of these options that are shifted to the east, what's the thought behind as one goes north on 29 Road, it curves to the left, crosses the canal, and then you have a wide curve to go back. Why not just go straight up 29 Road over the Canal and then curve to the proposed location of the ramps?

Response: It has to do with the design speed and sight distance, maintaining a perpendicular G Road connection, the issue of the skew between G Road and 29 Road, and the access to the existing houses and the potential of adding another canal bridge and/or possibly affecting the design speed.

Action Item: FHU to re-review the G Road skew and review at the next TAC meeting.

Question: What is the project team's recommendation?

Response: We do not currently have a recommendation and are simply providing the data for the TAC to review and weigh in.

Question: In looking at option 2B, how about eliminating G Road by adding a bridge and take it straight across to connect with 29 Road?

If it is outside of the Access Control Line. that would allow 29 Road to come up across the canal straight, and the intersection would not be required.

Meeting Summary

There would be another bridge to build, but a section of G Road would not have to be rebuilt.

Statement: To reiterate, CDOT's position for the interchange is to look at pushing it as far east as possible, meaning practical, feasible.

29 Road/Patterson Road Workshop Results (December 2024)

- ▶ Four concepts were presented
 - ▶▶ Traditional Intersection
 - ▶▶ Continuous Flow Intersection (CFI)
 - ▶▶ North-South Continuous Flow Intersection (NS CFI)
 - ▶▶ Quadrant Intersection
- ▶ **Traditional Intersection** to be included in the SLS
- ▶ Opportunities to improve during design
- ▶ Acceptable operations
- ▶ Lowest number of predicted crashes in HSS

General Questions:

Question: When going to the TC, will there be a funding plan in place by that time?

Response: It can be a high-level plan with a low level of detail. It will be included in the SLS.

Question: Has a cost benefit analysis been completed? It may be very helpful.

Response: A cost benefit analysis has not been completed. It is not required for the SLS but rather would be a requirement of some federal grant applications.

Action Items

Meeting Summary

- ▶ FHU to review the LOS in terms of densities as it may be just enough change in density of a few tenths that it pushes it over the LOS threshold. This will be reviewed at the next TAC meeting.
- ▶ FHU to calculate crash rates and review at the next TAC meeting.
 - ▶▶ This information has been added to these minutes as post-meeting follow-up. Refer to page 5.
- ▶ FHU to re-review the G Road skew and review at the next TAC meeting.

Next Steps

- ▶ Submit the SLS revised draft.
- ▶ Hold a follow-up TAC meeting.

Schedule

- ▶ The goal is to present at the Transportation Commission Workshop in May/June 2025.
- ▶ Complete NEPA Analysis/Design.
- ▶ RS/TC Determination (Air Quality) anticipated for Summer 2025.
- ▶ Initiate Interstate Access Request.

I-70 Interchange in Grand Junction – TAC Meeting #13a

February 20, 2025

Agenda

- ▶ Welcome and Introductions
- ▶ FHWA Updates
- ▶ CDOT Workshop Outcomes (October 2024)
- ▶ 29 Road/Patterson Road Workshop Results (December 2024)
- ▶ Next Steps
- ▶ Schedule

Meeting Goal:

Present results requested in CDOT I-70 Workshop



PRE-1601



1601/NEPA

**CURRENT PROCESS****GOAL:**

Is there a need for an interchange?

DETERMINATION OF NEED● **Traffic**

- Straight Model Results
- Freeway Analysis
- Select Limits/Select Grades
- Safety

● **Analysis Tools**

- MPO Model
- HCS (Freeway)

COMPLETED**LEVEL 1****SCREENING GOAL:**

29 Road or 30 Road?

EFFECTIVENESS & IMPACTS● **Traffic**

- Interchange Spacing
- Arterial Volume Changes
- Freeway LOS
- Activity Centers
- Land Use

● **Park-n-Ride/TDM**

- Roadway Plans
- Connectivity
- Planning History
- Activity Centers

● **Impacts**

- Community Context
- Access/Driveways
- Airport
- Historic
- Previous Public Involvement
- Planning History

● **Analysis Tools**

- MPO Model
- HCS (Freeway LOS)

COMPLETED**LEVEL 2****SCREENING GOAL:**Identify and Select Alignment and Interchange Configuration & Key Project Elements *(see next page for details)***IMPACTS**● **Traffic**

- Interchange Type (DDI, SPUI, Diamond)

● **Environmental**

- Noise
- Connectivity
- Biology
- Historic
- Air Quality

● **Roadway**

- 29 Road

● **Analysis Tools**

- Field Data
- CAP-X
- Crash Modification Factors (CMFs)

COMPLETED**LEVEL 3 ANALYSIS & REFINEMENT GOAL:**

CDOT 1601 Approval (including SLS) & FHWA IAR Approval

PREFERRED ALTERNATIVE EVALUATION● **Traffic**

- Operations
- Queuing
- Upstream/Downstream Interchange Effects
- Arterial Improvements

● **Safety**

- Safety Performance Functions (SPFs)

● **Multimodal**

- Accessibility

● **Guide Signing**

- Conceptual Plan

SUPPORTING ELEMENTS● **Traffic**

- I-70 Auxiliary Lane
- 29 Road
- Patterson Road

● **TDM**

- Park-n-Rides
- Bike Lanes
- Mobility Hubs

● **Environmental**

- Mitigation Commitments

● **Analysis Tools**

- Field Data
- Synchro / Rodel (arterials)
- HCS (Freeway)

- Level of Service (LOS)
- Diverging Diamond Interchange (DDI)
- Single-Point Urban Interchange (SPUI)

Ballot Measure

- ▶ Ballot Measure Failed
 - ▶ Results were 43.4% for / 56.6% against
 - ▶ About 86,500 votes cast
- ▶ City and County Pursuing Other Funding Options
 - ▶ Grants
 - ▶ Possible Future Ballot Measure

Project Status

- ▶ Working to gain CDOT and FHWA consensus
 - ▶ Developed option for 29 Road at Patterson Road Intersection
 - ▶ City and County Workshop
 - ▶ Revising SLS for CDOT review and submittal to Transportation Commission
 - ▶ TC Workshop in May/June
- 

CDOT Workshop Outcomes

Workshop

- ▶ Goal was to review and discuss a wide range of options for I-70 operations and safety in Grand Junction
 - ▶ Focus on 29 Road Interchange area
- ▶ Meeting held at CDOT Region 3 offices on October 28, 2024
- ▶ Led by CDOT staff
- ▶ Attended by CDOT, FHWA, City, County, MPO, and FHU

Workshop Option Matrix

I-70 'Local Road' (45% of trips)	I-70 Congestion	Auxiliary Lane	I-70 Curve
Toll 1-interchange trips	Accept as forecasted	Push out 10 to 15 years	Collector / Distributor Road
Auxiliary Road / Frontage Road	6-lane I-70 (22 Road to Clifton) in the future		Braided Ramp
F1½ Road through Matchett Park to Cortland Avenue (1 mile x \$6m / mile)			Flatten I-70 Curve
			Widen Shoulder
			Solid lane striping to discourage lane changes in curve
			Shift interchange to the east (~1,200 to 1,500 feet)
			Lower speed limit to 65 mph (22 Road to Clifton)

Options to be Further Pursued

The solutions that are highlighted were chosen to be reviewed under a new safety analysis.

I-70 'Local Road' (45% of trips)	I-70 Congestion	Auxiliary Lane	I-70 Curve
Toll 1-interchange trips	Accept as forecasted	Push out 10 to 15 years	Collector / Distributor Road
Auxiliary Road / Frontage Road	6-lane I-70 (22 Road to Clifton) in the future		Braided Ramp
F ¹ / ₂ Road through Matchett Park to Cortland Avenue (1 mile x \$6m / mile)			Flatten I-70 Curve
			Widen Shoulder
			Solid lane striping to discourage lane changes in curve
			Shift interchange to east (1,200 to 1,500 feet)
			Lower speed limit to 65 mph (22 Road to Clifton)

CDOT Workshop Follow-Up

- ▶ I-70 as a Local Road
 - ▶ Future Congestion
 - ▶ Safety: I-70 Curve
 - ▶ Safety: Overall Network
- 

