

# Colorado Transportation Commission

## Schedule & Agenda

June 14-15, 2023

### Transportation Commission Workshops

Wednesday, June 14, 2023

Time	Topic	Speaker
12:00 p.m.	Lunch for Commissioners (optional)	None
12:30 p.m.	Right of Way Condemnation Authorization Request	Keith Stefanik
12:45 p.m.	Budget Workshop & Commissioner Roundtable on Budget Items	Jeff Sudmeier and Bethany Nicholas
1:30 p.m.	Fee Based ROW Access for Fiber Progress Update	Allie Axley and Jonas Durham
2:15 pm	Break	None
2:30 p.m.	PD 1610 - GHG Mitigation Measures - Update	Darius Pakbaz and Theresa Takushi
2:45 p.m.	Update on Bustang Family of Services	Jennifer Phillips and Kay Kelly
3:15 p.m.	Region 3 Update	Herman Stockinger and Executive Management
3:45 p.m.	TPR Boundary Update	Herman Stockinger & Jamie Grimm
4:00 p.m.	Consent Agenda Review	Jason Smith
4:15 p.m.	Audit Review Committee	Frank Spinelli
5:00 p.m.	Adjournment	None

### Transportation Commission Meeting -

Thursday, June 15, 2023

Time	Topic	Speaker
8:00 a.m.	Commissioner Breakfast	Various
9:00 a.m.	Call to Order, Roll Call	Herman Stockinger
9:05 a.m.	Public Comments	Various
9:20 a.m.	Comments of the Chair and Individual Commissioners	Commissioners
9:40 a.m.	Executive Director's Management Report	Shoshana Lew
9:45 a.m.	Chief Engineer's Report	Keith Stefanik
9:50 a.m.	CTIO Director's Report	Nick Farber
9:55 a.m.	FHWA Division Administrator Report	John Cater
10:00 a.m.	STAC Report	Vincent Rogalski
10:05 a.m.	Act on Consent Agenda <ul style="list-style-type: none"> <li>• Proposed Resolution #1: Approve the Regular Meeting Minutes of May 18, 2023</li> <li>• Proposed Resolution #2: IGA Approval &gt;\$750,000</li> <li>• Proposed Resolution #3: FY24 Maintenance Projects \$150K-\$250K</li> </ul>	<ul style="list-style-type: none"> <li>• Herman Stockinger</li> <li>• Lauren Cabot</li> <li>• Jim Fox</li> </ul>

	<ul style="list-style-type: none"> <li>Proposed Resolution #4: Disposal: SH 85 &amp; Jewell, 15-EX, 16-EX, 17-EX, 18-EX, 53-EX</li> <li>Proposed Resolution #5: Adoption of Policy Directive 4.0 "Audit Division Policy"</li> </ul>	<ul style="list-style-type: none"> <li>Jessica Myklebust</li> <li>Frank Spinelli and Herman Stockinger</li> </ul>
10:10 a.m.	Discuss and Act on Proposed Resolution #6: C-470 operations and maintenance (O&M) Backup Loan Agreement	Nick Farber and Piper Darlington
10:15 a.m.	Discuss and Act on Proposed Resolution #7: 12 <sup>th</sup> Budget Supplement of FY 2023	Jeff Sudmeier and Bethany Nicholas
10:20 a.m.	Discuss and Act on Proposed Resolution #8: Budget Amendment	Jeff Sudmeier and Bethany Nicholas
10:25 a.m.	Discuss and Act on Proposed Resolution #9: State Infrastructure Bank Rate Update	Jeff Sudmeier and Bethany Nicholas
10:30 a.m.	Discuss and Act on Proposed Resolution #10: Fee Based ROW Access - ITS Fiber Program	Allie Axley
10:35 a.m.	Discuss and Act on Proposed Resolution #11: PD 1610 GHG Mitigation Measures	Darius Pakbaz and Theresa Takushi
10:40 a.m.	Discuss and Act on Proposed Resolution #12: Right of Way Condemnation Authorization Request	Keith Stefanik
10:45 a.m.	Recognition - R2 Regionwide Clean Up Day	Shane Ferguson
10:50 a.m.	Other Matters - Nominating committee announces nominations- election of officers	Commissioners Hart, Hall and Stuart
10:55 a.m.	Adjournment	None

The Bridge Enterprise Board of Directors meeting will begin immediately following the adjournment of the Transportation Commission Meeting. Estimated Start Time: 10:55 a.m.

---

## Bridge and Tunnel Enterprise Board of Directors Meeting

Thursday, June 15, 2023

Time	Topic	Speaker
10:55 a.m.	Call to Order and Roll Call	Herman Stockinger
11 a.m.	Public Comments	Various
11:05 a.m.	Act on Consent Agenda <ul style="list-style-type: none"> <li>Proposed Resolution #BTE1: to Approve the Regular Meeting Minutes of May 18, 2023</li> </ul>	Herman Stockinger
11:10 a.m.	Discuss and Act on Proposed Resolution #BTE2: BTE Annual Asset Ownership Transfer	Patrick Holinda
11:15 a.m.	Other Matters - Nominating committee announces nominations- election of officers	Commissioners Hart, Hall and Stuart
11:20 a.m.	Adjournment	None

---

## Information Only

- Project Budget/Expenditure Memo (Jeff Sudmeier)

- June TC Grants Memo (Hannah Reed)
- GHG Update: CDOT and DRCOG Annual Mitigation Action Plan (Darius Pakbaz)
- Critical Repair Update (Keith Stefanik)

MEMORANDUM

TO: THE TRANSPORTATION COMMISSION  
FROM: JEFF SUDMEIER, CHIEF FINANCIAL OFFICER  
BETHANY NICHOLAS, BUDGET DIRECTOR  
DATE: JUNE 14, 2023  
SUBJECT: FY 2022-23 BUDGET AMENDMENT

---

Purpose

To review the fifth budget amendment to the FY 2022-23 Annual Budget in accordance with Policy Directive (PD) 703.0.

Action

The Division of Accounting and Finance (DAF) is requesting the Transportation Commission (TC) to review and adopt the fifth budget amendment to the FY 2022-23 Annual Budget, which consists of two items that require TC approval. The fifth budget amendment adds \$15.5 million in FHWA Bridge Replacement and Rehabilitation funds to the Structures and Off-System Bridge Program lines (Lines 5 and 56, respectively), and reallocates \$4 million from the Commission Reserve Funds line (Line 73) to Agency Operations (Line 66) to provide a loan to the Colorado Transportation Investment Office (CTIO).

FY 2022-23 Budget Amendments

**Bridge Replacement and Rehabilitation Program**

CDOT received \$15.5 million in FHWA funds for the Bridge Replacement and Rehabilitation Program for eligible bridge projects. These are additional, supplemental federal bridge funds made available in the Federal Fiscal Year (FFY) 2023 appropriations act. Staff recommends that funds are allocated in the FY 2022-23 budget for the following initiatives:

1. **Off-system Load Ratings \$5.25 million** - FHWA recently came out with new allowable legal loads for Special Haul and Emergency vehicles that require all of the state's bridges to be re-rated to assure safe operation. These vehicles are in operation already and will most likely increase in use moving forward. CDOT is forecast to complete the re-rating of the on-system bridges in the next several months. There are still 3,500 off-system bridges requiring re-rating, which is CDOT's responsibility.

At the current funding levels the re-rate of the off-system bridges is forecast to take 10 years, putting liability on the state for compliance and potential risks of trucks overloading local bridges. CDOT is currently under a Plan of Corrective Action (PCA) with FHWA for this rating task.

2. **Fatigue Cracks \$10.15 million** - There has been an exponential increase in steel beam bridges with fatigue cracking in and around the I-70/I-76 interchange, intermittently along I-70 and I-76 in the metro area, and throughout the state. Fatigue cracks are caused by cyclical truck loads and typically seen propagating from welds in a bridge's secondary (low risk) members, such as diaphragms. These cracks are known to be caused by design and construction details of the eighties in non-redundant steel tension members (NSTMs, formerly fracture critical). The recent reports received on this group of bridges are being seen to have fatigue cracks in the primary structural members, which are of high concern. According to the FHWA, bridges with NSTMs are at elevated risk of sudden collapse due to the inability of the system or member(s)

to redistribute load and maintain stability in the event of full or partial fracture of the sections. Meaning that the failure of a NSTM could cause partial or full bridge collapse.

In the 2022 Insurance Renewal Report, CDOT reported three bridges with an overall rating of 3 (serious condition) or less. In the 2023 Insurance Renewal Report, CDOT reported 18 bridges with an overall rating of 3 or less, seven of which are rated this low due to fatigue cracks. Funding will be used to deliver rehabilitation projects on as many structures as possible, and to develop standards to address future structures diagnosed with fatigue cracking.

3. **T1 Steel Butt Weld Investigation \$0.1 million** - Per direction given in an FHWA memo issued on December 13, 2021, regarding Non-Destructive Testing of Fracture Critical Members Fabricated from AASHTO M244 Grade 100 (ASTM A514/A517) Steel, Staff Bridge identified five structures (the fourth highest number of potential T1 structures per state in the nation) requiring further investigation as to the presence of butt welds on T1 steel members in tension. These bridges are at risk for fracture failure at the welds, as was seen on the Hernando de Soto Bridge in Tennessee in May 2021, which resulted in immediate bridge closure. Staff Bridge is exploring options for material testing and/or non-destructive testing of any potential butt welds to determine the most cost-effective method to ensure the continued safety of these structures.

The fifth budget amendment adds \$15,500,015 from FHWA for the Bridge Replacement and Rehabilitation Program, including \$5,250,000 to the Off-System Bridge Program (Line 56) to address off-system load ratings, and \$10,250,015 to the Structures line (Line 5) for projects to address fatigue cracks and T1 steel butt weld investigation.

#### **Loan to CTIO for Operating and Maintenance on C-470**

The Colorado Transportation Investment Office (CTIO) is requesting a \$4 million loan from CDOT to cover operating and maintenance expenses on C-470, pursuant to the C-470 Interagency Agreement (IAA) between CDOT and CTIO. The presentation from CTIO provides background and context for the request. Details regarding loan disbursement, terms and amortization schedule are included as part of the Discuss and Act on Proposed Resolution #6: C-470 operations and maintenance (O&M) Backup Loan Agreement agenda item.

The fifth budget amendment reallocates \$4 million from the TC Program Reserve on the Commission Reserve Funds line (Line 73) to Agency Operations (Line 66) to provide a loan to the Colorado Transportation Investment Office to help cover operating and maintenance expenses on C-470.

#### **Attachments**

- Attachment A - FY 2022-23 Amended Revenue Allocation Plan
- Attachment B - Presentation

**Attachment A: FY 2022-23 CDOT AMENDED ANNUAL BUDGET (June 2023)**

Line	Budget Category / Program	Rollforward from FY 2021-22	FY 2022-23 Allocation Plan	Proposed TC Amendments	Approved TC Amendments	EMT and Staff Approved Adjustments	Total FY23 Program Budget Available including Changes	Directed By	Funding Source
<b>1</b>	<b>COLORADO DEPARTMENT OF TRANSPORTATION</b>								
2	Capital Construction	\$432.6 M	\$656.8 M	\$10.3 M	\$82.5 M	\$337.4 M	\$1,519.5 M		
3	Asset Management	-\$44.8 M	\$392.3 M	\$10.3 M	\$75.1 M	-\$45.7 M	\$387.2 M		
4	Surface Treatment	-\$7.5 M	\$225.6 M	\$0.0 M	\$39.6 M	-\$26.3 M	\$231.3 M	TC	FHWA / SH / SB 09-108
5	Structures	-\$4.7 M	\$62.5 M	\$10.3 M	\$0.0 M	\$0.2 M	\$68.3 M	TC	FHWA / SH / SB 09-108
6	System Operations	\$0.8 M	\$26.9 M	\$0.0 M	\$0.0 M	-\$2.4 M	\$25.2 M	TC	FHWA / SH
7	Geohazards Mitigation	\$6.9 M	\$10.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$16.9 M	TC	SB 09-108
8	Permanent Water Quality Mitigation	\$2.3 M	\$6.5 M	\$0.0 M	\$0.0 M	\$1.4 M	\$10.1 M	TC	FHWA / SH
9	Emergency Relief	\$11.3 M	\$0.0 M	\$0.0 M	\$0.0 M	-\$2.9 M	\$8.4 M	FR	FHWA
10	10 Year Plan Projects - Capital AM	-\$53.9 M	\$60.9 M	\$0.0 M	\$35.5 M	-\$15.6 M	\$26.9 M	TC / FR	FHWA
11	Safety	-\$7.3 M	\$121.6 M	\$0.0 M	\$0.0 M	\$40.2 M	\$154.5 M		
12	Highway Safety Improvement Program	-\$6.9 M	\$39.4 M	\$0.0 M	\$0.0 M	-\$1.1 M	\$31.4 M	FR	FHWA / SH
13	Railway-Highway Crossings Program	\$2.4 M	\$3.6 M	\$0.0 M	\$0.0 M	-\$0.9 M	\$5.1 M	FR	FHWA / SH
14	Hot Spots	-\$0.2 M	\$2.2 M	\$0.0 M	\$0.0 M	\$0.3 M	\$2.3 M	TC	FHWA / SH
15	FASTER Safety	-\$7.5 M	\$69.2 M	\$0.0 M	\$0.0 M	\$42.0 M	\$103.7 M	TC	SB 09-108
16	ADA Compliance	\$4.9 M	\$7.2 M	\$0.0 M	\$0.0 M	\$0.0 M	\$12.1 M	TC	FHWA / SH
17	Mobility	\$484.7 M	\$142.9 M	\$0.0 M	\$7.4 M	\$342.8 M	\$977.8 M		
18	Regional Priority Program	\$9.1 M	\$50.0 M	\$0.0 M	\$0.0 M	\$2.0 M	\$61.1 M	TC	FHWA / SH
19	10 Year Plan Projects - Capital Mobility	\$452.6 M	\$72.2 M	\$0.0 M	\$7.4 M	\$341.9 M	\$874.1 M	SL	FHWA / SB 17-267 / SB 21-260
20	Freight Programs	\$23.0 M	\$20.7 M	\$0.0 M	\$0.0 M	-\$1.1 M	\$42.6 M	FR	FHWA / SH / SL
21	Maintenance and Operations	\$34.8 M	\$372.3 M	\$0.0 M	\$11.5 M	\$16.1 M	\$433.0 M		
22	Asset Management	\$29.7 M	\$336.1 M	\$0.0 M	\$11.5 M	\$21.2 M	\$396.9 M		
23	Maintenance Program Areas	\$1.6 M	\$273.8 M	\$0.0 M	\$0.0 M	\$17.9 M	\$291.7 M		
24	Roadway Surface	\$0.0 M	\$37.7 M	\$0.0 M	\$0.0 M	\$0.0 M	\$37.7 M	TC	SH
25	Roadside Facilities	\$0.0 M	\$22.8 M	\$0.0 M	\$0.0 M	\$0.0 M	\$22.8 M	TC	SH
26	Roadside Appearance	\$0.0 M	\$10.8 M	\$0.0 M	\$0.0 M	\$0.0 M	\$10.8 M	TC	SH
27	Structure Maintenance	\$0.0 M	\$5.7 M	\$0.0 M	\$0.0 M	\$0.0 M	\$5.7 M	TC	SH
28	Tunnel Activities	\$0.0 M	\$6.4 M	\$0.0 M	\$0.0 M	\$0.0 M	\$6.4 M	TC	SH
29	Snow and Ice Control	\$0.0 M	\$84.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$84.1 M	TC	SH
30	Traffic Services	\$0.0 M	\$71.9 M	\$0.0 M	\$0.0 M	\$0.0 M	\$71.9 M	TC	SH
31	Materials, Equipment, and Buildings	\$0.0 M	\$18.2 M	\$0.0 M	\$0.0 M	\$0.0 M	\$18.2 M	TC	SH
32	Planning and Scheduling	\$0.0 M	\$16.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$16.1 M	TC	SH
33	Express Lane Corridor Maintenance and Operations	\$1.5 M	\$11.0 M	\$0.0 M	\$0.0 M	\$1.9 M	\$14.4 M	TC	SH
34	Property	\$0.0 M	\$27.9 M	\$0.0 M	\$6.5 M	\$12.1 M	\$46.5 M	TC	SH
35	Capital Equipment	\$19.6 M	\$23.4 M	\$0.0 M	\$0.0 M	\$1.2 M	\$44.3 M	TC	SH
36	Maintenance Reserve Fund	\$7.0 M	\$0.0 M	\$0.0 M	\$5.0 M	-\$12.0 M	\$0.0 M	TC	SH
37	Safety	\$0.3 M	\$12.2 M	\$0.0 M	\$0.0 M	-\$4.9 M	\$7.5 M	TC	FHWA / SH
38	Strategic Safety Program	\$0.3 M	\$12.2 M	\$0.0 M	\$0.0 M	-\$4.9 M	\$7.5 M	TC	FHWA / SH
39	Mobility	\$4.8 M	\$24.0 M	\$0.0 M	\$0.0 M	-\$0.2 M	\$28.6 M		
40	Real-Time Traffic Operations	\$0.6 M	\$14.0 M	\$0.0 M	\$0.0 M	-\$0.8 M	\$13.8 M	TC	SH
41	ITS Investments	\$4.2 M	\$10.0 M	\$0.0 M	\$0.0 M	\$0.6 M	\$14.8 M	TC	FHWA / SH
42	Multimodal Services & Electrification	\$70.0 M	\$46.3 M	\$0.0 M	\$35.1 M	\$19.1 M	\$170.5 M		
43	Mobility	\$70.0 M	\$46.3 M	\$0.0 M	\$35.1 M	\$19.1 M	\$170.5 M		
44	Innovative Mobility Programs	-\$2.2 M	\$8.9 M	\$0.0 M	\$0.0 M	-\$0.2 M	\$6.5 M	TC	FHWA / SH
45	National Electric Vehicle Program	\$8.4 M	\$11.3 M	\$0.0 M	\$0.0 M	\$5.0 M	\$24.7 M	FR	FHWA
46	10 Year Plan Projects - Multimodal	\$42.8 M	\$17.2 M	\$0.0 M	\$0.0 M	\$1.6 M	\$61.6 M	TC	FHWA / SB 17-267, SB 21-260
47	Rail Commission	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.3 M	\$0.3 M	SL	SL
48	Bustang	\$21.0 M	\$8.8 M	\$0.0 M	\$35.1 M	\$12.3 M	\$77.4 M	TC	SB 09-108 / Fare Rev.
49	Suballocated Programs	\$293.6 M	\$373.2 M	\$5.3 M	-\$35.1 M	\$66.4 M	\$703.3 M		
50	Aeronautics	\$12.3 M	\$35.3 M	\$0.0 M	\$0.0 M	\$36.2 M	\$83.8 M	AB	SA
51	Aviation System Program	\$12.3 M	\$35.3 M	\$0.0 M	\$0.0 M	\$36.2 M	\$83.8 M	AB	SA
52	Highway	\$146.1 M	\$143.9 M	\$5.3 M	\$0.0 M	-\$2.9 M	\$292.3 M		
53	STBG-Urban (STP-Metro)	\$114.3 M	\$61.9 M	\$0.0 M	\$0.0 M	-\$2.5 M	\$173.7 M	FR	FHWA / LOC
54	Congestion Mitigation and Air Quality	\$16.7 M	\$51.7 M	\$0.0 M	\$0.0 M	-\$4.4 M	\$64.1 M	FR	FHWA / LOC
55	Metropolitan Planning	\$9.1 M	\$10.7 M	\$0.0 M	\$0.0 M	\$1.8 M	\$21.6 M	FR	FHWA / FTA / LOC
56	Off-System Bridge Program	\$6.0 M	\$19.5 M	\$5.3 M	\$0.0 M	\$2.2 M	\$32.9 M	TC / FR	FHWA / SH / LOC
57	Transit and Multimodal	\$135.2 M	\$194.1 M	\$0.0 M	-\$35.1 M	\$33.1 M	\$327.2 M		
58	Recreational Trails	\$1.2 M	\$1.6 M	\$0.0 M	\$0.0 M	-\$1.4 M	\$1.4 M	FR	FHWA
59	Safe Routes to School	\$3.2 M	\$3.1 M	\$0.0 M	\$0.0 M	-\$0.4 M	\$6.0 M	TC	FHWA / LOC
60	Transportation Alternatives Program	\$10.0 M	\$20.6 M	\$0.0 M	\$0.0 M	-\$0.3 M	\$30.3 M	FR	FHWA / LOC
61	Transit Grant Programs	\$78.0 M	\$61.0 M	\$0.0 M	\$0.0 M	\$5.0 M	\$143.9 M	FR / SL / TC	FTA / LOC / SB 09-108
62	Multimodal Options Program - Local	\$46.2 M	\$97.6 M	\$0.0 M	-\$35.1 M	-\$10.4 M	\$98.3 M	SL	SB 21-260
63	Carbon Reduction Program - Local	-\$4.4 M	\$9.5 M	\$0.0 M	\$0.0 M	\$7.8 M	\$12.9 M	FR	FHWA / LOC
64	Revitalizing Main Streets Program	\$1.1 M	\$0.7 M	\$0.0 M	\$0.0 M	\$32.7 M	\$34.4 M	SL / TC	SB 21-260
65	Administration & Agency Operations	\$23.1 M	\$105.3 M	\$4.0 M	-\$0.9 M	\$14.1 M	\$145.5 M		
66	Agency Operations	\$23.0 M	\$59.7 M	\$4.0 M	-\$1.9 M	\$10.8 M	\$95.6 M	TC / AB	FHWA / SH / SA / SB 09-108
67	Administration	\$0.0 M	\$42.9 M	\$0.0 M	\$0.0 M	-\$0.5 M	\$42.4 M	SL	SH
68	Project Initiatives	\$0.1 M	\$2.6 M	\$0.0 M	\$1.0 M	\$3.8 M	\$7.5 M	TC	SH
69	Debt Service	\$230.4 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$230.4 M		
70	Debt Service	\$230.4 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$230.4 M	DS	SH
71	Contingency Reserve	\$26.7 M	\$0.0 M	-\$4.0 M	-\$103.1 M	\$156.8 M	\$76.4 M		
72	Contingency Fund	\$16.9 M	\$0.0 M	\$0.0 M	\$0.0 M	\$5.8 M	\$22.7 M	TC	FHWA / SH
73	Commission Reserve Funds	\$9.8 M	\$0.0 M	-\$4.0 M	-\$103.1 M	\$151.0 M	\$53.7 M	TC	FHWA / SH
74	Other Programs	\$52.8 M	\$29.5 M	\$0.0 M	\$0.0 M	-\$17.1 M	\$65.2 M		
75	Safety Education	\$22.5 M	\$14.1 M	\$0.0 M	\$0.0 M	\$2.0 M	\$38.7 M	TC/FR	NHTSA / SSE
76	Planning and Research	\$3.3 M	\$15.1 M	\$0.0 M	\$0.0 M	\$0.1 M	\$18.5 M	FR	FHWA / SH
77	State Infrastructure Bank	\$27.0 M	\$0.3 M	\$0.0 M	\$0.0 M	-\$19.2 M	\$8.0 M	TC	SIB
78	<b>TOTAL - CDOT</b>	<b>\$1,163.9 M</b>	<b>\$1,583.3 M</b>	<b>\$15.5 M</b>	<b>-\$10.0 M</b>	<b>\$592.7 M</b>	<b>\$3,345.4 M</b>		

	Budget Category / Program	Rollforward from FY 2021-22	FY 2022-23 Allocation Plan	Proposed TC Amendments	Approved TC Amendments	EMT and Staff Approved Adjustments	Total FY23 Program Budget Available including Changes	Directed By	Funding Source
<b>79</b>	<b>COLORADO BRIDGE &amp; TUNNEL ENTERPRISE</b>								
80	Capital Construction	\$28.9 M	\$94.5 M	\$0.0 M	\$0.0 M	\$1.6 M	\$125.0 M		
81	Asset Management	\$28.9 M	\$94.5 M	\$0.0 M	\$0.0 M	\$1.6 M	\$125.0 M		
82	Bridge Enterprise Projects	\$28.9 M	\$94.5 M	\$0.0 M	\$0.0 M	\$1.6 M	\$125.0 M	BTEB	SB 09-108, SB 21-260
83	Maintenance and Operations	\$0.5 M	\$0.8 M	\$0.0 M	\$0.0 M	\$0.0 M	\$1.3 M		
84	Asset Management	\$0.5 M	\$0.8 M	\$0.0 M	\$0.0 M	\$0.0 M	\$1.3 M		
85	Maintenance and Preservation	\$0.5 M	\$0.8 M	\$0.0 M	\$0.0 M	\$0.0 M	\$1.3 M	BTEB	SB 09-108
86	Administration & Agency Operations	\$3.9 M	\$1.9 M	\$0.0 M	\$0.0 M	\$0.0 M	\$5.9 M		
87	Agency Operations-BTE	\$3.9 M	\$1.9 M	\$0.0 M	\$0.0 M	\$0.0 M	\$5.9 M	BTEB	SB 09-108
88	Debt Service	\$2.1 M	\$48.0 M	\$0.0 M	\$0.0 M	-\$17.1 M	\$33.0 M		
89	Debt Service-BTE	\$2.1 M	\$48.0 M	\$0.0 M	\$0.0 M	-\$17.1 M	\$33.0 M	BTEB	FHWA / SH
<b>90</b>	<b>TOTAL - BRIDGE &amp; TUNNEL ENTERPRISE</b>	<b>\$35.5 M</b>	<b>\$145.2 M</b>	<b>\$0.0 M</b>	<b>\$0.0 M</b>	<b>-\$15.5 M</b>	<b>\$165.2 M</b>		

<b>91</b>	<b>COLORADO TRANSPORTATION INVESTMENT OFFICE (CTIO)</b>								
92	Maintenance and Operations	\$48.6 M	\$36.1 M	\$0.0 M	\$0.0 M	\$11.4 M	\$96.1 M		
93	Express Lanes Operations	\$48.6 M	\$36.1 M	\$0.0 M	\$0.0 M	\$11.4 M	\$96.1 M	CTIOB	Tolls / Managed Lanes Revenue
94	Administration & Agency Operations	\$3.3 M	\$4.1 M	\$0.0 M	\$0.0 M	\$2.5 M	\$9.8 M		
95	Agency Operations-CTIO	\$3.3 M	\$4.1 M	\$0.0 M	\$0.0 M	\$2.5 M	\$9.8 M	CTIOB	Fee for Service
96	Debt Service	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M		
97	Debt Service-CTIO	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.0 M	CTIOB	Fee for Service
<b>98</b>	<b>TOTAL - COLORADO TRANSPORTATION INVESTMENT OFFICE</b>	<b>\$51.9 M</b>	<b>\$40.1 M</b>	<b>\$0.0 M</b>	<b>\$0.0 M</b>	<b>\$13.9 M</b>	<b>\$105.9 M</b>		

<b>99</b>	<b>CLEAN TRANSIT ENTERPRISE</b>								
100	Suballocated Programs	-\$6.8 M	\$6.8 M	\$0.0 M	\$0.0 M	-\$1.3 M	-\$1.3 M		
101	Transit and Multimodal	-\$6.8 M	\$6.8 M	\$0.0 M	\$0.0 M	-\$1.3 M	-\$1.3 M		
102	CTE Projects	-\$6.8 M	\$6.8 M	\$0.0 M	\$0.0 M	-\$1.3 M	-\$1.3 M	CTB	SB 21-260
103	Administration & Agency Operations	\$0.1 M	\$1.4 M	\$0.0 M	\$0.0 M	\$1.3 M	\$2.7 M		
104	Agency Operations-CTE	\$0.1 M	\$0.6 M	\$0.0 M	\$0.0 M	\$1.3 M	\$1.9 M	CTB	SB 21-260
105	Contingency Reserve-CTE	\$0.0 M	\$0.8 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.8 M		
106	Debt Service	\$0.0 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.1 M		
107	Debt Service-CTE	\$0.0 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.1 M	CTB	SB 21-260
<b>108</b>	<b>TOTAL - CLEAN TRANSIT ENTERPRISE</b>	<b>-\$6.8 M</b>	<b>\$8.3 M</b>	<b>\$0.0 M</b>	<b>\$0.0 M</b>	<b>\$0.0 M</b>	<b>\$1.5 M</b>		

<b>109</b>	<b>NONATTAINMENT AREA AIR POLLUTION MITIGATION ENTERPRISE</b>								
110	Multimodal Services & Electrification	-\$6.6 M	\$6.6 M	\$0.0 M	\$0.0 M	-\$0.3 M	-\$0.3 M		
111	Mobility	-\$6.6 M	\$6.6 M	\$0.0 M	\$0.0 M	-\$0.3 M	-\$0.3 M		
112	NAAPME Projects	-\$6.6 M	\$6.6 M	\$0.0 M	\$0.0 M	-\$0.3 M	-\$0.3 M	NAAPMEB	SB 21-260
113	Administration & Agency Operations	\$0.1 M	\$0.4 M	\$0.0 M	\$0.0 M	\$0.3 M	\$0.8 M		
114	Agency Operations-NAAPME	\$0.1 M	\$0.2 M	\$0.0 M	\$0.0 M	\$0.3 M	\$0.6 M	NAAPMEB	SB 21-260
115	Contingency Reserve-NAAPME	\$0.0 M	\$0.2 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.2 M		
116	Debt Service	\$0.0 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.1 M		
117	Debt Service-NAAPME	\$0.0 M	\$0.1 M	\$0.0 M	\$0.0 M	\$0.0 M	\$0.1 M	NAAPMEB	SB 21-260
<b>118</b>	<b>TOTAL - NONATTAINMENT AREA AIR POLLUTION MITIGATION ENTERPRISE</b>	<b>-\$6.6 M</b>	<b>\$7.1 M</b>	<b>\$0.0 M</b>	<b>\$0.0 M</b>	<b>\$0.0 M</b>	<b>\$0.6 M</b>		
<b>119</b>	<b>TOTAL - CDOT AND ENTERPRISES</b>	<b>\$1,237.9 M</b>	<b>\$1,784.0 M</b>	<b>\$15.5 M</b>	<b>-\$10.0 M</b>	<b>\$591.1 M</b>	<b>\$3,618.6 M</b>		

## MEMORANDUM

**TO:** TRANSPORTATION COMMISSION  
**FROM:** NICK FARBER, CTIO DIRECTOR  
PIPER DARLINGTON, CTIO BUDGET AND SPECIAL PROJECTS MANAGER  
**SUBJECT:** C-470 OPERATIONS AND MAINTENANCE BACK-UP LOAN AND AGREEMENT  
**DATE:** JUNE 15, 2023

### PURPOSE:

This memorandum provides information regarding a Colorado Department of Transportation (CDOT) Back-Up Loan Agreement and \$4.0 million loan request for C-470 operations and maintenance (O&M) obligations. The request is being made under the C-470 Financing Agreements, which were approved in March 2017 by the Colorado Transportation Investment Office<sup>1</sup> (CTIO) Board of Directors and the Transportation Commission (TC).

