

Meeting Summary

Date: May 30, 2025, **Revised June 20, 2025**

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

Meeting Name: TAC Meeting #14: CDOT Follow-up

Meeting Date: May 12, 2025

Attendees:

Invitee	Organization	Invitee	Organization
Kevin King	Mesa County	Alex Pulley	FHU
Scott Mai	Mesa County	Amanda Cushing (virtual)	FHU
Trent Prall	Grand Junction	Paul Brown (virtual)	FHU
Ajin Hu (virtual)	FHWA	Melanie Bishop (virtual)	FHU
Liz Cramer (virtual)	FHWA	Cady Dawson (virtual)	FHU
Zane Znamenacek	CDOT	John Dibble (virtual)	FHU
Mark Bunnell	CDOT	Daniel Larkin (virtual)	Mesa County
Eric Mocko (virtual)	Grand Junction		

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 Summary



Meeting materials can be found at the end of this meeting summary. Additionally, to keep consistent nomenclature (I-70 interchange without the aux lane vs. Base [Build]), clarifications from the meeting materials have been made in this meeting summary.

Meeting Goal:

- ▶ Reach Consensus on Interchange Elements to Move Forward

Agenda:

Welcome and Introductions

Project Background/History

The 29 Road Interchange at I-70 is one of the final elements that project partners, City of Grand Junction and Mesa County, need to provide important connections to other projects that have already been constructed.

Project Purpose and Need

Purpose

The purpose of the project is to enhance the eastern Grand Valley transportation network between the I-70 Business Loop East Interchange and the Horizon Drive Interchange to 1) improve local and regional connectivity and 2) provide enhanced access to planned land use surrounding I-70 in Grand Junction.

Need

Improved local and regional connectivity is needed to:

- ▶ Address limited regional transportation network connectivity with access to/from I-70 between I-70 Business Loop East and Horizon Drive interchanges



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- ▶ Extend the functional longevity of the existing transportation system connecting to I-70

Improved access to I-70 is needed to:

- ▶ Provide transportation infrastructure needed to accommodate planned land use surrounding I-70, and specifically, the future Matchett Park and its associated recreation center
- ▶ Provide transportation infrastructure needed to support projected and regional traffic demands

Reviewed and approved by Stephanie Gibson (FHWA [retired]) on **November 9, 2022**.

Matchett Park is a planned regional park that will be accessed via 29 Road. The recreation center at Matchett Park is currently under construction.

TAC #14 (April 2025) Summary

- ▶ During a previous TAC meeting, it was revealed that the 2050 long-range forecasts are expected to **decrease** approximately 10-15% as less anticipated growth is expected. We are currently using the 2045 model. Thus, it is possible that some of the congestion that has been anticipated may be less severe.
- ▶ The TAC agreed that if safety improves through a reduction in fatal and serious injury crashes, I-70 congestion will be acceptable.

Revision:

If CDOT had to choose between 1) decreasing serious injury and fatal crashes on I-70, or 2) mitigating congestion on I-70 created by the 29 Road interchange, CDOT would accept the congestion to reduce crashes. It would be difficult to accept congestion when there are options under consideration that reduce crashes and mitigate the congestion on I-70.

- ▶ The project must prevent weaving on the I-70 curve.



Meeting Summary

- ▶ Remaining alternatives include:
 - ▶▶ Build (Base)
 - ▶▶ Build (Base) Alternative with braided ramp and slip lane
- ▶ Evaluate additional safety improvements
- ▶ Complete benefit cost analysis

Future Congestion

Review of graphics with 2045 I-70 Build (29 Road interchange) without mitigation options.

Westbound

- ▶ I-70 Build without mitigation during AM peak hour showed **one 15-minute period** with a level of service (LOS) F.
- ▶ During the same 15-minute period, **LOS D** was seen in the **No Action Alternative**.
- ▶ During the same 15-minute period, **LOS C** was seen in the **I-70 Build with an auxiliary lane**.
- ▶ During the same 15-minute period, **LOS D** was seen in the **I-70 Build 6-lane I-70 facility**.

Eastbound

- ▶ Eastbound AM peak hour depicted levels of service between LOS A and LOS C in all scenarios.

Review of graphics with 2045 I-70 Build (29 Road interchange) with mitigation options.

Westbound

- ▶ I-70 Build with an auxiliary lane during westbound AM peak hour levels of service between **LOS A** and **LOS C**.

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- ▶ I-70 Build with a C-D road, levels of service were between **LOS A** and **LOS D**.
- ▶ I-70 Build with braided ramps, levels of service were between **LOS A** and **LOS D**.
- ▶ I-70 Build with a **6-lane I-70 facility, one 15-minute period** with a level of service **LOS D** was depicted.

Eastbound

- ▶ Eastbound AM peak hour has LOS A through LOS C in all scenarios.

(Graphics included within the meeting materials at the end of the summary.)

No questions or comments.

Safety: I-70 Curve

Crash rates and predicted crashes are summarized below.

- ▶ Adding an interchange on I-70 would inherently increase crashes (due to the increased number of conflict points). A CDOT/FHWA requirement for the project was to not see an increase in fatal and injury crashes.
- ▶ As depicted in the table below, through the addition of safety mitigation measures in the different options, there is an expected reduction in crash rates.
- ▶ As previously mentioned, the I-70 auxiliary lane option and the C-D Road option were removed from further consideration. Additionally, converting I-70 into a 6-lane facility is not feasible for this project. The attendees reviewed freeway predicted crash rates for fatal and injury crashes.
 - ▶▶ For the No Action Alternative, there is a 0.80 crash rate.
 - ▶▶ For the Build (Base) Alternative, the crash rate is 0.64.
 - ▶▶ For the braided ramps, the crash rate is further reduced to 0.40.

Freeway Predicted Crash Rates (2045)

Scenario	Property Damage Only	Fatal and Injury	Total
No Action	1.14	0.80	1.94
Build (Base)	1.00	0.64	1.64
Auxiliary Lane	~~1.00~~	~~0.65~~	~~1.65~~
C-D Road	~~1.32~~	~~0.90~~	~~2.22~~
Build (Base) Alternative with a braided ramp and slip lane	0.77	0.40	1.17
~~6-Lane I-70~~	~~0.88~~	~~0.50~~	~~1.38~~

No questions or comments.