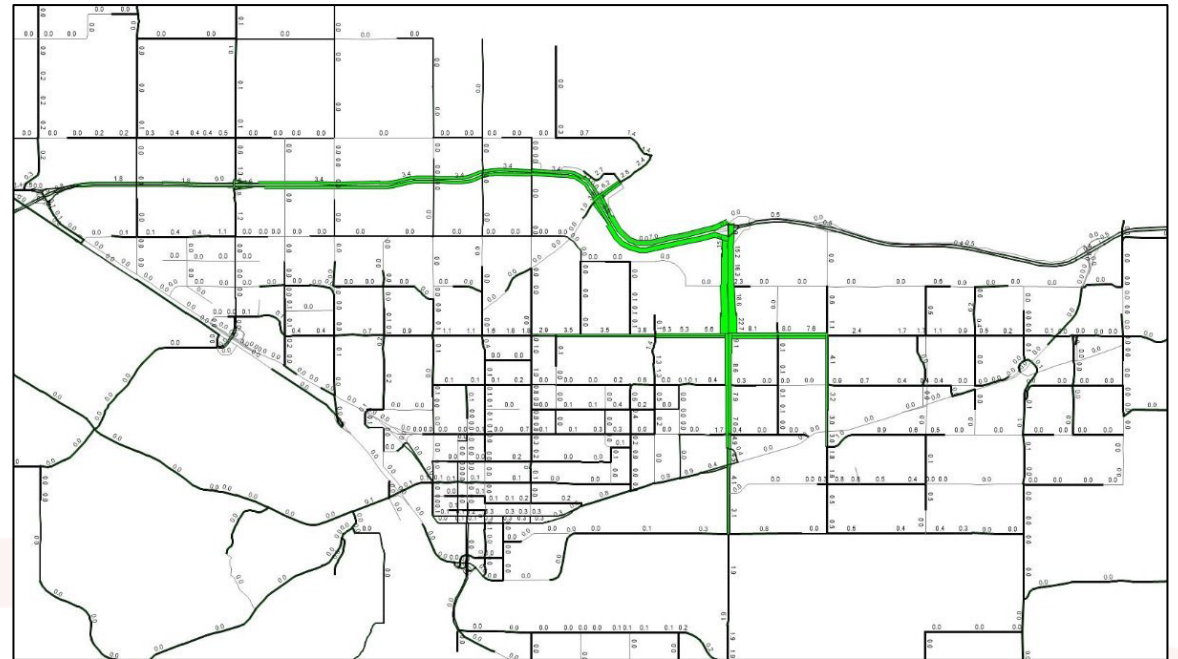
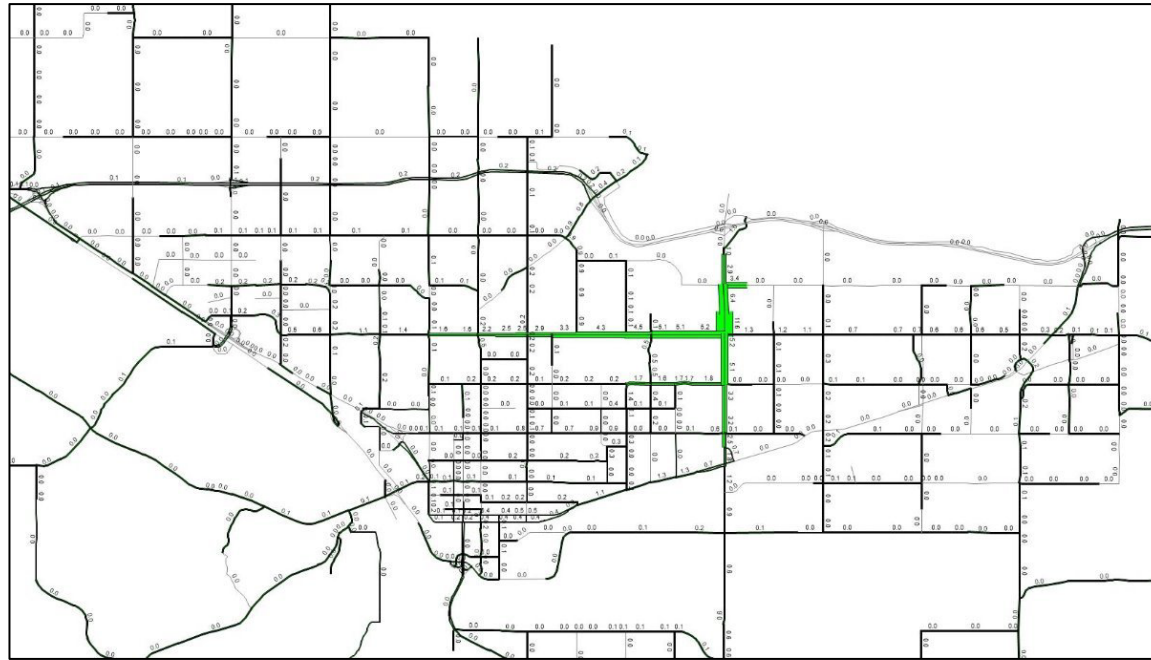
CDOT Workshop Follow-Up

- ▶ *I-70 as a Local Road*
 - ▶ Future Congestion
 - ▶ Safety: I-70 Curve
 - ▶ Safety: Overall Network

I-70 as a Local Road: Volumes

- ▶ Perception:
 - ▶ 45% of I-70 trips are short trips (I-70 between 29 Road and Horizon Drive)
 - ▶ Refer to TAC #1 & TAC #11
- ▶ Model results:
 - ▶ 45% is on 29 Road north of Patterson Road
 - ▶ TAC slides do not reflect all I-70 volumes
 - ▶ I-70 select link analyses (2045)
 - ▶ No Action – 22% short trips (between Horizon Drive & Clifton)
 - ▶ Build – 19% short trips (between Horizon Drive & 29 Road)
- ▶ Conclusion:
 - ▶ About 20% of I-70 trips are short trips

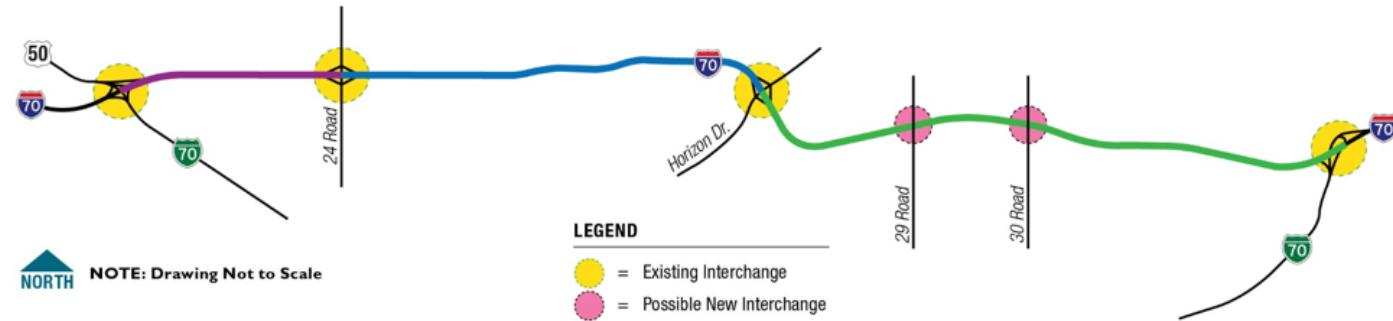
I-70 as a Local Road: Volumes



I-70 as a Local Road: F½ Road

- ▶ Perception:
 - ▶ F ½ Road connection through Matchett Park would reduce I-70 “local trips”
- ▶ Model Results:
 - ▶ 3% reduction
 - ▶ Initial screening, shown in TAC Meeting #2
 - ▶ Connection is not in fiscally constrained network
- ▶ Conclusion:
 - ▶ The F ½ Road Connection has little effect on I-70 local trips.

I-70 as a Local Road: F½ Road



		I-70								
Year	Scenario	I-70B / US 6 / US 50 Interchange	I-70 mainline	24 Rd Interchange	I-70 mainline	Horizon Drive Interchange	I-70 mainline	New Interchange	I-70 mainline	I-70B / Clifton Interchange
2018	Base Model	17,590	11,720	8,380	17,290	20,230	23,860	-	23,860	18,720
	Forecast Model	30,400	27,420	27,970	36,730	35,660	44,200	-	44,200	31,840
2045	29 Rd Interchange	-1%	5%	3%	16%	10%	32%	21,664	-10%	-12%
	30 Rd Interchange	-1%	2%	3%	12%	7%	23%	18,544	-17%	-19%
	North Frontage Road	-7%	-1%	-8%	-3%	-3%	-5%	-	-5%	-5%
	F1/2 Road Connection	0%	1%	-1%	0%	-1%	-3%	-	-3%	-3%

CDOT Workshop Follow-Up

- ▶ I-70 as a Local Road
 - ▶ *Future Congestion*
 - ▶ Safety: I-70 Curve
 - ▶ Safety: Overall Network
- 

Future Congestion

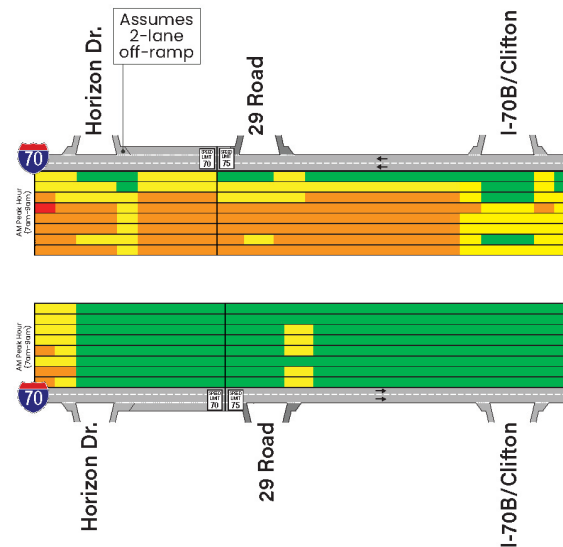
- ▶ Options discussed:
 - ▶ Auxiliary Lane (preferred option in Draft SLS)
 - ▶ C-D Road
 - ▶ Braided Ramps
 - ▶ 6-lane I-70
- ▶ Traffic operations have been evaluated
 - ▶ HCS, consistent with previous analyses
 - ▶ Volumes for new options updated with recent model runs

Future Congestion: Auxiliary Lane

- ▶ Presented in TAC # 11
 - ▶ Also discussed during CDOT Workshop
- ▶ Acceptable operations (LOS D or better)