### REQUESTED ACTION:

CTIO staff is requesting TC review and approval of Proposed Resolution #6 - Approving CDOT Back Up Loan Agreement regarding the C-470 Express Lanes Project and a \$4.0 million loan request included as part of Proposed Resolution #8 CDOT FY 2022-23 annual budget amendment.

### BACKGROUND AND DETAILS:

Please see the presentation included as Attachment A: C-470 Operations & Maintenance Back-Up Loan and Agreement for background and Attachment B: CDOT Back-Up Loan Agreement for loan terms and amortization schedule.

### OPTIONS AND RECOMMENDATIONS:

1. Adopt Resolution #6, approving the CDOT Back-Up Loan Agreement and the \$4.0 M loan request included in Proposed Resolution #8 CDOT FY 2022-23 Annual Budget Amendment. **Staff Recommendation.**
2. Request additional information or changes to request.
3. Do not approve.

### NEXT STEPS:

- If approved, CTIO staff will execute the loan agreement and coordinate with the Office of Financial Management and Budget (OFMB) to ensure that the approved loan amount is distributed and available for CTIO to make draws against.
- CTIO will update the TC as it draws down the approved funds.

### ATTACHMENTS:

Attachment A: C-470 Operations & Maintenance Backup Loan Agreement Presentation

Attachment B: CDOT Back-Up Loan Agreement

---

<sup>1</sup> The High-Performance Transportation Enterprise (CTIO) is now doing business as the Colorado Transportation Investment Office (CTIO). CTIO is how the enterprise refers to itself now and in the future. However, the CTIO name is retained for legislative and legal documents.



## CDOT Backup Loan Agreement

THIS LOAN AGREEMENT, made this 15th day of June 2023, by and between the State of Colorado for the use and benefit of THE COLORADO DEPARTMENT OF TRANSPORTATION ("CDOT" or "Lender") and the COLORADO HIGH-PERFORMANCE TRANSPORTATION ENTERPRISE ("HPTE" or "Borrower") entered pursuant to the Amended and Restated C-470 Express Lanes Project Intra-Agency Agreement, dated as of the 1st June, 2017, between Lender and Borrower ("Intra-Agency Agreement").

### RECITALS

A. Lender, is an agency of the State of Colorado authorized pursuant to Section 43-1-105, C.R.S. to plan, develop, construct, coordinate, and promote an integrated transportation system in cooperation with federal, regional, local and other state agencies.

B. Borrower was authorized and created pursuant to Sections 43-4-806(1) and (2), C.R.S. as a government-owned business, a TABOR-exempt enterprise, and a division of CDOT, and is charged with aggressively pursuing innovative means of financing surface transportation projects.

C. The Transportation Commission of Colorado is the budgetary and policy-making body of the Lender and may, pursuant to Section 43-4-806(4), C.R.S. authorize the transfer of money from the state highway fund to the Borrower to defray expenses of the Borrower and, notwithstanding any state fiscal rule or generally accepted accounting principle that could otherwise be interpreted to require a contrary conclusion, such a transfer by the Lender to the Borrower shall, in accordance with Section 43-4-806(4), C.R.S. constitute a loan and shall not be considered a grant for purposes of Section 20(2)(d) of Article X of the State Constitution.

D. In furtherance of HPTE's efforts to finance the Project (as defined below) and for the benefit of CDOT, HPTE has entered into that certain Master Trust Indenture dated as of March 1, 2017 ("Master Trust Indenture"), as supplemented by a First Supplemental Trust Indenture dated as of March 1, 2017 ("First Supplemental Indenture"), each between HPTE and Zions Bank, a division of ZB, National Association, as Trustee ("Trustee"), as well as that certain TIFIA Loan Agreement, dated as of March 1, 2017, with the United States Department of Transportation, an agency of the United States of America, acting by and through the Executive Director of the Build America Bureau ("TIFIA Loan Agreement"), which loan will be evidenced by a bond ("2017 TIFIA Bond") issued to the TIFIA Lender pursuant to the Master Trust Indenture, as supplemented by a Second Supplemental Trust Indenture dated as of March 1, 2017 ("Second Supplemental Indenture") between HPTE and the Trustee (collectively, the "Financing Agreements") to finance a portion of the Project (as defined in the Intra-Agency Agreement).

E. The Borrower has requested a loan from the Lender in the amount of \$[Requested Amount] to satisfy the HPTE O&M Obligations (as defined in the Intra-Agency Agreement)] because [description].

F. The Transportation Commission has approved this loan request and authorized the Lender to make a loan to the Borrower in the amount of up to \$4,000,000.00, and has allocated funds, in its sole discretion, for such purpose.

G. Authority exists in the law and a sufficient unencumbered balance thereof remains available in [Fund 400] to lend to the Borrower.

H. This Agreement is executed under the authority of Section 43-4-806(4), C.R.S. and by resolution of the HPTE Board of Directors.

**NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING RECITALS, THE PARTIES HEREBY AGREE AS FOLLOWS:**

## **ARTICLE I LOAN AND CLOSING**

**Section 1.01. Loan and Promissory Note.** Pursuant to the terms of the Intra-Agency Agreement and this Agreement, the Lender hereby agrees to make available up to \$4,000,000.00 ("Principal Amount") to the Borrower, in draws as specified by Borrower ("Outstanding Amount"), and the Borrower agrees to pay the Lender the Outstanding Amount up to the Principal Amount of the loan, plus interest on the terms described herein (collectively, "Loan"). The Borrower's obligation to pay the Lender the principal of and interest on the Loan is evidenced by a promissory note ("Note") in the form attached hereto as Attachment 1.

**Section 1.02. Closing.** The Lender shall encumber and make available for draw the Principal Amount of the Loan to the Borrower, on a date mutually agreed to by the Borrower and the Lender ("Closing Date").

## **ARTICLE II LOAN OBLIGATIONS**

**Section 2.01. Principal and Interest Payments.** Borrower shall pay to Lender the Outstanding Amount up to the Principal Amount of the Loan plus accrued interest in accordance with Section 2.07 hereof, or Borrower may make prepayments in accordance with Section 2.05 hereof only to the extent permitted under the Financing Agreements.

**Section 2.02. Lender Invoice and Reports.** Lender shall forward an invoice that includes the Outstanding Amount and interest that shall be due to Lender at least thirty (30) days before the next scheduled payment is due.

**Section 2.03. Interest.** Interest shall accrue on the Outstanding Amount of the Loan from the Date of draw through the day preceding the Maturity Date or Prepayment Date at the Interest Rate (defined in Section 2.04 hereof), computed on the basis of a 360-day year of twelve 30-day months.

**Section 2.04. Interest Rate.** "Interest Rate" means a rate of interest equal to the rate of interest

established and adopted by resolution by the Colorado Transportation Commission for loans made by the Colorado state infrastructure bank pursuant to 2 CCR 605-1, Rule V (2), and in effect as of the date hereof.

**Section 2.05. Optional Prepayment.** Subject to the requirements of the Financing Agreements, the Borrower, at its option, may prepay the Loan in whole or part, without penalty, by paying the Lender the Outstanding Amount or a portion of the Loan (such date of payment, a "Prepayment Date"), plus accrued interest to the Prepayment Date as selected by the Borrower.

**Section 2.06. Resource Pledge for Repayment.** The Borrower's obligation to pay the Outstanding Amount and interest on the Loan ("Loan Obligations") are extraordinary limited obligations of the Borrower payable solely from net revenues generated by the Project in accordance with the terms of the Financing Agreements.

**Section 2.07. Repayment Schedule.** Subject to the requirements of the Financing Agreements, the Borrower shall pay to the Lender of the Outstanding Amount of the Loan not later than June 30, 2063 ("Maturity Date");. The Borrower shall be credited for any payments made prior to the Maturity Date and the interest due shall also be updated to reflect such payments in accordance with Section 2.05 herein. An Illustrative example of the anticipated amortization schedule for repayment is attached hereto and incorporated herein as Exhibit A. The parties agree Exhibit A maybe be updated and changed to reflect the current amortization schedule based on draws made by CTIO, without need for formal amendment of this Agreement.

**Section 2.08. Remittance.** All loan payments shall be made payable to the Colorado Department of Transportation and sent to the Lender's accounting branch at 2829 W. Howard Place, Denver, CO 80204, or to such other place or person as may be designated by the Lender in writing.

### **ARTICLE III DEFAULT AND TERMINATION**

**Section 3.01. Event of Default.** Borrower default ("Event of Default") is governed by Section IV of the Intra-Agency Agreement.

**Section 3.02. Remedies.** Lender's remedies against a Borrower Event of Default are governed by Section IV of the Intra-Agency Agreement.

**Section 3.03. Remedies Neither Exclusive Nor Waived.** No remedy under Section 3.02 hereof is intended to be exclusive, and each such remedy shall be cumulative and in addition to the other remedies. No delay or failure to exercise any remedy shall be construed to be a waiver of an Event of Default.

**Section 3.04. Waivers.** The Lender may waive any Event of Default and its consequences. No waiver of any Event of Default shall extend to or affect any subsequent or any other then existing Event of Default.

**ARTICLE IV  
TERMINATION**

**Section 4.01.** Subject to the terms of the Intra-Agency Agreement, this Agreement may be terminated as follows:

(a) Termination for Cause. If, through any cause, the Borrower shall fail to fulfill, in a timely and proper manner, its obligations under this Agreement, or if the Borrower shall violate any of the covenants, agreements, or stipulations of this Agreement, the Lender shall thereupon have the right to terminate this Agreement for cause by giving written notice to the Borrower of its intent to terminate and at least thirty (30) days' opportunity to cure the default or show cause why termination is otherwise not appropriate. Notwithstanding above, the Borrower shall not be relieved of liability to the Lender for any damages sustained by the Lender by virtue of any breach of this Agreement by the Borrower.

(b) Termination Due to Loss of Funding. The parties hereto expressly recognize that the Loan is made to the Borrower with State funds which are available to the Lender for the purposes of making a loan for the purposes described herein, and therefore, the Borrower expressly understands and agrees that all its rights, demands and claims to a loan arising under this Agreement are contingent upon availability of such funds to the Lender. In the event that such funds or any part thereof are not available to the Lender, the Lender may immediately terminate or amend this Agreement.

*[Signature page follows.]*

**Attachment 1**  
**NOTE**

§ \_\_\_\_\_  
\_\_\_\_\_

For VALUE RECEIVED, THE COLORADO HIGH PERFORMANCE TRANSPORTATION ENTERPRISE (the "Maker") subject to and in accordance with a Loan Agreement dated the [Date], promises to pay to the Colorado Department of Transportation (the "Holder") the principal sum of up to \$4,000,000.00, with interest from date at the rate 3.5% per annum on the balance from time to time remaining unpaid. The said principal and interest shall be payable in lawful money of the United States of America at 2829 W. Howard Place, Denver, CO 80204 or at such place as may hereafter be designated by written notice from the Holder to the Maker hereof, on the date and in the manner following:

Subject to the requirements of the Financing Agreements, Maker shall pay to the Lender of the Outstanding Amount of the Loan on the Maturity Date. The Maker shall be credited for any payments made prior to the Maturity Date and the interest due shall also be updated to reflect such payments.

COLORADO HIGH PERFORMANCE  
TRANSPORTATION ENTERPRISE

By: \_\_\_\_\_

Its

Attest: .....

.....

**EXHIBIT A  
C-470 EXPRESS LANES PROJECT  
CDOT BACKUP O&M LOAN DRAWS AND ANTICIPATED AMORTIZATION**

<b>Effective Date</b>		6/30/2023					
<b>Interest Rate:</b>		3.50%					
<b>Period Ending</b>	<b>Beginning Balance</b>	<b>Disbursements<sup>1</sup></b>	<b>Interest Accrued</b>	<b>Interest Paid<sup>2</sup></b>	<b>Principal Paid<sup>3</sup></b>	<b>Total Payments</b>	<b>Ending Balance</b>
6/30/2023	-	850,000	-	-	-	-	850,000
6/30/2024	850,000	3,150,000	29,750	(29,750)	-	(29,750)	4,000,000
6/30/2025	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2026	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2027	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2028	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2029	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2030	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2031	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2032	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2033	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2034	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2035	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2036	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2037	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2038	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2039	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2040	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2041	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2042	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2043	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2044	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2045	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2046	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2047	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2048	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2049	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2050	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2051	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2052	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2053	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2054	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2055	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2056	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2057	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2058	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2059	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2060	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2061	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2062	4,000,000	-	140,000	(140,000)	-	(140,000)	4,000,000
6/30/2063	4,000,000	-	140,000	(140,000)	(4,000,000)	(4,140,000)	-
6/30/2064	-	-	-	-	-	-	-
6/30/2065	-	-	-	-	-	-	-
6/30/2066	-	-	-	-	-	-	-
6/30/2067	-	-	-	-	-	-	-
6/30/2068	-	-	-	-	-	-	-
6/30/2069	-	-	-	-	-	-	-
6/30/2070	-	-	-	-	-	-	-
<b>Total</b>		<b>4,000,000</b>	<b>5,489,750</b>	<b>(5,489,750)</b>	<b>(4,000,000)</b>	<b>(9,489,750)</b>	

**Notes**

<sup>1</sup> Anticipated loan disbursements as of June 2023; amounts to be updated in accordance with actual draws.

<sup>2</sup> Amounts reflect total interest due each period; interest accrual resulting from deferred or partial payments shall be reflected in loan balance.

<sup>3</sup> Anticipated principal payments based on Maturity Date; amounts to be updated in accordance with actual loan balance and any prepayments.



MEMORANDUM

TO: THE TRANSPORTATION COMMISSION  
 FROM: JEFF SUDMEIER, CHIEF FINANCIAL OFFICER  
 BETHANY NICHOLAS, BUDGET DIRECTOR  
 DATE: JUNE 15, 2023  
 SUBJECT: TWELFTH BUDGET SUPPLEMENT - FY 2022-2023

Region 3

**\$1,673,713 - Highway Safety Improvements and Hot Spots - I-70 Dowd Canyon Variable Signals-**  
 Additional funds required for project award. The additional costs are impacted by inflation and the cost of ITS devices. The project requires trenching and boring in areas of unknown soil conditions which increases cost risk borne by the contractor also resulting in higher bids.

I-70 Dowd Canyon Variable Signals								
Budget Components by Phase, Funding Program, Fiscal Year								
Phase of Work	Funding Program	Original Budget	Funding Request				Revised Budget	Expended To-Date
			Previous Adjustments	Current Request	Total Adjustments	Total Adjustment		
Right of Way	Highway Safety	\$7,060	\$0	\$0	\$0		\$7,060	\$7,060
	<b>Total Design</b>	<b>\$7,060</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0%</b>	<b>\$7,060</b>	<b>\$7,060</b>
Design	Highway Safety	\$370,000	\$0	\$0	\$0		\$370,000	\$370,000
	Regional Priorities	\$123,000	\$0	\$0	\$0		\$123,000	\$59,100
	<b>Total Design</b>	<b>\$493,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>0%</b>	<b>\$493,000</b>	<b>\$429,100</b>
Construction	Highway Safety	\$2,465,000	\$0	\$1,194,410	\$1,194,410		\$3,659,410	\$0
	Hot Spots	\$0	\$0	\$479,303	\$479,303		\$479,303	\$0
	FASTER Safety	\$2,000,000	\$0	\$0	\$0		\$2,000,000	\$0
	Regional Priorities	\$377,000	\$0	\$0	\$0		\$377,000	\$0
	<b>Total Construction</b>	<b>\$4,842,000</b>	<b>\$0</b>	<b>\$1,673,713</b>	<b>\$1,673,713</b>	<b>35%</b>	<b>\$6,036,410</b>	<b>\$0</b>
	<b>Total Project</b>	<b>\$5,342,060</b>	<b>\$0</b>	<b>\$1,673,713</b>	<b>\$1,673,713</b>	<b>31%</b>	<b>\$6,536,470</b>	<b>\$436,160</b>

Per Policy Directive 703.0 increases above \$500k and above 25% of the original budget requires Transportation Commission approval.

Region 4

**\$6,800,000 - 10 Year Plan funds - CO63 Rural Road Paving -** Region 4 is requesting to shift FY23-FY26 10-year plan funds from CO71 Corridor Improvements project to CO63 resurfacing. In evaluating Region 4 pavement conditions it was determined that CO63 is one of Region 4 worst rural roads, its drivability life is rated poor and is deteriorating at a rapid pace. Additionally, Region 4 has received numerous complaints regarding the condition of this road. This section of road is currently not in our current surface treatment plans nor the current 10 Year Plan. The Eastern TPR provided unanimous support to swap funds and address this poor pavement condition. The funds can come from the CO 71



Corridor Improvements project which was going to identify another priority section of the corridor to add shoulders and/or passing lanes, but no design had been initiated, therefore it was determined that transferring the funds to CO63 was the highest and best use of the 10-year rural paving funds.

Description	Region	Reason for Resolution	Transfer Between Projects	Amount
10 Year Plan Reallocations	4	Transfer Funds	ID TBD - CO63 Rural Resurfacing	\$ 6,800,000
			ID 1023 - CO71 Corridor Improvements	\$ (6,800,000)

Per Policy Directive 703.0 increases new projects being added to the 10 Year Plan require TC Approval.

**Cost Escalation Fund Reconciliation  
Twelfth Supplement FY 2023 Budget**

Transaction Date	Transaction Description	Amount	Balance	Reference Document
December-22	<i>Balance 6S23</i>		\$30,000,000	
January-23	<i>Balance 7S23</i>		\$30,000,000	
February-23	<i>Balance 8S23</i>		\$30,000,000	
March-23	<i>Balance 9S23</i>		\$25,353,112	
April-23	<i>Balance 10S23</i>		\$21,138,112	
May-23	<i>Balance 11S23</i>		\$20,555,987	
	<i>No Pending Requests</i>			
June-23	<i>Balance 12S23</i>		\$20,555,987	

**Transportation Commission Contingency Reserve Fund Reconciliation  
Twelfth Supplement FY 2023 Budget**

Transaction Date	Transaction Description	Amount	Balance	Reference Document
June-22	<i>Balance 12S21</i>		\$33,005,416	
July-22	<i>Balance 1S23</i>		\$32,405,631	
August-22	<i>Balance 2S23</i>		\$31,405,631	
September-22	<i>Balance 3S23</i>		\$32,135,631	
October-22	<i>Balance 4S23</i>		\$32,135,631	
November-22	<i>Balance 5S23</i>		\$31,681,154	
December-22	<i>Balance 6S23</i>		\$32,012,504	
January-23	<i>Balance 7S23</i>		\$32,012,504	
February-23	<i>Balance 8S23</i>		\$28,587,504	
March-23	<i>Balance 9S23</i>		\$25,114,214	
April-23	<i>Balance 10S23</i>		\$25,114,214	
May-23	<i>Balance 12S23</i>		\$22,301,756	
	<i>No Pending Requests</i>			
June-23	<i>Pending Balance 11S23</i>		\$22,301,756	





**Transportation Commission Program Reserve Fund Reconciliation  
Twelfth Supplement FY 2023 Budget**

<b>Transaction Date</b>	<b>Transaction Description</b>	<b>Amount</b>	<b>Balance</b>	<b>Reference Document</b>
June-22	<i>Balance 12S22</i>		\$45,008,409	
July-22	<i>Balance 1S23</i>		\$41,622,106	
August-22	<i>Balance 2S23</i>		\$41,752,379	
September-22	<i>Balance 3S23</i>		\$41,752,379	
October-22	<i>Balance 4S23</i>		\$59,812,379	
November-22	<i>Balance 5S23</i>		\$59,812,379	
December-22	<i>Balance 6S23</i>		\$67,326,775	
January-23	<i>Balance 7S23</i>		\$67,945,266	
February-23	<i>Balance 8S23</i>		\$67,945,266	
March-23	<i>Balance 9S23</i>		\$68,066,727	
April-23	<i>Balance 10S23</i>		\$14,774,236	
May-23	<i>Balance 11S23</i>		\$14,774,236	
	<i>No Pending Requests</i>			
June-23	<i>Pending Balance 12S23</i>		\$14,774,236	

**Transportation Commission Maintenance Reserve Reconciliation  
Twelfth Supplement FY 2023 Budget**

<b>Transaction Date</b>	<b>Transaction Description</b>	<b>Amount</b>	<b>Balance</b>	<b>Reference Document</b>
June-22	<i>Balance 12S22</i>		<b>\$6,993,697</b>	
July-22	<i>Balance 1S23</i>		<b>\$12,000,000</b>	
August-22	<i>Balance 2S23</i>		<b>\$12,000,000</b>	
September-22	<i>Balance 3S23</i>		<b>\$12,000,000</b>	
October-22	<i>Balance 4S23</i>		<b>\$12,000,000</b>	
November-22	<i>Balance 5S23</i>		<b>\$12,000,000</b>	
December-22	<i>Balance 6S23</i>		<b>\$12,000,000</b>	
January-23	<i>Balance 7S23</i>		<b>\$12,000,000</b>	
February-23	<i>Balance 8S23</i>		<b>\$10,180,000</b>	
March-23	<i>Balance 9S23</i>		<b>\$4,655,000</b>	
April-23	<i>Balance 10S23</i>		<b>\$0</b>	
May-23	<i>Balance 11S23</i>		<b>\$0</b>	
	<i>No Pending Requests</i>	\$ -		
June-23	<i>Pending Balance 12S23</i>		<b>\$0</b>	



FY 2022-2023 Contingency Reserve Fund Balance Projection		
May TC Contingency Balance (Emergencies)	\$22,301,784	
<i>Pending Requests:</i>		
No Pending Requests	\$0	
Pending June TC Contingency Reserve Balance	\$22,301,784	
<i>Projected Outflow:</i>		
	Low Estimate	High Estimate
No Pending Outflows	\$0	\$0
<i>Projected Inflow:</i>		
	Low Estimate	High Estimate
I-70 Glenwood Canyon Slides Remaining Repayments	\$0	\$3,000,000
Region 4 Project Savings	\$0	\$3,000,000
Projected FY 2022-2023 YE Contingency Balance	\$22,301,784	\$28,301,784
<i>TCCRF Surplus (Deficit) to Reach \$25M Balance July 1, 2023</i>	<i>(\$2,698,216)</i>	<i>\$3,301,784</i>

FY 2022-2023 Program Reserve Fund Balance Projection		
May TC Program Reserve Balance	\$14,774,236	
<i>Pending December Requests:</i>		
No Pending Requests	\$0	
Pending June TC Program Reserve Fund Balance	\$14,774,236	
<i>Projected Outflow:</i>		
	Low Estimate	High Estimate
No Pending Requests	\$0	\$0
<i>Projected Inflow:</i>		
	Low Estimate	High Estimate
No Pending Requests	\$0	\$0
Projected FY 2022-2023 YE Program Reserve Balance	\$14,774,236	\$14,774,236

FY 2022-2023 Cost Escalation Pool	
May Cost Escalation Pool Balance	\$20,555,987
<i>EMT Approved Requests:</i>	
No Pending Requests	\$0
Pending June TC Program Reserve Fund Balance	\$20,555,987

FY 2022-2023 Maintenance Reserve Fund Balance Projection	
May TC Maintenance Reserve Balance	\$0
<i>EMT Approved Requests:</i>	
No Pending Requests	\$0
Pending June TC Maintenance Reserve Fund Balance	\$0





DATE: June 7, 2023

TO: Transportation Commission

FROM: Heather Paddock, P.E. Region 4 Transportation Director

SUBJECT: Reallocation of 10-year funds for new Rural Resurfacing Project on CO 63

#### Purpose

This memo is to request reallocation of 10-year rural resurfacing funds to fund a new surface treatment project on CO 63 in Akron.

#### Action

CDOT R4 is requesting that the \$6.8M of FY23-26 funding allocated for CO 71 Corridor Improvements (Planning Project ID 1023) be reallocated to fund a new rural resurfacing project on CO 63 from south to north of Akron (MP 25.1 to 34.3).

#### Background

The 10-year plan currently has a total of \$27.38M of strategic funding to implement corridor improvements on CO 71. R4 also has a resurfacing project currently underway on CO 71 from the R2/R4 border, north 15 miles. The current project, which is funded by the surface treatment asset pool, is addressing the poorest pavement section on CO 71 within the ETPR. Upon completion of resurfacing this section, the remaining CO 71 pavement within the ETPR will be rated moderate to high drivability. \$6.8M of FY23-26 dollars are currently identified for further CO71 corridor improvements. To date, R4 has yet to scope or encumber design funds for the \$6.8M.

Over the past several years, the pavement conditions of CO 63 have deteriorated rapidly and are in worse shape than CO 71. Due to traffic volume and the scale of pavement treatments needed, CO 63 is not a match for surface treatment funds and is not programmed for surface treatment funding. After discussions with stakeholders, elected officials, and R4 Maintenance Forces, R4 determined that the best course of action would be to reallocate the \$6.8M of FY23-26 money for CO 71 corridor improvements to address the worst pavement section on CO 63 (MP 25.1 to 34.3). This recommendation was discussed at the ETPR meeting held June 5, 2023, and the group unanimously approved an action to support the action requested herein. Provided that the recommended action is approved, there will still be \$14.3M of outyear funding available to further improvements on CO 71.

#### Key Benefits

- Restores a pavement section that has not received a treatment in over 45 years
- Stakeholder support/consensus



Next Steps

Upon approval of the Transportation Commission, CDOT R4 will begin the preconstruction process for the proposed project, with a goal of advertising for construction summer of 2024.





**COLORADO**

Department of Transportation

# June 2023 FY23 Budget Amendment



## Agenda:

- Summary of Budget Amendments
- Bridge Replacement and Rehabilitation Program
- Loan to CTIO for Operating and Maintenance on C-470





# FY23 Budget Amendments

<b>Budget Amendment</b>	<b>Amount</b>	<b>Budget Line From</b>	<b>Budget Line To</b>
Bridge Replacement and Rehabilitation Program	\$10.25M	n/a (new revenue)	Structures line (Line 5)
	\$5.25M	n/a (new revenue)	Off-System Bridge Program (Line 56)
Loan to CTIO for Operating and Maintenance on C-470	\$4M	Commission Reserve Funds line (Line 73)	Agency Operations (Line 66)



# Bridge Replacement and Rehabilitation Program

Project/Cost		Total
1 - Off-System Load Ratings	\$5.25M	<b>\$15.5M</b>
2 - Fatigue Cracks	\$10.15M	
3 - T1 Steel Butt Weld Investigation	\$0.1M	





# 1 - Off-System Load Ratings

FHWA recently came out with new allowable legal load Special Haul and Emergency vehicles that require all of the state's bridges to be re-rated to assure safe operation. These vehicles are in operation already and will most likely increase in use moving forward. CDOT is forecast to complete the re-rating of the on-system bridges in the next several months. There are still 3500 off-system bridges requiring re-rating, which is CDOT's responsibility.

At the current funding levels the re-rate of the off-system bridges is forecast to take 10 years, putting liability on the state for compliance and potential risks of trucks overloading local bridges. CDOT is currently under a Plan of Corrective Action (PCA) with FHWA for this rating task.



Suggestion: \$1.75M annually over three years (\$5.25M total) would allow for the off-system ratings to be **completed by the end of 2026.**



# 2 - Fatigue Cracks

There has been an uptick in identified fatigue cracks in the shear zone of bridges with non-redundant steel tension members (NSTMs, formerly fracture critical) that was not forecast. These cracks are occurring abundantly at the I-70/I-76 interchange and intermittently along I-70 and I-76 and throughout the state.

According to the FHWA, bridges with NSTMs are at elevated risk of sudden collapse due to the inability of the system or member(s) to redistribute load and maintain stability in the event of full or partial fracture of the section. This, in turn, leads to a lower tolerance for fatigue cracking that can lead to sudden fracture.

