

I-70 Interchange in Grand Junction — TAC Meeting #7

July 28, 2023

Agenda

- ▶ Welcome and Introductions
- ▶ MOU Status
- ▶ Request for Additional Information
- ▶ Summary of Public Meeting Results
 - ▶ Alignment Location
 - ▶ Interchange Configuration
- ▶ Level 3 Approach
- ▶ Next Steps

Meeting Goal:

Finalize Level 2 Screening and Progress into Level 3 Analysis

Memorandum of Understanding Status

Additional Requested Information

- ▶ Provide information about the effect on I-70 from each interchange alignment (Level 2A)
- ▶ Does the new interchange create a fatal flaw on the operations/safety of I-70?
 - ▶ What are the Levels of Service?
 - ▶ What are the potential safety issues associated with the I-70 curve?
 - ▶ What are the options to alleviate degradation of I-70 operations?

Screening Process



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)



LEVEL 1 SCREENING GOAL:

29 Road or 30 Road?

EFFECTIVENESS & IMPACTS

Traffic

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

Impacts/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)



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
- Community
- Biology
- Historic
- Air Quality

Roadway

- 29 Road

Analysis Tools

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



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

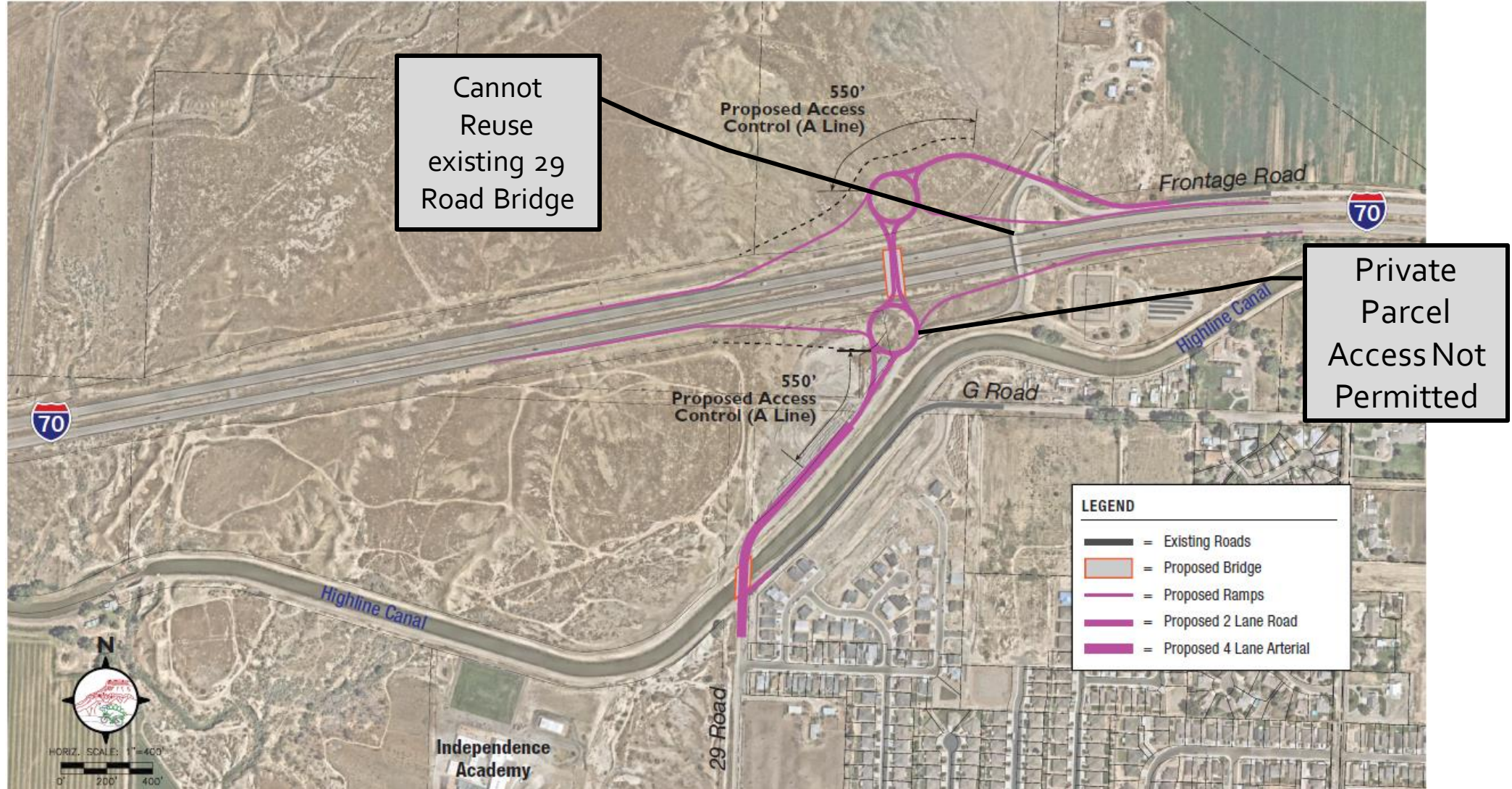
Environmental

- Mitigation Commitments

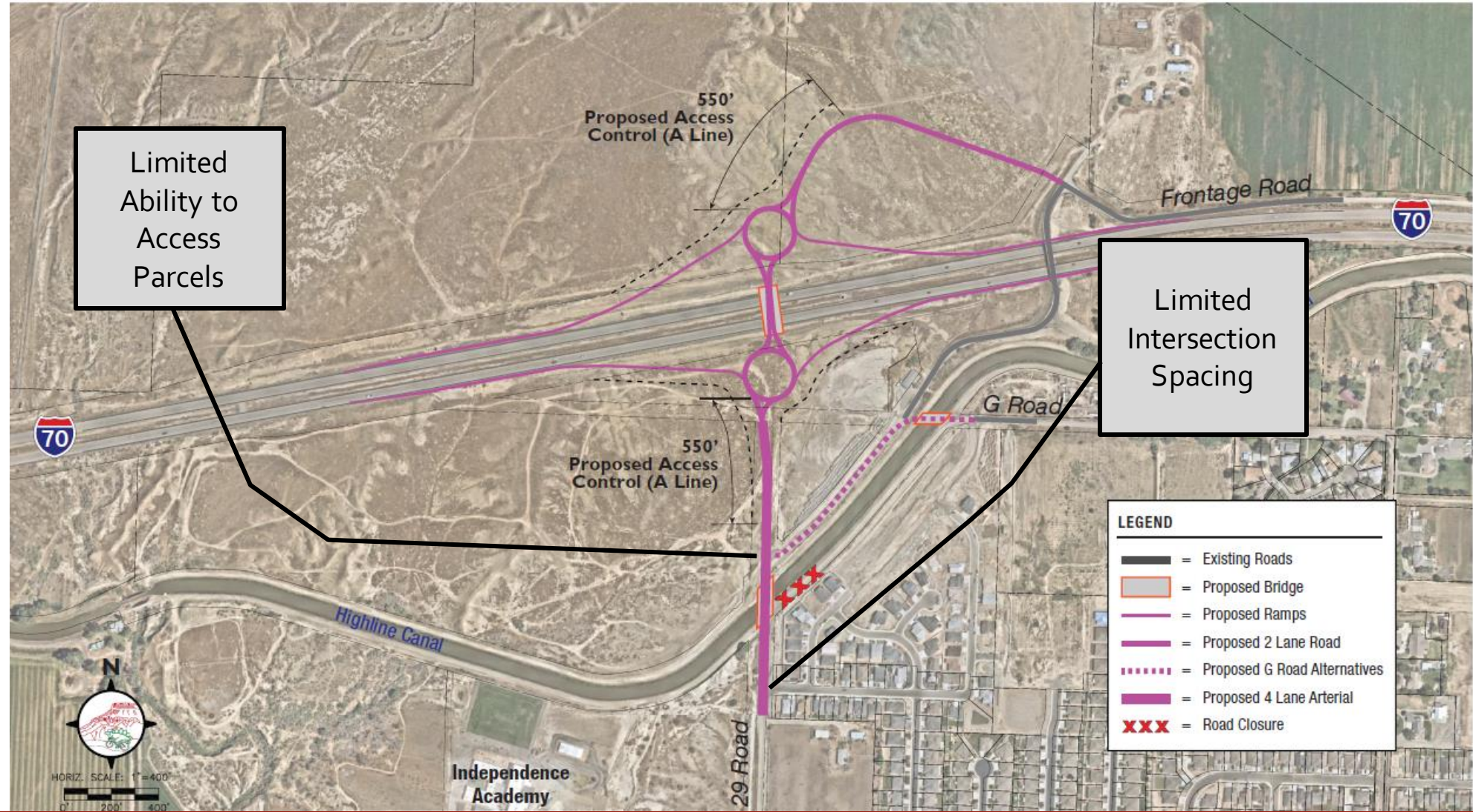
Analysis Tools

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

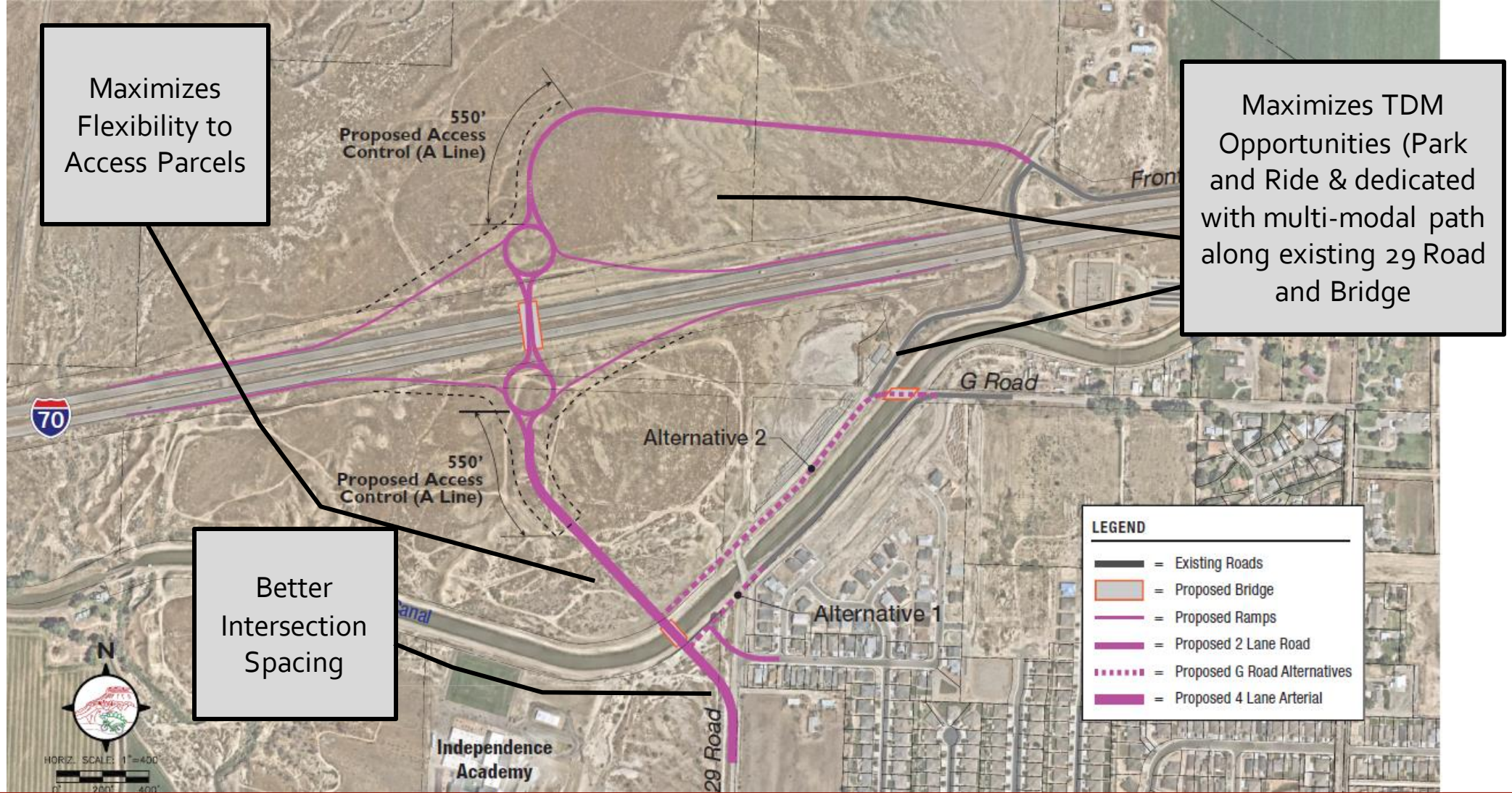
- Level of Service (LOS)
- Diverging Diamond Interchange (DDI)
- Single-Point Urban Interchange (SPUI)



Level 2A East Alignment—***Not Advanced***



Level 2A Center Alignment—***Not Advanced***



Level 2A West Alignment—**Retained**

Additional Requested Information

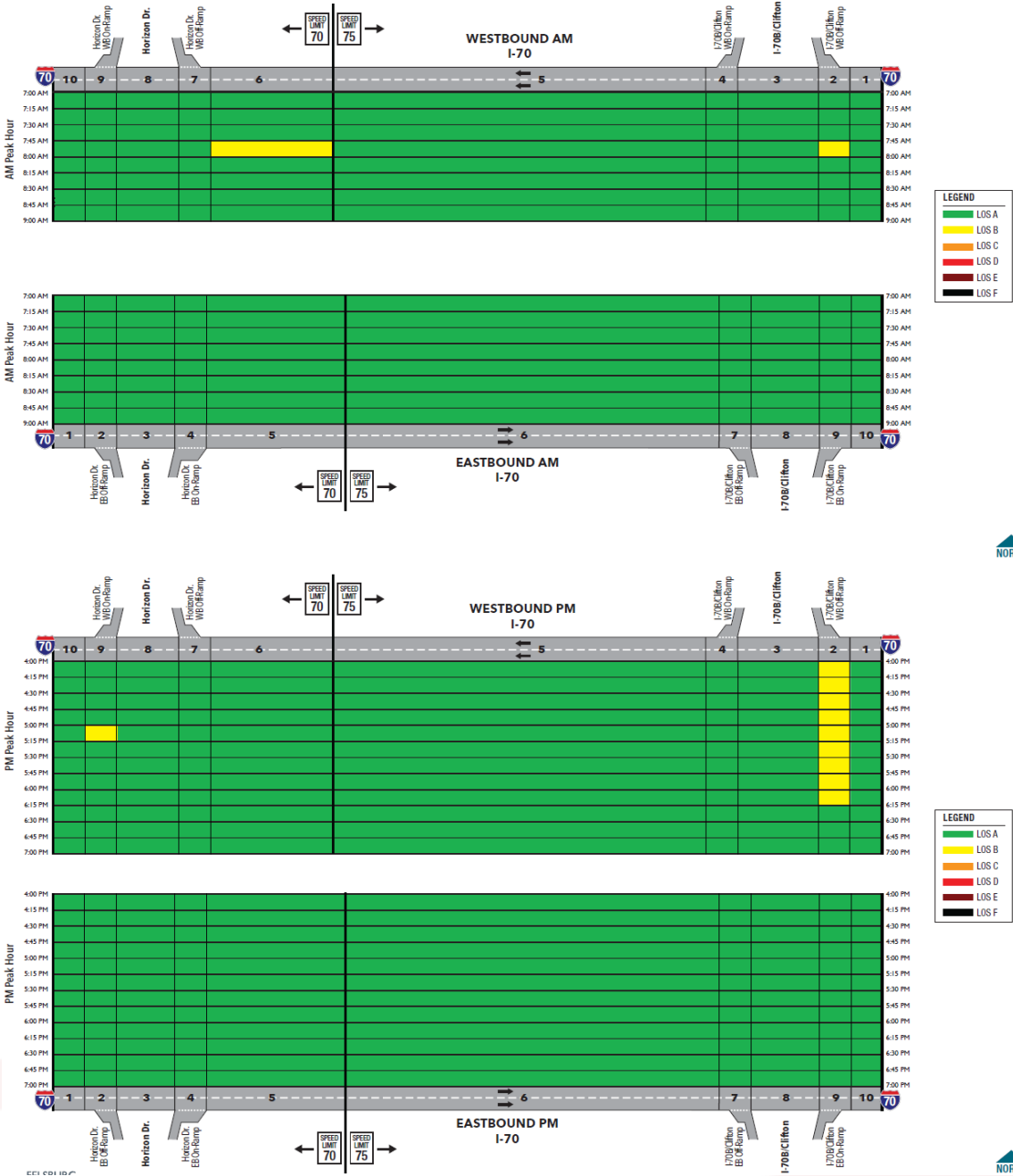
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 - ▶ What are the options to alleviate degradation of I-70 operations?