2045 with 29 Road and Aux Lane

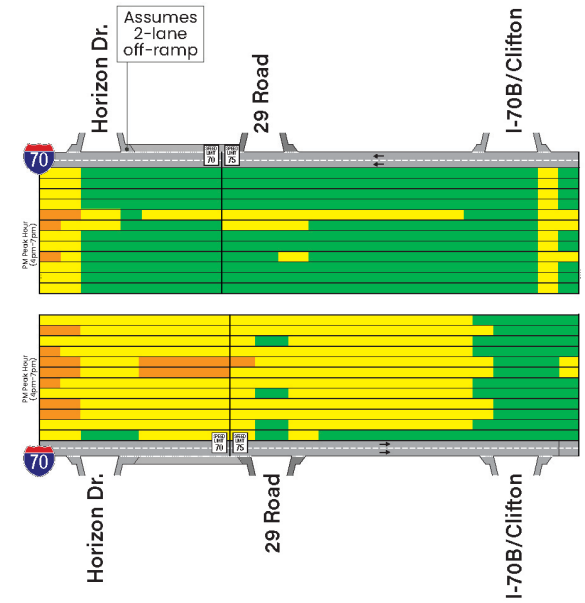
WESTBOUND AM



EASTBOUND AM

2045 with 29 Road and Aux Lane

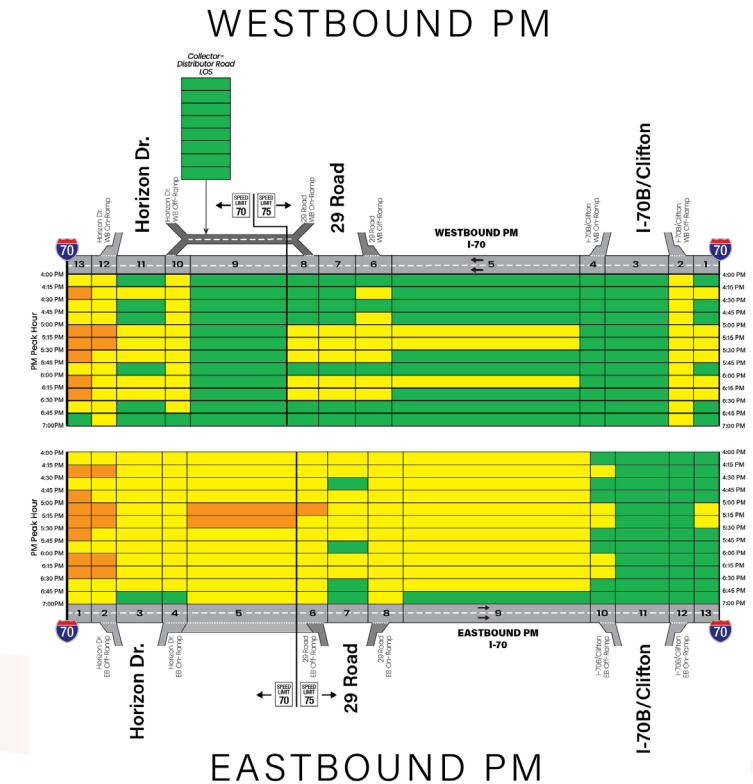
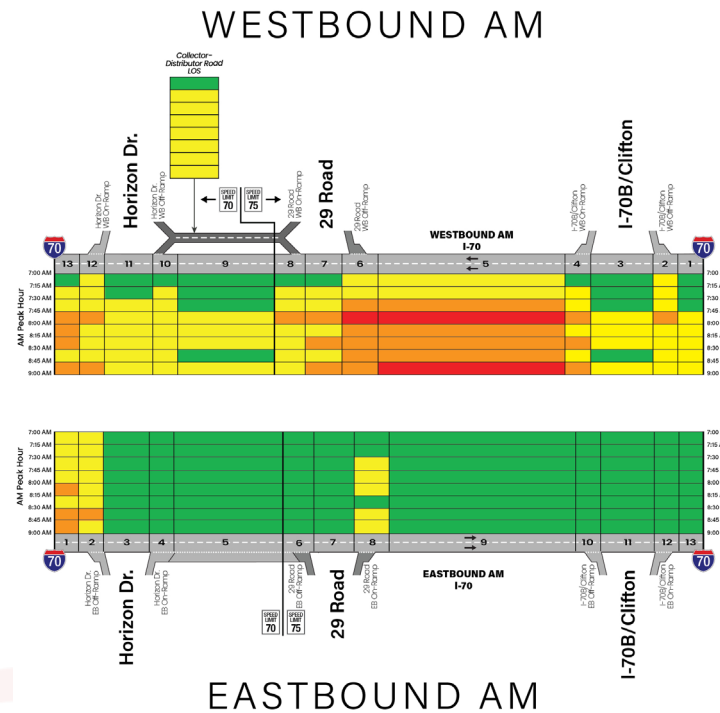
WESTBOUND PM



EASTBOUND PM

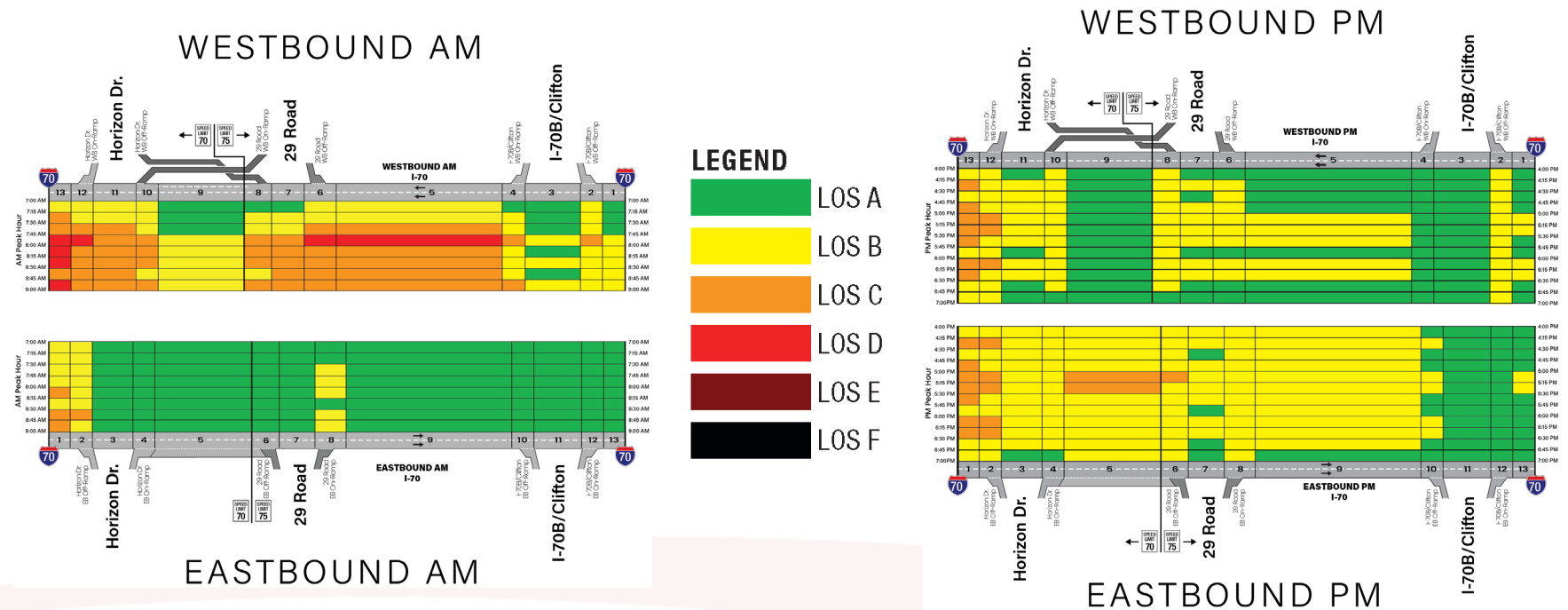
Future Congestion: C-D Road

- ▶ New Analysis
 - ▶ Westbound Only
 - ▶ Lower mainline volumes in curve
- ▶ Acceptable operations (LOS D or better)



Future Congestion: Braided Ramps

- ▶ New Analysis
 - ▶ Westbound Only
 - ▶ Lower freeway volumes in the curve
- ▶ Acceptable operations (LOS D or better)

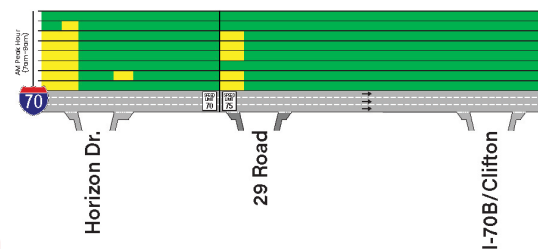
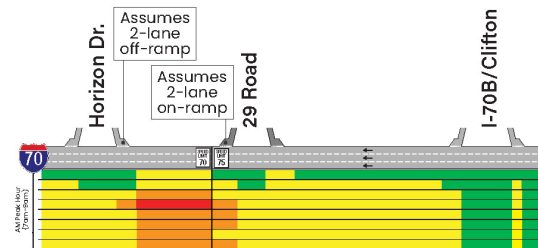


Future Congestion: 6-Lane I-70

- ▶ Presented in TAC # 11
 - ▶ Also discussed during CDOT Workshop
 - ▶ Much larger improvement area
- ▶ Acceptable operations (LOS D or better)

2045 with 29 Road and 6 Lane
(No Aux Lane)

WESTBOUND AM



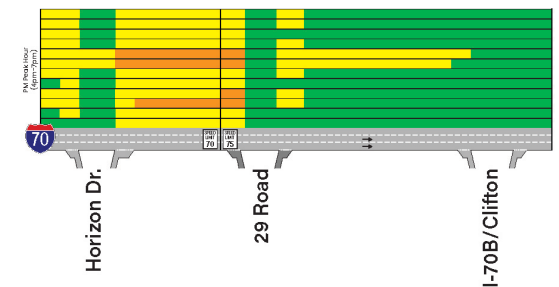
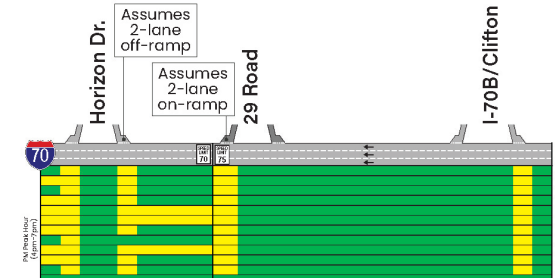
EASTBOUND AM