On the 2022 Insurance Renewal Report, CDOT reported three bridges with an overall rating of 3 (serious condition) or less. On the 2023 Insurance Renewal Report, CDOT reported 18 bridges with an overall rating of 3 or less, seven of which are rated this low due to fatigue cracks.



Suggestion: \$7M dedicated toward this project would address four structures on I-76 with known fatigue issues. Additional funding (\$3.15M) would be used to implement retrofits on structures with existing cracks around the state. Total = \$10.15M



# 3 - T1 Steel Butt Weld Investigation

Per direction given in an FHWA memo issued on December 13, 2021 regarding Non-Destructive Testing of Fracture Critical Members Fabricated from AASHTO M244 Grade 100 (ASTM A514/A517) Steel, Staff Bridge identified five structures (the fourth highest number of potential T1 structures per state in the nation) requiring further investigation as to the presence of butt welds on T1 steel members in tension. These bridges are at risk for fracture failure at the welds, as was seen on the Hernando de Soto Bridge in Tennessee in May 2021, which resulted in immediate bridge closure. Staff Bridge is exploring options for material testing and/or non-destructive testing of any potential butt welds to determine the most cost-effective method to ensure the continued safety of these structures.

**FEDERAL REGISTER**  
The Daily Journal of the United States Government

Notice

**Emergency Temporary Closure of the Interstate 40 Hernando DeSoto Bridge Over the Mississippi River Between Arkansas and Tennessee**

A Notice by the Federal Highway Administration on 07/16/2021

**AGENCY:**  
Federal Highway Administration (FHWA), U.S. Department of Transportation (DOT).

**ACTION:**  
Notice; request for comments.

**SUMMARY:**  
The Arkansas Department of Transportation (ARDOT) and the Tennessee Department of Transportation (TDOT) closed the I-40 Hernando DeSoto Bridge (I-40 Bridge) over the Mississippi River between Arkansas and Tennessee on May 11, 2021, for safety considerations when a mechanical fracture was discovered within the elements of a steel box beam. FHWA is providing notice that ARDOT and TDOT are continuing the temporary closure of the I-40 Bridge for an indefinite period of time. FHWA has approved a request by the Arkansas and the Tennessee Divisions of the FHWA for an emergency deletion of a segment of I-40 between the I-55 Split (Exit 219B) in West Memphis, Arkansas,

**DOCUMENT DETAILS:**  
Printed version: PDF  
Publication Date: 07/16/2021  
Agencies: Federal Highway Administration  
Dates: Comments must be received on or before August 16, 2021  
Comments Close: 08/16/2021  
Document Type: Notice  
Document Citation: 85 FR 37764  
Page: 37764-37785 (2 pages)  
Agency Docket Number: Docket No. FHWA-2021-0007



Hernando de Soto Bridge in Tennessee  
Fracture at butt weld. Bridge fabricated with T1 steel.



K-07-B, US 50 over Gunnison River/Blue Mesa Reservoir  
Identified as possibly being fabricated with T1 Steel

Suggestion: Expected investigation costs are \$100K



COLORADO  
**Transportation  
Investment Office**

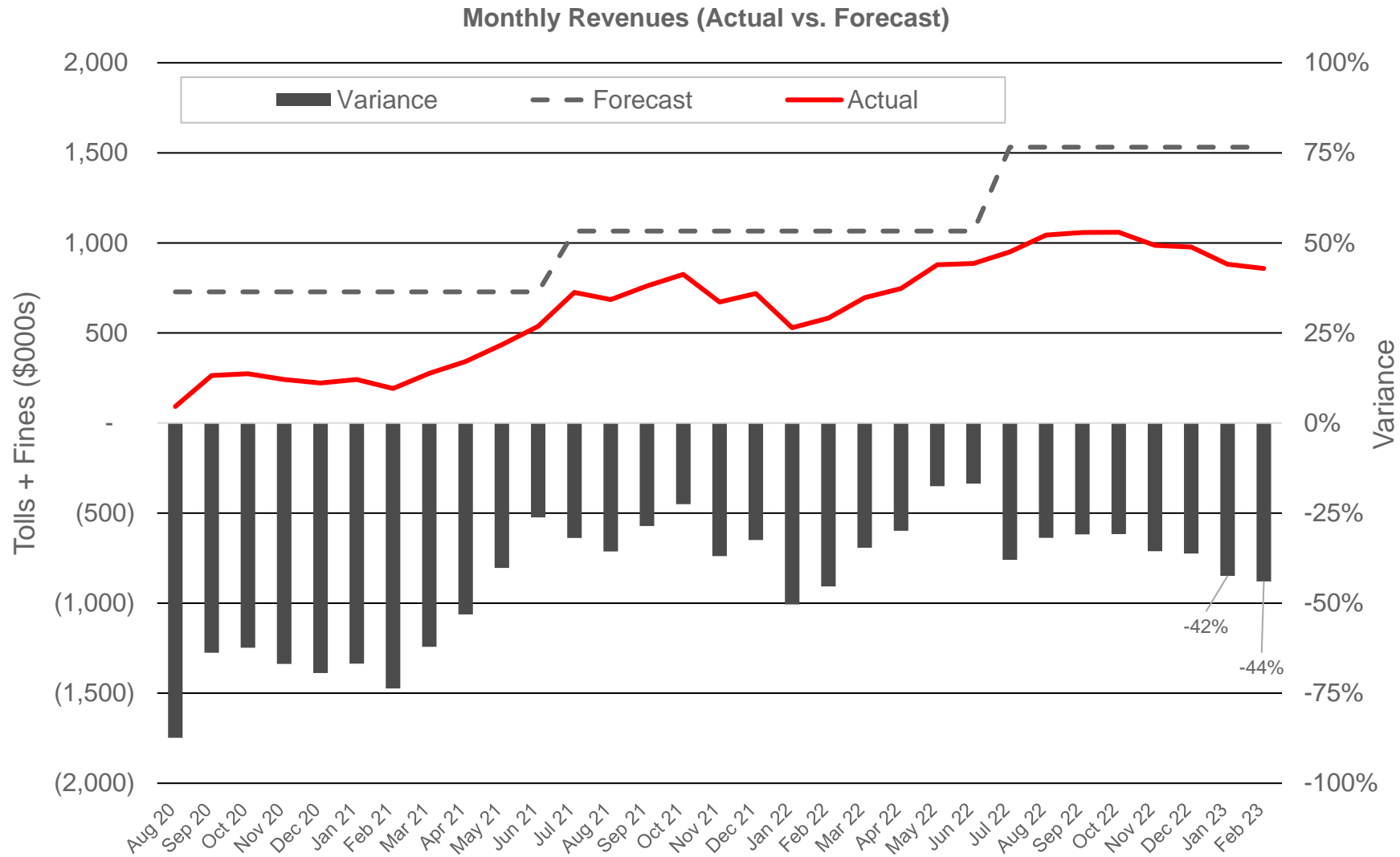
# **C-470 Operations & Maintenance Backup Loan Agreement**

June 14, 2023

# Project Background and Updates

- CTIO secured a \$176 million in revenue bonds and a \$107 million TIFIA loan to support the project. The financing will be repaid by gross toll revenues generated by Express Lanes.
- Corridor opened in August 2020, over two years late and in the middle of a pandemic.
- Under the C-470 Intra Agency Agreement, CDOT paid CTIO for late delivery. CTIO also used TIFIA funds for additional capitalized interest.
- Early 2022, engaged T&R advisor to monitor traffic volumes and toll revenues generated along the corridor. Implemented a new recommended toll rate schedule that was designed to align rates with newly exhibited demand patterns.
- While C-470 volumes have generally recovered to pre-COVID and pre-construction levels (2016), the normal growth expected between 2016 and 2022 has not materialized.
- CTIO has continued to meet all reporting and operations requirements and has worked with external rating agencies on annual surveillance.

# Corridor forecast vs. observed revenues - monthly



Source: Louis Berger T&R Report; E-470 Monthly Reports

# Project Expense Profile

Period	30 Jun 23	31 Dec 23	30 Jun 24	Total
Cashflow Available for Debt Service	11,760	11,828	12,285	35,873
Total Debt Service	-8,090	-8,090	-10,053	-26,233
O&M Expenses	-4,513	-4,473	-4,392	-13,378
<b>Projected Shortfall</b>	<b>-843</b>	<b>-735</b>	<b>-2,160</b>	<b>-3,738</b>
<b>Coverage Metrics and O&amp;M Loan</b>				
				<b>Average</b>
Senior DSCR (incl. RURA) (1.35x)	2.21x	2.22x	1.83x	2.09x
Total DSCR (incl. RURA) (1.25x)	2.21x	2.22x	1.53x	1.98x
All Obligations (1.0x)	<b>0.93x</b>	<b>0.94x</b>	<b>0.85x</b>	<b>0.90x</b>
<b>Projected O&amp;M Loan Draws</b>	<b>-843</b>	<b>-735</b>	<b>-2,160</b>	<b>-1,246</b>
<i>Amounts in \$000s</i>				

- Assumes conservative revenue growth over the next year
- Reflects lower FY 24 O&M costs
- CTIO has sufficient cashflow, including reserve accounts, to cover debt service but not O&M
- Estimated \$4.0 M shortfall projected through next June

# Loan Request and Agreement

- The ability to request an O&M loan from CDOT is contemplated under the C-470 financing documents.
- The Form of the Backup Loan Agreement was approved as part of the March 2017 financing document approval.
- The agreement allows CTIO to defer interest if there is not sufficient surplus cashflow.
- CTIO is requesting up to a \$4.0 M loan from CDOT. CTIO will draw down on the approved loan amount over the next year to meet O&M obligations and required coverage tests.
- Loan Terms:
  - Accrues at current SIB rate of 3.5%
  - Interest-only until last three years when principal payments commence
  - 40-year term
  - Loan is repaid in full after both the senior bonds and TIFIA loan are repaid



# Next Steps



- Pursue Additional Revenues
  - Reduce revenue leakage through life cycling tolling equipment- Early 2024
  - Implement Safety Enforcement Program- Summer 2023
- Further reduce operating costs where possible
- Start work with lenders to refinance and/or restructure existing debt
- Update the Traffic and Revenue forecast
- Staff will update the TC as the loan is drawn down

## MEMORANDUM

**TO:** Transportation Commission  
**CC:** Shoshana Lew, CDOT Executive Director; Herman Stockinger, Deputy Executive Director; John Lorme, Division of Maintenance & Operations Director; Deputy Director of Operations Bob Fifer; Allie Axley, Intelligent Transportation Systems Branch Manager

**FROM:** Jonas Durham, Fiber Development Manager

**DATE:** June 2023

**SUBJECT:** TC Resolution #10 - Fee Based ROW Access for Fiber

### Purpose

CDOT is proposing authorization to implement a simplified fee structure and improved process to facilitate access to CDOT rights of way for the deployment of broadband as mandated by Colorado Executive Order D-2022-0023 and Senate Bill 22-083.

### Action

CDOT seeks to have the commission approve the revised annual fee structure as presented in the May TC Workshop and as requested in Proposed Resolution #10, which aligns with federal and state regulations; is consistent with other DOT rates; and compensates CDOT for the operation and maintenance expenses incurred from allowing Public and Private entities to use CDOT rights of way for the deployment of broadband.

### Background

In February 2022, the Governor issued Executive Order D 2022 009 (restated in June in EO D 2022 023) and Senate Bill 22-083, Accelerating Broadband Deployment in Colorado. This Executive Order and Senate Bill directed CDOT develop a simplified fee structure to facilitate access to CDOT rights of way for the deployment of broadband.

CDOT presented a simplified structure for initial consideration at the March 2023 commission workshop and has since received public comments on the proposed structure. The comments received have similar themes and concerns summarized here. The major themes of feedback received include:

- concerns with the proposed structure being cost prohibitive in rural areas, and believing it would impede broadband deployment,
- perceived lack of clarity how the funds will be allocated and why CDOT is proposing a simplified fee structure,
- fees being allegedly arbitrary and inconsistent with entities like cities and counties,
- delay on delivering on the simplified fee structure per Executive Order D-2022-0009, and Senate Bill 22-083,
- suggestion for a one-time fee, and
- concern about CDOT's alignment with federal and state legislation.

CDOT formed a small, working subcommittee with members of the Transportation Commission, members of the Transportation Unit within the Colorado Attorney General's office, and CDOT leadership. The objective of this subcommittee was to examine every public comment received and develop a revised fee structure based on the consideration of those public comments and input from the Transportation Commissioners to date. The subcommittee reviewed the proposed fee structure and costs to be recovered, compared other

DOT's approaches, reviewed comments received and has discussed potential revisions to the originally proposed structure.

CDOT has reviewed the background and comments submitted to date and has received legal guidance from the Attorney General's Office related to its legal authority and expectations so that it can balance all interests related to the use of CDOT rights of way for broadband purposes. This legal guidance is summarized here as part of the information relied upon by CDOT and the Transportation Commission when developing this fee program.

CDOT is allowed and encouraged to receive valuable consideration for the use of state highway right-of-way. Colorado statutory law addresses telecommunications providers' access to public rights-of-way in C.R.S. §§ 38-5.5-102 through 109. CDOT has been advised that limitations contained in these statutes as to what telecommunications providers can be charged apply to local government entities and political subdivisions as distinguished from CDOT. CDOT is a principal department of the State of Colorado and is neither a "political subdivision" or "local government entity" as defined in C.R.S. § 38-5.5-102(5).

Furthermore, several other provisions in state law refer to and authorize CDOT to receive valuable consideration for use of state highway right-of-way. Per C.R.S. § 43-1-1201, *et seq.*, CDOT can enter into a non-exclusive public-private initiative partnership agreement with a telecommunications company but must either receive a commensurate contribution for the use of CDOT's right-of-way or be able to offset the benefit that the private telecommunications company will be receiving with a public benefit. In addition, federal and state law also requires CDOT to obtain fair market value for the use and disposal of state highway right-of-way. See *e.g.*, C.R.S. §43-1-210(5).

Lastly, the Federal Telecommunications Act specifically allows an entity like CDOT to require fair and reasonable compensation from telecommunications providers on a competitively neutral and nondiscriminatory basis for the use of public rights-of-way. See 47 U.S.C.A. § 253(c).

### **Response and Revised Proposal**

While the fiber program staff members believe that the proposed fee structure stays within the guardrails of our state and federal laws and regulations, they propose revisions to be considered which respond to the public input received to date, which continue to acknowledge that CDOT is authorized to receive fair market value for the use of public rights of way and in addition must receive fair and reasonable compensation from telecommunication providers for the management of its rights of way.

The subcommittee identified three major changes that may be applied to the originally proposed simplified fee structure.

First, the subcommittee identified and agreed that a component of the proposed fee structure could be turned into a one-time fee, as opposed to an annually recurring fee. Specifically, the working group proposed revising the fee structure to move the administrative costs of the program to an up-front, one-time payment.

Second, the subcommittee examined how the fee structure could be adjusted in an attempt to reduce the costs overall. CDOT proposed reducing the maintenance fee component by 66% through several proposed changes. Originally, CDOT proposed setting the maintenance fee component at \$0.39 per linear foot, representing a 3-foot width of ROW disturbance. CDOT proposes reducing this fee to \$0.13 per linear foot, representing a 1-foot width of ROW. This component of the fee structure represents all impacts to the state of the ROW and the ongoing required maintenance activities that enable access to other entities' infrastructure installed in the ROW.

Third, the subcommittee also examined reducing the Abandonment Liability Fee from \$0.13 per linear foot and proposed reducing this component by 50%. The newly proposed component would result in \$0.06 per

linear foot to cover the risks and cost ordinarily covered by typical bonding requirements, since the new proposal includes elimination of bonding to CDOT for fee-based permittees.

By providing a hybrid fee structure that includes paying administrative costs one time and up front as well as paying costs associated with managing and maintaining the ROW annually, CDOT addressed the request for a one-time payment. In addition, by reducing the maintenance and abandonment costs, CDOT is increasing internal risk, but trying to reduce challenges in deploying broadband infrastructure across the state.

The revised proposed fee structure results in the follow per foot costs for an initial, up front payment and an annual, recurring payment:

Initial, One-Time Fee	Annual, Recurring Fee
Interstate = \$0.11 per foot US Routes = \$0.09 per foot State Highway = \$0.07 per foot	Interstate = \$0.43 per foot per year US Routes = \$0.33 per foot per year State Highway = \$0.27 per foot per year

**Next Steps**

The ITS Fiber Development Team is seeking approval of TC Resolution #10 to implement the annual fee structure as mandated by Colorado Executive Order D-2022-0023 and Senate Bill 21-083.

Section 43-1-1206, C.R.S. permits the Transportation Commission to implement rules associated with the Public Private Initiatives Program Act if the Transportation Commission determines such rules are necessary or appropriate. The Transportation Commission has previously determined, in consultation with its counsel at the Attorney General's Office, that Section 43-1-1206, C.R.S. is permissive, not mandatory. Additionally, CDOT believes its proposed fee structure is adequately supported based on CDOT's aforementioned work and collaboration to develop the proposed fee structure. As a result, CDOT believes the Transportation Commission does not need to implement rules associated with the proposed fee structure and has included proposed language within the draft TC Resolution #10 indicating the Transportation Commission has determined that it is not necessary to implement rules associated with CDOT's proposed fee structure.



**COLORADO**

Department of Transportation

# ITS Fiber Program Fee Structure for ROW use May 17, 2023



# Developing a Fee Structure: Why? and How?

## Colorado Executive Order D-2022-0009, Senate Bill 22-083, CRS 43-1-1204

E. I direct CDOT to complete the following for its Fiber Lease and Right of Way program:

1. CDOT will achieve a 90% approval rating on eligible contracts, public private partnerships, and permits, while adhering to Federal Regulations, State Statutes and procedures, as it relates to CDOT Right of Way access for broadband service providers. Acceptances and denials shall be provided to the broadband service provider in writing with clear reasons for approval and denial and be made available to the public online. C.R.S. 43-1-1201 through 1204.
2. By August 30, 2022, CDOT must develop a uniform electronic application, permitting, contract, and fee structure to facilitate non-government entities' access to CDOT rights of way and fiber lease for the deployment of broadband. This process shall include:
  - a. A transparent website that identifies the process of accessing state owned fiber must be published by March 31, 2022;
  - b. To ensure a consistent approach, while adhering to Federal regulations and State statutes, the process shall, to the extent practicable and efficient, provide equal access to Right of Way and leasing of excess fiber, for the deployment of wireline and wireless facilities; and
  - c. Standard pricing and cost frameworks, expected timelines and details about the application review process, maintenance and operational resources, and any other requirements that CDOT would deem necessary to support a standard streamlined application.

## The Team

### AG's Office

Kathy Young  
Justin Curry

### CBO

Mark Colwell  
Ali Haitham  
Michael Murphy  
Kendall Cramer

### CDOT Permitting / Utilities

R1 Chris Laughlin  
R2 Todd Ausbun  
R2 Valerie Vigil  
R3 Joe Carter  
R4 David Torrez  
R4 Tim Bilobran  
R4 Michael Grover  
R5 Randee Reider  
R5 Kevin Walters  
Central 70 Donna Haight

### HQ Property Management / ROW

Rob Martindale  
David Fox  
Andrea Griner  
Marcella Broussard  
Dan Roussin  
Dennis Blea

**Goal: Streamline the existing process!**



# Legal Authority

## C.R.S. § 38-5.5-102 through 109

- Addresses telecommunications providers' access to public rights-of-way
- Any limitation contained in these statutes on what telecommunications providers can be charged applies only to local government entities and political subdivisions

## C.R.S. § 38-5.5-102(5)

- These limitations do not apply to CDOT because CDOT is a principal department of the State of Colorado and is neither a "political subdivision" or "local government entity"
- The fact that the Colorado Legislature meant to exclude CDOT from the fee limitations contained in C.R.S. § 38-5.5-102, *et. seq.* is made crystal clear by listening to pertinent legislative history audio recordings

## C.R.S. § 43-1-1201, *et al*

- CDOT can enter into a **non-exclusive** public-private initiative partnership agreement with a telecommunications company but **must either receive a private contribution** for the use of CDOT's right-of-way or be able to offset the benefit that the private telecommunications company will be receiving with a public benefit

## C.R.S. §43-1-210(5)

- Federal and state law also **requires** CDOT to **obtain fair market value** for the use and disposal of state highway right-of-way

## Federal Telecommunications Act (See 47 U.S.C.A. § 253(c))

- Allows an entity like CDOT to require fair and reasonable compensation from telecommunications providers on a **competitively neutral and nondiscriminatory basis** for the use of public rights-of-way



# Building Fiber in the ROW: Two Options

## Option #1: Public Private Partnership

- Requires MSA Process (12-24 months)
- In-Kind Compensation



## Option #2: Special Use Permit

- Requires Permit Application (3-4 months)
- One-time & Annual Monetary Fee



\*Option #3: Public Private Partnership to lease existing CDOT owned dark fiber where available

More information including detailed process steps and expected timelines can be found on our webpage:

<https://www.codot.gov/programs/intelligent-transportation-systems/fiber-leases-right-of-way-use>





# Special Use Permit: Proposed Fee Structure

<u>One Time Install Fee</u>		<u>Annual Fee</u>	
Interstates	= 26% = \$0.11/ft	Interstates	= ((((\$2.35 + 2%) * 10%) + \$0.13 + \$0.06) = \$0.43/ft
US Routes	= 26% = \$0.09/ft	US Routes	= ((((\$1.76 + 2%) * 8%) + \$0.13 + \$0.06) = \$0.33/ft
State Highway	= 26% = \$0.07/ft	State Highway	= ((((\$1.32 + 2%) * 6%) + \$0.13 + \$0.06) = \$0.27/ft

- Administration costs are one-time upfront payment
- Annual fee approx. 60% less than originally proposed



# How the Fee Structure was Developed: Formula Components

## One Time Install Fee

Interstates = 26% = \$0.11/ft

US Routes = 26% = \$0.09/ft

State Highway = 26% = \$0.07/ft

## Annual Fee

Interstates =  $((\$2.35 + 2\%) * 10\%) + \$0.13 + \$0.06 = \$0.43/\text{ft}$

US Routes =  $((\$1.76 + 2\%) * 8\%) + \$0.13 + \$0.06 = \$0.33/\text{ft}$

State Highway =  $((\$1.32 + 2\%) * 6\%) + \$0.13 + \$0.06 = \$0.27/\text{ft}$

### Construction Engineering & Indirects

We applied Construction Engineer and Indirect standard 26% to recoup administrative and overhead costs, consistent with specialty overhead costs for projects.

When applied CE&I is:

Interstate: \$0.11/ft

US Route: \$0.09/ft

State Highway: \$0.07/ft

We made this a one-time up front payment, instead of annually recurring.

### Right of Way evaluation

We took 762.5 miles of highway evaluations and broke them out by Interstate, US Routes, and State Highway to get the average across the fence valuation per linear foot:

Interstate = \$2.35/ft

US Route = \$1.76/ft

State Highway = \$1.32/ft

### Corridor Fee

We added 2% to the ATF, based on standard practice from our ROW office. The 2% value is based on the contiguous path highway ROW provides. When added to ATF, the corridor fee results in:

Interstate: \$2.40/ft

US Route: \$1.80/ft

State Highway: \$1.35/ft



# How the Fee Structure was Developed: Formula Components

<u>One Time Install Fee</u>		<u>Annual Fee</u>	
Interstates	= 26% = \$0.11/ft	Interstates	= ((((\$2.35 + 2%) * 10%) + \$0.13 + \$0.06) = \$0.43/ft
US Routes	= 26% = \$0.09/ft	US Routes	= ((((\$1.76 + 2%) * 8%) + \$0.13 + \$0.06) = \$0.33/ft
State Highway	= 26% = \$0.07/ft	State Highway	= ((((\$1.32 + 2%) * 6%) + \$0.13 + \$0.06) = \$0.27/ft

### Property Use Fee

We applied a use fee, because the compensation is for access to the ROW, not purchase of the ROW. The fees applied our consistent with CDOT Property Management fees applied to Cell Towers. We applied 10% to interstates, 8% to US Routes, 6% to State Highways. The intent was to apply smaller fees to more rural stretches of road. When applied:

- Interstate: \$0.24/ft
- US Route: \$0.14/ft
- State Highway: \$0.08/ft

### Maintenance Level of Service

We took the total spent in MLOS in FY22 (\$278M) and divided this by highway lane miles (24,000). We assumed a typical lane width of 12 ft to get a per foot width cost of \$0.13/ft per 1-ft width.

We assumed typical fiber installation disturbances are 3-ft wide (UDOT uses 6ft) and added \$0.39 /ft.

We revised this to assume a 1-ft width = \$0.13/ft

### Abandonment Infrastructure Liability

We added an additional fee of 1-ft width of maintenance costs, to cover any abandonment issues. In typical agreements we require bonding, to speed up the process of issuing permits, we proposed instead applying this fee.

We revised this to be half of the revised MLOS = \$0.06/ft

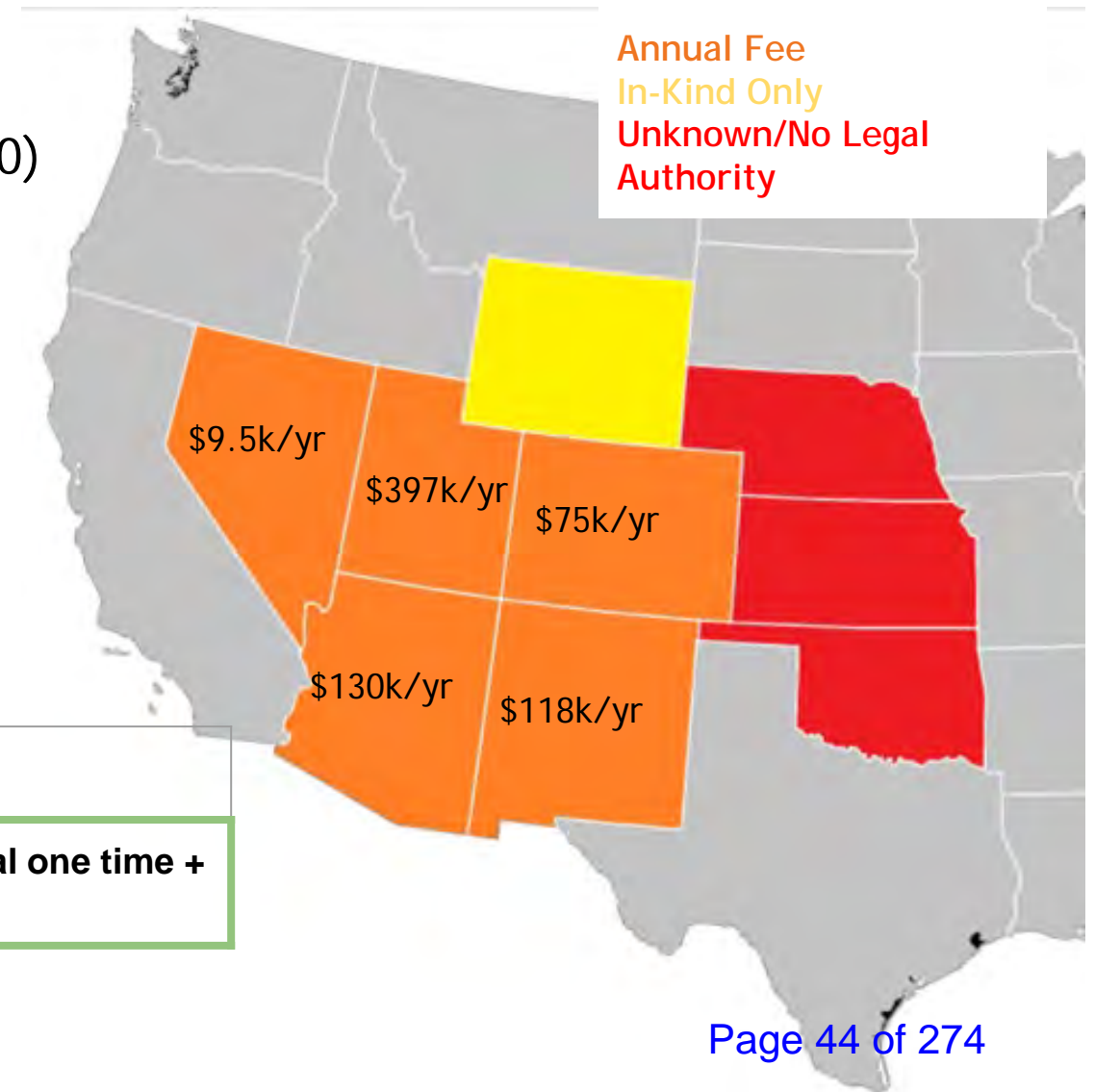


# Use Case 1: Highway 151 Ignacio to Pagosa Springs

- State Highway 151
  - Mile Point 0 (Ignacio) to Mile Point 33.5 (US 160)
  - 33.5 miles
- US 160
  - Mile Point 127 to Pagosa Springs Mile Point 143
  - 16 miles

Nevada	\$9,500 / yr
New Mexico	\$118,879 / yr
Arizona	\$130,680 / yr
<b>Colorado</b>	<b>\$205,392 / yr</b>
Utah	\$397,267 / yr

Original Proposal	\$205,392 / yr
<b>Revised Proposal</b>	<b>\$19,984 initial one time + \$75,636 / yr</b>