Effect on I-70 Operations

- ▶ Evaluation consistent with previous efforts
 - ▶ East of Clifton Interchange to west of Horizon Drive Interchange
- ▶ Based on the Highway Capacity Manual (HCM)
 - ▶ Segmented at changes in freeway conditions (speed limit change, merge / diverge areas)
 - ▶ Evaluated 15-minute increments in AM and PM Peak Periods
 - ▶ Determined Level of Service (LOS) for each segment
 - ▶ Used Highway Capacity Software (HCS) per the M&A Document

Existing Conditions

Mostly LOS A in both directions in both peak periods



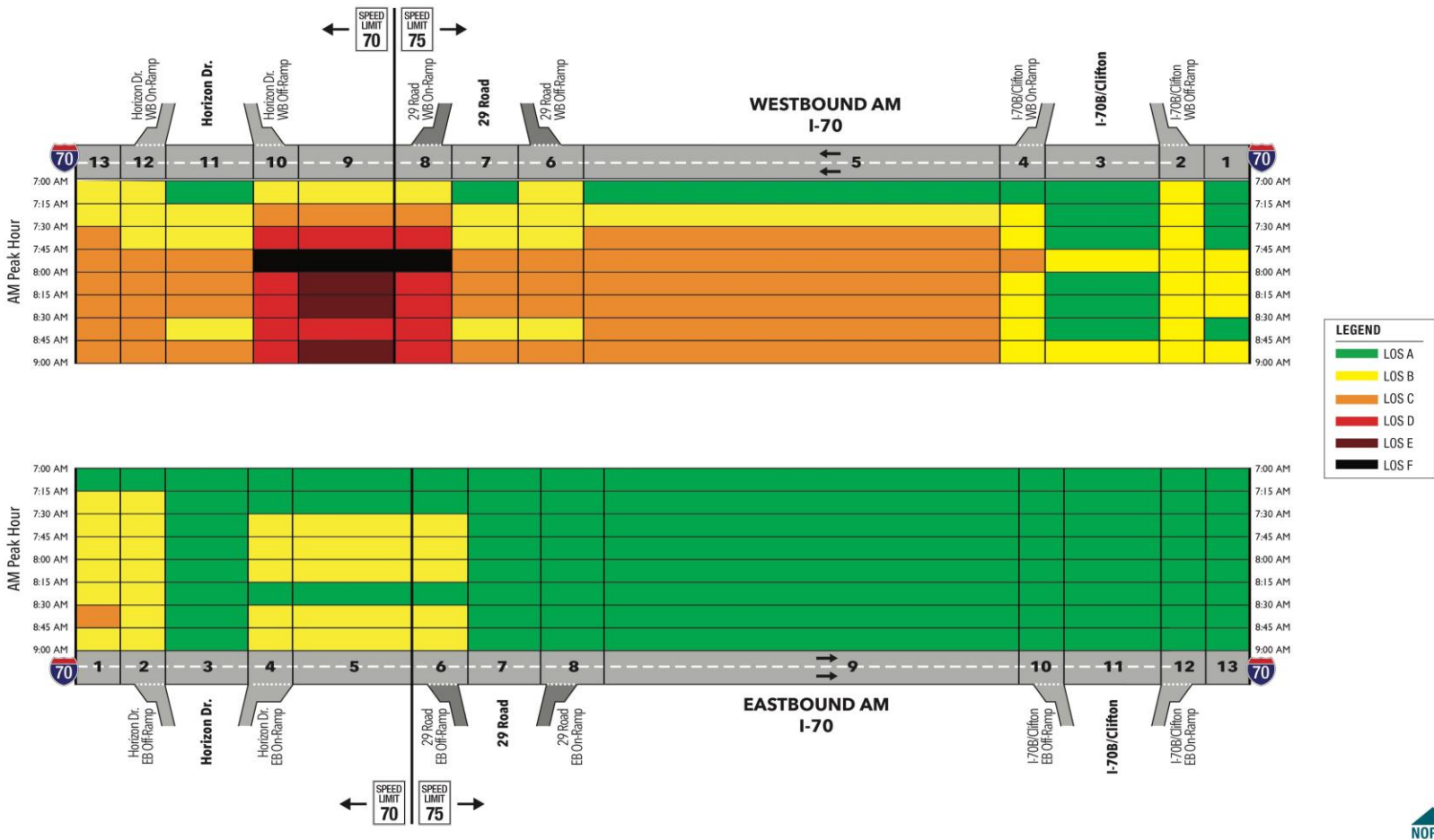
2045 No Action Conditions

LOS C
westbound
approaching
Horizon Drive in
the AM

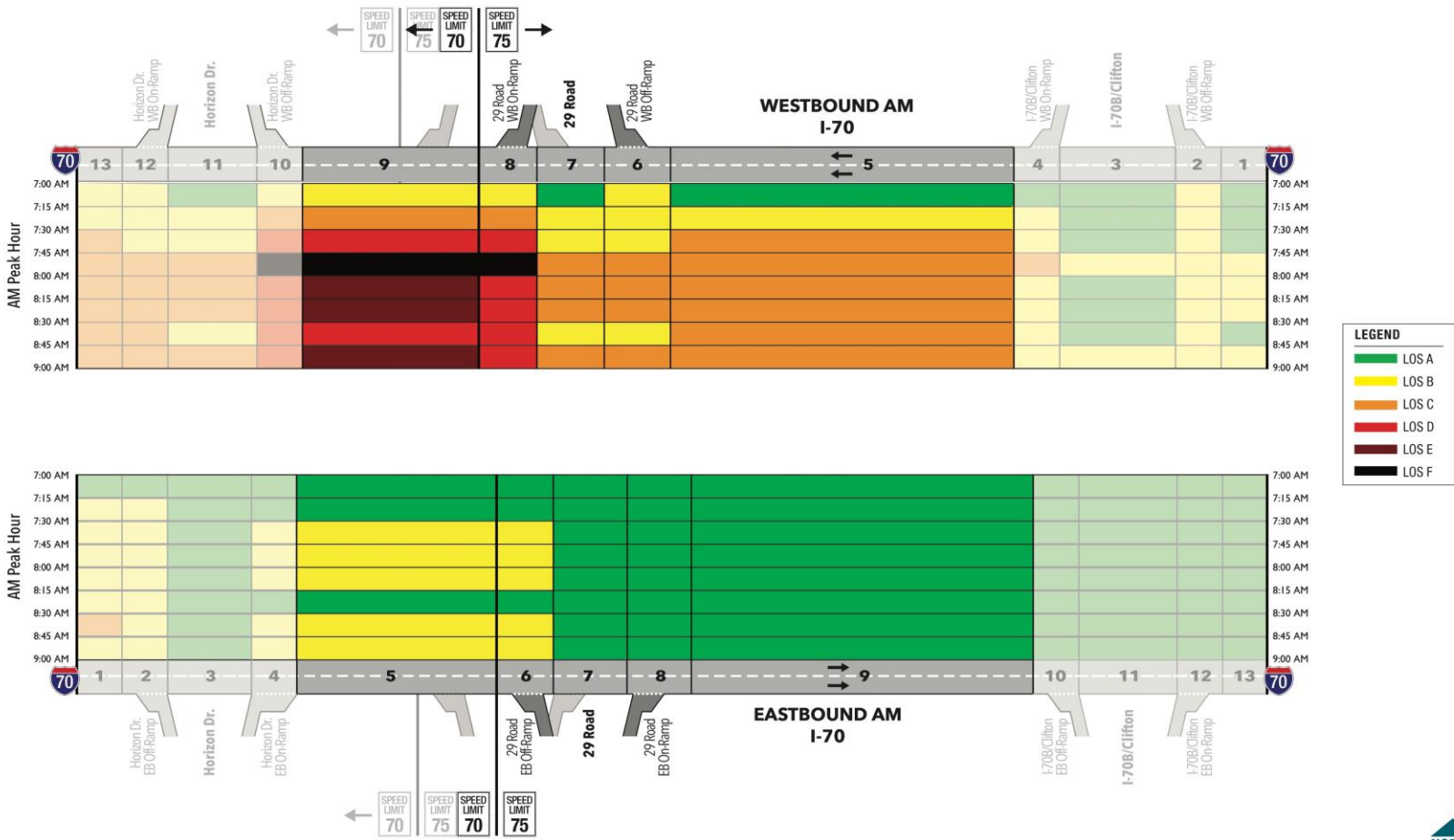
LOS C
approaching
Clifton and
departing
Horizon in the
PM