Safety: Overall Network

- ▶ As depicted in the table below, through the addition of safety mitigation measures in the different options, there is an expected reduction in predicted crashes.
- ▶ Similar to the table above, the auxiliary lane option, the C-D Road option, and the 6-lane I-70 facility option were removed. Thus, we reviewed freeway and study area predicted crashes for fatal and injury crashes.
 - ▶▶ For the No Action and the Build (Base) Alternatives, 38 fatal and injury crashes are predicted along the freeway.
 - ▶▶ For the braided ramps, it is down to 31 predicted fatal and injury crashes along the freeway.

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Freeway Predicted Crashes (2045)

Scenario	Property Damage Only	Fatal and Injury	Total
No Action	85	38	123
Build (Base)	95	38	133
Auxiliary Lane	95	39	134
C-D Road	86	36	124
Build (Base) Alternative with a braided ramp and slip lane	76	31	107
6-lane I-70	90	34	125

No questions or comments.

- ▶ Predicted fatal and injury crashes for the study area, which includes the arterial network of 29 Road, Patterson Road, I-70B, Horizon Drive, 27½ Road, F½ Road, and 30 Road, as follows:
 - ▶ For the No Action and the Build (Base) Alternatives, there are 68 and 70 fatal and injury crashes predicted within the study area, respectively.
 - ▶ For the braided ramps, it is down to 65 predicted fatal and injury crashes.

Study Area Predicated Crashes (2045)

Scenario	Property Damage Only	Fatal and Injury	Total
No Action	147	68	215
Build (Base)	166	70	236

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Scenario	Property Damage Only	Fatal and Injury	Total
Auxiliary Lane	166	71	237
C-D Road	159	68	227
Build (Base) Alternative with a braided ramp and slip lane	149	65	214
6-lane I-70	162	66	228

No questions or comments.

Preferred Alternative

- ▶ During a previous TAC meeting, CDOT requested that we look at shifting the proposed interchange location as far east as possible to give more distance between the interchange location and the I-70 curve.
- ▶ The **westbound** 29 Road on-ramp for the revised interchange location is approximately **3,900 feet** from the I-70 curve.
- ▶ The **eastbound** 29 Road off-ramp for the revised interchange location is approximately **3,700 feet** from the I-70 curve.

(Graphics included within the meeting materials at the end of the summary.)

Question: What are the 2050 project volume decreases of 10% to 15% compared to?

Response: We are comparing to the 2045 project volumes, which is the model that we have been using. The RTPD is in the process of updating their regional transportation model and that is the projections they are seeing.

Question: Why are the year 2050 projected volumes expected to decrease?

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Response: While the RTPD folks are not currently present to review the details, we understand that it is systemwide and it is due to less population growth; thus, the 2045 volumes may be over projected.

Question: Why did the C-D road crash rate increase?

Response: When we pulled this analysis together, we included the C-D road with the freeway system crashes. There are crashes associated with the C-D road itself and that pushes the overall freeway crash rate up.

Looking at only I-70, it is likely more similar to some of the other options here, but we did not feel comfortable that the C-D road was part of the arterial network because it is serving freeway traffic connecting 29 Road and Horizon Drive and it does not serve arterial traffic. It is simply providing a place for entering and exiting traffic on the freeway to mix instead of mixing them on the freeway itself. Thus, with the extra merge and diverge points that you get with the CD road, it increased the crash rate.

Question: Why is the 2045 AM congestion for the C-D road different than what is shown in the SLS?

Response: We would need to review the SLS and compare the tables. However, we did rerun the model for the C-D road and braided ramp scenarios. Thus, the volumes did change, which changed the levels of service. The patterns were consistent in that westbound AM.

We felt comfortable maintaining that this is similar to the SLS, but there are some changes from the SLS volumes. There was also a discussion around whether there would be connectivity between 29 Road and Horizon Drive in the braided ramp scenario which is something we've been working on and have presented results where a connection is in place to allow for traffic to exclusively go from 29 Road to Horizon Drive.

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Thus, there have been multiple volume changes from what was presented in the SLS in 2024 to address what has been asked of us in the multiple TAC meetings since the draft SLS was prepared.

From a safety standpoint, the C-D road depicted an increase in crashes as the C-D road still allows the weaving movement on a parallel facility adjacent to the I-70 curve.

Question: Given that the proposed interchange is 1 ½ miles from the Horizon Drive interchange, did you consider fixing the access to 29 Road through the Horizon Drive? In other words, did you consider for the purpose and need just accessing that area using the Horizon Drive interchange and complete analysis for that scenario?

Response: The project team was not prepared to adequately respond to this question at this time.

Post Meeting Response: The project team evaluated the 2045 No Action Condition at both adjacent interchanges to evaluate other operational as well as functional ability to accommodate the additional traffic.

The I-70 and Horizon Drive interchange is in a grey area of operational capacity due to multiple modelling assumptions and methodologies. However, the roadway cannot be expanded beneath I-70 due to the location of the I-70 bridge piers. Therefore, a large amount of work would be required to ensure that future operational needs were addressed. Therefore, improvements at this interchange were deemed to be unreasonable.

The I-70B/Clifton interchange has plenty of capacity in 2045 as it is a free-flow interchange. However, the functional life span is limited due to the age of the structures. Additionally, the roadway shoulders do not meet current standards. Any changes to this interchange would likely require a complete re-build of the interchange. Thus, replacing this interchange was deemed to be unreasonable.

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One of the needs for the project is to expand the longevity of the existing infrastructure, which includes the I-70/Horizon Drive interchange and the I-70/I-70B/Clifton Interchange. A new interchange at I-70 and 29 Road would reduce trips on the adjacent interchanges; thus, extending the life of these interchanges.

Question: Referring to the table, why does the acceleration/deceleration length have a slightly higher rate than the base case?

Response: We used the Highway Safety Software (HSS) which implements the methodologies in the Highway Safety Manual. HSS does not differentiate well between with and without auxiliary lanes. For this, the differential between the Build without the auxiliary lane and the Build with the auxiliary lane. We have researched crash modification factors (CMFs) but we do not yet have a strong enough case to make some real difference between the Build base case and the Build auxiliary lane case beyond what HSS does.

Question: You cannot tell which one is better, correct?

Response: That is correct, from a safety perspective per the output from HSS. Again, we're seeing weaving on the I-70 curve, which has been a primary concern for the group because the group does not feel that HSS is accurately reflecting the effects of the curve.