LEGEND



2045 with 29 Road and 6 Lane
(No Aux Lane)

WESTBOUND PM



EASTBOUND PM

Future Congestion: *Conclusion*

- ▶ All options provide acceptable freeway operations
- ▶ The C-D road and braided ramp scenarios reduce volumes through the curve
- ▶ The 6-lane scenario adds capacity through the Grand Valley

Scenario	15-minute periods at LOS D or worse	Location(s)
Auxiliary Lane	1	West of Horizon Drive
C-D Road	2	Between Clifton and 29 Road
Braided Ramps	1	Between Clifton and 29 Road
	5	West of Horizon Drive
6-lane I-70	1	Between 29 Road and Horizon Drive

CDOT Workshop Follow-Up

- ▶ I-70 as a Local Road
 - ▶ Future Congestion
 - ▶ *Safety: I-70 Curve*
 - ▶ Safety: Overall Network
- 

Safety: I-70 Curve

- ▶ Changes from the CDOT workshop:
 - ▶ Widened inside shoulder: Reduced predicted crashes in HSS
 - ▶ Lowered speed limit: No HSS change, no CMF
 - ▶ Enhanced curve warning signage: No HSS change, used CMF
 - ▶ Moved interchange east: Increased crashes in HSS
- ▶ Overall Result
 - ▶ Moving the interchange east increases predicted crashes

Safety: I-70 Curve

Freeway Predicted Crashes (2045)

Scenario	Property Damage Only	Fatal and Serious Injury	Total
Westernmost	63.1	33.5	96.6
West	63.6	33.7	97.3
East	63.9	33.8	97.7
Easternmost	64.2	33.9	98.1

CDOT Workshop Follow-Up

- ▶ I-70 as a Local Road
 - ▶ Future Congestion
 - ▶ Safety: I-70 Curve
 - ▶ *Safety: Overall Network*
- 

Safety: Overall Network

- ▶ Adding interchange increases predicted crashes
 - ▶ More conflict points
 - ▶ Longer / wider 29 Road
- ▶ Project Goal:
 - ▶ No increase in severe crashes (fatal and Injury)

Scenario	Safety Goal Met	
	Freeway	Network
Auxiliary Lanes	No	No
C-D Road	Yes	--
Braided Ramps	Yes	--
6-Lane I-70	Yes	Yes

Safety:
Overall
Network

Freeway Predicted Crashes (2045)

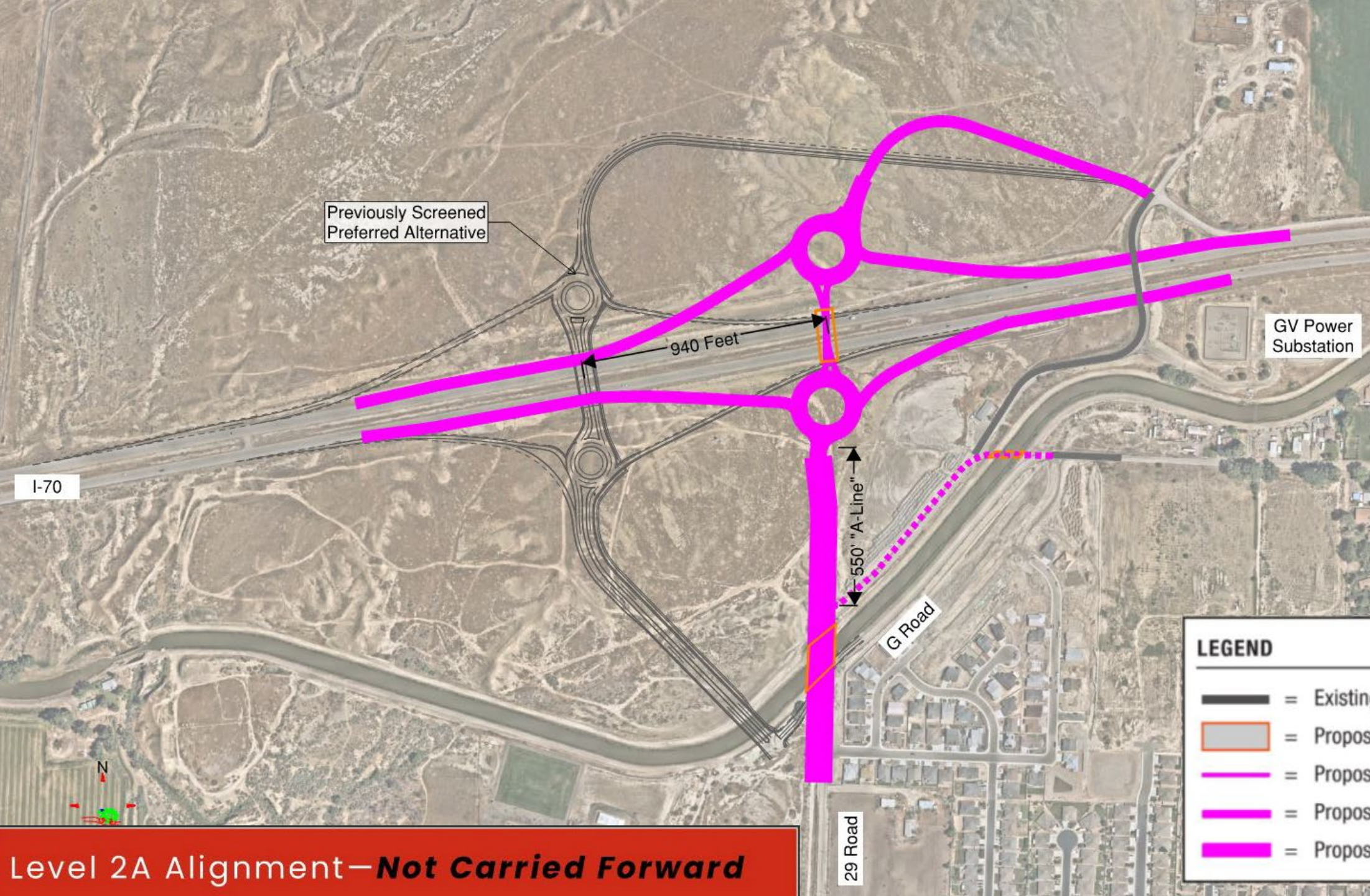
Scenario	Property Damage Only	Fatal and Serious Injury	Total
No Action	85	38	123
Auxiliary Lanes	95	39	134
C-D Road	86	35	120
Braided Ramps	87	35	122
6-Lane I-70	90	34	125

Study Area Predicted Crashes (2045)

Scenario	Property Damage Only	Fatal and Serious Injury	Total
No Action	147	68	215
Auxiliary Lanes	166	71	237
C-D Road	---	---	---
Braided Ramps	---	---	---
6-Lane I-70	162	66	228

Move Interchange to the East

- ▶ Re-evaluated one option previously not carried forward during Level 2 Screening
- ▶ Developed additional options
 - ▶ Four options & one sub-option
 - ▶ Used substation as eastern boundary
 - ▶ Included 550-foot Access Control Line to identify options



TAC #7

LEGEND

	= Existing Roads
	= Proposed Bridge
	= Proposed Ramps
	= Proposed 2 Lane Road
	= Proposed 4 Lane Arterial

Level 2A Alignment—**Not Carried Forward**

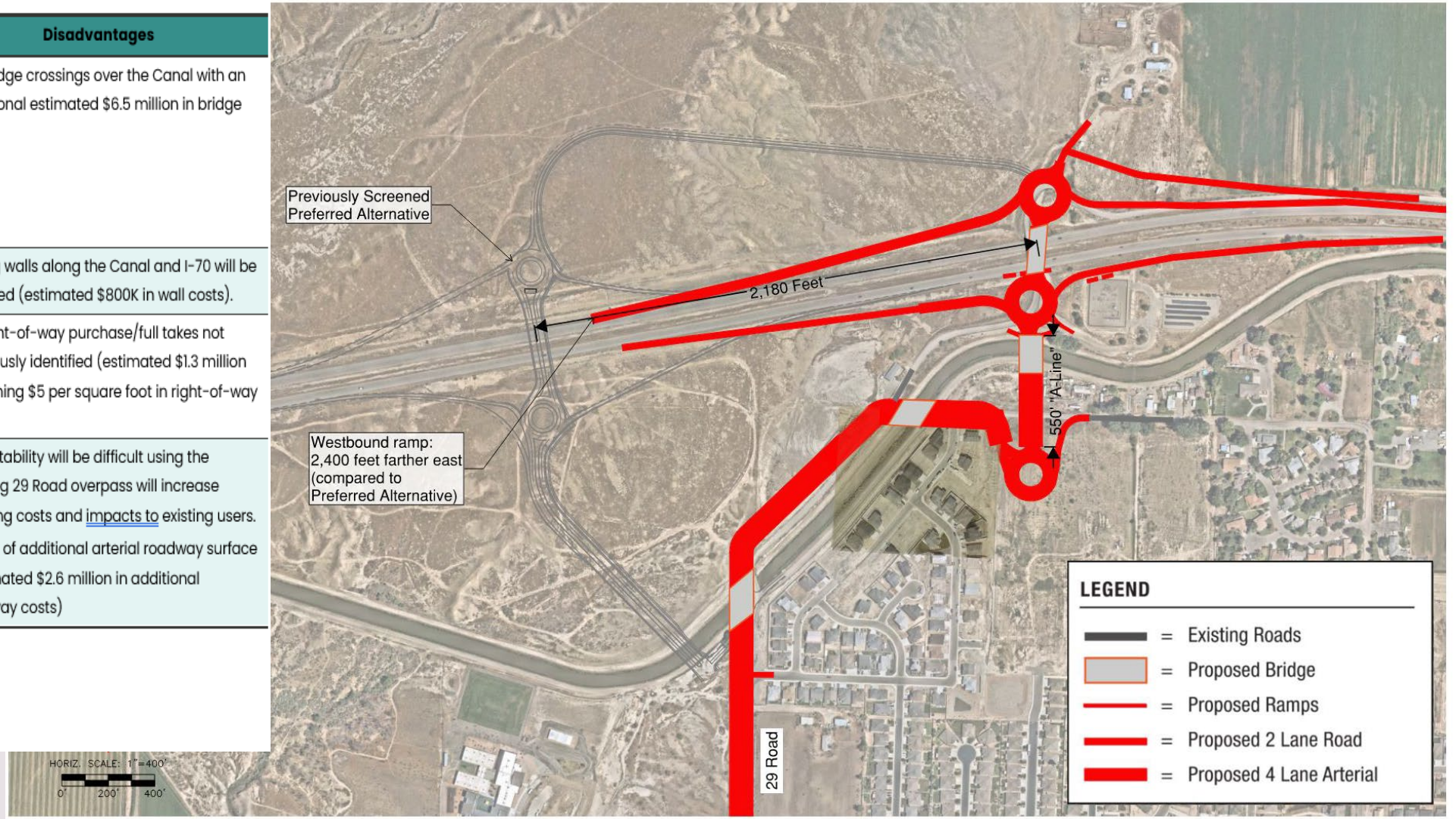
Table 1. Conceptual Layout Option 1 – Far East Roundabout
North-South Alignment