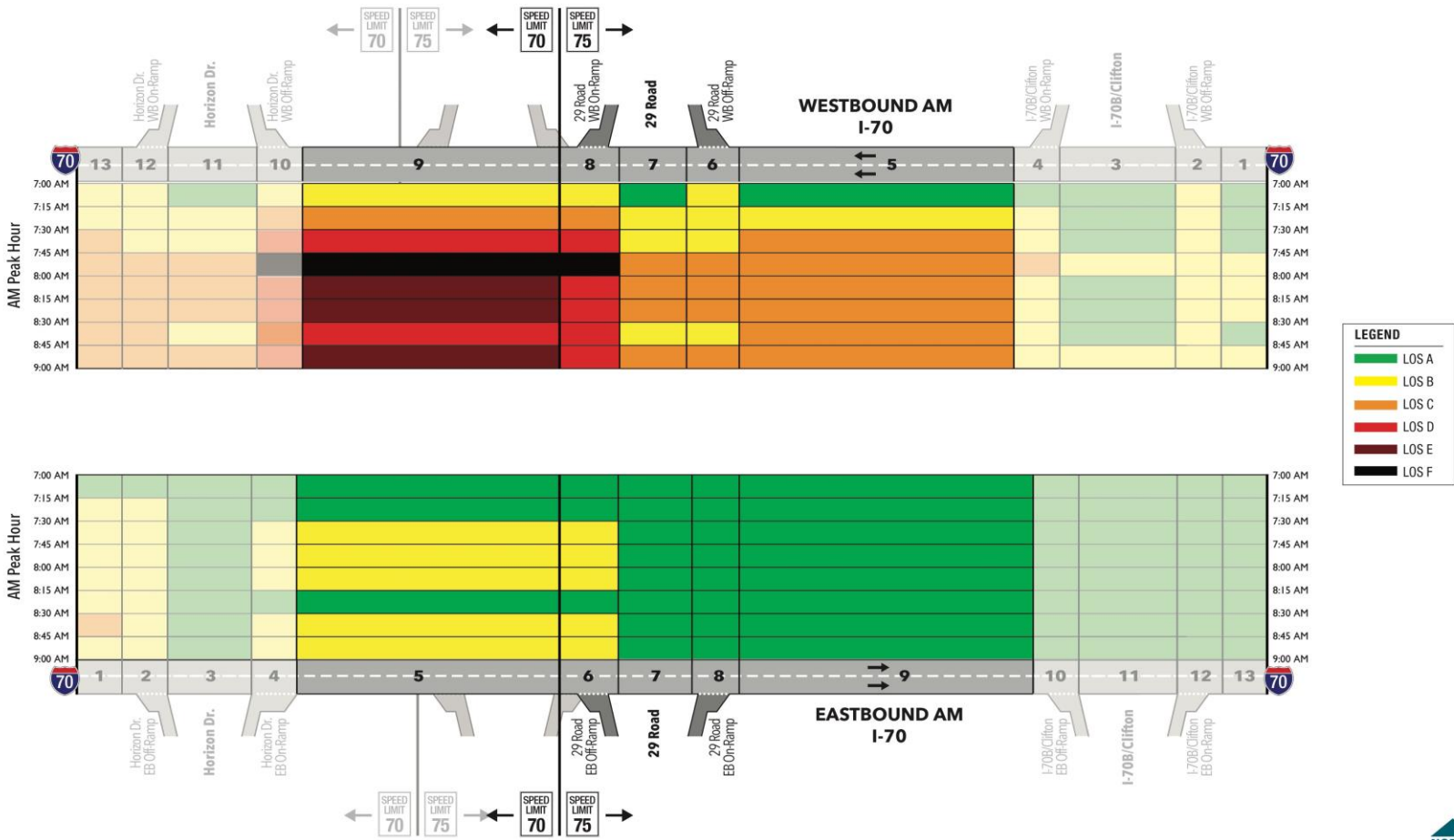
2045 West Alternative Conditions (AM Peak Hour)



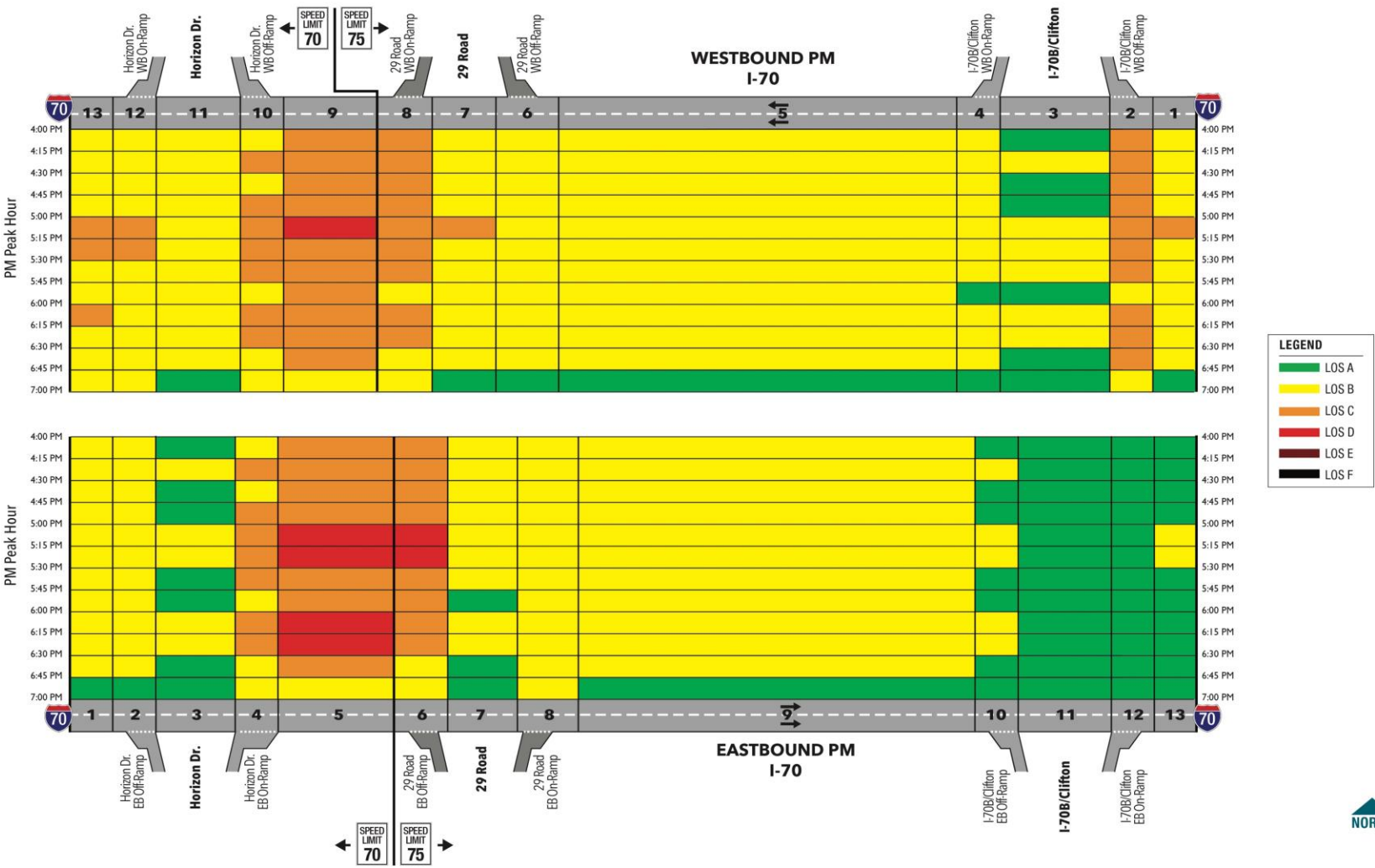
2045 Center Alternative Conditions (AM Peak Hour)



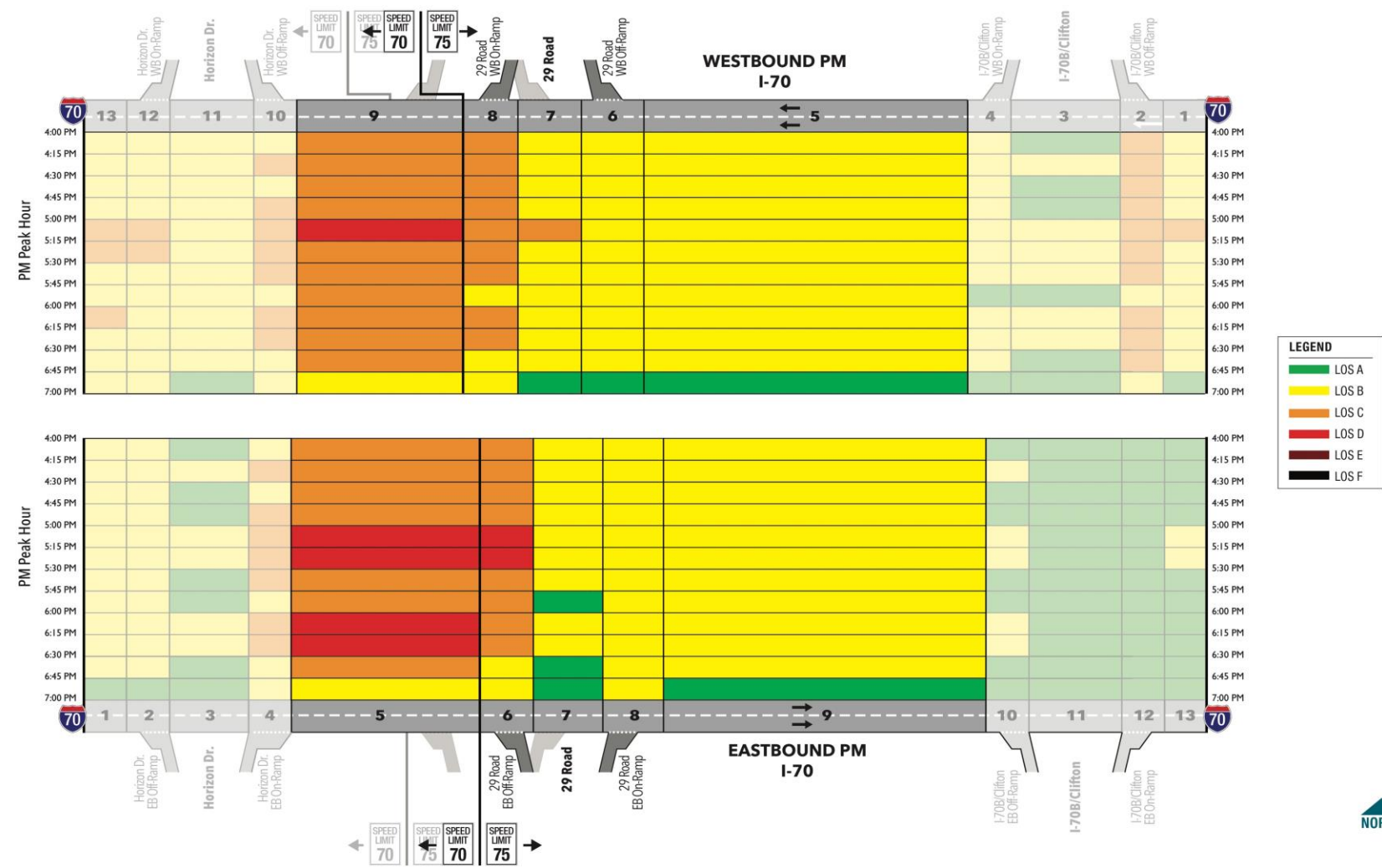
2045 East Alternative Conditions (AM Peak Hour)