Question: With continual acceleration/deceleration length, a driver will be better off weaving because the longer distance there is to weave between the two interchanges; is that correct?

Response: There has been a lot of discussion that bout the auxiliary lane and concerns with weaving in an area that has been prone to safety issues. CDOT has been very concerned about adding weaving conflicts into an area with identified safety issues.

Question: What's the distance between the two interchanges?

Response: It's about 1½ miles depending on which interchange scenario is referenced.

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Analysis Between TAC #14 and Today

Meeting with Ex. Director Lew and Region 3 Transportation Commissioner

- ▶ Will likely present a project status to the Transportation Commission (TC) at the July 2025 meeting.
- ▶ Looking to get conditional approval from the TC in order to use the Congressionally Discretionary Spending funds for the 29 Road improvements.
- ▶ CDOT Executive Director Lew has been briefed on the TDM findings.
- ▶ Formal approval of the project would be in 2026. The final IAJR would be submitted at this time.

Statement: FHWA has not received an IAJR from CDOT. Two options have been presented as potentially moving forward. Which option is planned? FHWA would prefer to approve a design that does not require a design exception.

Response: We would agree. Our goal is to narrow down to one scenario that meets safety requirements and makes sense from a benefit cost analysis to receive TC approval for CDOT's 1601 process and then advancing the draft IAJR.

Statement: FHWA would prefer to receive and review the IAJR prior to receiving approval on the 1601 as there is a possibility that the proposed design will not meet operation safety and engineering.

Response: We worked early in the project to get approval on the Methods and Assumptions document and have included FHWA in the TAC meetings; however, the project has had multiple changes in leadership; we've had several engineers involved in the project. In addition, Stephanie Gibson (recently retired) was very involved on the environmental side as well as providing comments and guidance.

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Statement: FHWA will review the Methods and Assumptions document.

Statement: Please submit something specific for FHWA review and provide a response which will help us provide a preliminary approval.

Statement: CDOT proposes submitting a letter to FHWA stating that the project appears to meet safety and operational standards. FHWA would review and provide the final formal approval.

Revision:

CDOT would submit this letter after the SLS is reviewed and accepted by CDOT.

Statement: In the updated IAJR guidance, the engineering and safety approval (SO&E determination) is an interim check and then the official IAJR approval would occur after NEPA has been completed as the issuance of the IAJR is a federal action. Thus, NEPA must be completed prior to the final IAJR approval.

Statement: Ideally, FHU would like to settle on one option and follow up with updating the SLS and resubmitting it to stakeholders for review.

No other questions or comments.

Konrad's comments

The previous FHWA representative gave the following statements.

- ▶ FHWA is hesitant to approve a project that exhibits adverse effects on operations and safety; however, FHWA can approve exceptions where a negative impact is unavoidable if the benefits to surrounding system outweigh the highway impact.
- ▶ There are likely simple solutions to reduce fatal and injury crashes to at least equal to or less than the No Action Alternative, the operational impact would then be justified.

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Additional Safety Countermeasures

Based on those statements, FHU reviewed safety to the overall system applying safety countermeasures from the Highway Safety Software (HSS). Additional safety countermeasures, CMFs, that are not available in the HSS were also applied.

- ▶ Curb and gutter along 29 Road arterial segments (CMF)
- ▶ Sidewalks along 29 Road arterial segments (CMF)
- ▶ Bicycle lanes along 29 Road arterial segments (CMF)
- ▶ Lighting at 29 Road arterial intersections (HSS)
- ▶ Reflective backplates at Patterson Road arterial intersections (CMF)
- ▶ Protection left turn phasing at Patterson Road arterial intersections (HSS) and at I-70B arterial intersections (HSS)

Revised Safety Numbers

With the addition of the countermeasures, the predicted crashes are updated as follows:

Scenario	Facility	Property Damage Only	Fatal and Injury	Total
No Action	I-70	85 (85)	38 (38)	123 (123)
	Arterial roadways ¹	62 (62)	30 (30)	92 (92)
	Total Study Area	147 (147)	68 (68)	215 (215)
Build (Base)	I-70	95 (95)	38 (38)	133 (133)
	Arterial roadways ¹	65 (71)	28 (32)	93 (103)
	Total Study Area	160 (166)	66 (70)	226 (236)
Build (Base) Alternative with a braided ramp and a slip lane ²	I-70	83 (76)	33 (31)	116 (107)
	Arterial roadways ¹	63 (73)	28 (34)	91 (107)
	Total Study Area	146 (149)	60 (65)	206 (214)

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¹ – Arterial roadways included 29 Road, Patterson Road, I-70B, and Horizon Drive

² – The values in parentheses correspond to the braided ramp configuration without a slip lane.

(XX) – Crashes prior to applying safety countermeasures.

- ▶ Adding the safety countermeasures showed a reduction in fatal and injury crashes with both options (Build (Base) and Build (Base) Alternative with a braided ramp and slip lane).

Post Meeting Question: Why do the Fatal and Injury crashes increase on I-70 for the braided ramps options when safety improvements are made on 29 Rd and Patterson Rd?

- ▶ **Post Meeting Response:** In the No Action and Build (Base) scenarios, the values in parentheses represent crash frequencies before applying safety countermeasures. However, in the Braided Ramp with the slip lane scenario, the values in parentheses inadvertently reflect the braided ramp without the slip lane, instead of representing pre-countermeasure crash data, as in the other two scenarios.

The braided ramp configuration with a slip lane exhibits increased traffic demand and greater exposure, which results in a slightly higher predicted crash frequency.

Reviewing further, FHU looked at developing a benefit cost analysis (BCA) to answer the question:

- ▶ Does the cost of the braided ramp outweigh the safety benefits?

Benefit Cost Analysis

- ▶ FHU prepared a BCA that included I-70, I-70B, Patterson Road, 29 Road, and Horizon Drive.
- ▶ BCA assumes construction in 2030 and includes maintenance until 2055.
- ▶ The BCA monetizes benefits for:
 - ▶ Operations and Maintenance

Meeting Summary

- ▶▶ Residual Value & Remaining Service Life
- ▶▶ Safety
- ▶▶ Travel Time Savings
- ▶▶ Emission Reductions
- ▶ FHU prepared a BCA for the following alternatives:
 - ▶▶ Build (Base)
 - ▶▶ Build (Base) Alternative with a braided ramp and slip lane
- ▶ Many of the assumptions in the BCA were utilized from previous projects.
- ▶ A Benefit Cost Ratio (BCR) that is greater than 1.0 means that the benefits outweigh the costs.