Advantages	Disadvantages
Westbound ramp is 2,400 feet farther east of Horizon Drive compared to the preferred alternative. Westbound 29 Road on-ramp to Horizon off-ramp: 6,500 feet Eastbound Horizon Drive on-ramp to 29 Road off-ramp: 6,600 feet	Three bridge crossings over the Canal with an additional estimated \$6.5 million in bridge costs.
Roundabout geometry is better for approach angles. ¹	Retaining walls along the Canal and I-70 will be required (estimated \$800K in wall costs).
More contiguous developable land between Canal and I-70 as well as to the north of I-70. ²	Large right-of-way purchase/full takes not previously identified (estimated \$1.3 million assuming \$5 per square foot in right-of-way costs)
Does not impact homeowner at 705 29 Road.	Constructability will be difficult using the existing 29 Road overpass will increase phasing costs and <u>impacts to existing users</u> . 1,000 feet of additional arterial roadway surface (estimated \$2.6 million in additional roadway costs)

Notes:

1. Compared to Options 2 and 2B
2. Compared to the preferred alternative

Conceptual Layout Option 1 - Far East Roundabout - NS Alignment



Option 1

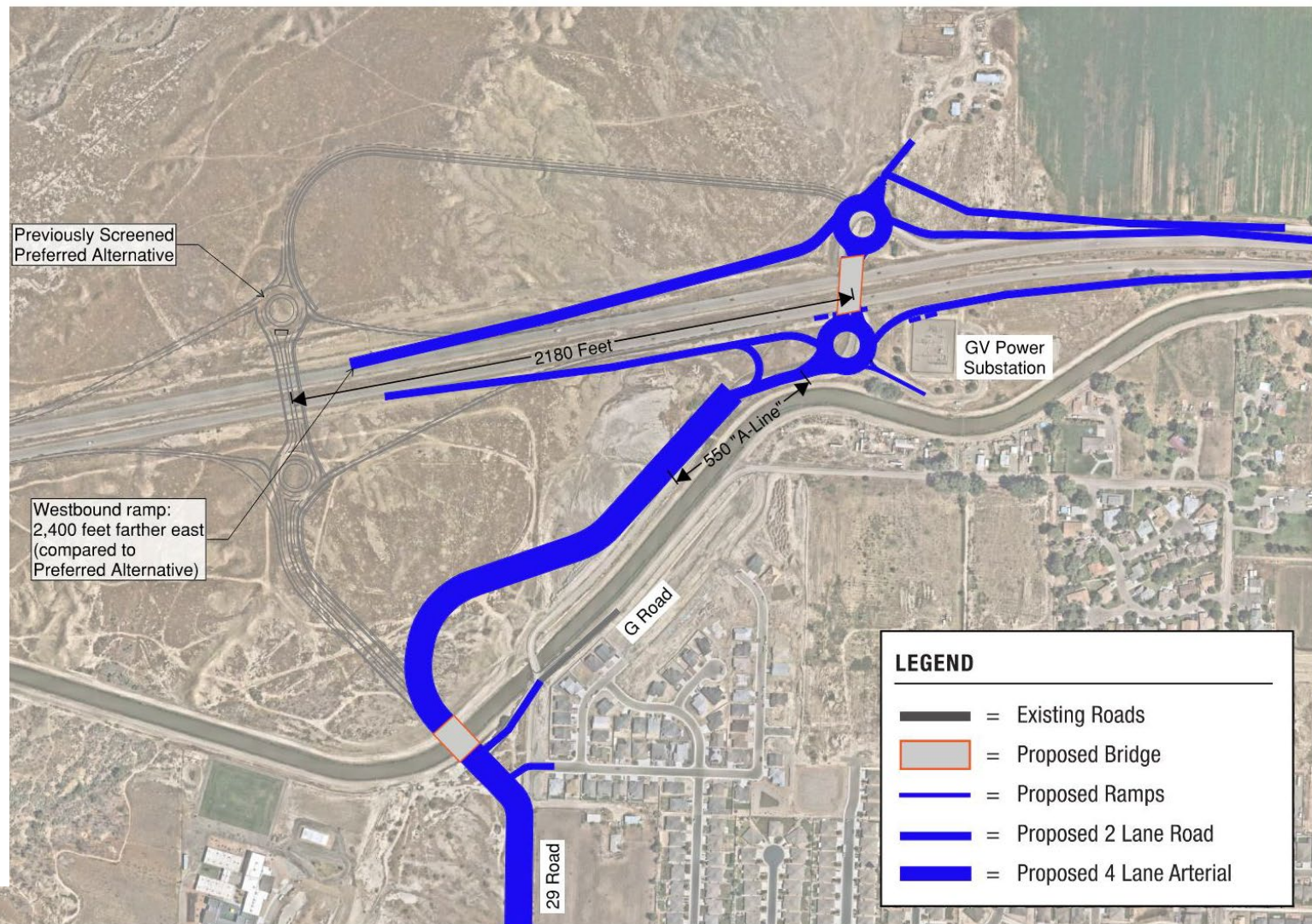
Table 2. Conceptual Layout Option 2 – Far East Roundabout – Existing Alignment

Advantages	Disadvantages
- Westbound ramp is 2,400 feet farther east from Horizon Drive when compared to the preferred alternative. - Westbound 29 Road on-ramp to Horizon Drive off-ramp: 6,500 feet - Eastbound Horizon Drive on-ramp to 29 Road off-ramp: 6,600 feet	Roundabout geometry is tight and may not be best for optimal path (further analysis and design required).
- More contiguous developable land between the Canal and I-70 as well as to the north of I-70.¹ - Opportunity for easily accessible Park-N-Ride on the south side of I-70	- Retaining walls along <u>I-70</u> required (estimated \$560K in wall costs) - Skewed bridge results in slightly higher cost (estimated \$100K). - Impacts homeowner at 705 29 Road and requires relocation (estimated \$1.3 million assuming \$5 per square foot in right-of-way costs) 900 feet of additional arterial roadway surface (estimated \$2.3 million in additional roadway costs)

Notes:

- Compared to the preferred alternative

Conceptual Layout Option 2 - Far East Roundabout - Existing Alignment



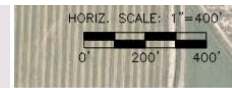
Option 2

Option 2B - Existing Alignment Skewed

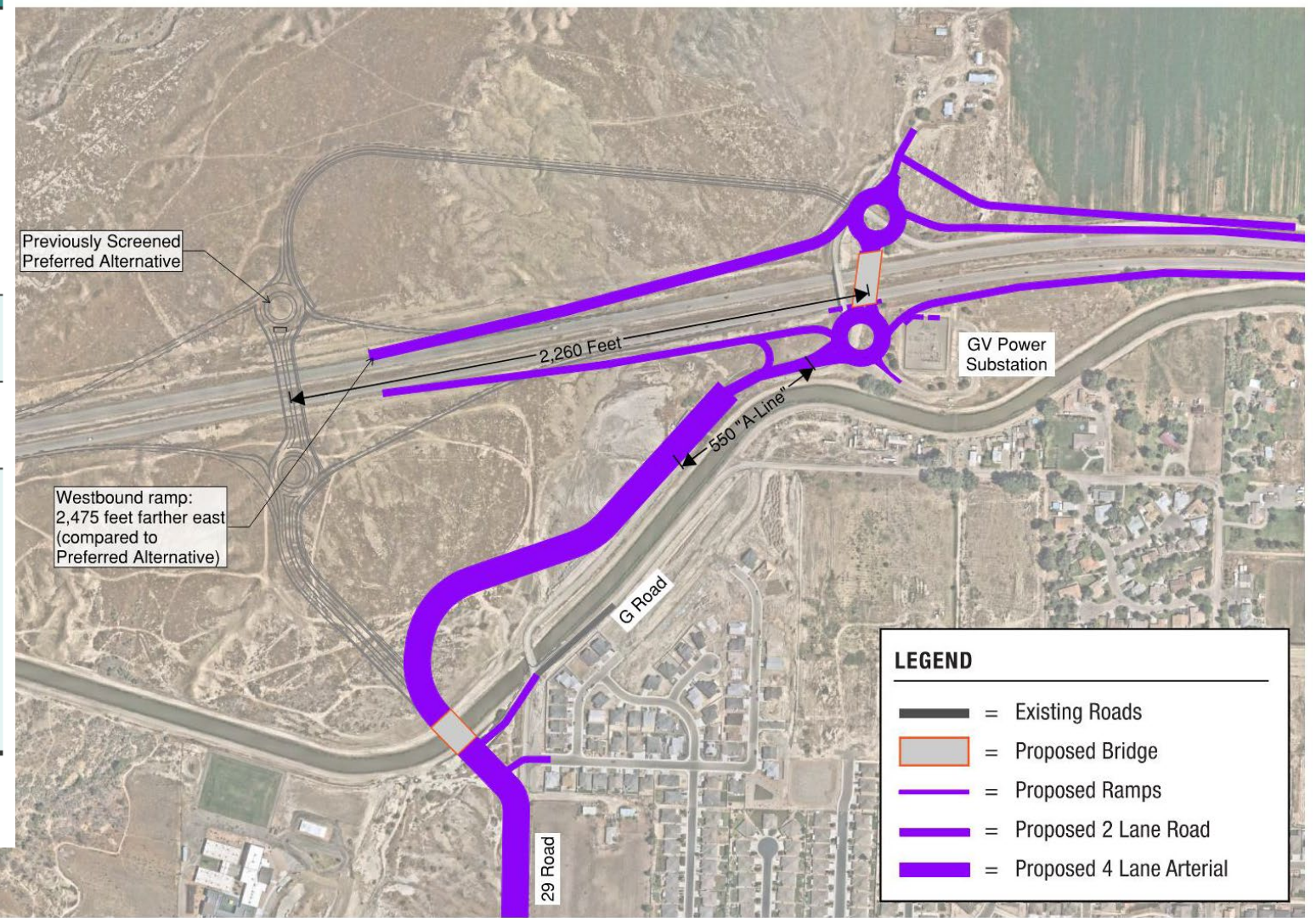
Advantages	Disadvantages
Westbound ramp is 2,475 feet farther east from Horizon Drive when compared to the preferred alternative. Westbound 29 Road on-ramp to Horizon Drive off-ramp: 6,575 feet Eastbound Horizon Drive on-ramp to 29 Road off-ramp: 6,675 feet	Roundabout geometry is tight and may not be best for optimal path; however, the geometry is better than that of Option 2 (requires further analysis and design).
More contiguous developable land between the Canal and I-70 as well as to the north of I-70. ¹	Retaining walls along I-70 required (estimated \$700K in wall costs)
Opportunity for easily accessible Park-N-Ride on the south side of I-70	Skewed bridge results in slightly higher cost (estimated \$100K)
Better constructability than Option 2	Impacts homeowner at 705 29 Road and requires relocation (estimated \$1.3 million assuming \$5 per square foot in right-of-way costs) 900 feet of additional arterial roadway surface (estimated \$2.3 million in additional roadway costs)

Notes:

- 1. Compared to preferred alternative



Conceptual Layout Option 2B - Existing Alignment Skewed

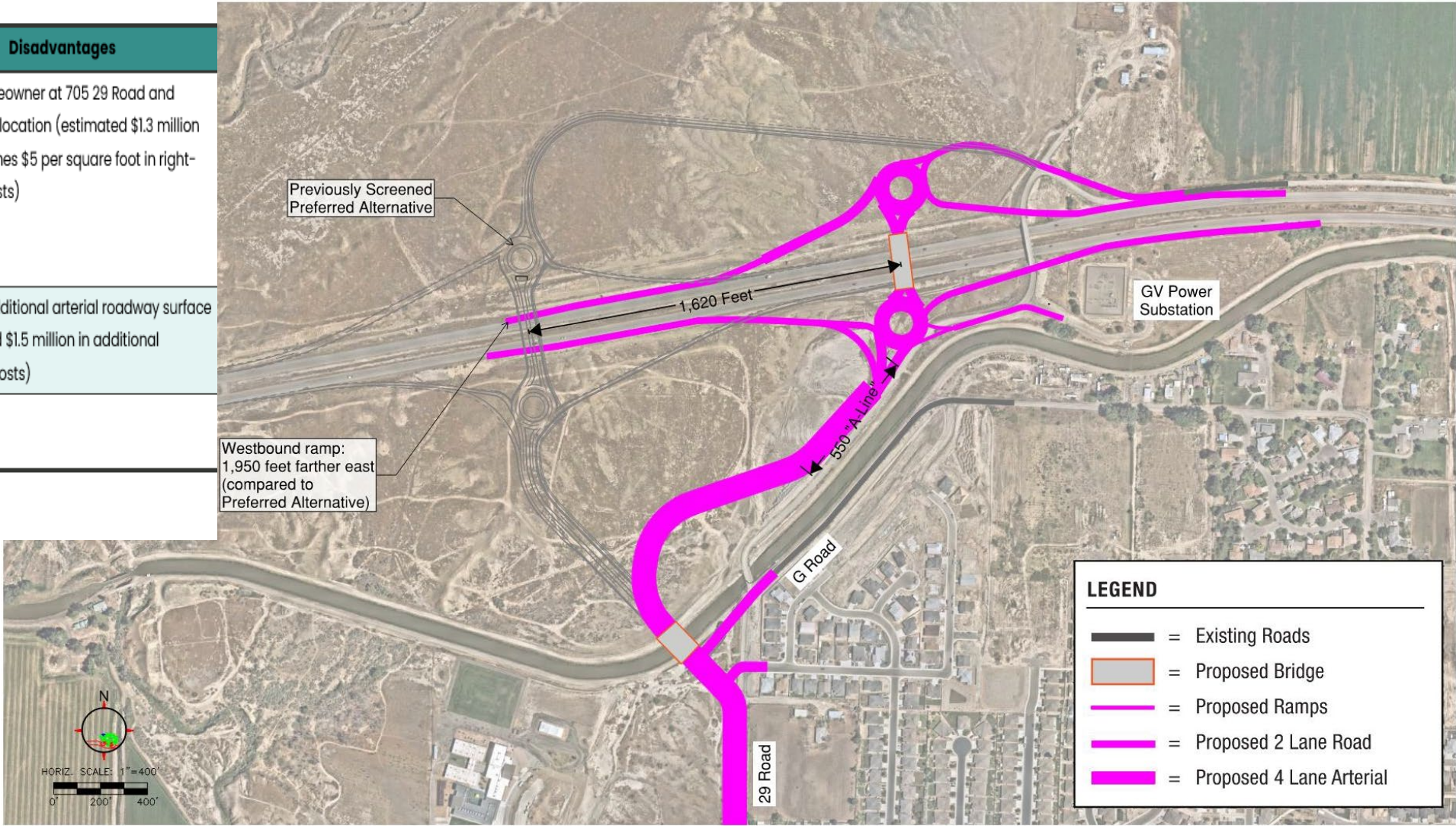


Option 2B

Table 4. Conceptual Layout Option 3 – East Roundabout
Original (Revised)

Advantages	Disadvantages
Westbound ramp 1,950 feet farther east from Horizon Drive when compared to the preferred alternative.	Impacts homeowner at 705 29 Road and requires relocation (estimated \$1.3 million and assumes \$5 per square foot in right-of-way costs)
Westbound 29 Road on-ramp to Horizon Drive off-ramp: 5,950 feet	
Eastbound Horizon Drive on-ramp to 29 Road off-ramp: 6,050 feet	
More contiguous developable land between the Canal and I-70 as well as north of I-70'	600 feet of additional arterial roadway surface (estimated \$1.5 million in additional roadway costs)
Opportunity for easily accessible Park-N-Ride on the south side of I-70	