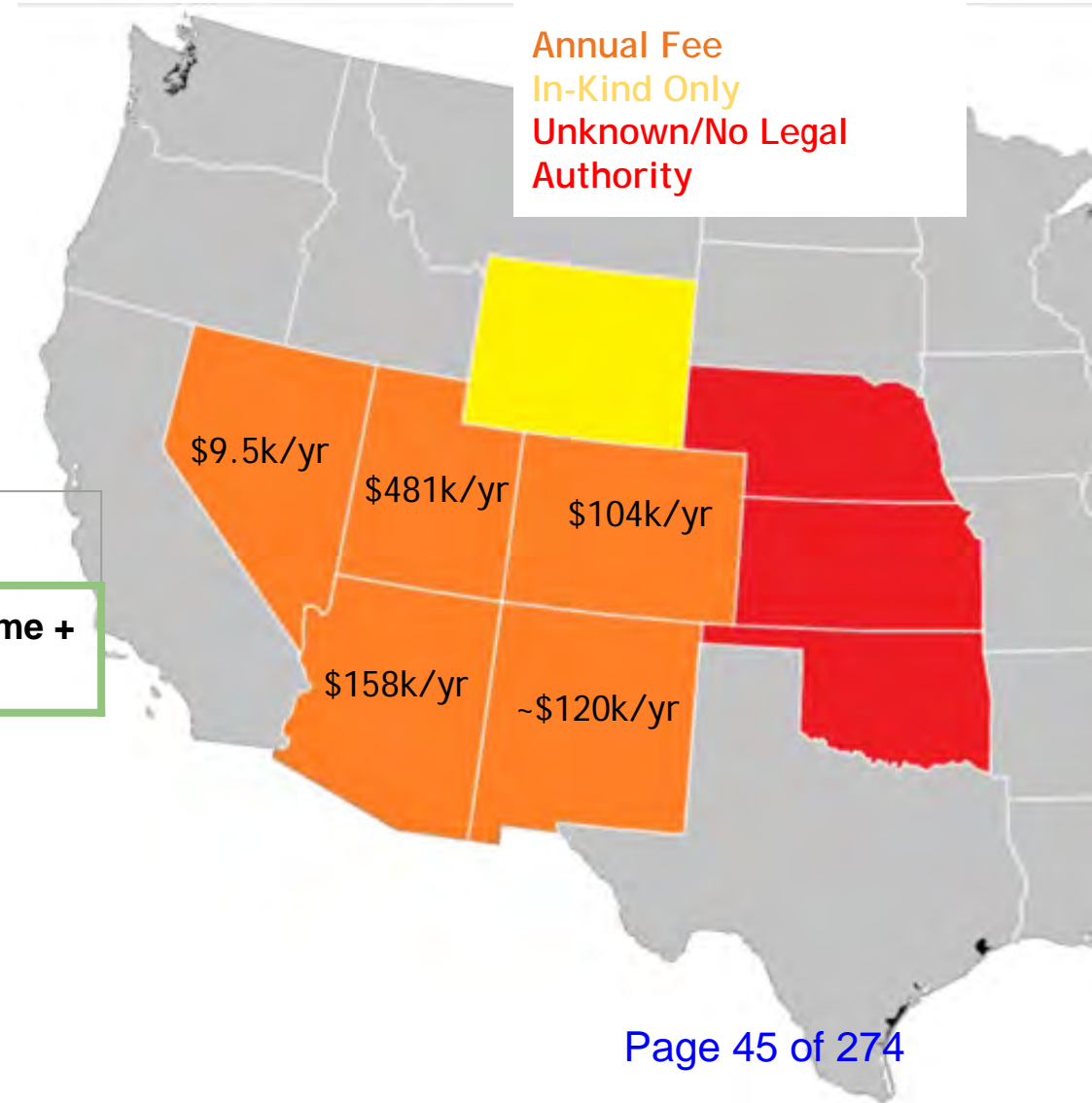


# Use Case 2: US 160 Durango to Pagosa Springs

- US 160
  - Durango (MP 83) to Pagosa Springs (MP 143)
  - 60 miles

Nevada	\$9,500 / yr
New Mexico	\$120,384 / yr
Arizona	\$158,400 / yr
<b>Colorado</b>	<b>\$266,112 / yr</b>
Utah	\$481,536/ yr

Original Proposal	\$266,112 / yr
<b>Revised Proposal</b>	<b>\$28,512 initial one time + \$104,544 / yr</b>





# How the Fee Structure was Developed: Intent of Fees

$((\text{Average Across-the-Fence value} + \text{Corridor Fee}) * \text{Property Use Fee}) + \text{MLOS} + \text{AILF}) * \text{Construction Engineering \& Indirects}$

## Proposed Revision

### One Time Install Fee

Interstates = 26% = \$0.11/ft

US Routes = 26% = \$0.09/ft

State Highway = 26% = \$0.07/ft

### Overhead / Administrative

The intent of this component is to cover costs associated with permit processing, project administration, inspections and specialty reviews.

### Annual Fee

Interstates =  $((\text{\$2.35} + 2\%) * 10\%) + \text{\$0.13} + \text{\$0.06} = \text{\$0.43/ft}$

US Routes =  $((\text{\$1.76} + 2\%) * 8\%) + \text{\$0.13} + \text{\$0.06} = \text{\$0.33/ft}$

State Highway =  $((\text{\$1.32} + 2\%) * 6\%) + \text{\$0.13} + \text{\$0.06} = \text{\$0.27/ft}$

### Value and Maintenance

The intent of these components is to fund typical maintenance activities that enable access to CDOT ROW for fiber installations. All activities that ensure management, accessibility and maintained pathways including roadway surface, structure maintenance, snow removal, erosion control, mowing, etc.

### Contingency pool

The intent of this component is to have a funding source available should there be any safety or operational concerns with the installed infrastructure.

Page 46 of 274



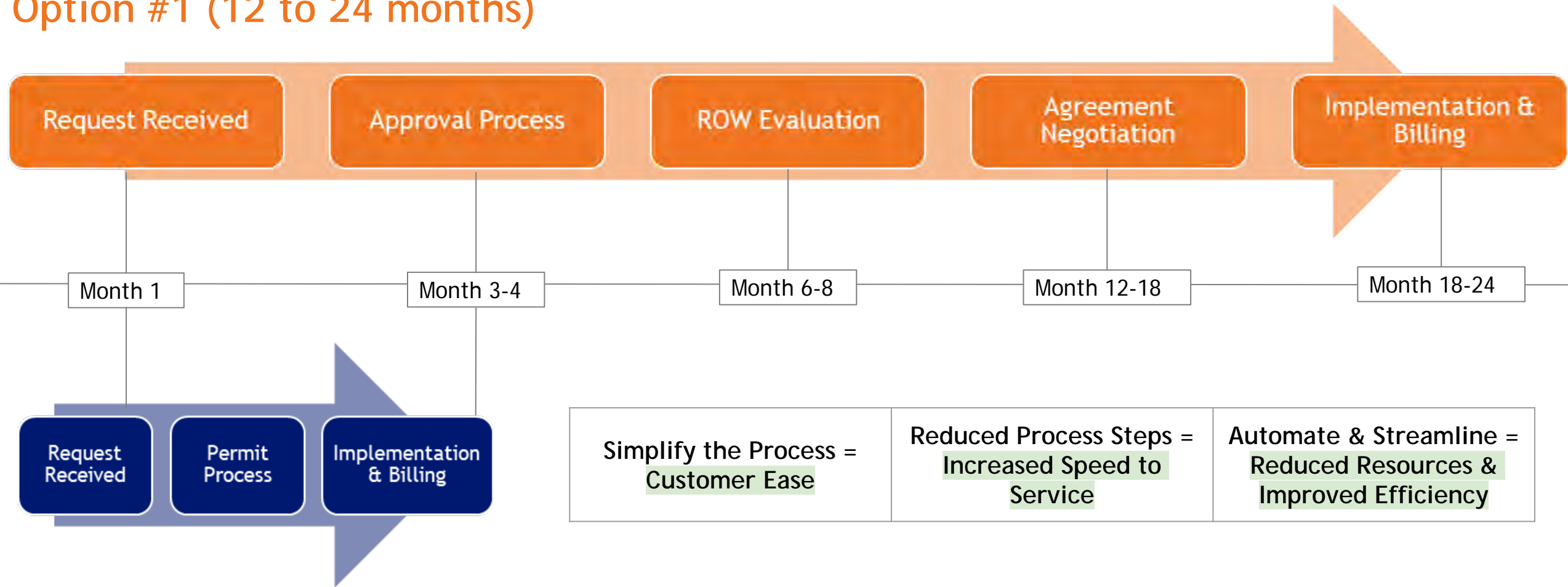
# Points of Clarity/Resolutions

1. The Fee structure will be adjusted annually based on Consumer Pricing Index (CPI)
  - When a company applies for a permit, the year they receive their initial permit will be the rate they lock in for the remainder of annual payments
  - Adjusted rates only applied to new permits
2. CDOT can and will be flexible about offering multiple years of payment up front
  - Ex: An option to pay the first 10-years within first permit application
3. The Unsolicited Proposal process and opportunity to compensate CDOT for the use of the ROW with in-kind infrastructure is and will remain available.
4. Every three years, CDOT will evaluate our rates compared to neighboring states and the tenth circuit DOTs to ensure CDOT's approach stays aligned and comparable.
5. Every year, CDOT will re-evaluate the administrative burden, maintenance costs, and abandonment risks associated with the fee structure.
6. Existing fiber in the ROW will be grandfathered in at no cost



# Improved Process Current vs Proposed

## Option #1 (12 to 24 months)



## Option #2 (3 to 4 months)

\*All timeframes vary based on staffing and request volumes





# Potential Next Steps

- Complete Salesforce development
- Implement Accounts Receivable platform
- Develop tracking/oversight for funding
- Return to TC in Q4 to provide updates



**DATE:** June 1, 2022

**TO:** Transportation Commission

**FROM:** Darius Pakbaz, Director, Division of Transportation Development  
Theresa Takushi, Greenhouse Gas Program Manager  
Herman Stockinger, Deputy Director and OPGR Director

**SUBJECT:** Amendments to GHG Mitigation Measures (Policy Directive 1610) Appendix A, with updates to the transit GHG Mitigation Measures and non-substantive changes.

### Purpose

This memo summarizes proposed amendments to Policy Directive 1610.0 - *GHG Mitigation Measures* (PD-1610) to provide newly corrected transit numbers in Appendix A.

### Action

Approve amendments to PD-1610

### Background

Appendix A of PD 1610 provides a list of approved GHG Mitigation Measures which agencies can use to comply with the GHG Pollution Reduction Planning Standard. These GHG Mitigation Measures are “off-model” calculation techniques for a variety of projects and program types, based on formulas and research based input values. PD 1610 recognizes that these GHG Mitigation Measures may need to be periodically updated to reflect the latest and most accurate information.

### Details

The following changes have been made to PD 1610, the majority of which occur in the Appendix.

1. Revised the Review Date section, which directed a review of PD 1610 by January 2023.
2. Replaced the word “point/s” with “metric tons (MT)” and “metric” with “unit” throughout the Appendix to increase usability by parties unfamiliar with the GHG Pollution Reduction Planning Standard.
3. The GHG savings for five different transit Mitigation Measures were changed. These measures include the fixed route transit electric/diesel fleet average, demand response, replacing a diesel transit bus with battery-electric bus, replacing a diesel transit bus with hybrid diesel-electric bus, and replacing a diesel transit bus with an RNG bus. Previously, the GHG savings of these measures were based on an assumption that the entire transit fleet in Colorado would be 100% electric/ZEV by 2033. The new GHG savings reflect an assumption that 100% of the transit fleet is electric/ZEV by 2050, which is in alignment with Colorado’s energy goals.

### **Next Steps**

CDOT GHG Program staff will continue to look for ways to make the Appendix of PD 1610 more accessible, as well as update the calculation methodologies and data inputs for GHG Mitigation Measures.

### **Attachments**

- Attachment A - Requested Amendments to PD-1610
- Attachment B - Slide presentation

<b>COLORADO DEPARTMENT OF TRANSPORTATION</b>		<input checked="" type="checkbox"/> <b>POLICY DIRECTIVE</b> <input type="checkbox"/> <b>PROCEDURAL DIRECTIVE</b>
Subject <b>Greenhouse Gas Mitigation Measures</b>		<b>1610.0</b>
Effective <b>06/15/23</b>	Supersedes <b>12/15/22</b>	Originating Office <b>Division of Transportation Development</b>

**I. PURPOSE**

The purpose of this Policy Directive is to fulfill the requirements of the Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions (the Rule), which directs the Colorado Department of Transportation (CDOT), in consultation with the Metropolitan Planning Organizations (MPOs), to establish an ongoing administrative process and guidelines for selecting, measuring, confirming, verifying, and reporting Greenhouse Gas (GHG) Mitigation Measures. CDOT and MPOs may use GHG Mitigation Measures in order to assist them in meeting the Regional GHG Planning Reduction Levels in 2 CCR 601-22. This Policy Directive sets forth the intent and principles of GHG mitigations and the process for establishing, tracking, and verifying mitigation measures. It further establishes the quantification methodology and the associated GHG reductions/scores for each measure.

**II. AUTHORITY**

Transportation Commission pursuant to § 43-1-106 (8)(a), C.R.S.  
 § 43-1-128, C.R.S.  
 2 CCR 601-22, Rules Governing Statewide Transportation Planning Process and Transportation Planning Regions (the “Rule”).

**III. APPLICABILITY**

This Policy Directive shall apply to all CDOT Divisions, Regions, Branches, and Offices as well as to the state’s current five MPOs: Denver Regional Council of Governments (DRCOG), North Front Range Metropolitan Planning Organization (NFRMPO), Pikes Peak Area Council of Governments (PPACG), Grand Valley Metropolitan Planning Organization (GVMPO), and Pueblo Area Council of Governments (PACOG), as well as any MPOs created during the lifetime of the Rule.

#### IV. BACKGROUND

The broad purpose of this Policy Directive is to help achieve the objectives of the Rule, which is intended to reduce GHG emissions from the transportation sector. Specifically, the Policy Directive fulfills the following requirement within 2 CCR 601-22, Section 8.02.4:

“By May 1, 2022, CDOT in consultation with the MPOs shall establish an ongoing administrative process and guidelines, through a public process, for selecting, measuring, confirming, verifying, and reporting GHG Mitigation Measures. CDOT and MPOs may incorporate one or more GHG Mitigation Measures into their plans in order to assist in meeting the Regional GHG Planning Reduction Levels in Table 1. Such a process and guidelines shall include, but not be limited to, how CDOT and MPOs shall determine the relative benefits and impacts of GHG Mitigation Measures, and measure and prioritize localized benefits to communities and Disproportionately Impacted Communities in particular. The mitigation credit awarded to a specific solution shall consider both regional and community benefits.”

GHG Mitigation Measures are an important, but voluntary, component of the Rule as they provide an additional option to demonstrate compliance with the GHG Reduction Levels (Table 1 in the Rule). For this reason, the GHG reductions achieved by GHG Mitigation Measures must be real, additional, quantifiable, and verifiable. GHG Mitigation Measures will be considered additional if it is not currently listed as a specific and quantified action in the GHG Roadmap or captured in an agency’s model. The GHG Mitigation Measures included in this Policy Directive--and the scores or reduction levels assigned to these measures--are based on the best available research, calculation methodology and forecasting tools available nationwide.

It also is important to understand how GHG Mitigation Measures relate to transportation plans (“Applicable Planning Documents” in the Rule), which include a range of projects-- from roadway expansions to new transit and bike lanes. The Rule requires CDOT and MPOs to model “at a minimum... Regionally Significant Projects” to demonstrate compliance. The words “at a minimum” give the flexibility to model projects that are not Regionally Significant. This approach has the benefit of providing a full analysis of all the projects within a plan and, further, of realizing the benefits of a model to capture the interrelationships of these strategies across the transportation network. However, not all projects can be accurately modeled yet. This is either because they are too small to be detected within a model (e.g. a segment of bike lane) or are beyond the current overall capability of an agency’s model. Thus, this Policy largely focuses on GHG Mitigation Measures that cannot yet be accurately quantified within CDOT or an MPO’s travel demand modeling runs. The Commission recognizes that this dynamic will

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

change over time. As models continue to improve, transportation system elements currently treated as GHG Mitigation Measures may be incorporated into the models which may require amendments to this Policy.

**V. DEFINITIONS**

The defined terms in this Policy Directive have the same meaning as in the Rule except as explicitly set forth herein. Some definitions are repeated here for convenience.

“Applicable Planning Document”, as stated in the Rule (1.02), are MPO Fiscally Constrained Regional Transportation Plan (RTP), Transportation Improvement Program (TIP) for MPOs in Non-Attainment Areas, CDOT’s 10-Year Plan and Four-Year Prioritized Plan in Non-MPO areas, and amendments to the MPO RTPs and CDOT’s 10-Year Plan and Four-Year Prioritized Plan in Non-MPO areas that include the addition of Regionally Significant Projects.

“Disproportionately Impacted Communities”, as stated in the Rule (1.11), is defined in § 24-38.5-302(3), C.R.S. as a community that is in a census block group, as determined in accordance with the most recent United States Decennial Census where the proportion of households that are low income is greater than forty percent (40%), the proportion of households that identify as minority is greater than forty percent (40%), or the proportion of households that are housing cost-burdened is greater than forty percent (40%).

“Greenhouse Gas (GHG)”, as stated in the Rule (1.16), are pollutants that are anthropogenic (man-made) emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride

“GHG Mitigation Measure Equity Standards” is a document being developed in collaboration with CDOT’s Environmental Justice and Equity Branch and the MPOs which will guide the process of evaluating benefits and burdens of GHG Mitigation Measures for Disproportionately Impacted Communities.

“Greenhouse Gas (GHG) Mitigation Measures”, as stated in the Rule (1.18) or “Mitigation Measures”, are non-Regionally Significant Project strategies that reduce transportation GHG pollution and help meet the GHG Reduction Levels.

“Greenhouse Gas (GHG) Reduction Level”, as stated in the Rule (1.17), is the amount of the GHG expressed as CO2e reduced that CDOT and MPOs must attain through transportation planning.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

“GHG Transportation Report” is the report that is required to be submitted as part of the Rule which shows compliance toward meeting the reductions levels.

“Metropolitan Planning Organization” or “MPO”, as stated in the Rule (1.28), is an organization designated by agreement among the units of general purpose local governments and the Governor, charged to develop the Regional Transportation Plans (RTPs) and programs in a Metropolitan Planning Area pursuant to 23 U.S.C. § 134. Colorado currently includes five designated MPOs: DRCOG, PPACG, PACOG, GVMPO and NFRMPO.

“Mitigation Action Plan” (MAP) is an element of the GHG Transportation Report that specifies which GHG Mitigation Measures shall be implemented that help achieve the GHG Reduction Levels.

“Off-Model” means tools are better suited to use independent of the travel model, including calculation methodology in order to quantify or estimate the effects of GHG reductions.

“Policy Directive” is a document adopted by the Transportation Commission that specifies organizational and Commission goals and policies and is used to help implement the Rule.

“Regionally Significant Project”, as stated in the Rule (1.42), is a transportation project that is on a facility which serves regional transportation needs (such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network or state transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel. Modifications of this definition shall be allowed if approved by the State Interagency Consultation Team. If the MPOs have received approval from the Environmental Protection Agency (EPA) to use a different definition of regionally significant project as defined in 40 C.F.R. § 93.101, the State Interagency Consultation Team will accept the modified definition. Necessary specificity for MPO Models or the Statewide Travel Model will be approved by the State Interagency Consultation Team. The Transportation Commission may issue guidance for implementation of this definition based on population density or other defined factors from time to time.

“State Interagency Consultation Team” (IACT), as stated in the Rule (1.44), consists of the Division Director or the Division Director’s designee, the Colorado Department of Public Health and Environment (CDPHE) Director of Air Pollution Control Division or the Director’s

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

designee, the Director of each MPO or their designee, and the Colorado Energy Office Director or Director’s designee. The Division Director may appoint additional member(s) from outside of these organizations. The State Interagency Consultation Team works collaboratively and consults appropriately to approve modifications to Regionally Significant definitions, to address classification of projects as Regionally Significant, and to consult on issues that may arise regarding modeling assumptions and projects that reduce GHG emissions.

**VI. POLICY**

The Transportation Commission adopts the processes and priorities stated herein to guide the development of GHG Mitigation Measures, the approval of new GHG Mitigation Measures, the elements of a Mitigation Action Plan and GHG Mitigation Measure Status Report, and the analysis of the efficacy of GHG Mitigation Measures. Due to the evolving nature of evaluation techniques it is expected that this Policy may be reviewed and amended in the early months and years of its adoption.

**A. Overall Process for Establishing GHG Mitigation Measures**

This Policy Directive includes a list of approved GHG Mitigation Measures (Appendix A) that have been reviewed, vetted, and scored by the Department’s subject matter experts, reviewed and recommended by the Interagency Consultation Team, and provided to the Air Pollution Control Division as required by the Rule, Section 8.04.2.

This Policy recognizes the need to balance appropriate analytical rigor around the expected reductions of GHG Mitigation Measures with encouraging new ideas and adapting to advancements in measurement methodologies. Further, the Commission recognizes that in the early compliance period for the Rule, MPOs may identify valid and quantifiable GHG Mitigation Measures that are not contemplated in Appendix A. Thus, this Policy provides two pathways for including mitigation measures in a MAP: 1) Using an approved measure listed in Appendix A or 2) Proposing a new measure so long as the process outlined below for validating and reviewing a measure is followed.

A locally-driven project, not otherwise prompted or developed as a result of CDOT or MPO action (e.g. funded or directly incentivized) may be included in the Mitigation Action Plan if it is a GHG Mitigation Measure contained in Appendix A of this Policy.

**1. Proposing and Approving New GHG Mitigation Measures**

a. Inclusion in Appendix A:



Any individual or organization may nominate a new GHG Mitigation Measure for review and potential approval. CDOT shall develop an online form on CDOT's website to receive these nominations. Staff, in consultation with the Transportation Commission, reserves the discretion to prioritize newly nominated GHG Mitigation Measures based on the information available and the effort required to assess.

Additionally, CDOT staff will establish a regular process of inventorying best practices from around the country with a focus on identifying a range of effective GHG Mitigation Measures for urban, suburban, and rural contexts throughout the state. Staff shall engage CDOT's Environmental Justice branch in this process to help ensure that GHG Mitigation Measures and policy updates are regularly adapted to, and developed with, input from Disproportionately Impacted Communities.

In order to be included in Appendix A as an approved GHG Mitigation Measure, all new measures must follow the process outlined below:

- Assessment by CDOT GHG Program staff according to the framework listed in Table 1. The individual or group submitting the new measure shall be expected to provide, to the extent possible, this information and data upon submission of a proposed GHG Mitigation Measure.
- Review and recommendation by the Interagency Consultation Team.
- Confirmation and verification by the Air Pollution Control Division (APCD) (as required by 8.04.2).
- Approval by the Transportation Commission for incorporation into Appendix A.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Table 1: Framework for Submitting New GHG Mitigation Measures

New GHG Mitigation Measure Submission Components	Description of New GHG Mitigation Measure
Strategy Description	Describe the overall strategy, including: <ul style="list-style-type: none"> <li>• The nexus with the transportation sector</li> <li>• Description of what the strategy achieves or implements</li> <li>• Description of how the strategy reduces CO2e emissions</li> <li>• If possible, identification of how the strategy is not already reflected-- or cannot be accurately measured by-- land use and travel modeling tools, thus warranting an off-model estimate of CO2e emission reductions</li> <li>• Description of additionality. A GHG Mitigation Measure will be considered additional if it is not currently listed as a specific and quantified action in the GHG Roadmap or captured in an agency’s modeling.</li> </ul>
Quantification Methodology	Describe the methodology for quantifying CO2e emissions reductions from the strategy, including: <ul style="list-style-type: none"> <li>• Empirical evidence supported by verifiable data sources</li> <li>• Clearly document all assumptions, sources of data, and calculations</li> </ul>
Challenges and Constraints	<ul style="list-style-type: none"> <li>• Potential challenges and constraints with quantifying and implementing strategy</li> </ul>

b. Including a Mitigation Measure in a MAP not included in Appendix A. If a GHG Mitigation Measure is not included in Appendix A, but submitted as part of a MAP, such measures must include the information in Table 1 and follow the process outlined below. CDOT staff shall work expeditiously to review new Mitigation Measures and support each submittal through this process.

- Assessment by CDOT GHG Program staff according to the framework listed in Table 1.
- Review and approval by the Interagency Consultation Team.
- Confirmation and verification by the Air Pollution Control Division (APCD) (as required by 8.04.2).

The Commission shall revisit this provision by May 2023 to determine its necessity and effectiveness based on the experience of the initial compliance period (i.e. October 2022 deadline).

**B. Process for Scoring Approved GHG Mitigation Measure**

Approved GHG Mitigation Measures will be scored and the scores included in Appendix A. The scoring is related to the ability of a GHG Mitigation Measure to reduce GHG emissions relative to a certain unit (e.g. per mile of bike lane). It also provides a way to distinguish and value the location and context of GHG Mitigation Measures.

The scores are based on the following factors:

1. Metric (e.g. per mile of bike lane)
2. Tons/unit
3. Additional multipliers
4. Adjustment for effectiveness over time, and
5. A total expected lifetime of each measure

**C. Measuring and Prioritizing GHG Mitigation Measures Benefits to Disproportionately Impact Communities**

Section 8.02.4 of the Rule stipulates that this Policy Directive shall include a process and guidelines for “how CDOT and MPOs should determine the relative benefits and impacts of GHG Mitigation Measures, and measure and prioritize localized benefits to communities and Disproportionately Impacted Communities in particular”. To measure the benefits of project-specific GHG Mitigation Measures in Disproportionately Impacted Communities, agencies shall use the tool outlined in the GHG Mitigation Measures Equity Standards document developed in partnership with CDOT’s Environmental Justice and Equity Branch and MPOs. The GHG Mitigation Measure Equity Standards will be updated as needed to reflect the best practices and latest data on measuring transportation inequity relief.

Prioritizing project benefits in Disproportionately Impacted Communities will be addressed in a subsequent effort by CDOT’s Environmental Justice and Equity Branch to establish a more comprehensive transportation equity framework.

Given the nearly 30-year lifetime of the rule, some planned GHG Mitigation Measures in agencies’ GHG Mitigation Action Plans may lack the specificity needed to measure project benefits to communities and Disproportionately Impacted Communities. As such, agencies may either measure equity benefits in GHG Mitigation Action Plans or in GHG Mitigation Measure Status Reports, as project specifics become clearer. As noted above, this tool currently is only applicable to project-based mitigation measures.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

**D. GHG Mitigation Action Plan**

Subsection 8.02.6.3 of the Rule states as follows: “If (GHG) Mitigation Measure(s) are needed to count toward the GHG Reduction Levels in Table 1, the MPO or CDOT may submit a Mitigation Action Plan that identifies GHG Mitigation Measures, if any, needed to meet the GHG Reduction Levels within Table 1”. The Transportation Commission will evaluate Mitigation Action Plans and determine their sufficiency to assure that the Plan meets the GHG Reduction Levels needed for compliance.

The following information must be included in a Mitigation Action Plan:

- a. GHG Emissions Reductions: Summary of emissions analysis from GHG Transportation Report, including the estimated gap to achieve the GHG Reduction Levels specified for each horizon year.
- b. GHG Mitigation Measure Summary/Description: Each measure shall include the following details as listed in Table 2.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Table 2: Description for Each Mitigation Measure

Component	Description of information to be submitted with application.
Measure Description	A description of the measure, including scale, location, and how it would affect travel activities expected to result in GHG reductions.
Timing	Anticipated start date, completion date, and dates of any other key milestones.
GHG Reductions	<p>If using the tons as set up in Appendix A, record the GHG reductions and associated technical data in each year of the project’s lifetime.</p> <p>If agencies would like to substitute specific local data for the inputs or parameters that form the basis of the calculation methodologies of the strategies in Appendix A, document the GHG reductions and associated technical data. Agencies shall work with CDOT technical staff to verify the new technical data inputs.</p> <p>If using a GHG Mitigation Measure that is not included in Appendix A, document the GHG reductions and associated technical data listed in Table 1 used to calculate the GHG emissions reductions of the strategy. The Commission notes that there is a risk of disapproval under this scenario due to the Commission reviewing without the benefit of being pre-approved through the Appendix A process.</p>
Co-benefits	Quantification, where possible, of specific co-benefits including reduction of co-pollutants (PM2.5, NOx, etc.) as well as travel impacts (changes to VMT, pedestrian/bike use, transit ridership, etc. as applicable), for each relevant compliance year in the project’s lifetime.
Benefits to Disproportionately Impacted Communities	A description of the benefits and burdens to Disproportionately Impacted Communities based on the methodology in the GHG Mitigation Measure Equity Standards document and a description of any stakeholder engagement conducted with those communities. Include an accounting of the amount of mitigation dollars directly spent in--or designed to serve--Disproportionately Impacted Communities as a subset of total dollars.
Measure Origin and History	<p>Include a description of the origin of the measure, including, where applicable, the role of the MPO or CDOT. Description must explain how the GHG Mitigation Measure is additional per the guidance provided above.</p> <p>A GHG Mitigation Measure will be considered additional if it is not currently listed as a specific and quantified action in the GHG Roadmap or captured in an agency’s modeling. A locally-driven project, not otherwise prompted or developed as a result of CDOT or MPO action (e.g. funded or directly incentivized) may be included in the Mitigation Action Plan if it is a GHG Mitigation Measure contained in Appendix A of this Policy.</p> <p>If a project was specifically identified in a previous fiscally constrained plan as</p>

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

	of January 30, 2022, it is not eligible as a GHG Mitigation Measure in a new plan UNLESS the new GHG Mitigation Measure is funded from a pool of non-specific projects (and not otherwise modeled in a previous plan), in which case it may be used as a GHG Mitigation Measure in the new plan.
Funding/ Resources/ Partnerships	Funding source(s), including if those funds are confirmed if any partnerships have been made or in-kind/matches are included.
Other Info As Needed	Any other relevant information that may be needed for thorough review of the proposed GHG Mitigation Measure.