Build (Base)	BCA
Total Costs	\$71,597,689
Total Benefits	\$162,649,783
Benefit Cost Ratio	2.27 : 1

Build (Base) Alternative with Braided Ramp and Slip Lane	BCA
Total Costs	\$98,458,898
Total Benefits	\$120,454,868
Benefit Cost Ratio	1.22 : 1

Reviewing the BCA, the benefit-cost ratio for:

- ▶ Build (Base) is **2.27 : 1**.
- ▶ Build (Base) Alternative with a braided ramp and slip lane is **1.22 : 1**.

Looking at a slightly different perspective, what is the “difference” between the 2.27 : 1 and the 1.22 : 1?

Meeting Summary

- ▶ Increased the Benefit to equal Interchange BCR of 2.29
- ▶ Kept Costs the same and roughly changed the Benefits

Build (Base) Alternative with Braided Ramp and Slip Lane	BCA	Hypothetical Benefits	Δ Benefits to Equal Build (Base)
Total Costs	\$98,458,898	\$98,458,898	\$0
Total Benefits	\$120,454,868	\$225,000,000	\$104,545,132
Benefit Cost Ratio	1.22 : 1	2.29	

Alternatively, another perspective includes:

- ▶ Decreasing Costs to equal Interchange BCR of 2.29.
- ▶ Keep Benefits the same and roughly decreased Costs

Build (Base) Alternative with Braided Ramp and Slip Lane	BCA	Hypothetical Costs	Δ Costs to Equal Build (Base)
Total Costs	\$98,458,898	\$53,000,000	(\$45,458,898)
Total Benefits	\$120,454,868	\$120,454,868	\$0
Benefit Cost Ratio	1.22 : 1	2.27	

Post Meeting Information: FHU has analyzed the BCA and refined the BCA to reflect a different perspective on the analysis. This has resulted in the results to be closer; however, the Build (Base) Alternative with Braided Ramp and Slip Lane scenario still has a lower BCA. This information will be presented at the next TAC meeting.

ACTION ITEM: Statement: CDOT would like to review the BCA.

Summary and Discussion

- ▶ Operational challenges are not likely as severe as the 2045 traffic model shows due to the presumed 2050 traffic model.

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- ▶ Additional safety measures decrease fatal and injury crashes less than No Action for both the Build (Base) and the Build (Base) Alternative with a braided ramp and slip lane.
- ▶ The reduction in crashes from the braided ramp and slip lane does not outweigh the additional costs compared to Build (Base).
- ▶ The Build (Base) returns more benefit per dollar spent than the Build (Base) Alternative with a braided ramp and slip lane.
- ▶ **Question:** What is the current cost of the interchange adding all of the safety elements (intersection lighting, curb and gutter, bike lanes, etc.)?
 - ▶ **Response:** The added safety elements do not substantially change the cost estimate. Most of the safety elements (curb and gutter, lighting, etc.) have been a part of the design from the beginning.
- ▶ **Question:** Were any safety elements considered that would mitigate crash rates on the interstate?
 - ▶ **Response:** We added advanced curve warning signage and geometric modifications including widening the shoulders, etc.
- ▶ **Statement:** We are happy to share a link to our project website which includes the TAC meeting summaries, public meeting documents, stakeholder reports, etc.

<https://fhu.mysocialpinpoint.com/29-road-interchange/internal-resources>
- ▶ **ACTION ITEM:** Set up a time with FHWA to review a snapshot of the current situation, current plan, and the safety and operations analyses for those plans.
- ▶ **ACTION ITEM: Statement:** Please send us a link to access TAC meeting #14.
- ▶ **Question:** With adding an interchange to the I-70 facility, crashes will inherently increase; however, the crash rate does not increase. Please

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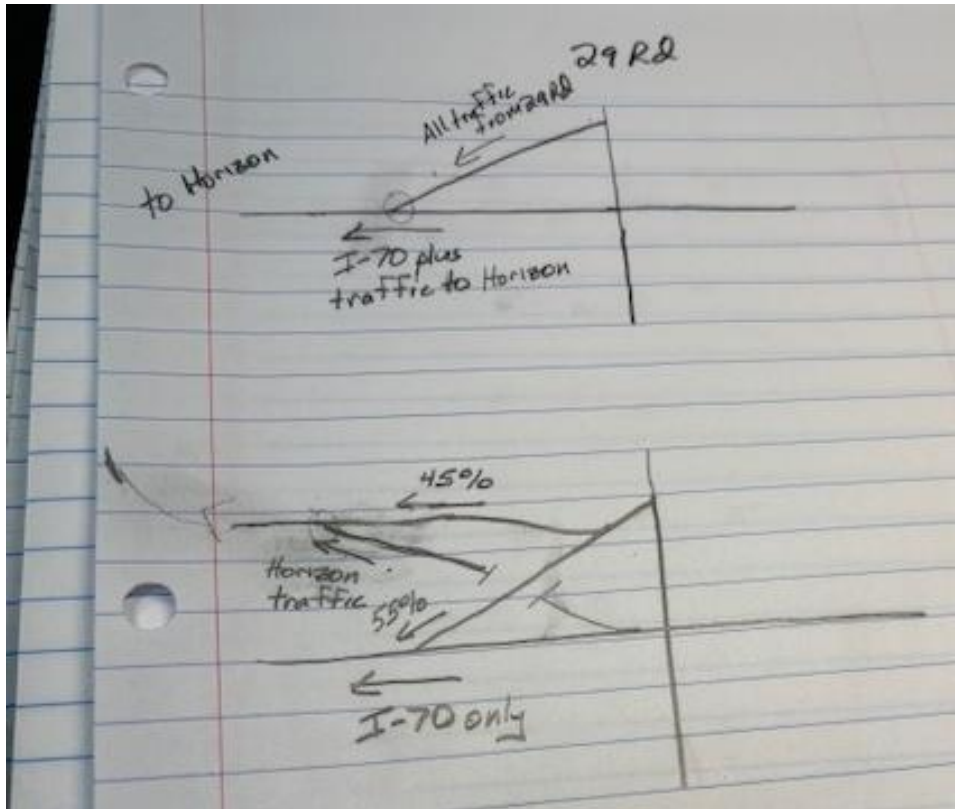
explain why No Action and Build does not support that statement as it seems counterintuitive to what has been presented.