Notes:
1. Compared to the preferred alternative



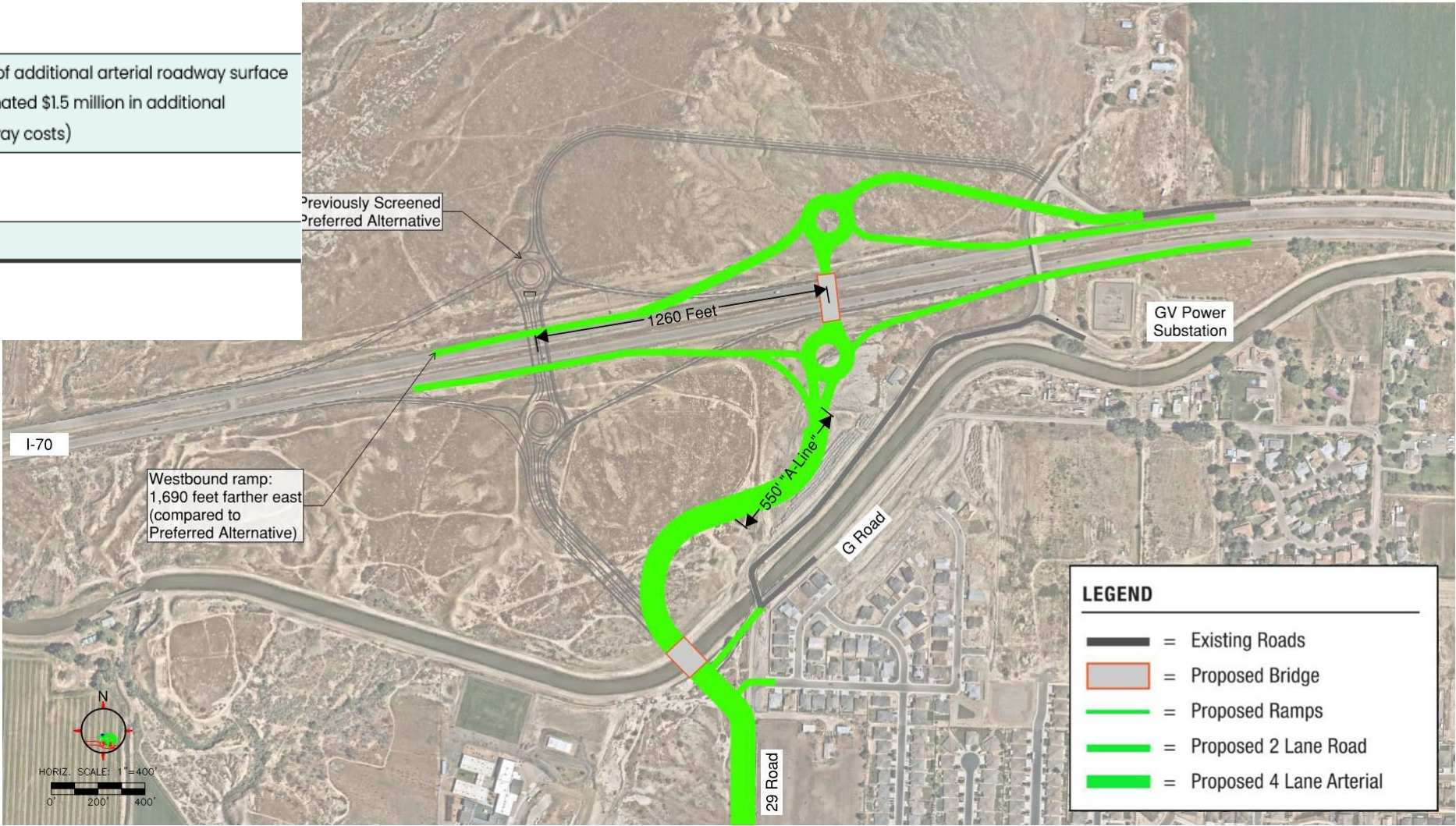
Option 3

Table 5. Conceptual Layout Option 4 – East Roundabout (Preserves House)
(Preserves House)

Advantages	Disadvantages
Westbound ramp 1,690 feet farther east from Horizon Drive when compared to the preferred alternative. Westbound 29 Road on-ramp to Horizon Drive off-ramp: 5,500 feet Eastbound Horizon Drive on-ramp to 29 Road off-ramp: 5,600 feet	350 feet of additional arterial roadway surface (estimated \$750K in additional cost)
More contiguous developable land between the Canal and I-70 as well as to the north of I-70 ¹	600 feet of additional arterial roadway surface (estimated \$1.5 million in additional roadway costs)
Opportunity for easily accessible Park-N-Ride on <u>south</u> side of I-70	
Does not impact homeowner at 705 29 Road	

Notes:
1. Compared to preferred alternative

Conceptual Layout Option 4 - East Roundabout (Preserves House)



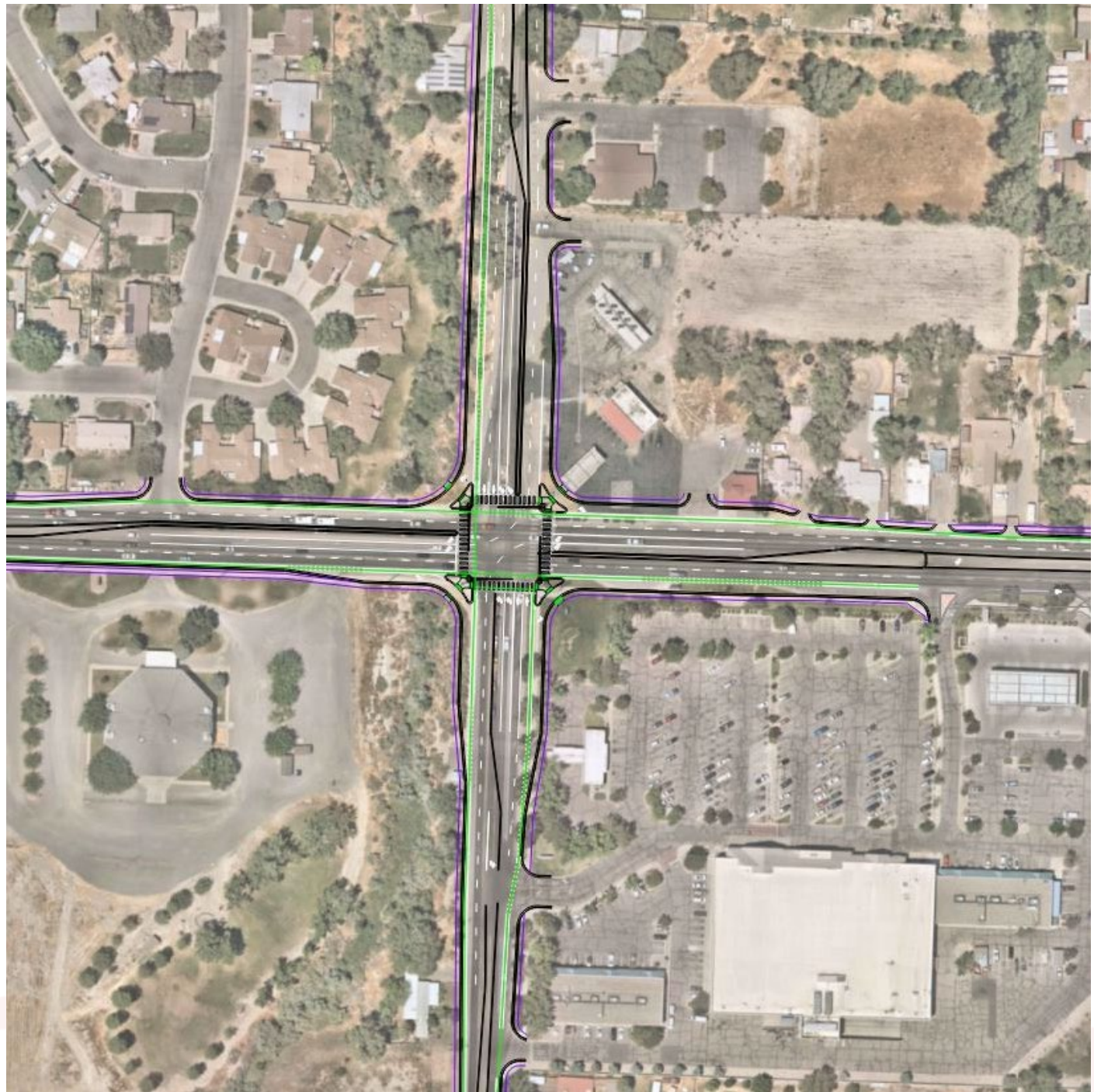
Option 4

Patterson Road & 29 Road Intersection

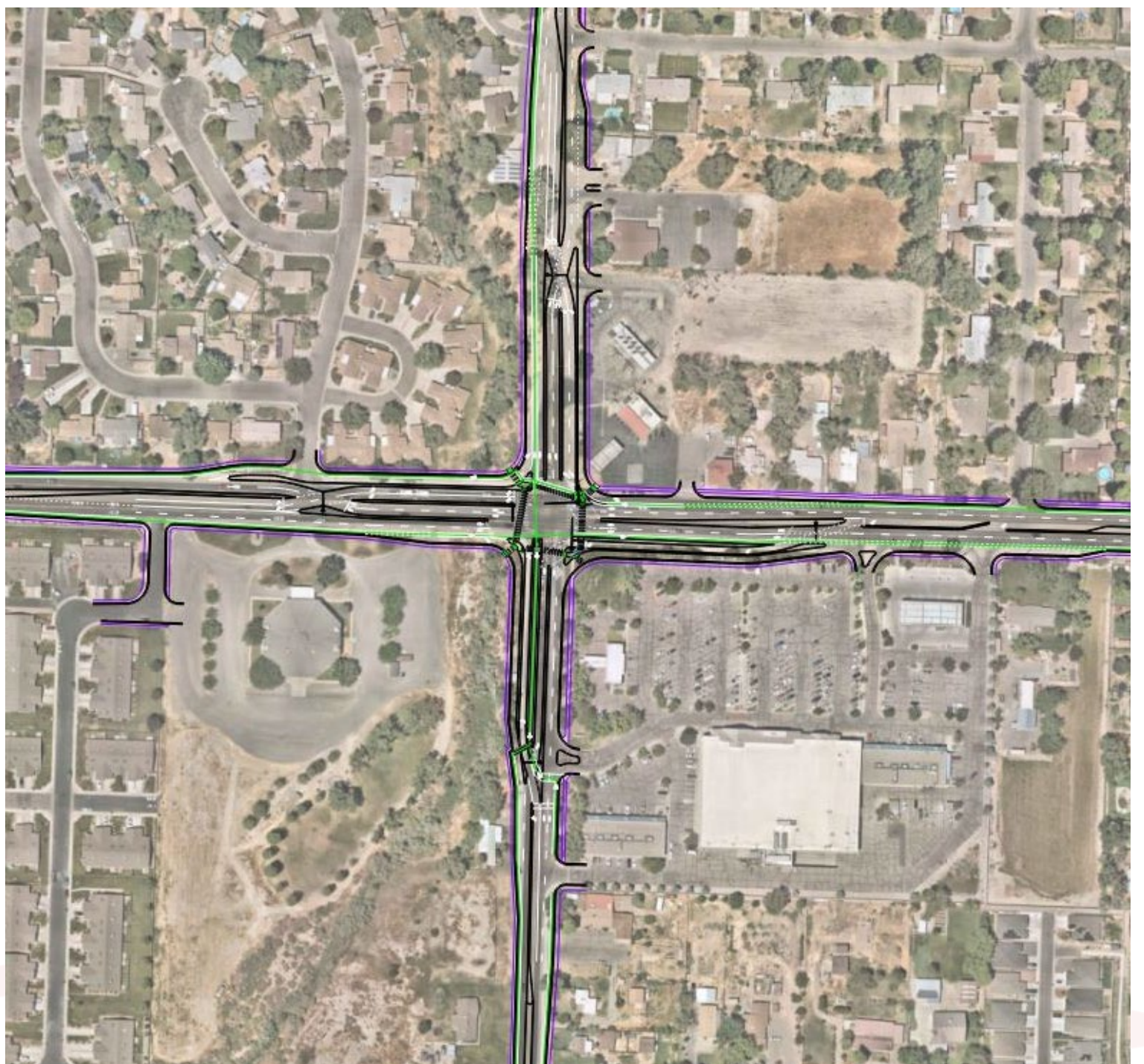
Patterson Intersection Workshop

- ▶ Four concepts were presented
 - ▶ Traditional Intersection
 - ▶ Continuous Flow Intersection (CFI)
 - ▶ North-South Continuous Flow Intersection (NS CFI)
 - ▶ Quadrant Intersection
- ▶ Various criteria and pros/cons evaluated