**E. GHG Mitigation Measure Status Reports and Follow-Up Analysis.**

**1. Submitting a GHG Mitigation Measure Status Report.**

Following the approval of a GHG Mitigation Action Plan, CDOT and the MPOs are required to submit an annual status report for each GHG Mitigation Measure to the Transportation Commission starting on April 1 of each calendar year subsequent to the approval of the MAP. The following information shall be included in each status report (as outlined in the Rule):

- The implementation timelines;
- The current status
- For measures that are in progress or completed, quantification of the annual benefit of such measures
- For measures that are delayed, canceled, or substituted, an explanation of why that decision was made and, how these measures or the equivalent will be achieved
- For measures located in a Disproportionately Impacted Community that are delayed, canceled, or substituted, an explanation of why that decision was made and, how these measures or the equivalent will still be achieved in Disproportionately Impacted Communities
- Description of the benefits and burdens to Disproportionately Impacted Communities based on the methodology in the GHG Mitigation Measure Equity Standards document and a description of any stakeholder engagement conducted with those communities

If an agency fails to implement or find a substitute for a delayed or canceled GHG Mitigation Measure, the Commission will need to consider whether an Applicable Planning Document is in compliance, as per subsection 8.02.6.4 of the Rule. The

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Commission shall consider failure to submit reports and any analysis therein in subsequent review of future plans presented for consideration.

**2. Analyzing the Efficacy of GHG Mitigation Measures.**

CDOT shall create a process to evaluate the effectiveness of implemented GHG Mitigation Measures against predicted achievement of those measures by no later than the end of 2026 and annually thereafter if needed. Such analysis shall be provided to the Interagency Consultation Team for their review and consideration as to whether this information merits a change to the score applied to relevant measure(s). The Commission shall incorporate subsequent review and revisions into this Policy Directive. Further, CDOT and MPOs shall conduct ongoing review in advance of the next plan update in order to better understand how GHG Mitigation Measures are being developed and implemented.

**VII. IMPLEMENTATION PLAN**

This Policy Directive shall be effective immediately upon approval by the Transportation Commission.

The Office of Policy and Government Relations shall post this Policy Directive on CDOT’s intranet as well as on public announcements.

**VIII. REVIEW DATE**

This Directive shall be reviewed by January 2028.

---

Herman Stockinger  
Transportation Commission Secretary

---

Date of Approval

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

**APPENDIX A.**

**Table of Contents**

- Table 1. GHG Mitigation Measures and their tons/unit in each compliance year.
- Table 2. GHG Point Estimate Calculation Methodologies - Pedestrian and Bicycle Strategies
- Table 3. GHG Point Estimate Calculation Methodologies - Transit Strategies
- Table 4. GHG Point Estimate Calculation Methodologies - Parking Management Strategies
- Table 5. GHG Point Estimate Calculation Methodologies - Travel Demand Management Strategies
- Table 6. GHG Point Estimate Calculation Methodologies - Traffic Operation Strategies
- Table 7. GHG Point Estimate Calculation Methodologies - Land Use Strategies
- Table 8. GHG Point Estimate Calculation Methodologies - MD/HD Strategies
- Table 9. GHG Point Estimate Calculation Methodologies - Sources



Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

**Table 1. GHG Mitigation Measures and their tons/unit in each compliance year.**

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> <u>Now-2025<sup>3</sup></u>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
<b>Pedestrian/Bicycle</b>							
Bike lane/facility <sup>4</sup> - core urban <sup>5</sup>	Miles of two-way facility built between plan year 1 and evaluation year <sup>6</sup>	30	26	21	12	6	2.0 – separated / protected lane or bike boulevard
Bike lane/facility - urban			14	11	7	3	
Bike lane/facility – suburban			4	4	2	1	

<sup>1</sup> Lifetime Effectiveness of GHG Mitigation Measures: The table lists the number of years after implementation or expenditure for which a strategy remains effective. Some infrastructure projects have long lasting effects, while other programs must be annually reinstated e.g., transit operations and parking pricing. For those programs that must be annually reinstated, agencies may take credit for as many years as the applicable planning document commits to funding said program. An agency may take credit for the GHG reductions of a given project over its lifetime effectiveness.

<sup>2</sup> 1 point corresponds to 1 metric ton of CO2 reduced. Agencies may take partial credit for any of these measures, i.e. if an agency builds half a mile of bike lane in an urban area, it may take half the tons (6 tons).

<sup>3</sup> Year of emissions factor basis for tons: now-2025: 2025; 2026-2030: 2030; 2031-2040: 2040; and 2041-2050: 2050.

<sup>4</sup> “Sharrows” are not considered bike facilities in this application; however, a bike boulevard (low-volume street that includes pavement markings, signage, and traffic calming measures) is considered a bike facility. A “mixed-use district” is a street along which both residential and commercial (including retail) uses are permitted by zoning and where multiple non-residential uses (including retail) are present or planned.

<sup>5</sup> For all strategies in this Appendix , “core urban” corresponds to census tract or block group population density of greater than 10,000; “urban” to density between 4,000 and 10,000 persons per square mile; “suburban” to density between 500 and 4,000 persons per square mile; and “rural” to density of less than 500 persons per square mile. If there is evidence to show that a census tract or block group’s population density will grow ( e.g. shift from rural to suburban), agencies may claim a different density for a project.

<sup>6</sup> “Evaluation year” is the year for which projected GHG mitigation is being compared against a target, i.e., 2025, 2030, 2040, 2050.

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Bike lane/facility – rural	Miles of two-way facility built between baseline plan year 1 and evaluation year	30	1	1	1	1	1.5 – within mixed-use district or ½ mi of transit station or school
Sidewalk/pedestrian facility - core urban			28	23	13	6	
Sidewalk/ pedestrian facility - urban			9	7	4	2	
Sidewalk/ pedestrian facility - suburban			1	1	1	1	
Sidewalk/ pedestrian facility – rural			1	1	1	1	
Shared-use path <sup>7</sup> - core urban			84	69	40	19	
Shared-use path - urban			39	32	18	9	
Shared-use path – suburban			10	8	5	2	
Shared-use path – rural			2	2	1	1	

<sup>7</sup> A shared use path is a facility that is physically separated from motorized vehicular traffic by an open space or barrier, either within the highway right-of-way or within an independent right of way, and with minimal cross flow by motor vehicles. Shared use paths should have a minimum width of 8’ for two-way traffic, while 10 - 12’ is desired.

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
"Complete Streets" <sup>8</sup> reconstruction - core urban	Miles of two-way facility built between baseline plan year 1 and evaluation year	30	54	44	26	12	2.0 – separated/protected lane or bike boulevard  1.5 – within mixed-use district or ½ mi of transit station or school
"Complete Streets" reconstruction - urban			22	18	11	5	
"Complete Streets" reconstruction - suburban			5	4	2	1	
Bikeshare	Per 100 vehicles in service in evaluation year	1	18	15	9	4	
Scooter share			18	14	8	4	

<sup>8</sup> Reconstruct streets to include or enhance bicycle and pedestrian facilities as well as transit priority treatments if appropriate.

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
<b>Transit</b>							
New/increased fixed-route transit service <sup>9</sup> -electric	Per 1,000 additional vehicle revenue-hours <sup>10</sup> in evaluation year	1	31	25	15	7	
New/increased fixed-route transit service -electric/diesel fleet average			1	4	5	7	
New/increased fixed-route transit service - intercity <sup>11</sup> fleet average bus	Per 1,000 vehicle revenue-miles		2	2	1	1	
New/increased fixed-route transit service - intercity electric bus			3	3	1	1	
Waive transit fares 25%	Per million annual trips current ridership base		69	57	33	16	
Waive transit fares 50%			139	115	67	32	

<sup>9</sup> Some new transit projects may yield higher GHG reductions if the agency supplies local specific data. CDOT and the MPOs may use the “Transit GHG Mitigation Measure User Input Tool” found on the CDOT GHG webpage as an alternative to the tons in this table when evaluating the GHG reductions impact of new or expanded transit services.

<sup>10</sup> Expressing service expansion in vehicle-hours captures a wide range of specific actions including adding route-miles, reducing headways, and extending service hours or days. Ridership elasticities are available to relate to overall service metrics, but will be less available for more specific actions. Data to support ridership response to other improvements (e.g., bus stops and other amenities) will be less available.

<sup>11</sup> Intercity transit services that cross multiple regional and metropolitan areas, e.g. CDOT’s Bustang. Intercity buses have a more efficient driving cycle due to use of the highway.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Waive transit fares 100%	Per million annual trips current ridership base	1	277	229	133	63	
Implement bus priority treatments <sup>12</sup>	Per 1,000 vehicle revenue-miles per weekday of affected service in evaluation year	30	37	26	13	6	
New/increased demand-response bus service	Per 1,000 new vehicle revenue hours	1	-	-	1	2	
<b>Transportation Demand Management</b>							
Trip Reduction program <sup>13</sup> - voluntary	Per 1,000 covered employees	1	108	89	52	24	

<sup>12</sup> Infrastructure and/or operational improvements to reduce run times and improve reliability. These may include transit signal priority, queue jump lanes, exclusive bus lanes, bulb-outs, and/or other treatments. Bus priority treatments will need to meet minimum standards, e.g., anticipated >+10% travel time reduction on high-frequency (<=20 min headway) routes.

<sup>13</sup> Minimum requirements for such programs include staff dedicated to performing outreach to employers to promote and provide information on travel options for employees; resources for employers to communicate travel options to employees (e.g., websites, flyers, social media, trip planning tools, model telework policies, vanpool support); guaranteed ride home program; ride matching platform; incentives for participation (e.g., prizes, recognition); and support for measuring and tracking performance (e.g., participation in alternative mode use) via apps or surveys.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> <u>Now-2025</u> <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Trip Reduction marketing	Per program \$1,000 expenditure in evaluation year	1	2	2	1	1	
Employer sponsored vanpool	Per new vanpool in evaluation year	1	2	1	1	1	
Employer sponsored vanpool - electric	Per new vanpool in evaluation year		8	7	4	2	
Carshare program	# of cars provided in evaluation year		15	13	7	3	3.0 for EVs
Telework	Per 100 employees teleworking additional 1 day/week		25	20	12	6	
Broadband Expansion	Per 100 new households served	30	45	37	21	10	

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
<b>Traffic Operations<sup>14</sup></b>							
Retime/optimize arterial signals	Per 10,000 AADT per signal optimized within five years prior to evaluation year	5	53	50	33	23	
Replace signalized intersection with roundabout	Per 10,000 AADT per roundabout	30	243	221	133	55	
<b>Parking Management</b>							
Reduce or eliminate commercial parking minimums and set maximum levels - Non-Central Business District, max 2.5 spaces/1,000 sq. ft.	Per 10,000 sq. ft. of gross floor area of commercial capacity in the area subject to the parking requirements between baseline plan year 1 and evaluation year	30	3	3	1	1-	

<sup>14</sup> The Rule requires that any operational GHG Mitigation Measure take into consideration induced demand. Table 6 in the Appendix demonstrates how the tons for retiming/optimizing arterial signals were calculated with an induced demand factor. At this time, there is no conclusive evidence that roundabouts offer any travel time savings to drivers, thus induced demand is not a factor in this strategy.

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Reduce or eliminate commercial parking minimums and set maximum levels - Non-Central Business District, max 2.0 spaces/1,000 sq. ft.	Per 10,000 sq. ft. of gross floor area of commercial capacity in the area subject to the parking requirements between baseline plan year 1 and evaluation year	30	8	7	4	2	
Reduce or eliminate commercial parking minimums and set maximum levels - Central Business District, max 1.5 spaces/1,000 sq. ft			5	4	2	1	
Reduce or eliminate commercial parking minimums and set maximum levels - Central Business District, max 1.0 spaces/1,000 sq. ft			10	8	5	2	
Eliminate residential parking minimums and set low maximum levels <sup>15</sup> - core urban			1,535	1,265	734	347	

<sup>15</sup> Maximums: no more than 0.75 (1 bed/studio/efficiency), 1.0 (2 bed), and 1.25 (3+ bed).



Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Eliminate residential parking minimums and set low maximum levels – urban	Per 1,000 DUs <sup>16</sup> that can be built in the area subject to the parking requirements between baseline plan year 1 and evaluation year	30	1,603	1,321	766	362	
Eliminate residential parking minimums and set low maximum levels - suburban			1,841	1,517	880	416	
Reduce or eliminate residential parking minimums and set moderate maximum levels <sup>17</sup> - core urban			767	632	367	173	
Reduce or eliminate residential parking minimums and set moderate maximum levels - urban			801	660	383	181	
Reduce or eliminate residential parking minimums and set moderate maximum levels - suburban			921	759	440	208	

<sup>16</sup> Dwelling units.

<sup>17</sup> Maximums: no more than 1.0 (1 bed/studio/efficiency), 1.5 (2 bed), and 1.75 (3+ bed).

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Unbundle residential parking <sup>18</sup>	Per 1,000 parking spaces rented for at least \$100 per month in evaluation year	1	179	147	85	40	
Additional tax or fee on public and/or private parking	Per 1,000 parking spaces per daily \$1 fee in evaluation year	1	188	155	90	42	
<b>Land Use</b>							
Increase residential density	Per acre rezoned from <10 units/acre to at least 15-25 units/acre meeting "smart growth" criteria	30	27	22	13	6	
Increase job density	Per acre rezoned from <0.5 FAR to at least 1.0 FAR meeting "smart growth" criteria	30	22	18	11	5	

<sup>18</sup> This measure unbundles a residential project's parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost. Unbundling may not be available to all residential developments, depending on funding sources.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
Mixed-use Transit-Oriented Development (TOD) - higher intensity	Per acre of area rezoned for mixed-use TOD accommodating at least 25 residential units/acre and 150 jobs/acre, within 1/2 mile of fixed-guideway transit station	30	60	49	28	13	
Mixed-use TOD - moderate intensity	Per acres of area rezoned for mixed-use TOD accommodating at least 15 residential units/acre and 100 jobs/acre, within ½ miles of high-frequency bus transit or fixed guideway station	30	49	40	23	11	

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> Now-2025 <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers	
<b>MD/HD<sup>19</sup></b>								
Replace diesel transit buses with battery-electric buses	Number of new vehicles introduced between baseline plan year 1 and evaluation year	12	92	85	76	74		
Replace diesel transit buses with hybrid diesel-electric buses			15	14	13	12		
Replace diesel transit buses with RNG bus	Number of new vehicles introduced between baseline plan year 1 and evaluation year		37	34	30	29		
Replace diesel school buses with electric buses			12	11	10	10		
Build medium duty truck charger			Number of chargers	19	17	15	15	
Build heavy duty truck charger				32	30	27	27	
Replace medium duty truck	Number of new electric trucks / trucks introduced between baseline plan year 1 and evaluation year	12	19	17	15	15		
Replace heavy duty truck			32	30	27	27		
Support hydrogen refueling infrastructure	Number of refueling stations	30	45	250	420	420	Use 2040 values if hydrogen is produced	

<sup>19</sup> Strategies in this category will need to be recalibrated or reconsidered if an overlapping regulation is passed at the state level, such as the Advanced Clean Trucking rule.

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Project Type	Unit	Project Lifetime (Years) <sup>1</sup>	Tons/ Unit <sup>2</sup> <u>Now-2025</u> <sup>3</sup>	Tons/ Unit 2026-2030	Tons/ Unit 2031-2040	Tons/ Unit 2041-2050	Additional Multipliers
							from renewables
<b>Clean Construction</b>							
Strategies in this category will be added in 2023.							

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

**Legend for Calculation Methodologies Table**

output (points)  
future years copied from base year  
User input

**Table 2. GHG Point Estimate Calculation Methodologies - Pedestrian and Bicycle Strategies**

PEDESTRIAN AND BICYCLE STRATEGIES						
Ref	Parameter	Value				Source/Calculation
		2025	2030	2040	2050	
<b>Parameters Common Across Strategies</b>						
A	grams CO2 per vehicle-mile (auto)	341	281	163	77	CDOT (2021) - high EV scenario
Prior drive mode share of new bikers/walkers						
B1	Owned bikes	60%				Transportation Investment Strategy Tool, Table A.4
B2	Shared bikes and scooters	40%				Buehler et al (2019), Mobility Lab (2019), NABSA (2020), Ramboll (2020), MacArthur et al (2018)
B3	Walkers	40%				
Average trip length (mi)						
C1	Bike	2.3				2009 National Household Travel Survey
C2	Walk	0.7				2009 National Household Travel Survey
C3	Shared bike	1.4				PBOT (2020) and NABSA (2020)
C4	Scooter	1.1				PBOT (2020) and NABSA (2020)
D	Annualization factor	365				

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Per New Facility-Mile:	New Bicyclists (Daily)	New Walkers (Daily)	Displaced Auto Miles/yr	
Bike lane/facility - core urban	150		75,555	New users: Transportation Investment Strategy Tool documentation, Table A.4
Bike lane/facility - urban	80		40,296	Displaced auto miles: New users * C1 * B1 * D
Bike lane/facility – suburban	25		12,593	
Bike lane/facility – rural	5		2,519	
Sidewalk/ pedestrian facility - core urban		798	81,556	New users: Transportation Investment Strategy Tool documentation, Table 4.11
Sidewalk/ pedestrian facility - urban		247	25,243	Displaced auto miles: New users * C1 * B1 * D
Sidewalk/ pedestrian facility - suburban		13	1,329	
Sidewalk/ pedestrian facility – rural		2	204	
Shared-use path - core urban	327	798	246,266	New bicyclists: Transportation Investment Strategy Tool documentation, Table A.4
Shared-use path - urban	174	247	113,089	New walkers: Same as sidewalk/pedestrian facility
Shared-use path – suburban	55	13	28,780	Displaced auto miles: New users * C1 * B1 * D
Shared-use path – rural	11	2	5,695	
“Complete Streets” reconstruction - core urban	150	798	157,111	= Sum of value for bike lane + pedestrian improvements
“Complete Streets” reconstruction - urban	80	247	65,539	
“Complete Streets” reconstruction – suburban	25	13	13,921	

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Per New Shared Vehicle:	Trips per Day	Annual Person-Miles	Displaced Auto Miles		
Shared bike	2.6	1329	531	Trips per day: PBOT (2020) and NABSA (2020)	
Scooter	3.2	1285	514	Annual person-miles: Trips per day * [C3 or C4]* 365	
				Displaced auto miles: Annual person-miles * B2	
Change in tons CO2 per new facility-mile (annual):	2025	2030	2040	2050	
Bike lane/facility - core urban	(25.8)	(21.2)	(12.3)	(5.8)	= Displaced auto miles * A / 1000000
Bike lane/facility - urban	(13.7)	(11.3)	(6.6)	(3.1)	
Bike lane/facility – suburban	(4.3)	(3.5)	(2.1)	(1.0)	
Bike lane/facility – rural	(0.9)	(0.7)	(0.4)	(0.2)	
Sidewalk/ pedestrian facility - core urban	(27.8)	(22.9)	(13.3)	(6.3)	
Sidewalk/ pedestrian facility - urban	(8.6)	(7.1)	(4.1)	(1.9)	
Sidewalk/ pedestrian facility - suburban	(0.5)	(0.4)	(0.2)	(0.1)	
Sidewalk/ pedestrian facility – rural	(0.1)	(0.1)	(0.0)	(0.0)	
Shared-use path - core urban	(84.0)	(69.2)	(40.1)	(19.0)	
Shared-use path - urban	(38.6)	(31.8)	(18.4)	(8.7)	
Shared-use path – suburban	(9.8)	(8.1)	(4.7)	(2.2)	
Shared-use path – rural	(1.9)	(1.6)	(0.9)	(0.4)	
“Complete Streets” reconstruction - core urban	(53.6)	(44.1)	(25.6)	(12.1)	



Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

“Complete Streets” reconstruction - urban	(22.3)	(18.4)	(10.7)	(5.0)	
“Complete Streets” reconstruction – suburban	(4.7)	(3.9)	(2.3)	(1.1)	
<b>Change in tons CO2 per 100 new shared vehicles (annual):</b>	<b>2025</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>Source/Calculation</b>
Shared bike	(18.1)	(14.9)	(8.7)	(4.1)	= Displaced auto miles * A / 1000000
Scooter	(17.5)	(14.4)	(8.4)	(4.0)	
<b>TonsTons per new facility-mile:</b>	<b>2025</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	
Bike lane/facility - core urban	26	21	12	6	Providing a minimum of 1 point, with the expectation to improve these values as more Colorado specific data becomes available.
Bike lane/facility - urban	14	11	7	3	
Bike lane/facility – suburban	4	4	2	1	
Bike lane/facility – rural	1	1	1	1	
Sidewalk/ pedestrian facility - core urban	28	23	13	6	
Sidewalk/ pedestrian facility - urban	9	7	4	2	
Sidewalk/ pedestrian facility - suburban	1	1	1	1	
Sidewalk/ pedestrian facility – rural	1	1	1	1	
Shared-use path - core urban	84	69	40	19	
Shared-use path - urban	39	32	18	9	
Shared-use path – suburban	10	8	5	2	
Shared-use path – rural	2	2	1	1	

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

	“Complete Streets” reconstruction - core urban	54	44	26	12	
	“Complete Streets” reconstruction - urban	22	18	11	5	
	“Complete Streets” reconstruction – suburban	5	4	2	1	
	<b>Tons per 100 new shared vehicles:</b>	<b>2025</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	
	Shared bike	22	15	9	4	
	Scooter	21	14	8	4	

**Table 3. GHG Point Estimate Calculation Methodologies - Transit Strategies**

TRANSIT STRATEGIES						
Ref	Parameter	Value				Metric; Source/Calculation
		2025	2030	2040	2050	
<b>Parameters Common Across Strategies</b>						
Vehicle revenue-miles per revenue-hour						
A1	Fixed-route bus	13.0	13.0	13.0	13.0	NTD (2019), Colorado agencies
A2	Demand-response bus	13.7	13.7	13.7	13.7	NTD (2019), Colorado agencies
Passenger-miles per vehicle-mile						
B1	Fixed-route bus	11.5	11.5	11.5	11.5	NTD (2019), Colorado agencies - Rapid Bus (RB) service
B2	Demand-response bus	3.5	3.5	3.5	3.5	NTD (2019), Colorado agencies
grams CO2 per vehicle-mile						
C1	Fixed-route bus	2,274	1,666	743	-	CDOT (2021) - high bus electrification (100% electric by 2033)

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

C2	Demand-response bus	905	663	296	-	2019 based on medium truck MPG from AEO, future years adjusted proportional to fixed-route bus
C3	Auto	341	281	163	77	CDOT (2021) - high EV scenario
C4	Intercity bus	1,137	833	371	-	CDOT (2021) - high bus electrification
grams CO2 per vehicle-hour						
D	Fixed-route bus	3,966	1,018	-	-	CS (2021), scaled by g/mi from CBA analysis for future years
D1	Prior drive mode share of new riders	60%	60%	60%	60%	CS (2021)
D2	Prior drive mode share of new riders (intercity)	80%	80%	80%	80%	
Average trip length (mi) - unlinked						
F1	Fixed-route bus	4.5	4.5	4.5	4.5	FHWA CMAQ Calculator Toolkit
F2	Demand-response bus	4.5	4.59	4.5	4.5	Assumed same as fixed-route
G	Annualization factor	300	300	300	300	
<b>New/increased fixed-route bus service</b>						<b>1,000 new vehicle revenue-hours</b>
Tons CO2 per new VRH						
	Displaced auto	(30.6)	(25.2)	(14.6)	(6.9)	= 1000 * A1 * B1 * C3 * D / 1000000
	New bus (fleet average)	29.6	21.7	9.7	-	= 1000 * C1 * A1 * / 1000000
	New bus (electric)	-	-	-	-	
	Net (fleet average bus)	(1.0)	(3.5)	(5.0)	(6.9)	= new bus + displaced auto
	Net (electric bus)	(30.6)	(25.2)	(14.6)	(6.9)	
	Tons per new 1,000 VRH (fleet average bus)	1	4	5	7	

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Tons per new 1,000 VRH (electric bus)	31	25	15	7	
<b>New/increased fixed-route bus service - intercity</b>					<b>1,000 new vehicle revenue-miles</b>
Change in auto VMT	(9,200)	(9,200)	(9,200)	(9,200)	= 1000 * B1 * D2
Tons CO2 per new VRM					
Displaced auto	(3.1)	(2.6)	(1.5)	(0.7)	= 1000 * B1 * C3 * D / 1000000
New bus (fleet average)	1.1	0.8	0.4	-	= 1000 * C4 / 1000000
New bus (electric)	-	-	-	-	
Net (fleet average bus)	(2.0)	(1.8)	(1.1)	(0.7)	= new bus + displaced auto
Net (electric bus)	(3.1)	(2.6)	(1.5)	(0.7)	
Tons per 1,000 new VRM (fleet average bus)	2	2	1	1	
Tons per 1,000 new VRM (electric bus)	3	3	1	1	
<b>New/increased demand-response bus service - urban/suburban</b>					<b>1,000 new vehicle revenue-hours</b>
Tons CO2 per new VRH					Calculation from above data:
New bus	12.4	9.1	4.0	-	= C2 * A2 / 1000
Displaced auto	(9.8)	(8.1)	(4.7)	(2.2)	= A1 * B1 * C3 * D / 1000
Net	2.6	1.0	(0.6)	(2.2)	= new bus + displaced auto
Tons per new 1,000 VRH	-	-	1	2	
<b>Reduce transit fares</b>					<b>1 million base annual trips</b>
Fare elasticity	-0.3	-0.3	-0.3	-0.3	TCRP Report 95, Chapter 12; CAPCOA (2021)

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Effects per million annual trip base @ 100% fare reduction (annual)					
New trips	300,000	300,000	300,000	300,000	= 1000 * -(fare elasticity)
Change in auto VMT	(813,600)	(813,600)	(813,600)	(813,600)	= new riders * F1 * D
Change in tons CO2		(228.6)	(132.6)	(62.6)	= change in auto VMT * C3 / 1000000
Tons per million trips - free fares	277	229	133	63	
Tons per million trips - 50% fare reduction	139	115	67	32	
Tons per million trips - 25% fare reduction	69	57	33	16	
<b>Implement bus priority treatments</b>					<b>Affected 1,000 VRM per weekday</b>
Bus travel time elasticity	-0.4	-0.4	-0.4	-0.4	TCRP Report 95, Chapter 12
Typical travel time change (%)	-10%	-10%	-10%	-10%	CAPCOA (2021)
Effects per 1,000 affected VRM (annual)					
New bus passenger-miles	138,000	138,000	138,000	138,000	= B1 * elasticity * travel time change * G * 1000
Change in auto VMT	(82,800)	(82,800)	(82,800)	(82,800)	= new passenger-mi * D
Change in auto emissions (t CO2)	(28)	(23)	(13)	(6)	= change in auto VMT * C3 / 1000000
Change in bus idle emissions (t CO2)	(9)	(2)	-	-	
Change in tons CO2	(37)	(26)	(13)	(6)	
Tons per 1,000 affected weekday VRM	37	26	13	6	

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

User-input method for new transit service					
Planned new annual vehicle revenue-miles					Agency service plan
Anticipated new ridership (annual unlinked trips)					Agency estimate based on survey, model, or similar service
Anticipated share of new riders who previously drove or used a taxi/TNC					Agency estimate based on rider surveys or local mode shares. Use 60% if no local data available.
Average unlinked trip length of new riders (mi)					Agency estimate based on rider surveys, models, or data. Use 4.52 if no local data available.
Transit vehicle size					Agency service plan
Transit vehicle technology					Agency service plan
Average load factor for new service					= new riders * trip length / new revenue-miles
Change in annual auto VMT					= new riders * trip length * prior drive mode share
Change in annual tons CO2					
Displaced auto					= change in auto VMT * C3 / 1000000
New bus service					= 1000 * C1 * A1 * / 1000000
Net change					= new bus + displaced auto
Tons					