- ▶▶ **Post Meeting Response:** The crash rates factor in traffic volumes (i.e., crashes/million miles traveled) whereas crashes are simply the number of crashes regardless of how much volume is present on the roadway. The reason the crash rates are lower with the build scenarios is that there is more volume on I-70 than in the No Action scenario. Thus, fewer actual crashes per million miles travelled.
- ▶ **Question:** What is the arterial network crash rate?
 - ▶▶ **Response:** We have not yet developed a table with that information.
- ▶ **Question:** Please help me understand why the braided ramp depicts congestion while the typical ramp does not have congestion. Why would the model distribute the traffic in that manner (see drawing below)?
 - ▶▶ **Post Meeting Response:** Our analyses have consistently shown over-saturated conditions in the westbound direction. This remains true with the Build (Base) Alternative with Braided Ramp and Slip Lane scenario.
 - ▶▶ **Post Meeting Question:** This response does not answer the question. As depicted in the hand-sketch, the base build option has one merge point (29 Rd WB on-ramp to I-70) and two lanes WB between 29 Rd and Horizon Dr. The braided ramp option has two merge points (29 Rd WB on-ramp to I-70 and Horizon Dr WB off-ramp with 29 Rd to Horizon Dr connector). In addition, there is essentially a third lane WB between 29 Rd and Horizon Dr because of the braided ramps. This means the braided ramp option has more WB capacity than the base build option so it would seem that the LOS for the braided ramps option should be

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at least equal to (but not worse than) the base build option.
Please review this again to discuss it at the next TAC meeting.

- **Post Meeting Response:** We will discuss it at the next TAC meeting.



Next Steps/Action Items

- Send the BCA to CDOT.
- Set up a meeting with FHWA to review a snapshot of the current situation, current plans, and the safety and operations analyses for those plans (meeting is scheduled for May 29, 2025).
- Send project website link to FHWA to access TAC meeting summaries since the June 2024 SLS (completed).

Decisions Made

- None at this time.

Meeting Summary

Schedule

- ▶ Due to Executive Director Lew's leave of absence, the goal is to present the project status at the TC Workshop in July 2025.
- ▶ Complete environmental tech memos (NEPA decision document will come later).
- ▶ Update the System Level Study following preferred alternative selection.
- ▶ Complete conceptual design and the NEPA decision document (documented categorical exclusion or an Environmental Assessment).
- ▶ Initiate Interstate Access Justification Request.

I-70 Interchange in Grand Junction – FHWA & CDOT Mtg

May 12, 2025

Agenda

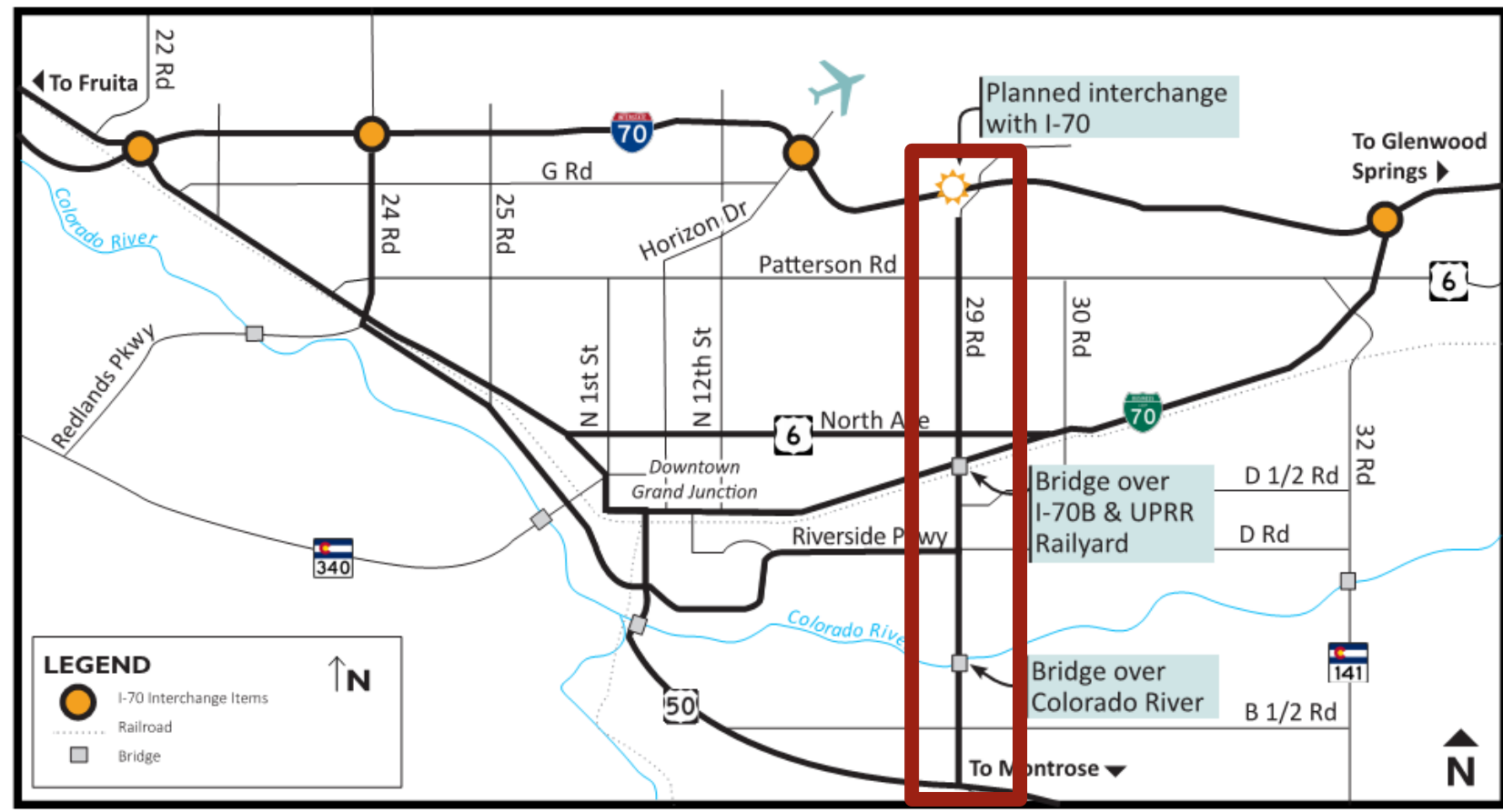
- ▶ Welcome and Introductions
- ▶ Quick Project Background
- ▶ TAC #14 (April 2025) Summary
- ▶ Analysis Between TAC #14 and Today
- ▶ Discussion
- ▶ Next Steps

Meeting Goal:

Reach Consensus on Interchange Elements to Move Forward

Quick Project Background

- ▶ City and County partnered on transportation projects already constructed
- ▶ 29 Road interchange is one of the final elements to provide important connections



Project History

Purpose & Need

Purpose

The purpose of the project is to enhance the eastern Grand Valley transportation network between I-70 Business Loop East Interchange and Horizon Drive to: 1) improve local and regional connectivity and 2) provide enhanced access to planned land use surrounding I-70 in Grand Junction.