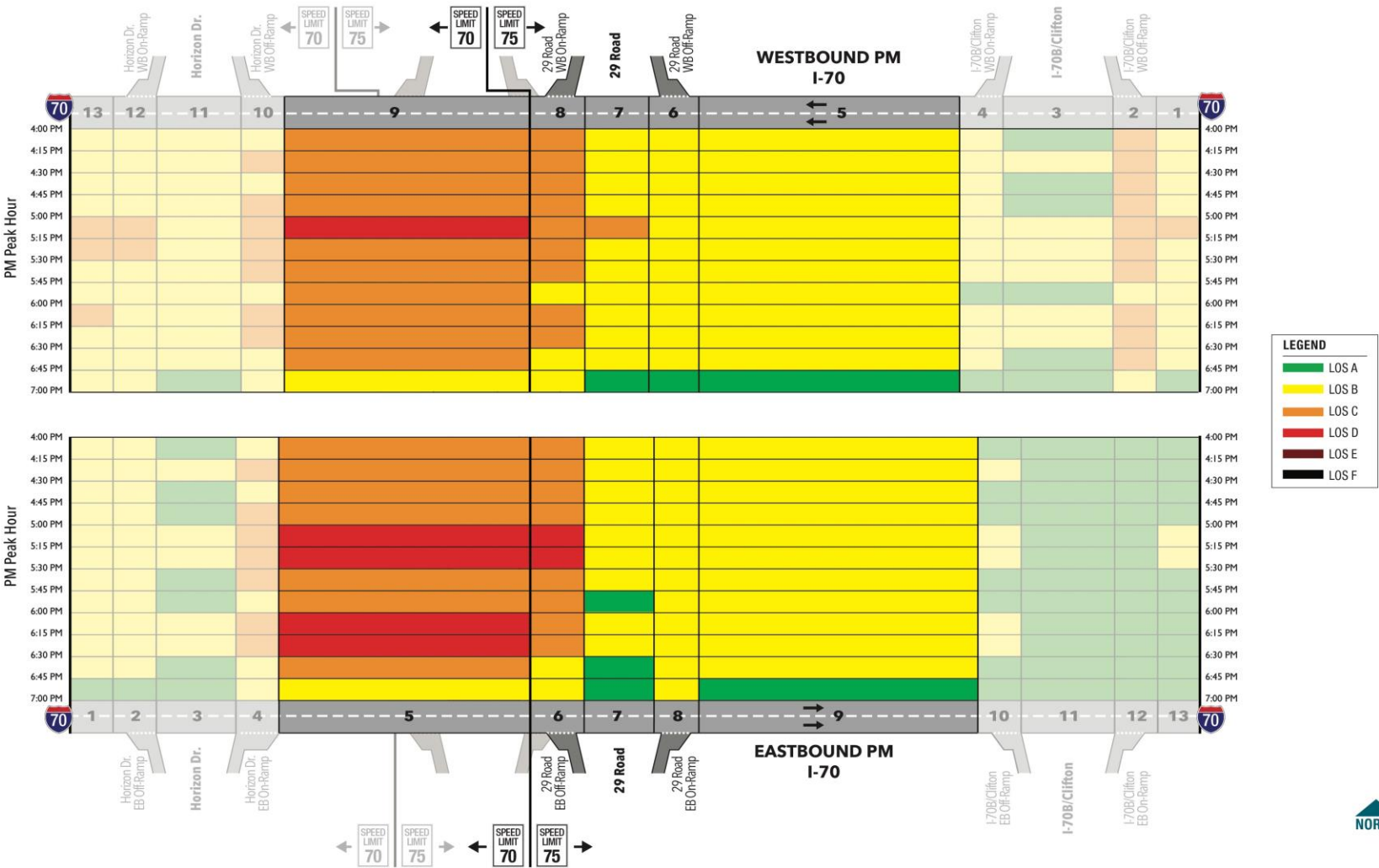
2045 West Alternative Conditions (PM Peak Hour)



2045 Center Alternative Conditions (PM Peak Hour)



2045 East Alternative Conditions (PM Peak Hour)



1. No difference between west, center, and east alignments
2. LOS does degrade
 - ▶ One 15-minute period between 29 Road and Horizon Drive westbound at LOS F; additional 15-minute periods at LOS D or E.
 - ▶ Several 15-minute periods between Horizon Drive and 29 Road eastbound at LOS D
3. Mitigations will be evaluated during Level 3 Analysis and Refinement
 - ▶ Westbound auxiliary lane between 29 Road and Horizon Drive
 - ▶ Ramp Improvements
 - ▶ Ramp Metering
 - ▶ Speed Harmonization

With mitigations, acceptable I-70 operations can be maintained.