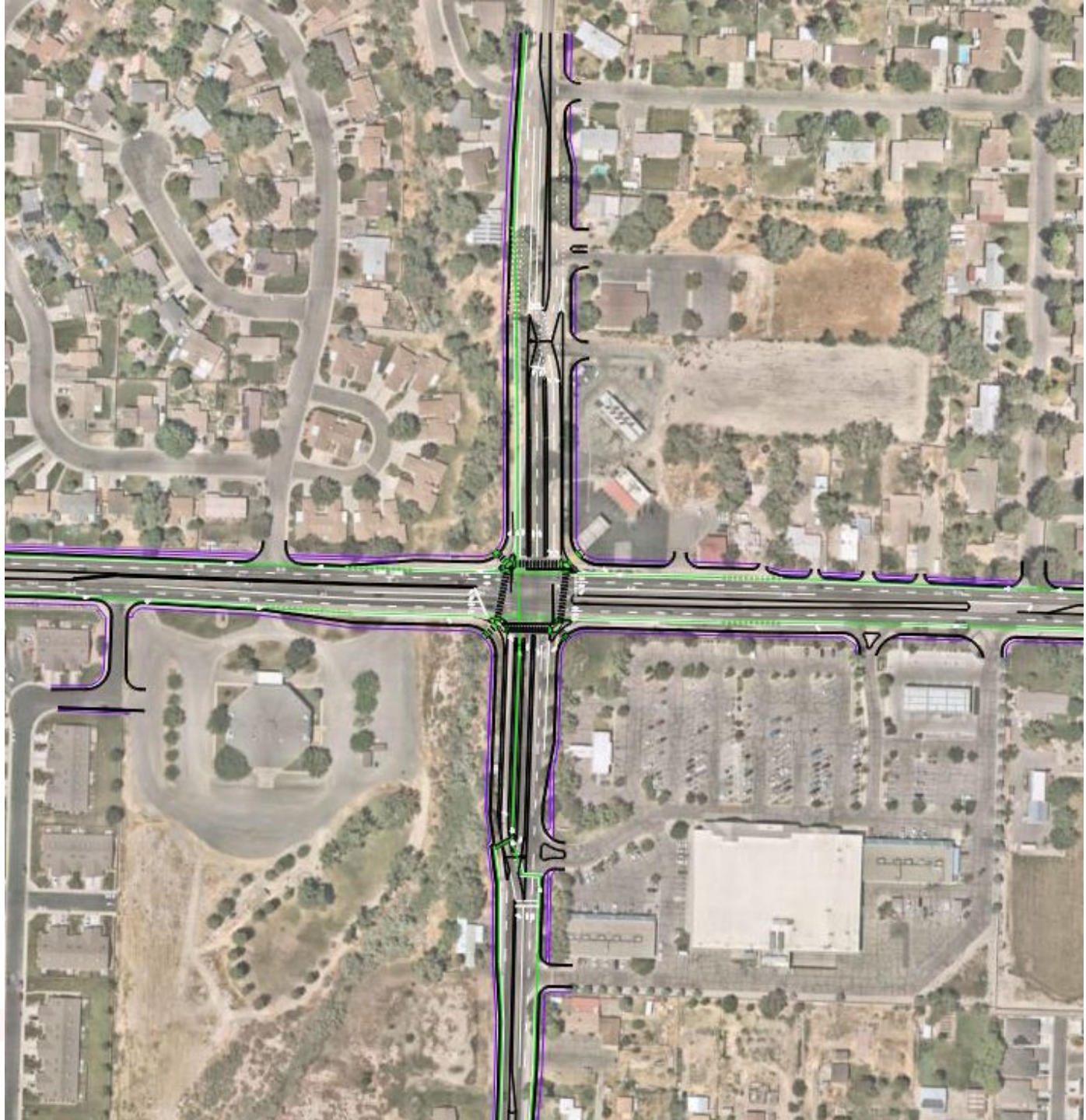
Traditional Intersection



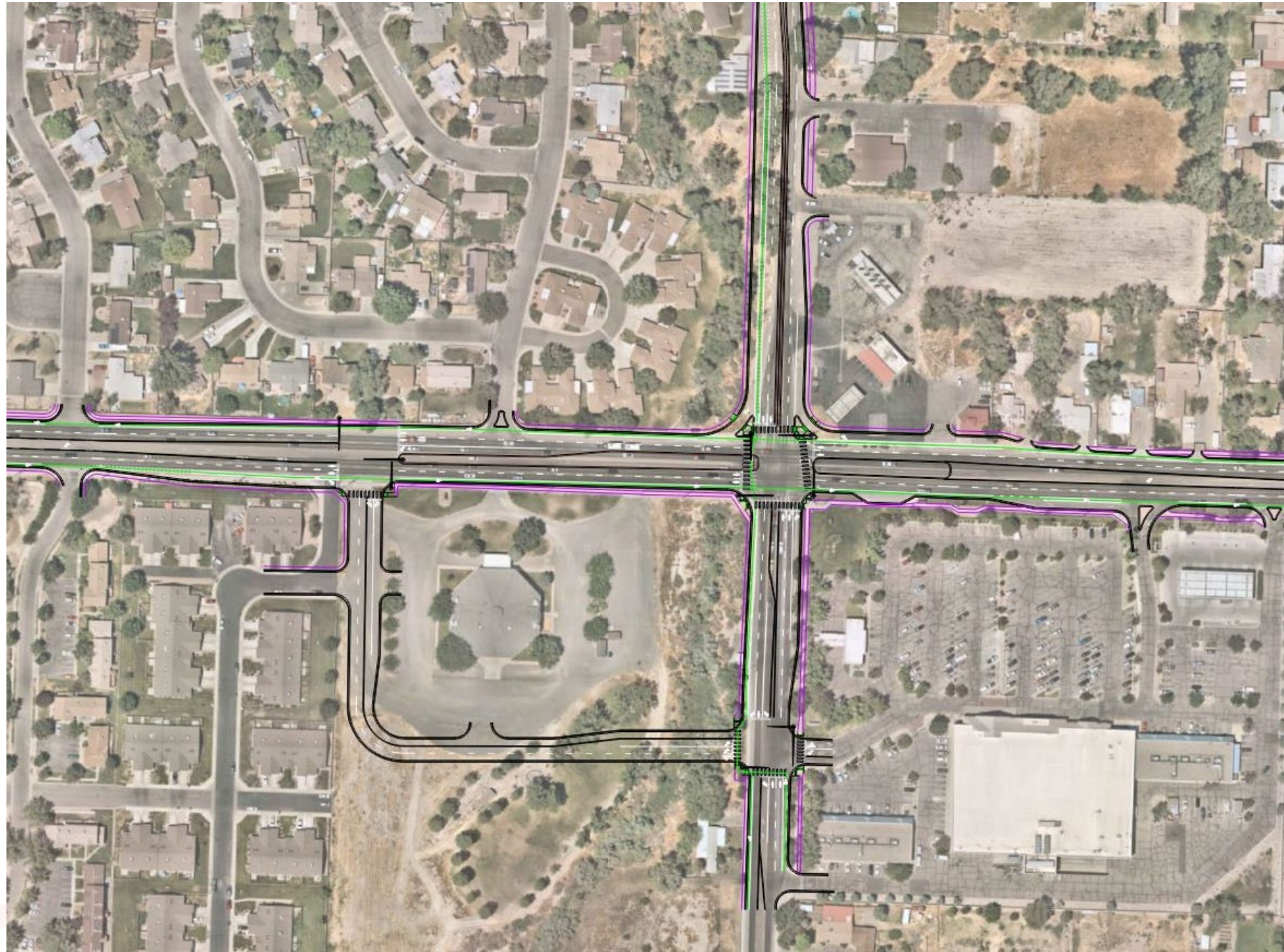
Continuous Flow Intersection



North-South Continuous Flow Intersection



Quadrant Intersection



Patterson Road / 29 Road Intersection

- ▶ Traditional Intersection to be included in the SLS
- ▶ Opportunities to improve during design
- ▶ Acceptable operations
- ▶ Lowest, unadjusted HSS crashes

Overall Project Next Steps

- ▶ Submit System Level Study to CDOT Transportation Commission
 - ▶ Including TDM strategies
- ▶ CDOT Transportation Commission Presentation/Vote
 - ▶ May/June
- ▶ Initiate Interstate Access Request
- ▶ Complete NEPA Analysis/Design
 - ▶ RS/TC Determination (Air Quality)
 - ▶ Summer 2025

Thanks!