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

**Table 4. GHG Point Estimate Calculation Methodologies - Parking Management Strategies**

PARKING STRATEGIES						
Ref	Parameter	Value				Metric; Source/Calculation
		2025	2030	2040	2050	
Parameters Common Across Strategies						
A	grams CO2 per vehicle-mile (auto)	341	281	163	77	CDOT (2021) - high EV scenario
B	Average trip length (mi) - all purposes	10.5				FHWA (2018), Table 6b
C	Annualization factor	300				
	Annual miles driven					
D1	Per vehicle	10,450				
D2	Per household	19,642				
D3	Per worker (commuting)	6,400				
<b>Additional Fee on Parking</b>						Per 1,000 covered spaces per daily dollar fee
	Elasticity of driving w/r/t fuel price	-0.12				Small and van Dender (2007)
	Price of gasoline (\$/gal)	\$ 3.11				
	Average mpg	23.8				
	\$1 parking fee equivalent cost per mile	\$ 0.10				
	\$1 parking fee equivalent cost per gallon	\$ 2.27				
	Leakage factor (destination change)	0%				
	% VMT change for affected trips	-9%				
	Trips per covered space per day	2.0				
	Change in annual VMT per space per \$	(551)				
		(551)				

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Change in annual tons CO2 per 100 spaces per \$	(187.9)	154.8	89.8	42.4)	= Change in VMT * 1000 * A / 1000000
Tons per 1,000 spaces per \$ daily fee	188	155	90	42	
<b>Unbundle Residential Parking</b>					
					Per 1,000 covered spaces @ \$100/mo
Annual parking cost per space	\$ 1,200				= \$100 * 12
Annual vehicle cost	\$ 9,666				AAA (2021)
Elasticity of vehicle ownership with respect to total vehicle cost	(0.4)				Litman (2021)
Adjustment factor from vehicle ownership to VMT	1.01				FHWA (2017), as cited in CAPCOA (2021)
Percent reduction in miles per vehicle	-5.0%				= (parking cost) / (vehicle cost) * elasticity * adjustment factor
Change in annual VMT per space per \$100/mo	(524)	(524)	(524)	(524)	= D1 * percent reduction
Change in annual tons CO2 per 1,000 space per \$	(178.7)	(147.3)	(85.4)	(40.4)	= Change in VMT * 1000 * A / 1000000
Tons per 1,000 spaces per \$100 monthly cost	179	147	85	40	
<b>Eliminate minimum and set low maximum levels (residential)</b>					
					Per 1,000 dwelling unit (DU)
Change in annual VMT per DU for a 1-space reduction					
Urban core	(4,500)				CS analysis using sample projects from the King County (WA)



Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

					Right Size Parking Calculator ( <a href="https://rightsizeparking.org/">https://rightsizeparking.org/</a> )
Urban	(4,700)				assuming that typical parking is 2+ space/unit for 2+ bedroom
Suburban	(5,400)				
Change in annual tons CO2 per 1,000 DU					= Change in VMT * 1000 * A / 1000000
Urban core	(1,535)	(1,265)	(734)	(347)	
Urban	(1,603)	(1,321)	(766)	(362)	
Suburban	(1,841)	(1,517)	(880)	(416)	
Tons per 1,000 DU					
Urban core	1,535	1,265	734	347	
Urban	1,603	1,321	766	362	
Suburban	1,841	1,517	880	416	
<b>Eliminate minimum and set moderate maximum levels (residential)</b>					
Per 1,000 dwelling unit (DU)					
Change in annual VMT per DU for a 1-space reduction					
Urban core	(2,250)				CS analysis using sample projects from the King County (WA) Right Size Parking Calculator ( <a href="https://rightsizeparking.org/">https://rightsizeparking.org/</a> )
Urban	(2,350)				assuming that typical parking is 2+ space/unit for 2+ bedroom
Suburban	(2,700)				
Change in annual tons CO2 per 1,000 DU					= Change in VMT * 1000 * A / 1000000
Urban core	(767)	(632)	(367)	(173)	

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Urban	(801)	(660)	(383)	(181)	
Suburban	(921)	(759)	(440)	(208)	
<b>Tons per 1,000 DU</b>					
Urban core	767	632	367	173	
Urban	801	660	383	181	
Suburban	921	759	440	208	
<b>Reduce or eliminate minimum and set maximum levels (commercial)</b>					
			<b>Per 10,000 sq. ft. gross floor area of commercial capacity</b>		
Square feet per worker	300				Average for multiple employment categories; see CAPCOA (2021), p. 74
Workers per 10,000 sq. ft.	33				= 10,000 / sq. ft. per worker
% change in auto mode share per 0.1 space parking reduction per 1,000 sq. ft.	-1.4%				Estimates based on Morrall & Bolger (1996) and Lund, Cervero, & Willson (2004)
Annual VMT change per 0.1 space reduction	(2,987)				= % change in auto mode share * workers per 10,000 sq. ft. * D3
Baseline parking level (spaces per 1,000 sq. ft. general office or commercial) for existing mode share (no reduction)					
Non-CBD area	2.8				Institute of Transportation Engineers, as cited in TCRP Report 95 Chapter 18
CBD area	2.0				Estimate
% change in auto mode share vs. baseline for maximum parking ratio for general office or commercial floor area:					
Non-CBD, max 2.5 spaces/1,000 sq. ft.	-4.2%				
Non-CBD, max 2.0 spaces/1,000 sq. ft.	-11.2%				

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

CBD, max 1.5 spaces/1,000 sq. ft.	-7.0%				
CBD, max 1.0 spaces/1,000 sq. ft.	-14.0%				
Annual VMT change per 10,000 sq. ft. revised parking ratios:		= % change in auto mode share * workers per 10,000 sq. ft. * D3			
Non-CBD, max 2.5 spaces/1,000 sq. ft.	(8,960)				
Non-CBD, max 2.0 spaces/1,000 sq. ft.	(23,893)				
CBD, max 1.5 spaces/1,000 sq. ft.	(14,933)				
CBD, max 1.0 spaces/1,000 sq. ft.	(29,867)				
Change in annual tons CO2		= Change in VMT * A / 1000000			
Non-CBD, max 2.5 spaces/1,000 sq. ft.	(3.1)	(2.5)	(1.5)	(0.7)	
Non-CBD, max 2.0 spaces/1,000 sq. ft.	(8.1)	(6.7)	(3.9)	(1.8)	
CBD, max 1.5 spaces/1,000 sq. ft.	(5.1)	(4.2)	(2.4)	(1.1)	
CBD, max 1.0 spaces/1,000 sq. ft.	(10.2)	(8.4)	(4.9)	(2.3)	
Tons per 10,000 sq. ft. gross floor area of commercial capacity:					
Non-CBD, max 2.5 spaces/1,000 sq. ft.	3	3	1	1	
Non-CBD, max 2.0 spaces/1,000 sq. ft.	8	7	4	2	
CBD, max 1.5 spaces/1,000 sq. ft.	5	4	2	1	
CBD, max 1.0 spaces/1,000 sq. ft.	10	8	5	2	

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

**Table 5. GHG Point Estimate Calculation Methodologies - Travel Demand Management Strategies**

TRAVEL DEMAND MANAGEMENT STRATEGIES							
Ref	Parameter	Value	2025	2030	2040	2050	Metric; Source/Calculation
<b>Parameters Common Across Strategies</b>							
	grams CO2 per vehicle-mile						
A1	Auto	341	281	163	77	CDOT (2021) - high EV scenario	
A2	Vanpool	758	703	366	90	Base year assumed 10 mpg, future year efficiency/electrification adjustments proportional to auto	
	Average work trip length (mi)						
B1	Auto	12.7				FHWA (2018), Table 26	
B2	Vanpool	25				TCRP Report 95, Chapter 5. Typical average length is close to 25 miles (p. 5-13, Table 5-5)	
C	Annualization factor	250				TCRP Report 95, Chapter 5, Table 5-6	
<b>Trip Reduction Program - Voluntary</b>						<b>Per Program \$1,000</b>	
	% change in work trip VMT for covered employees	-5%				USDOT (2010), p. 5-75, 5% reduction in SOV mode share; Boarnet (2014) as cited in CAPCOA (2021), 4-6% VMT reduction	
	VMT change per 1,000 covered employees (annual)	(317,500)	(317,500)	(317,500)	(317,500)	= % VMT Change * B1 * 2 * C * 1000	
	Change in annual tons CO2 per \$	(108.3)	(89.2)	(51.8)	(24.4)	= Change in VMT * A1 / 1000000	

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Tons per 1,000 covered employees	108	89	52	24	
<b>Trip Reduction Program - Marketing</b>					<b>Per Program \$1,000</b>
Annual VMT reduced per program \$	7				MWCOG (2009), as analyzed by CS for Colorado DOT (2010) and updated 2022
Change in annual tons CO2 per \$	(2)	(2)	(1)	(1)	= Change in VMT * 1000 * A1 / 1000000
Tons per program \$1,000	2	2	1	1	
<b>Employer Sponsored Vanpool</b>					<b>Per New Vanpool</b>
Average vanpool occupancy	5.8				CDOT (2019), total participants / total vans
Prior drive mode share of new vanpoolers	65%				TCRP Report 95, Chapter 5, p. 5-34. Total prior auto drivers, counting in carpool drivers, are in the 45 to over 65% range
Vanpool circuitry factor	1.2				Estimate
Annual VMT change per new vanpool					
Auto	(23,563)				= occupancy * prior drive mode share * B1 * C
Vanpool	7,500				= circuitry factor * B1 * C
Change in annual tons CO2 per new vanpool					
Auto	(8.0)	(6.6)	(3.8)	(1.8)	= Change in auto VMT * A1 / 1000000
Vanpool, fleet average	6.4	5.3	2.7.9	0.7	= Change in vanpool VMT * A2 / 1000000

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Vanpool, electric	-	-	-	-	= Change in vanpool VMT *A3 / 1000000
Net, fleet average vanpool	(1.6)	(1.4)	(1.1)	(1.1)	= Sum of auto and vanpool change
Net, electric vanpool	(8.0)	(6.6)	(3.8)	(1.8)	= Sum of auto and vanpool change
Tons per new vanpool (fleet average)	2	1	1	1	= Sum of auto and vanpool change
Tons per new vanpool (electric)	8	7	4	2	
<b>Carshare</b>					
				<b>Per # cars provided</b>	
Households served per car	15				Litman (2018) - typically 10-20 members per vehicle
Annual VMT reduction per HH served	3,000				Litman (2018) - carshare HHs are typically lower mileage HHs who reduce travel 50% (6,000 to 3,000 annual miles)
Change in annual CO2 per car (tons)	(15)	(13)	(7)	(3)	
Tons per new carshare vehicle	15	13	7	3	
<b>Telework</b>					
				<b>Per 100 employees teleworking additional 1 day/week</b>	
Daily work trip VMT change per new teleworker	-25.4				= B1 * 2
Rebound effect (additional non-work travel as % of reduced work travel)	41%				"Overall rebound effect" for a telecommuter on a telecommuter day, based on analysis of 2012-2013 California Household Travel Survey (CS, 2019)
Annual VMT change per 100 new					= Daily VMT change * (1 - rebound effect) * 48 weeks/year

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

teleworkers per additional day per week	(719)				
Change in annual CO2 per 100 new teleworkers per additional day per week (tons)	(23)	(20)	(12)	(6)	= Change in VMT * A1 * 100 / 1000000
Tons per 100 new teleworkers per additional day per week	23	20	12	6	
<b>Broadband</b>					
			<b>Per 100 new households served</b>		
% VMT for "personal business"	32%				FHWA (2018), Table 6a
Change in personal business VMT due to tele-travel	-10%				Assumption
% VMT for work	29%				FHWA (2018), Table 6a
Change in work travel due to work-from-home	-12%				Colorado DOT
Annual household VMT change per new broadband service point	(1,317)				= [Land Use-D2] * (% VMT * VMT reduction for personal business + % VMT * VMT reduction for work)
Change in annual CO2 per 100 new households served with broadband (tons)	(41)	(37)	(21)	(10)	= Change in VMT * A1 * 100 / 1000000
Tons per 100 new households served with broadband	41	37	21	10	

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

**Table 6. GHG Point Estimate Calculation Methodologies - Traffic Operation Strategies**

TRAFFIC OPERATION STRATEGIES						
Ref	Parameter	Value				Metric; Source/Calculation
		2025	2030	2040	2050	
<b>Parameters Common Across Strategies</b>						
	grams CO2 per vehicle-mile (auto)		281	163	77	CDOT (2021) - high EV scenario
	grams CO2 per vehicle-mile (heavy truck)	1,307	1,199	1,074	1,074	Based on AEO forecast mpg (no electrification)
	CO2 fraction from heavy vehicles (2019)	21%				National average based on AEO data
	kg CO2 per hour of delay (all traffic)	3.5	2.9	1.7	1.0	2019 based on TTI (2021), future years adjusted by relative efficiency improvement of autos and heavy trucks
<b>Retime/optimize arterial signals</b>				<b>Per 10,000 AADT per signal</b>		
	Sample corridor length (mi)	1.0				Assumption
	Signals per mile	2.0				Assumption
	Baseline corridor travel speed (mph)	20.0				Assumption
	Corridor travel time change (%)	-12%				USDOT (2010), p. 4-24: travel time reductions of 8-25% possible for preset signals, or 8-41% for actuated signals
	New corridor travel speed (mph)	22.7				Calculation
	Average daily arterial traffic volume at signal	10,000				Assumption
	Change in travel time per vehicle (hours)	-0.006				Calculation



Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Daily total delay reduction (hours)	(60)				Calculation
Induced travel elasticity (% change in VMT with respect to % change in travel time)	-0.3				[U.K.] Highways Agency (1997), recommended value of -0.20 to -0.33 for "urban areas with low modal competition, or interurban"; Barr (2000), -0.3 to -0.5
New volume	10,360				= Volume + [Volume * % travel time change * elasticity]
Annual change in tons CO2 per signal					
From delay reduction	(75.7)	(68.2)	(44.2)	(27.8)	= Delay reduction * CO2/hour * 365 / 1000
From VMT increase	22.4	18.5	10.7	5.1	= Volume change * miles/signal * g/mi [auto] * 365 / 1000000
Net CO2 change	(53.3)	(49.7)	(33.5)	(22.7)	
Tons per signal per 10,000 AADT	53	50	33	23	
<b>Roundabout</b>					
			<b>Per 10,000 AADT per roundabout</b>		
CO2 change, kg/vehicle	(0.07)				Calculated from data in Hu et al (2014), adjusted for ratio of 2025 to 2012 emissions based on AEO data
Annual vehicles	3,650,000				= 10,000 * 365
CO2 change, tons/year/10,000 AADT	(243)	(221)	(133)	(55)	= Vehicles * kg/vehicle / 1000
Tons per roundabout per 10,000 AADT	243	221	133	55	

**Table 7. GHG Point Estimate Calculation Methodologies - Land Use Strategies**

**LAND USE STRATEGIES**

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Ref	Parameter	Value				Metric; Source/Calculation
		2025	2030	2040	2050	
<b>Parameters Common Across Strategies</b>						
A	grams CO2 per vehicle-mile (auto)		281	163	77	CDOT (2021) - high EV scenario
B	Average trip length (mi) - all purposes	10.5				2017 NHTS Trends, Table 6b
C	Annualization factor	300				
	Annual miles driven					
D1	Per vehicle	10,450				
D2	Per household	19,642				
D3	Per worker (commuting)	6,400				
<b>Increase Residential Density</b>						Per acre rezoned from <10 units/acre to at least 15-25 units/acre meeting "smart growth" criteria
	Elasticity of VMT with respect to residential density	(0.22)				Stevens (2016), as cited in CAPCOA (2021)
	Change in annual VMT per residential unit	(4,321)				
	Change in annual CO2 (tons) per rezoned acre	(26.5)				
	<b>Tons per rezoned acre</b>	<b>27</b>	<b>22</b>	<b>13</b>	<b>6</b>	

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

<b>Increase Job Density</b>						Per acre rezoned from <0.5 FAR to at least 1.0 FAR meeting "smart growth" criteria
Elasticity of VMT with respect to job density	(0.07)					Stevens (2016), as cited in CAPCOA (2021)
Square feet of building space per employee	300					CAPCOA (2021)
Employees per acre at 1.0 FAR	145					43,560 / square feet/employee
Annual work trip VMT per employee						
Baseline	6,350					= TDM-B1 * TDM-C * 2
Change from rezoning	(445)					= Baseline VMT * elasticity * 100% density increase
Change in annual CO2 (tons) per rezoned acre	(22)	(18.1)	(10.5)	(5)	= Change in VMT/employee * employees/acre * A / 1000000	
Tons per rezoned acre	22	18	11	5		
<b>Mixed-use Transit-Oriented Development (higher intensity)</b>						Per acre of area rezoned for mixed-use TOD accommodating at least 25 residential units/acre and 150 jobs/acre, within 1/2 mile of fixed-guideway transit station
Change in annual VMT per rezoned acre	(174,706)					= Change in VMT/unit * 25 + change in VMT/employee * 150
Change in annual CO2 (tons) per rezoned acre	(-59.6)					(49.1)
Tons per rezoned acre	60	49	28	13		

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

<b>Mixed-use Transit-Oriented Development (moderate intensity)</b>					<b>Per acre of area rezoned for mixed-use TOD accommodating at least 15 residential units/acre and 100 jobs/acre, within 1/2 mile of high-frequency bus transit or fixed-guideway station</b>
Change in annual VMT per rezoned acre	(109,269)				= Change in VMT/unit * 15 + change in VMT/employee * 100
Change in annual CO2 (tons) per rezoned acre	(48.5)	(40)	(23.2)	(11)	= Combined effect for increasing residential density + increasing job density
Tons per rezoned acre	49	40	23	11	

**Table 8. GHG Point Estimate Calculation Methodologies - MD/HD Strategies**

MD/HD STRATEGIES						
Ref	Parameter	Value				Metric; Source/Calculation
		2025	2030	2040	2050	
grams CO2 per vehicle-mile						
	Transit bus - diesel	2,945	2,698	2,405	2,347	CDOT (2021)
	Transit bus - hybrid-electric	2,454	2,248	2,004	1,956	20% efficiency improvement
	Transit bus - RNG	1,774	1,626	1,449	1,414	Calculated based on 0.60 ratio of CNG to diesel direct CO2 emissions per unit energy
	Transit bus - electric	-	-	-	-	Excluding electricity sector emissions
	School bus - diesel	1,243	1,150	1,007	1,007	AFDC school bus mpg for 2017, future year adjustments for Federal MHDV rule, 10.15 kg CO2/gal
	School bus - electric	-	-	-	-	Excluding electricity sector emissions
	Medium truck - diesel	1,011	936	809	809	AEO medium truck mpg for base year, future year adjustments for Federal MHDV rule, 10.15 kg CO2/gal
	Medium truck - electric	-	-	-	-	Excluding electricity sector emissions
	Heavy truck - diesel	1,286	1,199	1,074	1,074	AEO heavy truck mpg for base year, future year adjustments for Federal MHDV rule, 10.15 kg CO2/gal

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Heavy truck - electric	-	-	-	-	- Excluding electricity sector emissions
Heavy truck - H2 fuel cell	-	-	-	-	- Excluding electricity sector emissions
<b>Miles per vehicle per year</b>					
Auto	10,450				CDOT (2021)
Transit bus	31,396				CDOT (2021)
School bus	9,939				U.S. EPA (2016): 9,939 mi/year, from the 1997 School Bus Fleet Fact Book
Medium truck	18,387				Computed from Argonne National Lab - VISION model (2019) data
Heavy truck (electric)	25,185				69 miles per day for class 7 delivery truck (Gao et al. 2017) - local food delivery
Heavy truck (H2 FC)	41,628				Argonne VISION model, computed average for Class 7/8 truck
<b>CO2 change per vehicle (tons/year)</b>					
Transit bus hybrid	(15.4)	(14.1)	(12.6)	(12.3)	= miles per year * (g/mi[hybrid] - g/mi[diesel])
Transit bus CNG	(36.8)	(33.7)	(30.0)	(29.3)	= miles per year * (g/mi[CNG] - g/mi[diesel])
Transit bus all-electric	(92.5)	(84.7)	(75.5)	(73.7)	= miles per year * (g/mi[electric] - g/mi[diesel])
School bus electric	(12.4)	(11.4)	(10.0)	(10.0)	= miles per year * (g/mi[electric] - g/mi[diesel])
Medium truck electric	(18.6)	(17.2)	(14.9)	(14.9)	= miles per year * (g/mi[electric] - g/mi[diesel])
Heavy truck electric	(32.4)	(30.2)	(27.0)	(27.0)	= miles per year * (g/mi[electric] - g/mi[diesel])
<b>Tons per new vehicle</b>					
<b>Per vehicle replacing a diesel vehicle</b>					
Transit bus hybrid	15	14	13	12	
Transit bus CNG	37	34	30	29	
Transit bus all-electric	92	85	76	74	
School bus electric	12	11	10	10	

Subject	Number
<b>GHG Mitigation Measures Policy Directive</b>	1610.0

Medium truck electric	19	17	15	15	
Heavy truck electric	32	30	27	27	
<b>Hydrogen Refueling Stations</b>					<b>Per station</b>
Utilization rate	10%	30%	30%	30%	RMI (2020): 10% in 5-year term, 30% long-term for DCFC, assumed same for H2
Time to refuel (hrs)	0.17	0.17	0.17	0.17	
Daily service time (hrs)	16	16	16	16	RMI (2020): most DCFC demand between 6 am and 10 pm, assumed same for H2
Number of vehicles served per station per day	9.6	28.8	28.8	28.8	= Service time / time to refuel * utilization rate
H2 % renewable (vs. natural gas)	10%	40%	100%	100%	Assumption
H2 carbon intensity, g CO2/MJ					
Compressed, central NG reform	115.6	115.6	115.6	115.6	CARB (2015) value of 152.5 life-cycle, deflated based on ratio of direct to life-cycle for diesel
Compressed, on-site renewable	62.1	62.1	62.1	62.1	CARB (2015) value of 62.1 life-cycle, deflated based on ratio of direct to life-cycle for diesel
Weighted average	110.3	94.2	62.1	62.1	Calculated
H2 carbon intensity, g CO2/GDE	14,994	12,811	8,446	8,446	= g CO2/MJ * 136 MJ/GDE [GDE = gallon diesel equivalent]
Heavy truck diesel mi/gallon	6.8	7.5	8.4	8.5	AEO, 2019 Reference Case
H2/diesel energy efficiency ratio (EER)	2.0	2.0	2.0	2.0	GREET model, v.2020
Heavy truck H2 g CO2/mi	1,103	854	503	497	= g CO2/GDE / mi/gal / EER
CO2 change (tons/year):					
per H2 truck served	(4.6)	(8.7)	(14.4)	(14.5)	= Miles/year/vehicle * g/mile / 1000000
per H2 station	(44.4)	(250.2)	(414.4)	(418.7)	= CO2 change/truck * trucks/charger
Tons per new station	44	250	414	419	

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

**Table 9. GHG Point Estimate Calculation Methodologies - Sources**

Short Name	Citation	Web Link
AAA (2021)	AAA (2021). Your Driving Costs.	<a href="https://newsroom.aaa.com/wp-content/uploads/2021/08/2021-YDC-Brochure-Live.pdf">https://newsroom.aaa.com/wp-content/uploads/2021/08/2021-YDC-Brochure-Live.pdf</a>
AEO	U.S. Department of Energy, Annual Energy Outlook Reference Case, 2019 or 2022	<a href="https://www.eia.gov/outlooks/aeo/">https://www.eia.gov/outlooks/aeo/</a>
AFDC	Alternative Fuels Data Center	<a href="https://afdc.energy.gov/">https://afdc.energy.gov/</a>
Barr (2000)	Barr, L.C. (2000). "Testing for the significance of induced highway travel demand in metropolitan areas", Transportation Research Record: Journal of the Transportation Research Board, vol. 1706.	<a href="https://journals.sagepub.com/doi/10.3141/1706-01">https://journals.sagepub.com/doi/10.3141/1706-01</a>
Buehler (2012)	Buehler, R., and J. Pucher (2012). "Cycling to Work in 90 Large American Cities: New Evidence on the Role of Bike Paths and Lanes." Transportation 39:409–432.	<a href="https://www.saferoutespartnership.org/resources/journal-article/cycling-work-90-large-american-cities">https://www.saferoutespartnership.org/resources/journal-article/cycling-work-90-large-american-cities</a>
CAPCOA (2021)	California Air Pollution Control Officers Association (2021). Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity.	<a href="https://www.airquality.org/ClimateChange/Documents/Handbook%20Public%20Draft_2021-Aug.pdf">https://www.airquality.org/ClimateChange/Documents/Handbook%20Public%20Draft_2021-Aug.pdf</a>
CARB (2015)	California Air Resources Board (2015). Staff Report: Calculating Life Cycle Carbon Intensity Value of Transportation Fuels in California.	<a href="https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/peerrview/050515staffreport_ca-greet.pdf">https://ww2.arb.ca.gov/sites/default/files/classic/fuels/lcfs/peerrview/050515staffreport_ca-greet.pdf</a>
CDOT (2019)	Colorado Department of Transportation (2019). Statewide Transportation Demand Management Plan. Phase 1 Report: Colorado Transportation Options. Prepared by Wilson & Company, Inc.	<a href="https://www.codot.gov/programs/innovativemobility/mobility-services/tdm/links.html">https://www.codot.gov/programs/innovativemobility/mobility-services/tdm/links.html</a>

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

CDOT (2021)	Colorado DOT (2021). Cost-Benefit Analysis for Rules Governing Statewide Transportation Planning. August 31, 2021.	<a href="https://www.codot.gov/business/rules/documents/cdot-cost-benefit-analysis-for-ghg-rule-sept-2021.pdf">https://www.codot.gov/business/rules/documents/cdot-cost-benefit-analysis-for-ghg-rule-sept-2021.pdf</a>
CS (2010)	Cambridge Systematics and Sprinkle Consulting (2010). Transportation Demand Management Project Evaluation and Funding Methods in the Denver Region. Prepared for Colorado DOT.	<a href="http://www3.drcog.org/documents/archive/_CODOT_TDM_COM_PLETE%20-%20FINAL%20%2011%2010.pdf">http://www3.drcog.org/documents/archive/_CODOT_TDM_COM_PLETE%20-%20FINAL%20%2011%2010.pdf</a>
CS (2019)	Cambridge Systematics (2019). "The Future of the Workplace: How Will Economic and Technological Changes Affect Work Travel and Emissions?" Presented to Southern California Association of Governments.	
CS (2021)	Cambridge Systematics (2021). Transportation Investment Strategy Tool Documentation, 2021. Prepared for Georgetown Climate Center.	<a href="https://www.georgetownclimate.org/files/report/GCC_Investment_Tool.pdf">https://www.georgetownclimate.org/files/report/GCC_Investment_Tool.pdf</a>
FHWA (2018)	McGuckin, N. and A. Fucci (2018). Summary of Travel Trends: 2017 National Household Travel Survey. U.S. Department of Transportation, Federal Highway Administration, FHWA-PL-18-019.	<a href="https://nhts.ornl.gov/assets/2017_nhts_summary_travel_trends.pdf">https://nhts.ornl.gov/assets/2017_nhts_summary_travel_trends.pdf</a>
Hu et al (2014)	Hu, W.; A.T. McCartt, J.S. Jermakian, S. Mandavilli (2014). Public Opinion, Traffic Performance, the Environment, and Safety After Construction of Double-Lane Roundabouts. Transportation Research Record no. 2402.	<a href="https://journals.sagepub.com/doi/abs/10.3141/2402-06">https://journals.sagepub.com/doi/abs/10.3141/2402-06</a>
ITF (2020)	International Transport Forum (ITF). (2020). "Good to Go? Assessing the Environmental Performance of New Mobility."	<a href="https://www.itf-oecd.org/good-go-assessing-environmental-performance-new-mobility">https://www.itf-oecd.org/good-go-assessing-environmental-performance-new-mobility</a>
King County (2022)	King County Multi-Family Residential Parking Calculator	<a href="https://rightsizeparking.org/">https://rightsizeparking.org/</a>
Litman (2018)	Litman, T. (2018). TDM Encyclopedia: Carsharing. Victoria Transport Policy Institute.	<a href="https://www.vtpi.org/tdm/">https://www.vtpi.org/tdm/</a>



Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

Litman (2021)	Litman, T. (2021). TDM Encyclopedia: Parking Requirement Impacts on Housing Affordability. Victoria Transport Policy Institute.	<a href="https://www.vtpi.org/tdm/">https://www.vtpi.org/tdm/</a>
Lund, Cervero, and Willson (2003)	Lund, H. M., Cervero, R., and Willson, R. W. (2004). Travel Characteristics of Transit-Oriented Development in California. Prepared by Project Team Members from Cal Poly Pomona, UC Berkeley, and San Francisco Bay Area Rapid Transit under a Caltrans “Statewide Planning Studies” Transportation Grant, Sacramento, CA. Cited in TCRP Report 95 Chapter 17.	
MacArthur (2018)	MacArthur, J., C. Cherry, M. Harpool and D. Schepcke. (2018). A North American Survey of Electric Bicycle Owners. NITC-RR-1041. Portland, OR: Transportation Research and Education Center (TREC). <a href="https://dx.doi.org/10.15760/trec.197">https://dx.doi.org/10.15760/trec.197</a>	<a href="https://pdxscholar.library.pdx.edu/trec_reports/161/">https://pdxscholar.library.pdx.edu/trec_reports/161/</a>
Mobility Lab (2019)	Mobility Lab, Arlington County Commuter Services (ACCS). (2019). Arlington County Shared Mobility (SMD) Pilot Evaluation Report.	<a href="https://mobilitylab.org/research-document/arlington-county-shared-mobility-devices-smd-pilot-evaluation-report/">https://mobilitylab.org/research-document/arlington-county-shared-mobility-devices-smd-pilot-evaluation-report/</a>
Morrall and Bolger (1996)	Morrall, J., and Bolger, D. (1996). “The Relationship Between Downtown Parking Supply and Transit Use.” ITE Journal Vol. 66, No. 2 (February, 1996).	
MWCOG (2009)	LDA Consulting et al for Metro Washington Council of Governments (2009). Transportation Emission Reduction Analysis Report, FY 2006–2008.	<a href="https://www.mwcog.org/documents/2020/11/17/commuter-connections-transportation-emission-reduction-measure-term-analysis-report--carsharing-commuter-connections-commuting/">https://www.mwcog.org/documents/2020/11/17/commuter-connections-transportation-emission-reduction-measure-term-analysis-report--carsharing-commuter-connections-commuting/</a>
NABSA (2020)	North American Bikeshare Association (NABSA). (2020). 1st Annual Micromobility State of the Industry Report.	<a href="https://doi.org/10.7922/G2057D6B">https://doi.org/10.7922/G2057D6B</a>
NACTO (2018)	National Association of City Transportation Officials (NACTO). (2018). Shared Micromobility in the U.S.: 2018.	<a href="https://nacto.org/shared-micromobility-2018/">https://nacto.org/shared-micromobility-2018/</a>