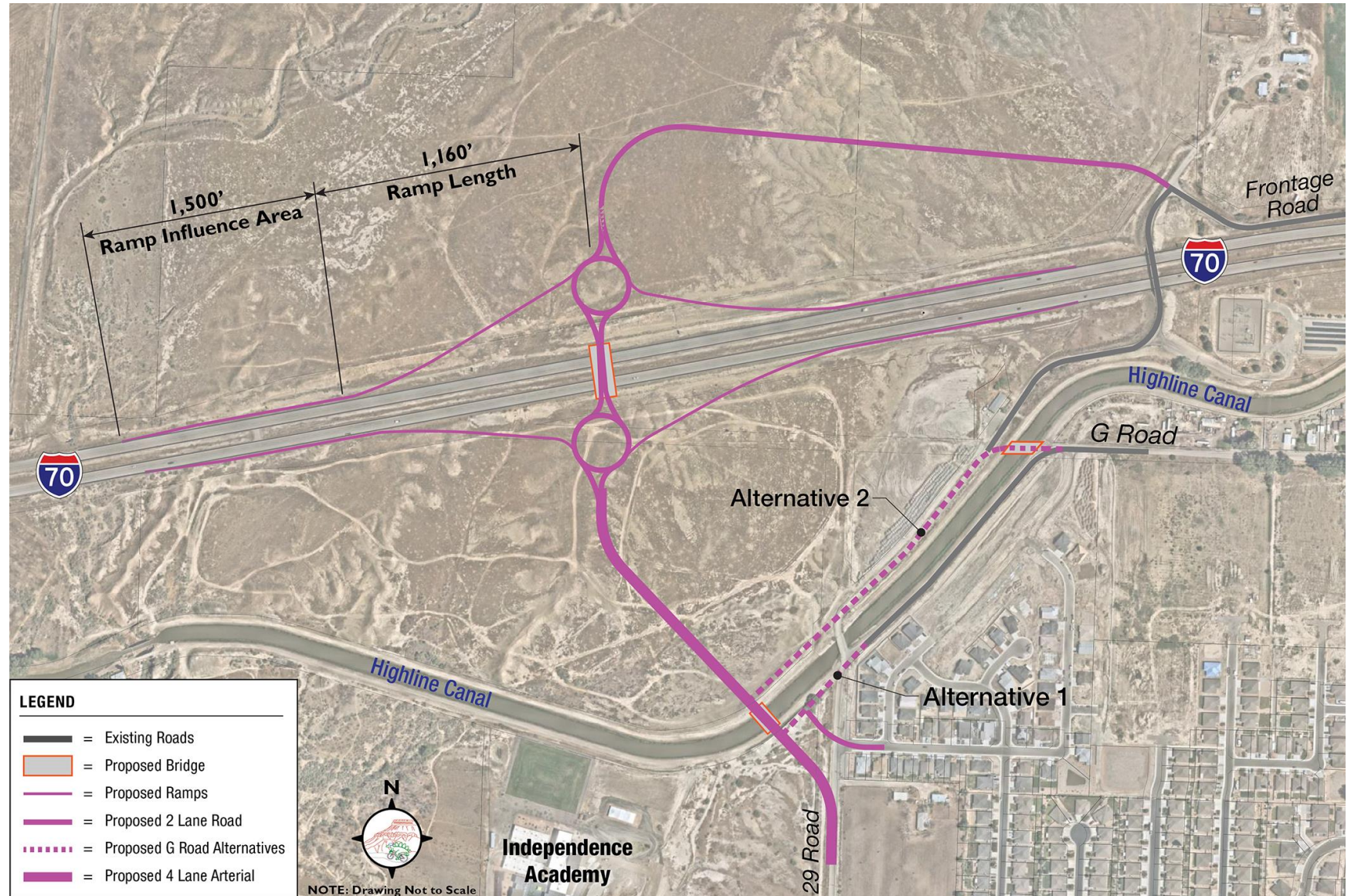
Freeway Operations Conclusions

I-70 Safety Concerns

- ▶ CDOT implemented safety improvements along I-70 in 2018
 - ▶ Cable guardrail through the curve
 - ▶ The westbound speed limit was reduced from 75 mph to 70 mph approaching the curve
 - ▶ The east end of safety improvement is 3,675 feet west of the 29 Road section line
- ▶ Although data are limited, the improvements appear to be having a positive effect along I-70 through the curve
 - ▶ A three-year before and after crash data comparison shows:
 - ▶ A 25% reduction in total crashes
 - ▶ Injury + fatal crashes decreased by more than half

Potential for Interchange to affect I-70 Safety

- ▶ New ramps will influence freeway safety
- ▶ Mainline ramp influence area is 1,500 feet from the ramp gore per HCM
- ▶ Conceptual designs show about 1,160 feet between the crossroad and the ramp gore



Effect on I-70 Safety

- ▶ The project team compared the 2,660-foot influence area to the alignment locations

Alignment	Distance from crossroad to Speed Limit Change (feet)	Does influence area reach 70 mph zone?
West (Preferred)	2,730	No
Center (Section Line)	3,675	No
East	4,330	No

- ▶ The west alignment influence area is close to the I-70 safety improvements but does not reach it.
 - ▶ The remaining alignments are further from the safety improvements
- ▶ It may be possible to achieve additional separation during conceptual design development

Public Meeting / Web Engagement Summary

Online Engagement

ONLINE ENGAGEMENT

► Grand Junction

- 31 Comments
(155 "Thumbs Up" votes)
- 105 Interchange Survey responses
- 110 "Values" Survey responses

► Outside Grand Junction

- *60 Regional
- *64 Out of State

29ROAD
INTERCHANGE

Drag to
comment



Make a
Comment

Info
Markers




Get Started


Activity


A
Diamond
Interchange


B
Diverging
Diamond


C
Roundabouts



Thanks for your input!

Click on each potential interchange design - A, B & C

- Learn more about each option and share your opinion by answering the survey questions.
- Or add comments!

Learn more about the project at <https://fhueng.mysocialpinpoint...>

Before you get started, answer this one question below...

Which of these issues or considerations do you feel are most important for the interchange project?

Select three

☐ Enhance local and regional traffic

☐ Increase roadway safety

☐ Limit impact to local property near the interchange

☐ Limit environmental impact (noise, wetlands)

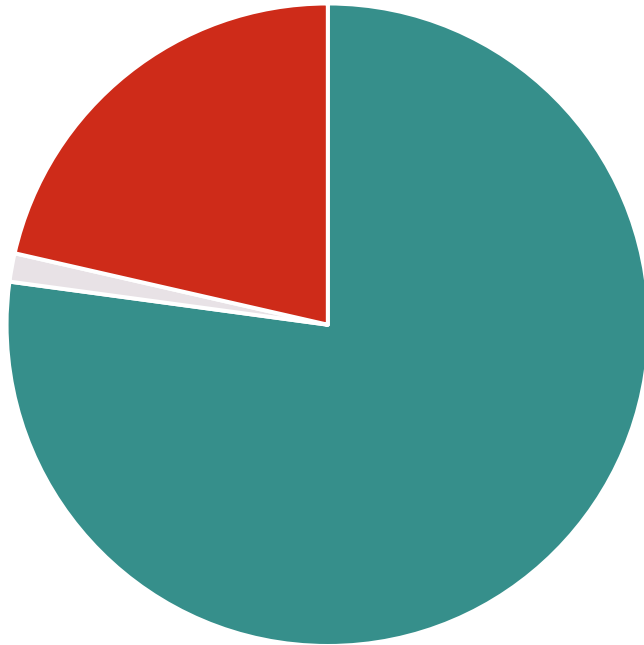
Potential Interchange Design Concepts



- Option A – Diamond Interchange
- Option B – Diverging Diamond Interchange
- Option C – Roundabout Interchange