Need

- ▶ Improved local and regional connectivity is needed to:
 - Address limited regional transportation network connectivity with access to/from I-70 between I-70 Business and Horizon Drive interchanges
 - Extend the functional longevity of the existing transportation system connecting to I-70
- ▶ Improved access to I-70 is needed to:
 - Provide transportation infrastructure needed to accommodate planned land use surrounding I-70, and specifically, the future Matchett Park and its associated recreation center
 - Provide transportation infrastructure needed to accommodate projected and regional traffic demands

Matchett Park



TAC #14 Summary

- ▶ Capacity and Safety are not aligning well
 - ▶ 2050 Projected Volumes are expected to *decrease* 10%–15%
- ▶ Group can live with projected congestion if safety improves
- ▶ CDOT does not want weaving on the I-70 curve
- ▶ Remaining Alternatives
 - ▶ Interchange without Aux Lane
 - ▶ Braided Ramp
- ▶ Direction to evaluate other safety improvements and conduct a Benefit Cost Analysis

TAC #14

Focus Areas

- ▶ *Future Congestion*
 - ▶ Safety: I-70 Curve
 - ▶ Safety: Overall Network
- 

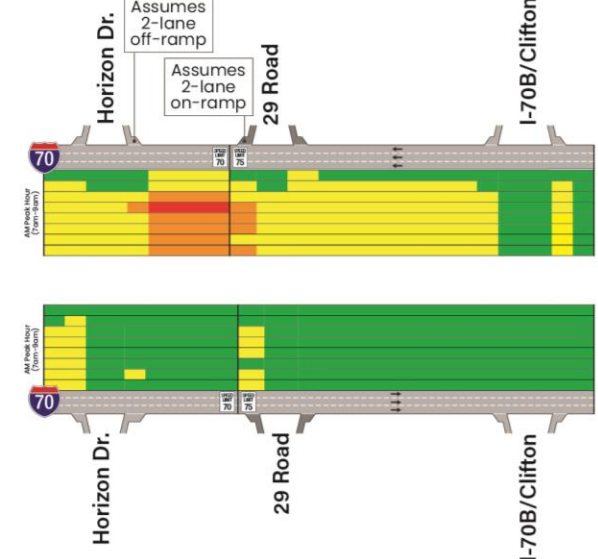
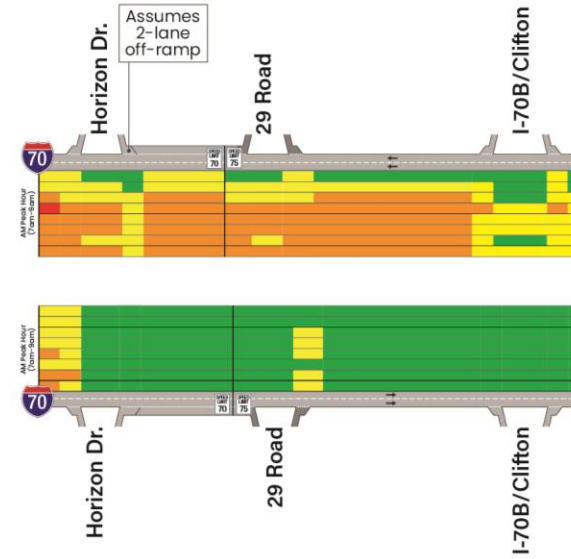
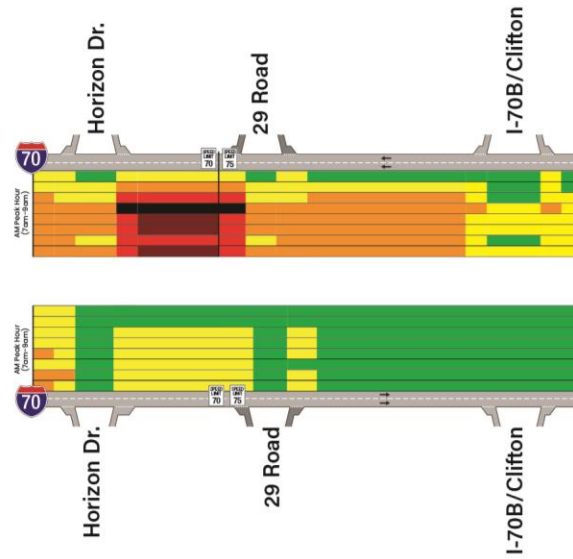
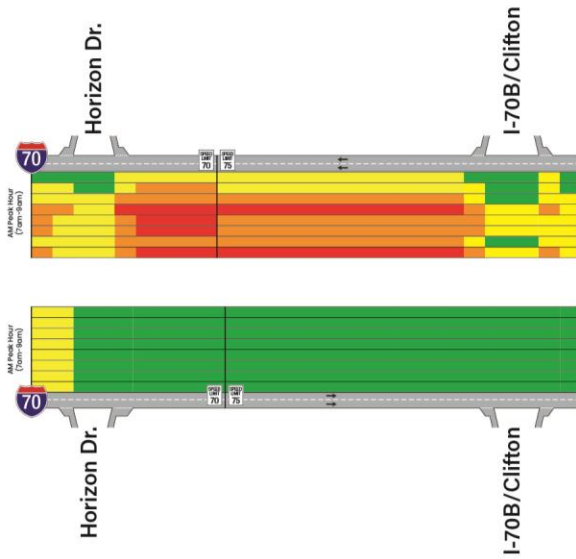
2045 No Action