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

NTD (2019)	2019 National Transit Database (data analysis by Cambridge Systematics)	<a href="https://www.transit.dot.gov/ntd">https://www.transit.dot.gov/ntd</a>
PBOT (2020)	Portland Bureau of Transportation (2020). E-Scooter Findings Report.	<a href="https://www.portlandoregon.gov/transportation/article/709719">https://www.portlandoregon.gov/transportation/article/709719</a>
Ramboll (2020)	Ramboll. (2020). Achieving Sustainable Micro-mobility. < <a href="https://ramboll.com/-/media/files/rgr/documents/markets/transport/m/ramboll_micro-mobility_greenpaper_a4_0320_lowres_v.pdf?la=en">https://ramboll.com/-/media/files/rgr/documents/markets/transport/m/ramboll_micro-mobility_greenpaper_a4_0320_lowres_v.pdf?la=en</a> >	
Rabi (2012)	Rabi, A. and A. de Nazelle (2012). "Benefits of Shift from Car to Active Transport." Transport Policy 19(1).	
RMI (2020)	Rocky Mountain Institute (2020). DCFC Rate Design Study. Prepared for Colorado Energy Office.	<a href="https://rmi.org/insight/dcfc-rate-design-study/">https://rmi.org/insight/dcfc-rate-design-study/</a>
Small and van Dender (2007)	Small, K. and K. Van Dender (2007). Fuel Efficiency and Motor Vehicle Travel: The Declining Rebound Effect. The Energy Journal, 28:1.	
TCRP Report 95 Chapter 12	McCullom, B.E., and R. H. Pratt, et al (2004). TCRP Report 95, Traveler Response to Transportation System Changes. Chapter 12: Transit Pricing and Fares. Transportation Research Board, Washington, D.C.	<a href="https://www.trb.org/Publications/TCRPReport95.aspx">https://www.trb.org/Publications/TCRPReport95.aspx</a>
TCRP Report 95 Chapter 5	Evans, J.E., and R. H. Pratt, et al (2005). TCRP Report 95, Traveler Response to Transportation System Changes. Chapter 5: Vanpools and Buspools. Transportation Research Board, Washington, D.C.	<a href="https://www.trb.org/Publications/TCRPReport95.aspx">https://www.trb.org/Publications/TCRPReport95.aspx</a>
TCRP Report 95 Chapter 17	Evans, J., R. Pratt, A. Stryker, and J.R. Kuzmyak (2004). TCRP Report 95, Traveler Response to Transportation System Changes. Chapter 17: Transit-Oriented Development. Transportation Research Board, Washington, D.C.	<a href="https://www.trb.org/Publications/TCRPReport95.aspx">https://www.trb.org/Publications/TCRPReport95.aspx</a>

Subject <b>GHG Mitigation Measures Policy Directive</b>	Number 1610.0
--	------------------

TCRP Report 95 Chapter 18	Kuzmyak, J.R., R. Weinberger, R. Pratt, and H. Levinson (2003). TCRP Report 95, Traveler Response to Transportation System Changes. Chapter 18: Parking Management and Supply. Transportation Research Board, Washington, D.C.	<a href="https://www.trb.org/Publications/TCRPReport95.aspx">https://www.trb.org/Publications/TCRPReport95.aspx</a>
TTI (2021)	Texas A&M Transportation Institute (2021). Urban Mobility Report. As analyzed in Cambridge Systematics (2021).	<a href="https://mobility.tamu.edu/umr/">https://mobility.tamu.edu/umr/</a>
[U.K.] Highways Agency (1997)	[U.K.] Highways Agency (1997). Design Manual for Roads and Bridges, Volume 12, Section 2, Part 2: Induced Traffic Appraisal.	
U.S. EPA (2016)	U.S. Environmental Protection Agency (EPA) (2016). Population and Activity of On-road Vehicles in MOVES2014. EPA-420-R-16-003.	<a href="https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=OTAQ&amp;dirEntryId=309336">https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=OTAQ&amp;dirEntryId=309336</a>
USDOT (2010)	U.S. Department of Transportation (2010). Transportation's Role in Reducing U.S. Greenhouse Gas Emissions.	<a href="http://www.reconnectingamerica.org/assets/Uploads/DOTClimateChangeReport-April2010-Volume1and2.pdf">http://www.reconnectingamerica.org/assets/Uploads/DOTClimateChangeReport-April2010-Volume1and2.pdf</a>
WSCTRB (2017)	Washington State Commute Trip Reduction Board (2017). 2017 Report to the Legislature.	<a href="https://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=2017CTR_Report_cc6e5f5a-b10f-44b7-8304-fd65ba28133f.pdf">https://app.leg.wa.gov/ReportsToTheLegislature/Home/GetPDF?fileName=2017CTR_Report_cc6e5f5a-b10f-44b7-8304-fd65ba28133f.pdf</a>



**COLORADO**

Department of Transportation

# June Updates to PD 1610

May 24, 2023

Page 108 of 274



# Summary of Changes

1. Language clarification to help users of PD 1610
  - Points -> Tons
  - Metric -> Unit
2. Updated numbers for 5 transit mitigation measures
3. Updated review date ( previously January 2023) language
  - a. Accomplished - and likely this PD will be updated every 6 months for the first few years
  - b. PDs are periodically reviewed every five years as a standard practice



# Why were changes made to transit?

Old: The emission factors used to calculate the GHG savings were based on the assumption that 100% of the transit fleet would be zero emission by 2033

New: Emission factors now based on the assumption that 100% of the transit fleet will be zero emission by 2050



## What was changed in transit?

PD 1610 has been updated with new assumptions for the average transit fleet mix.

	<b>2025</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>
Old	47%	85%	100%	100%
New	23%	38%	69%	100%

This means that the emission factors for mitigation measures which use “average transit fleet mix” have increased - because there are assumed to be less transit ZEVs in their fleet.



# Results

Project	Unit	Tons/Unit Now - 2025	Tons/Unit 2026-2030	Tons/Unit 2031-2040	Tons/Unit 2041-2050
New fixed route local - fleet avg	Per 1,000 new VRH	<del>10</del> 1	<del>20</del> 4	<del>15</del> 5	7
New demand response	Per 1,000 new VRM	<del>4</del> -	<del>6</del> -	<del>5</del> -1	2
Replace diesel bus with electric	Per vehicle	92	85	76	74
Replace diesel bus with hybrid	Per vehicle	15	14	13	12
Replace diesel bus with RNG	Per vehicle	37	34	30	29





## Why were these changes made?

- Align an assumption in PD 1610 with an official state goal: *100% of the transit fleet electrified by 2050*
- Provide local transit agencies and state enterprises with the most accurate emission factor information possible for their calculations



# Background

PD 1610 provides multiple ways that users can calculate the GHG savings of transit

CDOT staff recommend using the User Input Transit Tool, also part of PD 1610, when these specifics are known:

- Occupancy rate
- New ridership
- Trip length
- Vehicle size
- Vehicle technology

Lastly, these changes do not affect CDOT's compliance with the GHG Planning Standard.



## Conclusion

- Changes have gone through APCD review
- Changes do not affect CDOT's compliance with GHG Pollution Reduction Planning Standard



Questions?



**COLORADO**  
Department of Transportation

**TO:** CDOT Transportation Commission  
**FROM:** Kay Kelly, Chief, Office of Innovative Mobility  
Jennifer Phillips, Assistant Director, Bus Operations  
**DATE:** June 13, 2023  
**SUBJECT:** Update on Bustang Family of Services

**PURPOSE:** To provide an update on the Bustang Family of Services

**ACTION:** Informational

**BACKGROUND:**

The Bustang Family of Services provides statewide intercity regional bus service connecting Colorado's transportation network. The service consists of Bustang, Outrider and Pegasus along with several seasonal services.

Bustang provides bus service along I-25 and I-70.

Outrider provides rural bus services on eight different routes in Colorado.

Pegasus provides van service along I-70.

Quarterly, the Division of Transit and Rail provides the Transportation Commission with an informational update on ridership and farebox recovery for Bustang along with ridership data for Outrider.

**NEXT STEPS:** Bus Operations is happy to respond to any follow-up questions from the Commission.

**ATTACHMENTS:** Bustang Family of Services Update PPT Slides



**COLORADO**

**Department of Transportation**

# Bustang Family of Services Update

June 13, 2023 Transportation Commission Workshop Meeting [Page 118 of 274](#)

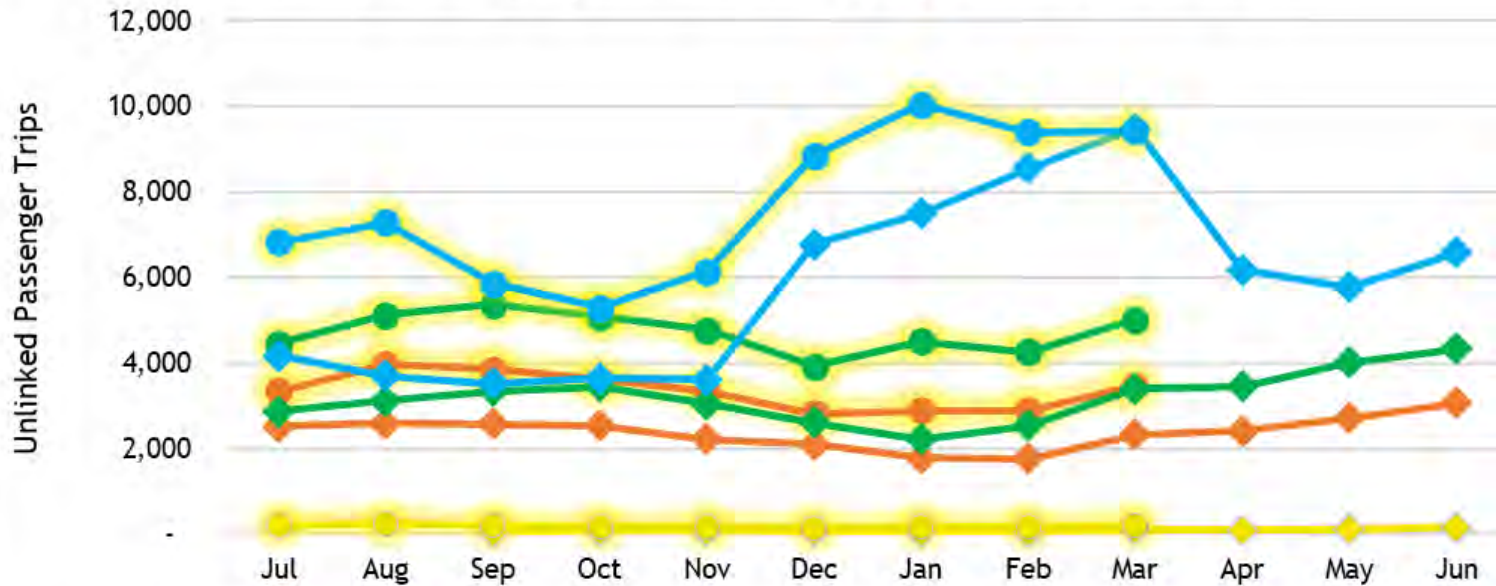
- Bustang Family of Services
  - Bustang
  - Bustang Outrider
  - Pegasus
  - Bustang to Broncos
  - Snowstang
  - Bustang to Estes





# Bustang Ridership Update

Monthly Bustang System Ridership by Line & Fiscal Year



	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
South FY22	2,522	2,590	2,577	2,539	2,228	2,099	1,789	1,765	2,322	2,422	2,714	3,060
South FY23	3,353	3,987	3,864	3,615	3,354	2,823	2,891	2,888	3,462			
North FY22	2,879	3,114	3,339	3,452	3,051	2,616	2,221	2,542	3,392	3,445	4,018	4,325
North FY23	4,446	5,117	5,366	5,082	4,764	3,934	4,506	4,253	5,010			
West FY22	4,173	3,696	3,528	3,638	3,612	6,770	7,503	8,554	9,484	6,175	5,778	6,587
West FY23	6,833	7,280	5,854	5,307	6,139	8,858	10,040	9,401	9,432			
DTC FY22			32	90	90	81	65	50	112	86	115	169
DTC FY23	191	236	200	164	163	125	180	158	202			

- 170,000 total boardings in calendar year 2022
- Year-over-year growth on all lines
- West Line ridership ~20% above pre-pandemic levels
- North and South Line ridership ~50% below pre-pandemic levels





# Outrider Ridership Update

**Bustang Outrider System Monthly Ridership by Fiscal Year**



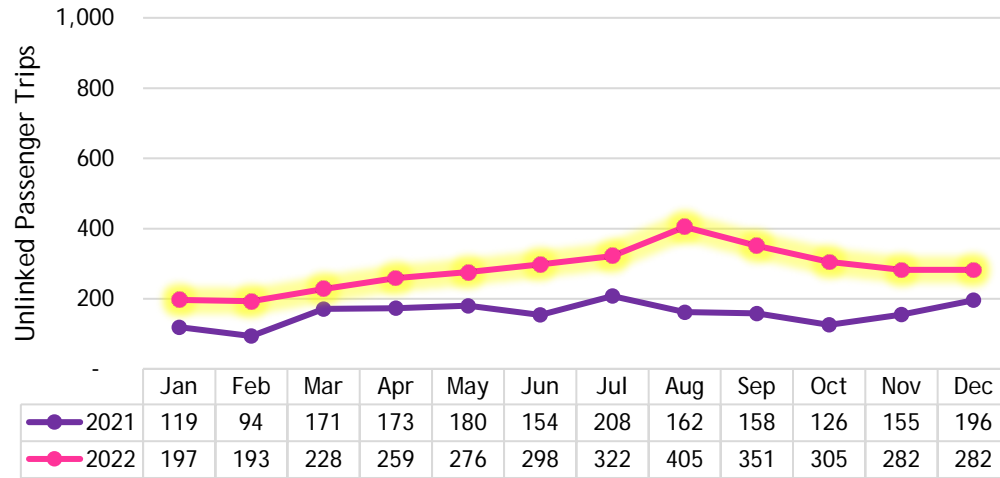
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
FY 2022	2,807	2,508	2,111	1,943	1,985	2,579	1,967	1,984	2,774	2,181	2,438	3,218
FY 2023	3,613	4,007	3,329	3,219	2,944	3,458	3,347	3,132	3,809			

- Steady year-over-year growth
- Sterling—Greeley and Sterling—Denver routes launched Nov. 2022
  - looking at extending to DIA
- Trinidad—Pueblo launched March 2023

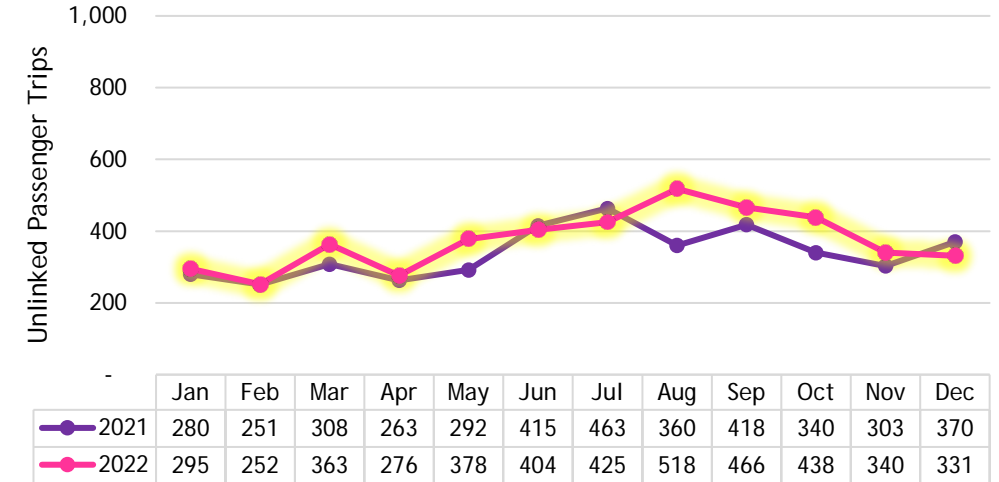


# Outrider Ridership Update

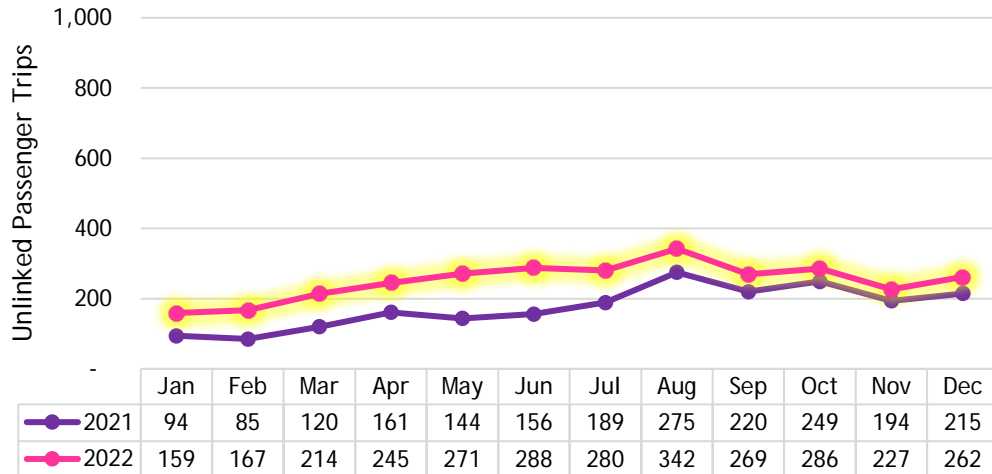
### Lamar - Colorado Springs Ridership by Month



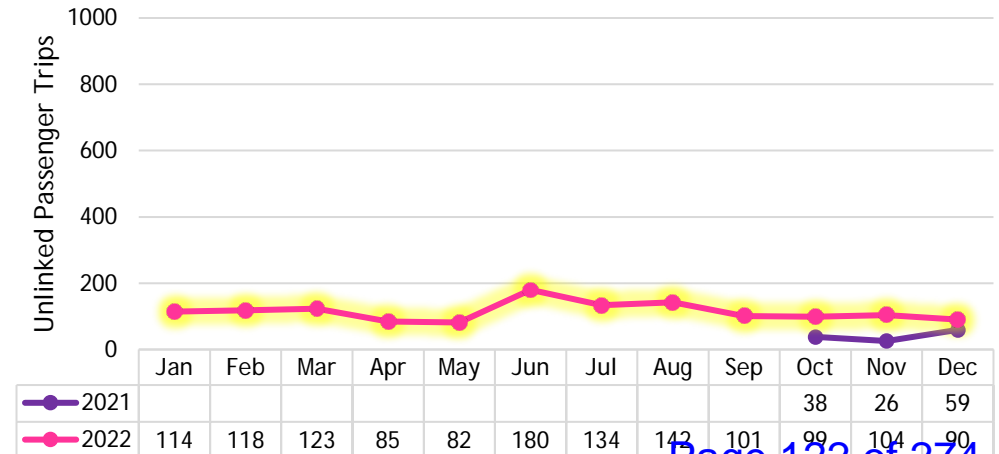
### Durango - Grand Junction Ridership by Month



### Alamosa - Pueblo Ridership by Month



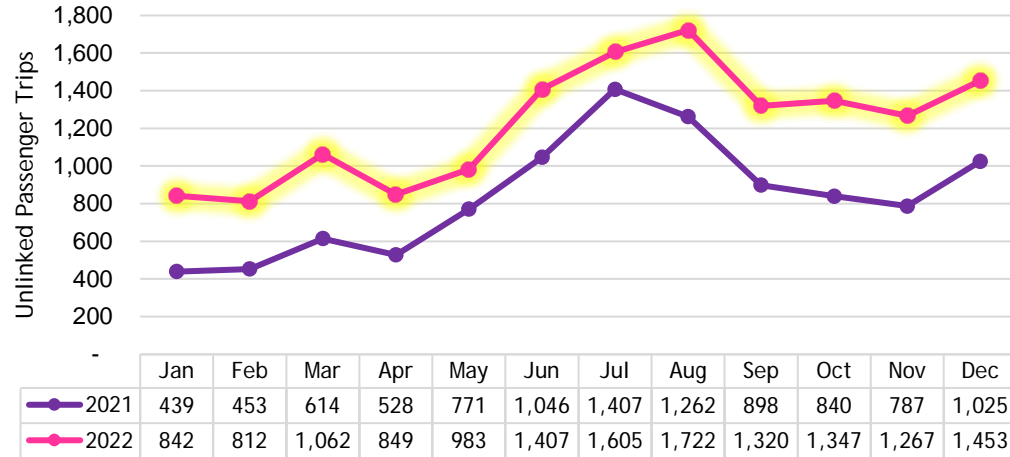
### Telluride - Grand Junction Ridership by Month



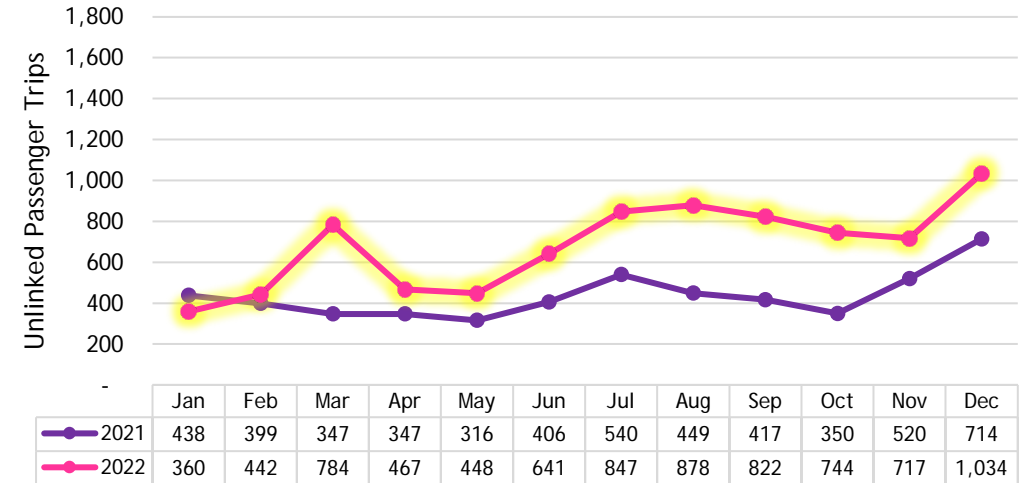


# Outrider Ridership Update

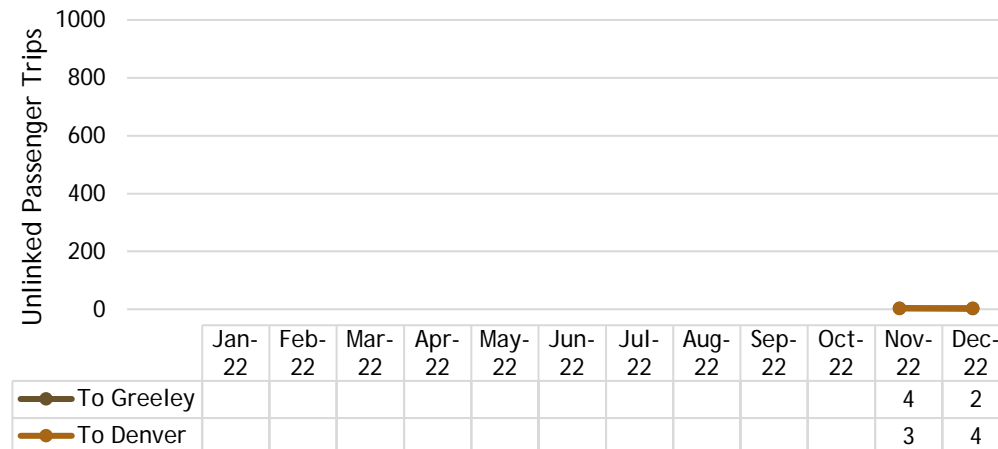
### Crested Butte - Denver Ridership by Month



### Craig - Denver Ridership by Month

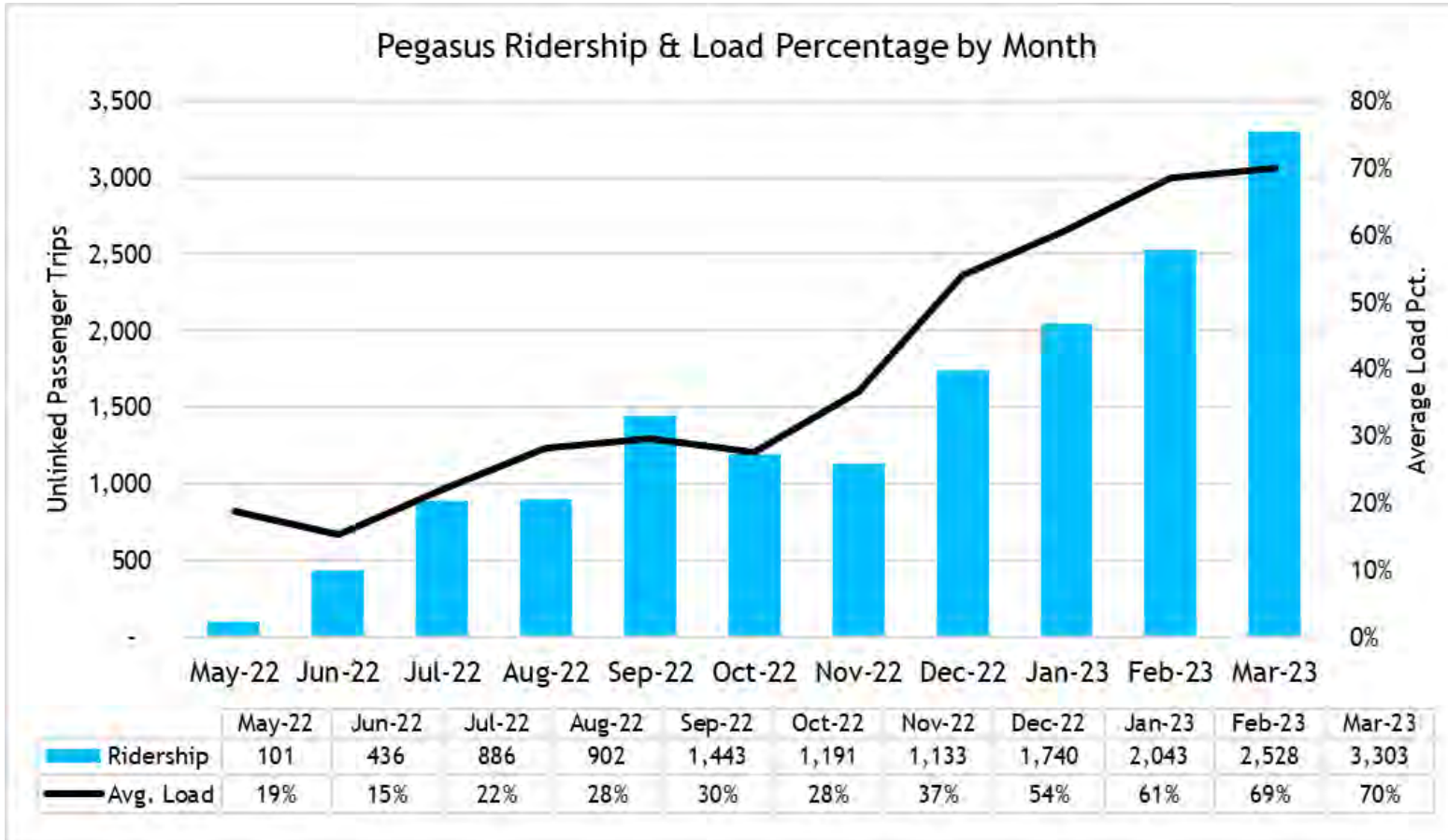


### Sterling - Greeley/Denver Ridership by Month





# Pegasus Ridership Update



- Steady growth since service launched Memorial Day weekend
- Expanded to daily service in September
- Schedule modifications implemented on Feb. 21, 2023



# Bustang to Broncos 2022-23 Season

- Strong ridership on North and South Lines
  - 1,965 total passengers
- Weak Ridership on Pilot West Line
  - 5 total passengers (some trips cancelled due to no reservations)
- Enhanced marketing
  - Reached just over 385,000 people total and drove 5,941 total link clicks