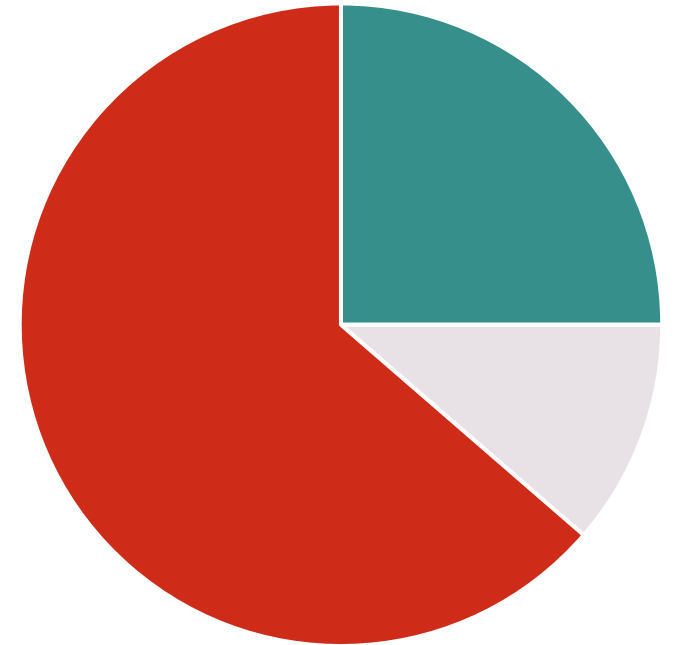
Roundabouts



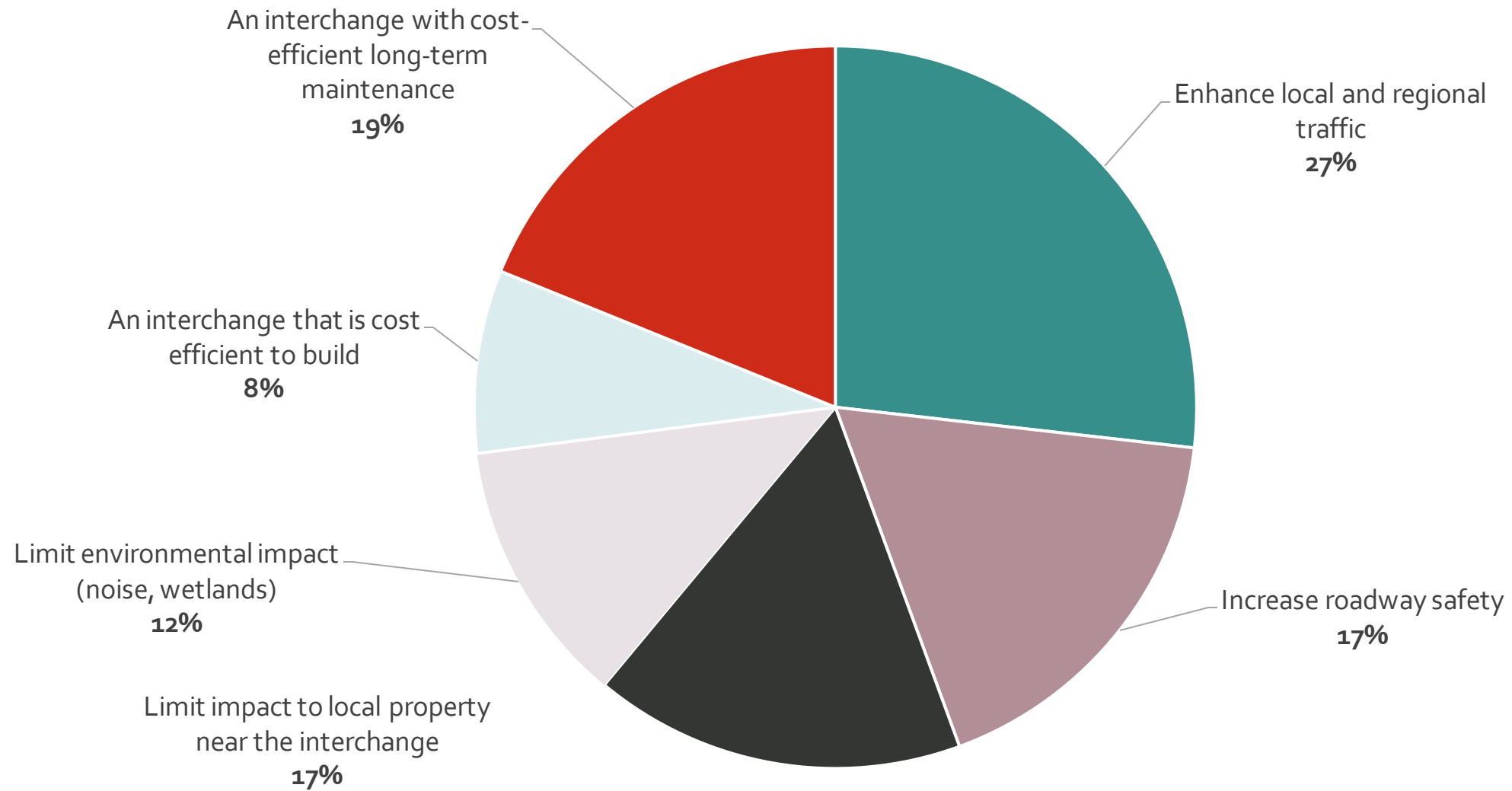
Diamond



Diverging Diamond



Interchange Preferences



VALUES

QUESTION: Which of these issues or considerations do you feel are most important for the interchange project?

Comment	Thumbs Up	Thumbs Down
We prefer option C, and later, down the road adding a new road to the airport from the north traffic circle will be easier to do. A new road to the airport on the north side of I-70 will take a lot of traffic off Horizon Drive and off I-70 from 29 Road to the Horizon Drive Exit.	26	5
I prefer option c. Roundabouts are safer, not confusing, require less infrastructure, they keep traffic moving and are quicker than the other options. With how quickly the city is growing, having a northern option to Horizon drive and or North of the airport would be planning for future growth/traffic for a main artery north of town.	16	2
I think plan A is the simplest option which makes it the best option. Still allows for change in the future and it's something drivers are familiar with. GJ's roads are already confusing, let's not add to the confusion, no roundabouts just simple straight lines. Also seems the most-friendly for pedestrians as there are lights, for them to cross at. Plan B looks confusing, like 1st street.	14	11
I hope the plan includes safe and comfortable bicycle crossing of I-70.	13	10
There should be a frontage road connection between this section and Horizon. If the road just connects from the frontage road beforehand, many people will be required to get on the interstate to get to Horizon Drive.	11	1
Roundabouts are safer, consistent with other exits on I-70 west and present a more positive image for out of state travelers. Additionally, they are much safer and don't require maintenance on lights. Proximity to the canal should supply ample water for desert appropriate plantings. A connector from Horizon Drive would save people getting on the interstate at high speed just to get off very quickly.	7	0
Why not identify the potential access to the airport? My plan C choice maybe difficult to align if moved north to connect to a frontage route west. Including this route now could identify future federal funding for a connection or alienation of support from Chamber of Commerce and businesses on Horizon Dr. Except a well-designed plan would appease residents and Horizon Dr interests if it's shown to be limited in scope due to flight path. Including H Rd and 7th Street, Horizon Dr and now 29 Rd	6	0
The G Road alternative should be used so the new interchange does not disrupt the current neighborhoods.	3	3

Open Comments (engaged)

Open house set for Tuesday on I-70 Interchange at 29 Road

By SENTINEL STAFF
Jun 8, 2023



Dale Shrull/The Daily Sentinel
City of Grand Junction and Mesa County officials will hold an open house on Tuesday to discuss a long-sought extension of 29 Road to Interstate 70.
Dale Shrull

The City of Grand Junction and Mesa County will host an open house on Tuesday to discuss a possible Interstate 70 interchange at 29 Road. The open house will be from 5-7 p.m. at the Grand Junction Church of Christ, 2893 Patterson Road. This will give community members a chance to review potential design configurations, goals and outcomes of the transportation study evaluating the project. In addition to attending the event, community members can provide comments at thuang.mysocialpinpoint.com/29-road-interchange, where residents can find more information about the project.

News & Marketing

City of Grand Junction
June 8 · 🌐

Weigh in on the new I-70 interchange! The City and Mesa County are asking the community to join us in a public open house to discuss a new interchange at 29 Road on Tuesday, June 13 from 5 to 7 p.m.

- 📍 Grand Junction Church of Christ (2983 Patterson Road)
- 🔗 Can't attend the event? Make sure your voice is heard at [#29Road](https://bit.ly/43zdWoN) #Interchange



👍❤️ 35 24 comments 34 shares Share



PUBLIC OPEN HOUSE
JUNE 13, 2023
5:00 – 7:00 PM
Patterson Road Church of Christ
2893 Patterson Road
An I-70 Interchange at 29 Road will complete the loop around Grand Junction, provide critical community access, enhance local & regional connectivity & support economic opportunity.

Closing the Loop
Join the conversation at a June 13 public open house to learn the storied history of the project and provide feedback on three possible interchange design concepts.

A little history:

- 1999 Identified the need for an I-70 interchange in northeast Grand Junction.
- 2015 Studied benefits and potential environmental impacts of a 29 Road interchange. Positioned the City and County for future state and federal funding opportunities.
- 2022 Developed vision and goals for future design concepts with local governments. Built consensus and documented key issues and opportunities with business, school, economic development, airport and planning organizations.
- 2023 Analyze and present potential interchange configurations for community input.

MESA COUNTY City of Grand Junction
<https://thuang.mysocialpinpoint.com/29-road-interchange>

Mesa County News
June 7 · 🌐

The City of Grand Junction and Mesa County invites the community to attend a public open house to discuss a new I-70 interchange at 29 Road on Tuesday, June 13, from 5 – 7 p.m. at the Grand Junction Church of Christ at 2893 Patterson Road.

The open house is designed so community members can review potential design configurations, goals, and outcomes of the transportation study evaluating the project. In addition to attending the event, community members can provide input online.

Continue reading at <https://www.mesacounty.us/.../city-grand-junction-and-mesa-co...>



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MESA COUNTY City of Grand Junction
<https://thuang.mysocialpinpoint.com/29-road-interchange>

👍❤️ 6 1 comment 2 shares Share



Casa Abierta
13 de junio del 2023
5:00 – 7:00 PM
Patterson Road Church of Christ
2893 Patterson Road
Un intercambio en el I-70 y la calle 29 completará el circuito alrededor de Grand Junction. Esto brindará acceso comunitario crítico, mejoría de la conectividad local y regional y apoyará oportunidades económicas.

Terminando el Proyecto
Únase a la conversación en la reunión pública el 13 de junio para conocer la historia del proyecto y brindar comentarios sobre tres posibles conceptos de diseño de intercambio.

Un Poco De Historia:

- 1999 Se identificó la necesidad de un intercambio en I-70 en el noreste de Grand Junction.
- 2015 Se estudió beneficios e impactos ambientales potenciales de un intercambio en la calle 29. Esto posiciona a la Ciudad y al Condado para futuras oportunidades de financiamiento estatal y federal.
- 2022 Se desarrolló una visión y metas para futuros conceptos de diseño con los gobiernos locales. Se creó un consenso y documentación de los problemas y oportunidades claves con organizaciones comerciales, escolares, de desarrollo económico, aeroportuarias y de planificación.
- 2023 Se analizó y se presentó posibles configuraciones de intercambio para recibir aportes de la comunidad.