2045 With 29 Road

2045 with 29 Road and Aux Lane

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

WESTBOUND AM



EASTBOUND AM

LEGEND



Peak Hour I-70 Build Operations without mitigation

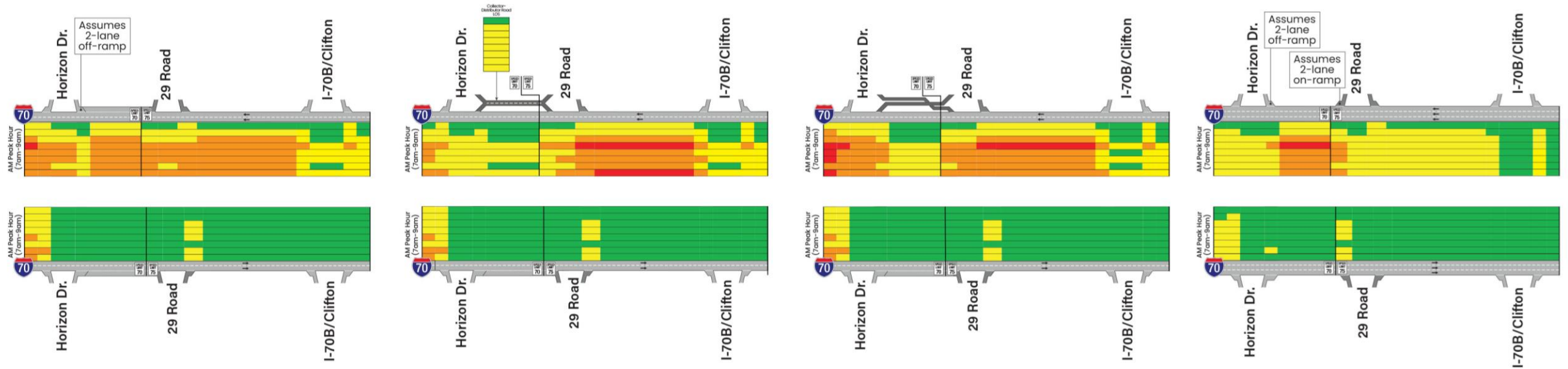
2045 with 29 Road and Aux Lane

2045 with 29 Road and C-D Road

2045 with 29 Road and Braided Ramps

2045 with 29 Road and 6 Lane

WESTBOUND AM



EASTBOUND AM

LEGEND



Peak Hour I-70 Option Operations (With Mitigation)

TAC #14

Focus

- ▶ Future Congestion
 - ▶ *Safety: I-70 Curve*
 - ▶ Safety: Overall Network
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- Focused on Fatal and Injury Crashes (no increases over No Action)
 - Decrease in Fatal and Injury Crash Rates overall; but total crashes increased

Freeway Predicted Crash Rates (2045)

Scenario	Property Damage Only	Fatal and Serious Injury	Total
<i>No Action</i>	1.14	0.80	1.94
<i>Build (Base)</i>	1.00	0.64	1.64
Auxiliary Lane	1.00	0.65	1.65
C-D Road	1.32	0.90	2.22
<i>Braided Ramps</i>	0.77	0.40	1.17
6-Lane I-70	0.88	0.50	1.38

I-70 Crash Rates

TAC #14

Focus

- ▶ Future Congestion
 - ▶ Safety: I-70 Curve
 - ▶ *Safety: Overall Network*
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Safety: Overall Network

Freeway Predicted Crashes (2045)

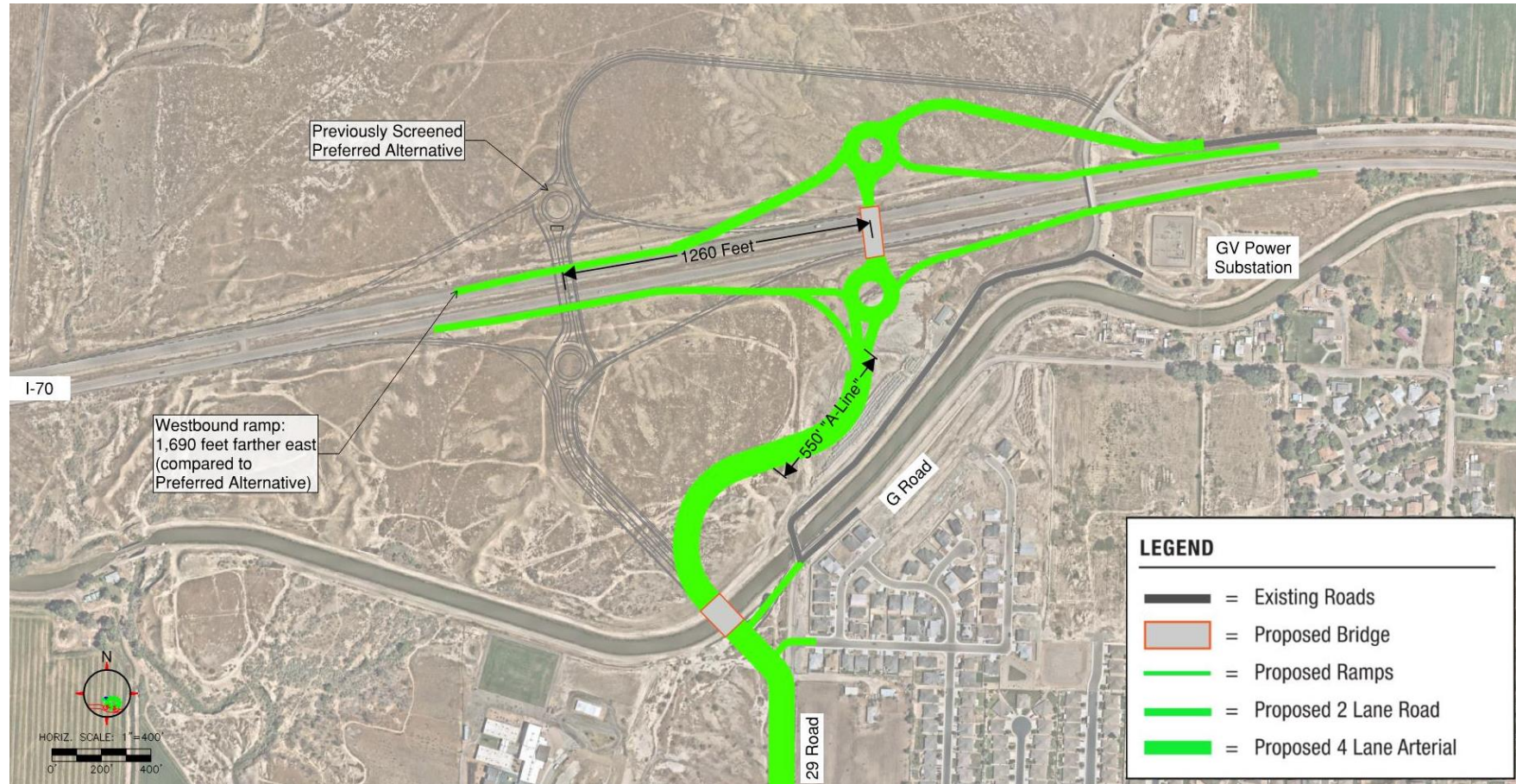
Scenario	Property Damage Only	Fatal and Serious Injury	Total
<i>No Action</i>	85	38	123
<i>Build (Base)</i>	95	38	133
Auxiliary Lanes	95	39	134
C-D Road	87	36	124
<i>Braided Ramps</i>	76	31	107
6-Lane I-70	90	34	125