MESA COUNTY City of Grand Junction
<https://thuang.mysocialpinpoint.com/29-road-interchange>

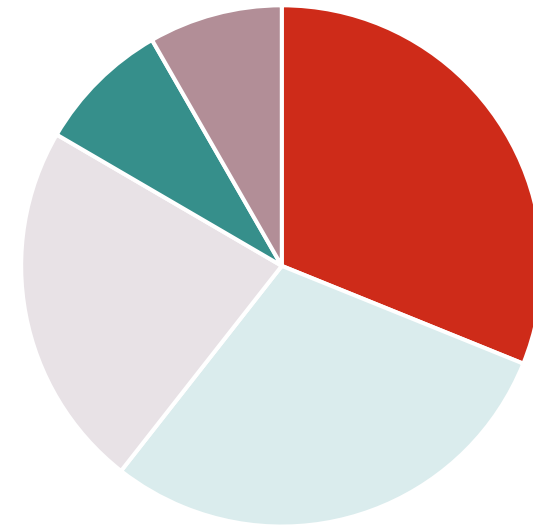
Public Meeting Summary

June 13 Meeting

- Approximately 204 attendees
- 58 comment cards



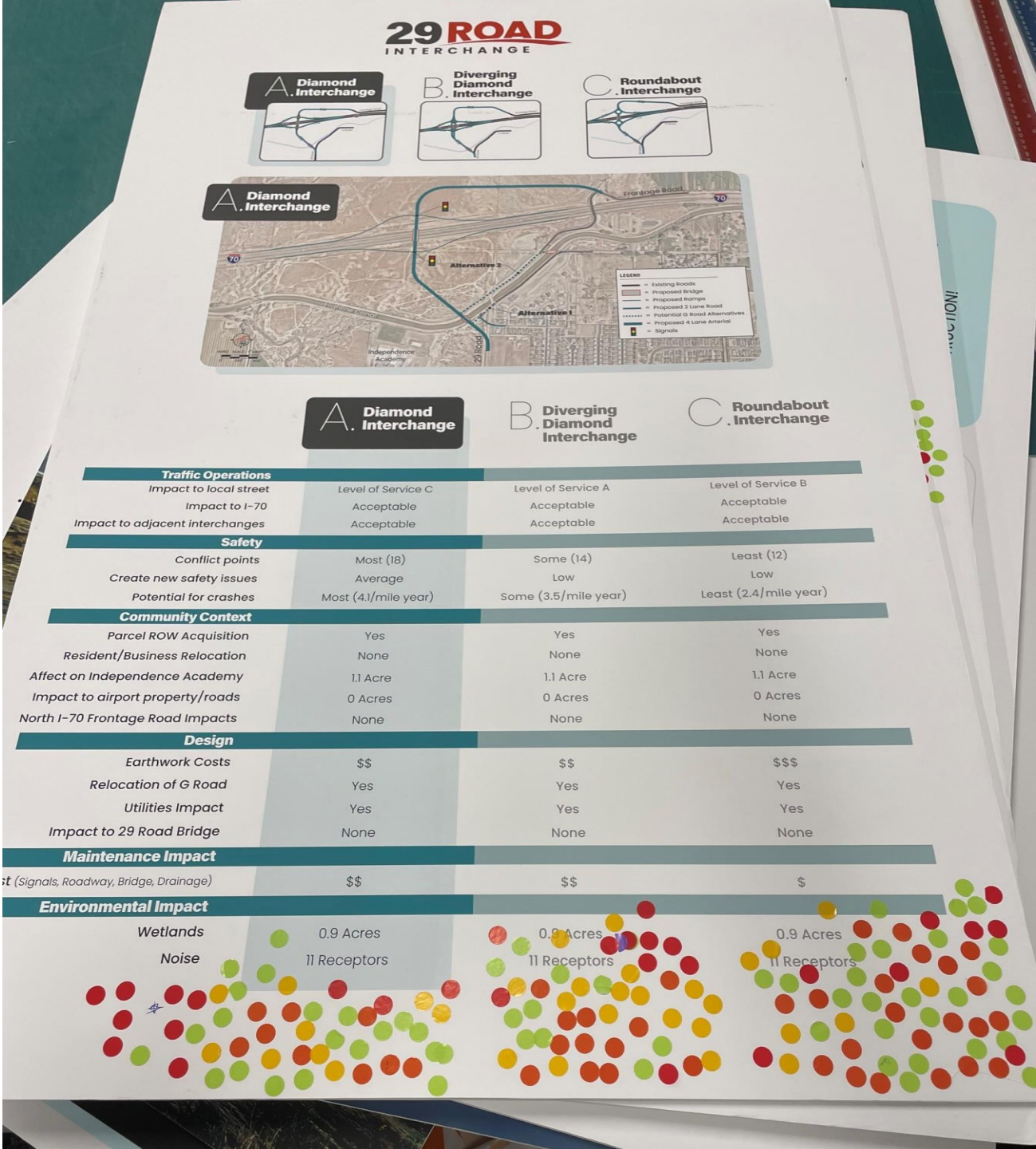
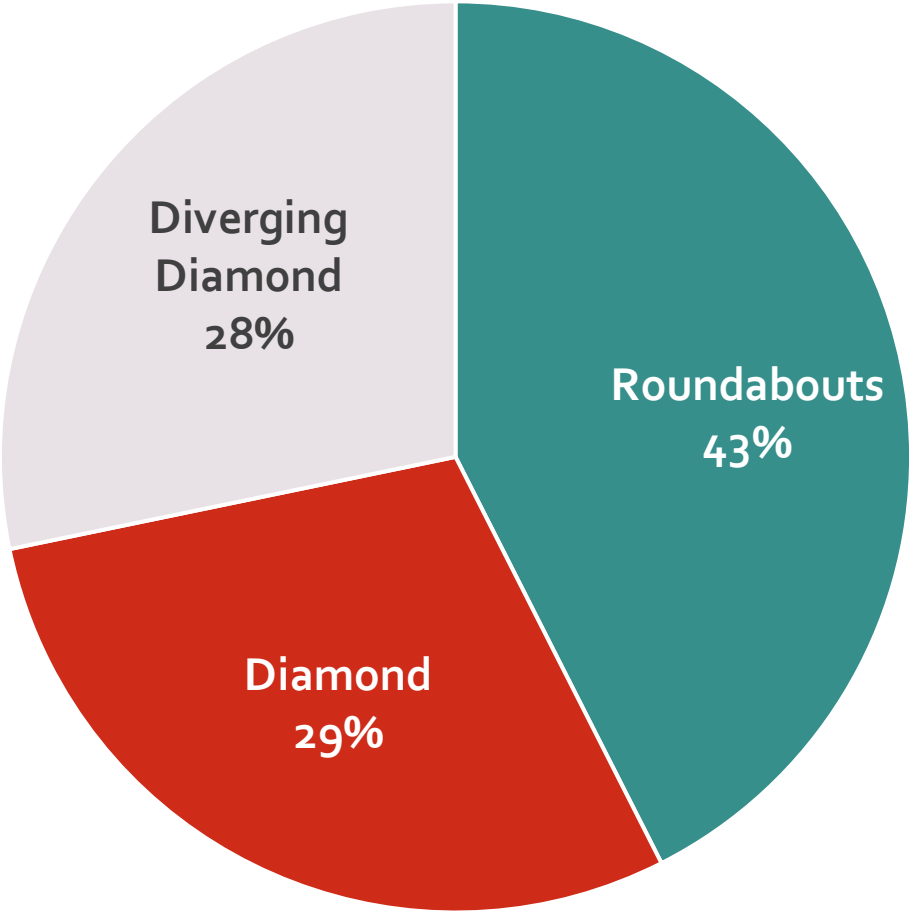
Values – Marble Exercise



■ Community ■ Traffic ■ Safety ■ Env ■ Cost



Interchange Preference



Other Public Meeting Themes

Other Public Meeting Themes

- ▶ Concern about effects on 29 Road between I-70 and Patterson Road
- ▶ 29 Road Pedestrian & Bicycle Safety
- ▶ ROW Impacts from 29 Road Improvements
- ▶ 29 Road and Patterson Road intersection has sight issues, especially left turns

Level 3 Approach

Level 3 Traffic Approach

- ▶ Finalize traffic forecasts
 - ▶ *Reflect west alignment and roundabouts at 29 Road*
 - ▶ *Consider access management concepts on 29 Road*
 - ▶ *Evaluate TDM effects on traffic volumes*
- ▶ Evaluate arterials to determine LOS and queues
 - ▶ *29 Road corridor with roundabout interchange*
 - ▶ *Other arterials, including 29 Road at Patterson Road*
 - ▶ *Use Synchro and Rodel software*
 - ▶ *Define mitigation measures, if needed*
- ▶ Evaluate mitigation measures along I-70
 - ▶ *Auxiliary lanes, ITS solutions, etc.*
 - ▶ *Use HCS*

Other Level 3 Tasks

- ▶ Evaluate safety along I-70
 - ▶ *West of Horizon to east of Clifton*
 - ▶ *Use HSS*
- ▶ Develop Conceptual Guide Signing Plan
 - ▶ *Demonstrate feasibility per IAR requirements*
- ▶ Prepare System Level Study (CDOT)
- ▶ Prepare Interstate Access Request (FHWA)

Next Steps

Upcoming

- ▶ Signed Initial MOU
- ▶ Next TAC Meeting
 - ▶ Initialize Level 3 Information
 - ▶ 29 Road Cross Section Evaluation
 - ▶ Patterson Road Intersection Information
 - ▶ Initiate NEPA Documentation
- ▶ Coordination Meetings
 - ▶ On-going and tied to decisions points and major evaluation steps

Thanks!!!