Study Area Predicted Crashes (2045)

Scenario	Property Damage Only	Fatal and Serious Injury	Total
<i>No Action</i>	147	68	215
<i>Build (Base)</i>	166	70	236
Auxiliary Lanes	166	71	237
C-D Road	159	68	227
<i>Braided Ramps</i>	149	65	214
6-Lane I-70	162	66	228

Preferred
Alternative

- ▶ FHWA Highway Capacity Manual Area of Influence = 1,500 feet (Regardless of Volume)
- ▶ Westbound 29 Road On-Ramp =
~3,900 feet from Curve
- ▶ Eastbound 29 Road Off-Ramp =
~3,700 feet from Curve



Shifted Interchange East

TAC #14 Summary

- ▶ Capacity and Safety are not aligning well
 - ▶ 2050 Projected Volumes are expected to *decrease* 10%–15%
- ▶ Group can live with projected congestion if safety improves
- ▶ CDOT does not want weaving on the I-70 curve
- ▶ Remaining Alternatives
 - ▶ Interchange without Aux Lane
 - ▶ Braided Ramp
- ▶ Direction to evaluate other safety improvements and conduct a Benefit Cost Analysis

Activities Since TAC #14

Executive Leadership Meeting

- ▶ Executive Director Lew
- ▶ Transportation Commissioner
- ▶ New County Administrator
- ▶ New City Manager
- ▶ County Public Works Director
- ▶ City Engineering and Transportation Director

FHWA from Konrad LaDow

- ▶ FHWA hesitant to approve with adverse effects on operations and safety
 - ▶ Can approve exceptions where a negative impact is unavoidable if the benefits to surrounding system outweigh the highway impact
- ▶ Imagines simple solutions to reduce F&I crashes to at least equal or less than No Action, then operational impact is justified

Additional Safety Elements

- Curb and gutter (CMF)
 - 29 Road arterial segments
- Sidewalks (CMF)
 - Same 29 Road arterial segments
- Bicycle lanes (CMF)
 - Same 29 Road arterial segments
- Lighting (HSS)
 - 29 Road arterial intersections
- Reflective backplates (CMF)
 - Patterson Road arterial intersections
- Protection left turn phasing (HSS)
 - Patterson Road arterial intersections
 - I-70b arterial intersections

Revised Safety Numbers

Scenario	Facility	Property Damage Only Crashes	Fatal and Injury Crashes	Total Crashes
No Action	Freeway	85.0	37.5	122.5
	Arterial	62.0	30.4	92.4
	Total Study Area	147.0	67.9	214.9
Preferred Alternative (no aux lane)	Freeway	94.7	38.1	132.8
	Arterial	64.8	28.1	92.9
	Total Study Area	159.5	66.2	225.7
Braid slip lane	Freeway	83.2	32.5	115.7
	Arterial	63.2	27.5	90.7
	Total Study Area	146.4	59.9	206.4

- Both Options have fewer Fatal and Injury Crashes than No Action

Benefit Cost Analysis

- ▶ Used latest US DOT Guidance
- ▶ Included I-70, I-70B, Patterson Road, 29 Road, and Horizon Drive
- ▶ Assumes construction in 2030 and extends to 2055
- ▶ Costs include Maintenance over the timeframe
- ▶ Monetizes Benefits For:
 - ▶ Operations and Maintenance
 - ▶ Residual Value & Remaining Service Life
 - ▶ Safety
 - ▶ Travel Time Savings
 - ▶ Emission Reductions
- ▶ Benefit Cost Ratio (BCR) >1.0 means the benefits outweigh the costs

BCA Results

Preferred Alt	BCA
Total Costs	\$ 71,597,689
Total Benefits	\$ 162,649,783
Benefit Cost Ratio	2.27 : 1

Braided Ramp Scenario	BCA
Total Costs	\$ 98,458,898
Total Benefits	\$ 120,454,868
Benefit Cost Ratio	1.22 : 1

Changes to Braided Ramp to Equal Interchange

- Increased the benefit to equal Interchange BCR of 2.29
- Kept Costs the same and roughly changed Benefits

Braided Ramp Scenario	BCA	Hypothetical Benefits	Δ Benefits to Equal Preferred
Total Costs	\$ 98,458,898	\$ 98,458,898	\$ -
Total Benefits	\$ 120,454,868	\$ 225,000,000	\$ 104,545,132
Benefit Cost Ratio	1.22 : 1	2.29	

Changes to Braided Ramp to Equal Interchange

- Decreased costs to equal Interchange BCR of 2.29
- Kept Benefits the same and roughly decreased Costs

Braided Ramp Scenario	BCA	Hypothetical Costs	Δ Costs to Equal Preferred
Total Costs	\$ 98,458,898	\$ 53,000,000	\$ (45,458,898)
Total Benefits	\$ 120,454,868	\$ 120,454,868	\$ -
Benefit Cost Ratio	1.22 : 1	2.27	

Discussion

- ▶ Operational Issues are not likely as severe as current model shows
- ▶ Additional Safety Countermeasures decrease Fatal & Injury Crashes less than No Action for both Braided Ramp and Interchange w/o Aux Lane
- ▶ The reduction in crashes from Braided Ramp does not outweigh the additional costs compared to Other Scenario
- ▶ The Interchange w/o Aux Lane returns more benefit per dollar spent than Braided Ramp

Thanks!