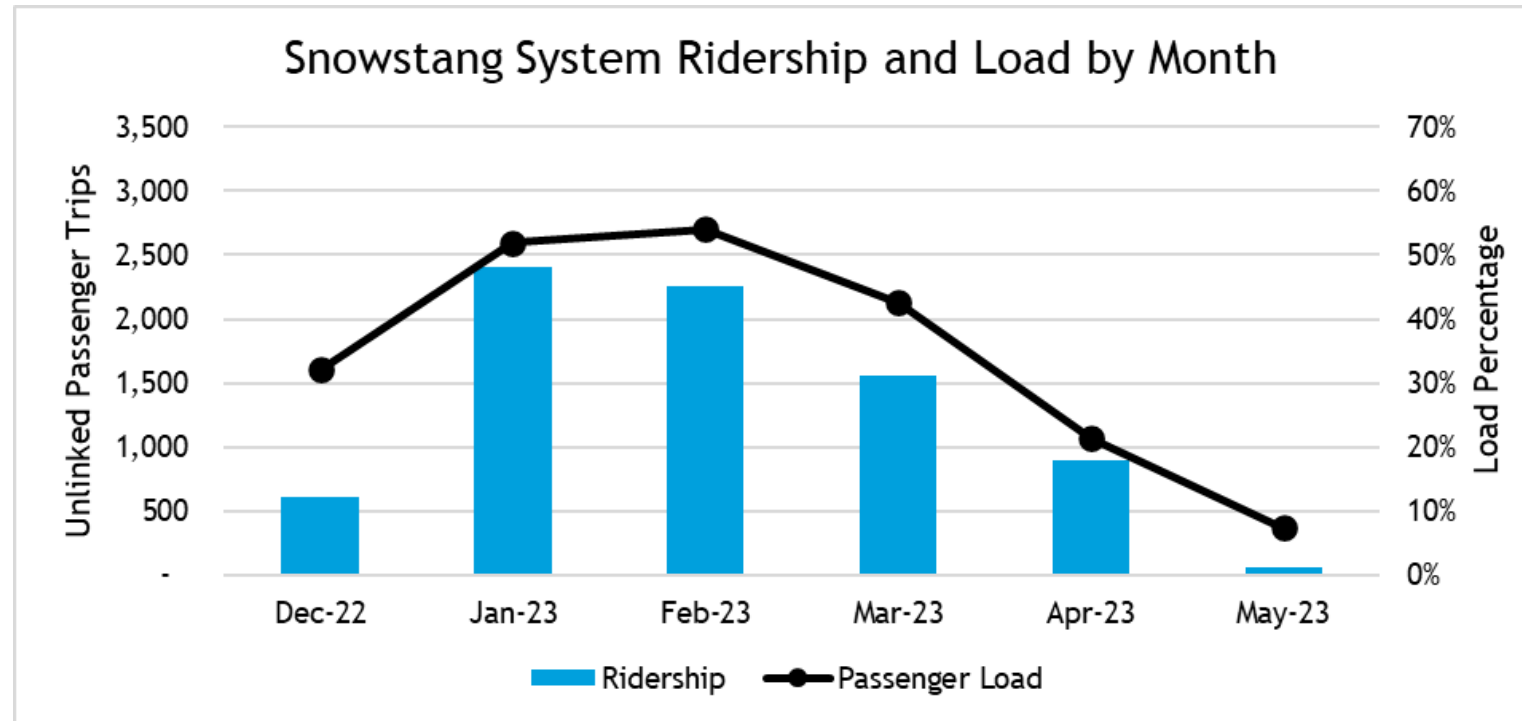
# Snowstang 2022-23 Update



- Snowstang launched on December 17
  - Season ended May 7
- 5 resorts
  - All four 2021-22 season participants returned
  - Added Breckenridge
- Over 7,700 total boardings
  - 84% YOY growth
  - Ridership strongest in January and February
- Enhanced marketing efforts



# Snowstang 2022-23 Update



Snowstang Unlinked Passenger Trips by Line

Route	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Full Season
Arapahoe Basin	95	429	355	244	249	6	1,378
Breckenridge	156	662	644	373	163	4	2,002
Copper Mountain	161	722	617	452	252	24	2,228
Loveland Ski Area	164	459	562	411	203	27	1,826
Steamboat*	31	139	81	84	28	—	363
<b>Total</b>	<b>607</b>	<b>2,411</b>	<b>2,259</b>	<b>1,564</b>	<b>895</b>	<b>61</b>	<b>7,797</b>

Snowstang Round Trip Load Factor by Line

Route	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Full Season
Arapahoe Basin	23%	42%	39%	30%	25%	3%	31%
Breckenridge	38%	65%	70%	46%	16%	2%	46%
Copper Mountain	39%	71%	67%	55%	28%	12%	51%
Loveland Ski Area	40%	45%	61%	50%	23%	13%	42%
Steamboat*	12%	25%	16%	21%	27%	—	19%
<b>Snowstang Average</b>	<b>32%</b>	<b>52%</b>	<b>54%</b>	<b>43%</b>	<b>21%</b>	<b>7%</b>	<b>40%</b>

\*Steamboat service ended 4/2



# Slide Through Saturdays

- Bringing diversity to the mountains
- Partnership with Ski Noir 5280, I-70 Things, Red Bull USA
- CDOT sponsored five bus trips
  - Always full with a waiting list
- Resort of the month provided free ski/snowboard lessons and lift tickets







# Bustang to Estes

- Bustang to Estes 2023 season began 5/27
  - Saturday, Sunday, and holiday Monday service through 10/1
- Strong partnerships
  - NPS allowing service to RMNP Park & Ride for a second year
- Enhanced marketing
- Added stop in Broomfield
- Fare discounts available
  - \$5 for children 2-12
  - 25% student discount



Source: NPS



**COLORADO**

Department of Transportation

# Looking Ahead

- Bustang Expansion Study
- Exploring enhanced performance measures and reporting
- Connected Colorado project
- Electric Bus Study
- Intercity Regional Bus Study
- Vehicle purchases



**COLORADO**

Department of Transportation

Thank You!

Questions?



**COLORADO**  
Department of Transportation

Region 3 Director

## MEMORANDUM

TO: THE TRANSPORTATION COMMISSION  
FROM: JASON C. SMITH, REGION 3 DIRECTOR  
DATE: JUNE 14, 2023  
SUBJECT: REGION 3 UPDATE

---

### Purpose

To present a Region 3 update to the Transportation Commission.

### Action

No action necessary; this is information only.

### Background

Presentation on Region 3 engineering and maintenance areas, 2022 project accomplishments as well as 2023 estimates. In addition, highlighting focus area/projects and measurements.

### Details

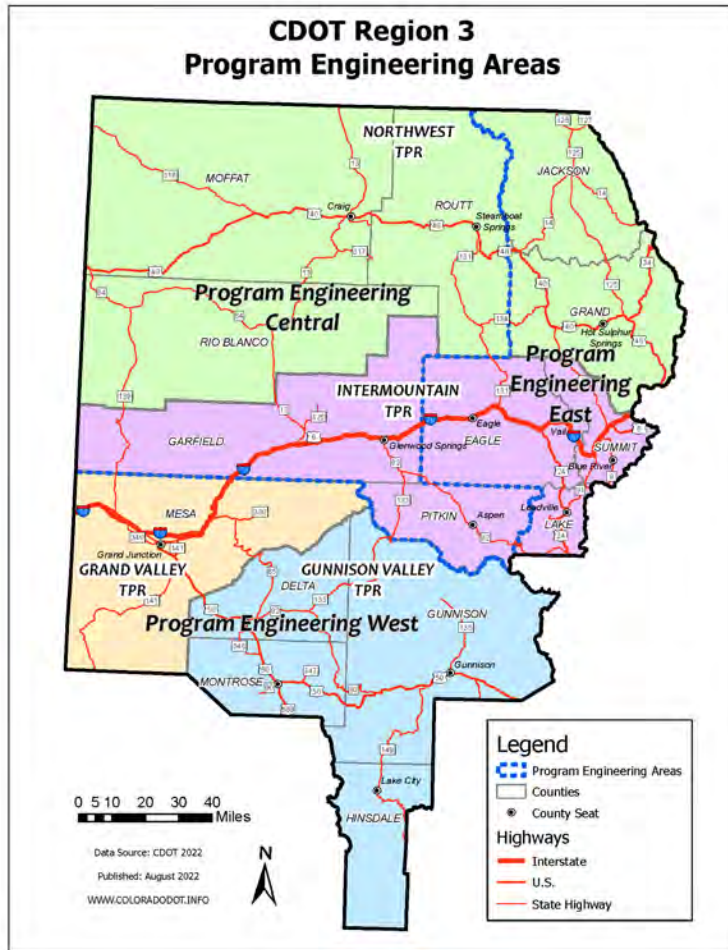
See attached presentation.



**COLORADO**

Department of Transportation

## Northwest Colorado - Region 3



- Largest region in square miles
- 4 TPRs, 1 MPO
- 15 counties
- 50+ municipalities
- 580+ employees
- 5,161 lane miles of highway
- 706 bridges
- 20k+ culverts
- 13 mountain passes
- 7 tunnels
- 13 rest areas



# Region 3 Values



We are resourceful, **respectful** and resilient



We embrace diversity in ideas and perspectives to further **excellence**



We keep our roadways **safe**



We are diligent in service to our communities



We use **teamwork** to design, deliver and maintain our transportation systems



We are dedicated to **integrity** and satisfactory results



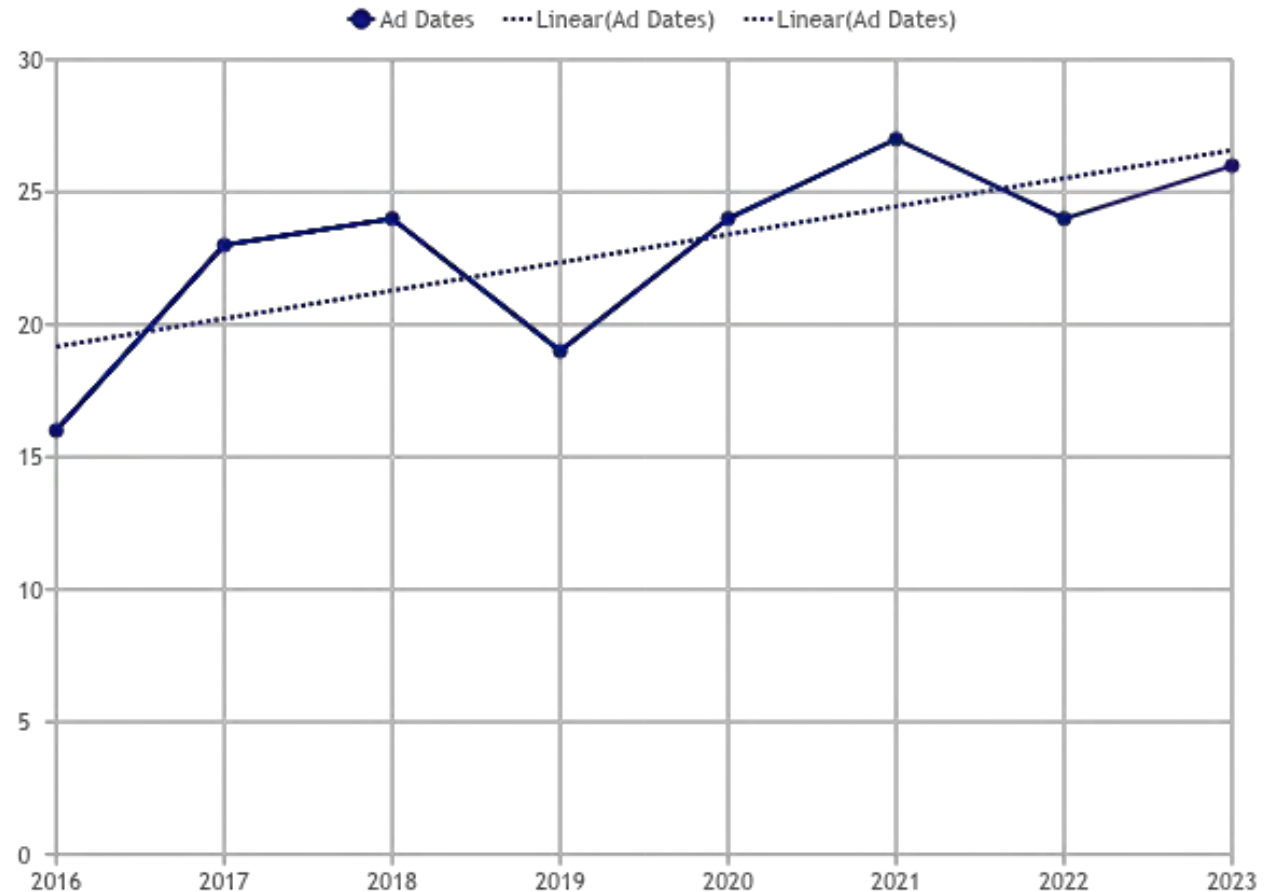
## 2022 Accomplishments

- Advertised State Delivered Projects - 24
- Active Local Agency Projects - 56
- \$251M spent delivering projects (\$171M to construction contractors)
- Form 128 Clearances - 58

## 2023 Estimated

- Advertised State Delivered Projects - 26
- \$212M for construction contracts

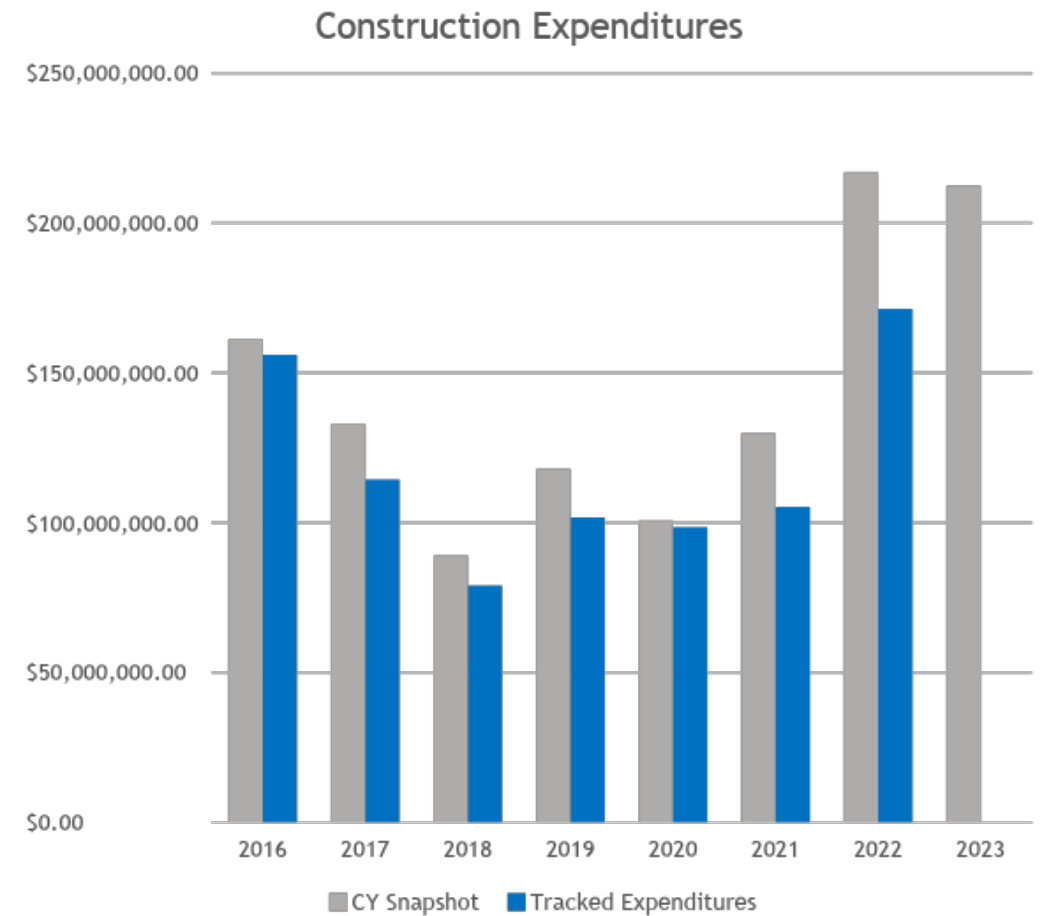
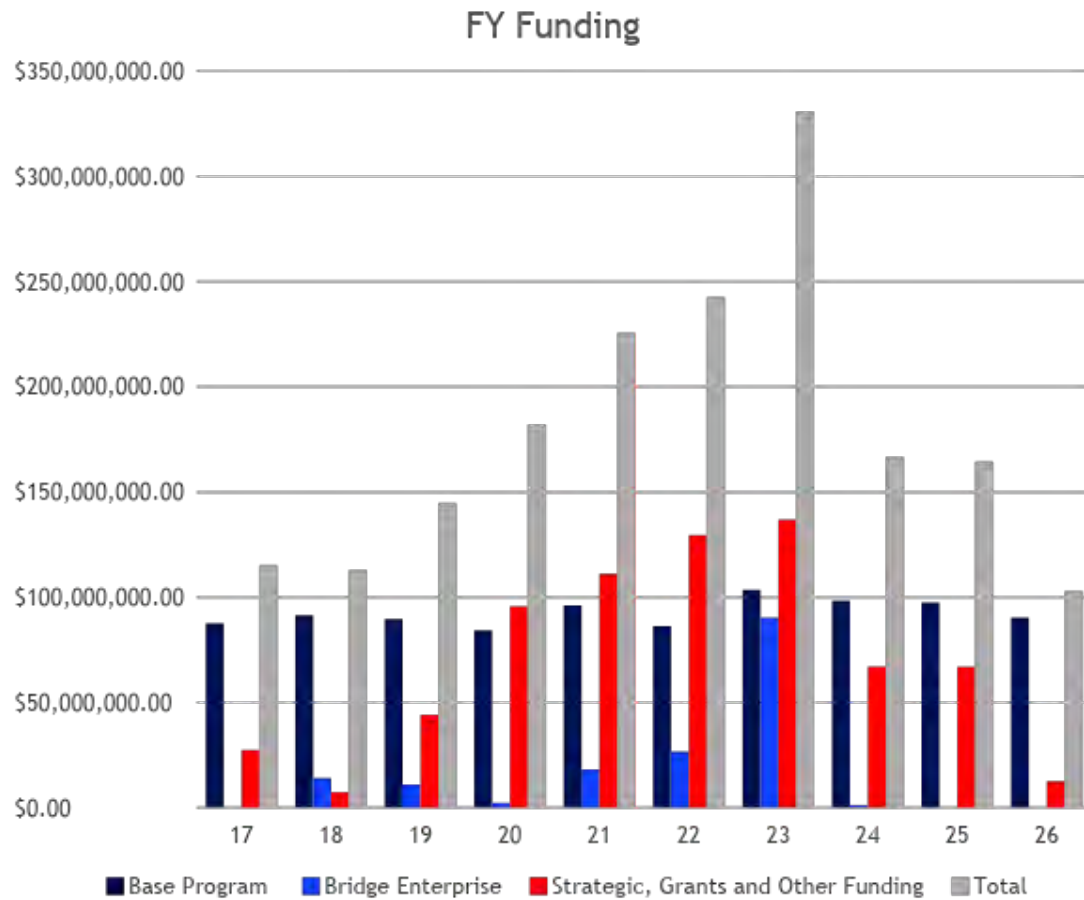
CY Projects Awarded







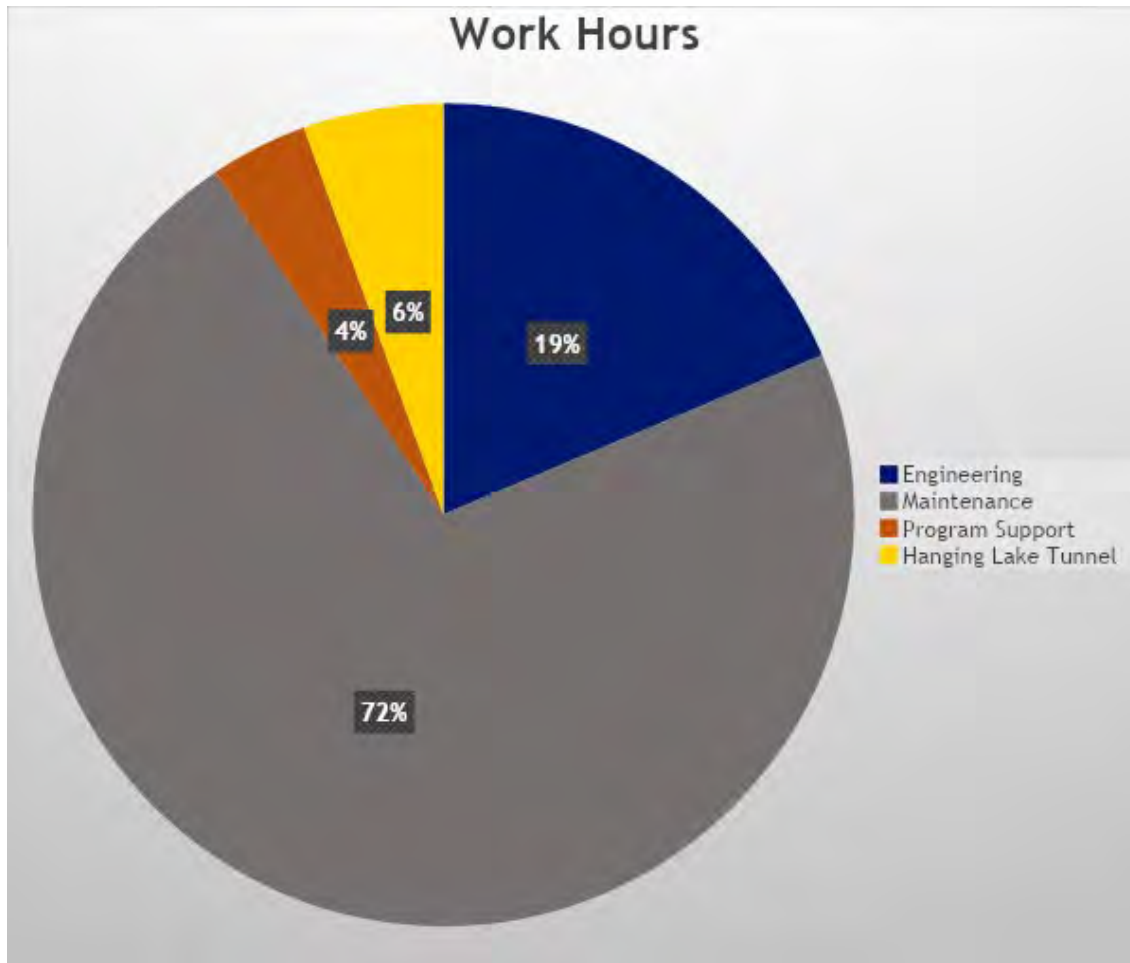
# Funding and Expenditures



\*Base Program - ADA, CBP, CCP, CWP, CTP, FSA, HAZ, RFM, RPP, SGA, SGN, SUR



# Employee Time



## 2022 Summary

Department	Hours
Engineering	228,579
Maintenance	880,995
Program Support	47,005
Hanging Lake Tunnel	67,565
<b>Total</b>	<b>1,224,144</b>

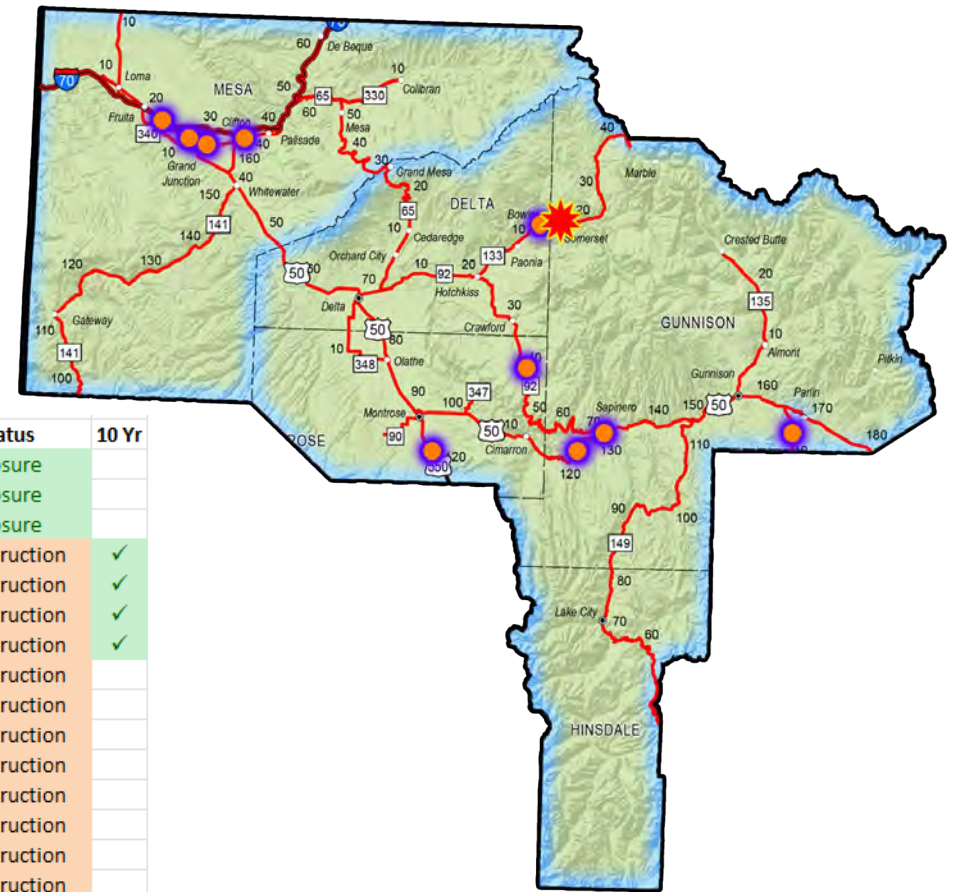


# Program West Engineering

	Status	10 Yr
22976-US50 Delta Resurface MP 72 West	Pre-Construction	
22992-SH92 Rogers Mesa Reconstruct Phase 1	Pre-Construction	✓
23583-I-70B Grand Junction South of Rood	Pre-Construction	✓
23611-SH139 Douglas Pass CFL Stabilization	Pre-Construction	
23616-Palisade US 6 TAP Sidewalk Improvements	Pre-Construction	
23955-US6 Town of Palisade ADA Ramps	Pre-Construction	
23964-Fremont Multimodal Design-Fruita (MMOF)	Pre-Construction	
24509-GJ Residency Chip Seals	Pre-Construction	
24557-SH 133 MP 15.3 Embankment & River Repair	Pre-Construction	
24598-SH133 Rockfall Mitigation MP21 to MP31.5	Pre-Construction	
24599-SH133 Slope Stabilization MP21 to MP31.5	Pre-Construction	
24648-US 6 Palisade Improvements MP 38 - 43	Pre-Construction	✓
24682-US 50 MP 77-86 Olathe North Resurfacing	Pre-Construction	✓
24828-Montrose West Main Street (RMS)	Pre-Construction	
24829-Delta Hillside Street Project (RMS)	Pre-Construction	
24889-I-70 Exit 37 East Resurface MP37-42.5	Pre-Construction	
25020-US6 Widening 22RD West MP21.8-MP25.87	Pre-Construction	✓
25236-SH65 Orchard City S MP 0-6.5 Rural Rd	Pre-Construction	
25237-CO348 Delta Olathe MP .3-17.059 Rural Rd	Pre-Construction	
25357-Fruita South Mesa Safety RMS	Pre-Construction	
25359-Grand Junction Crosby Ave Impv RMS	Pre-Construction	
25361-Mesa County Orchard Ave Safety ARPA	Pre-Construction	
25363-Palisade 5th Street Connector RMS	Pre-Construction	
25364-Paonia Safe Pathway RMS	Pre-Construction	
25370-Delta County - North Fork Miners Trail	Pre-Construction	
25371-Hinsdale County CR30 Chip Seal MMOF	Pre-Construction	
25454-SH139 Douglass Pass CFL Stblz (Internal)	Pre-Construction	
25460-RAISE Grand Junction Mobility Hub	Pre-Construction	✓
25631-CO 340 Grand Ave to Redlands Parkway	Pre-Construction	
25637-I-70B Grand Junction East of 3rd St	Pre-Construction	✓
25710-US 6 North Avenue Transit Improvements	Pre-Construction	
25711-CO 340 Riverfront Trail Design	Pre-Construction	
25735-Mesa County - 32 1/2 Rd Phase 2 Design	Pre-Construction	
25789-SH133 ER Temp Bridge-Culvert Failure	Pre-Construction	

Key	
✓	On the 10 Yr Plan
	Local Agency
Closure	Construction Completed

	Status	10 Yr
20923-I-70 Salt Wash Bridges Scour	Closure	
23103-US 50 / US 550 Montrose Resurfacing	Closure	
24139-SH 92 West of Austin Resurfacing MP 4-7	Closure	
19771-US6 / 20 Road Intersection Improvements	Construction	✓
21415-US 6 Clifton	Construction	✓
22020-US 550 Otter Road to R3/R5 Line	Construction	✓
23110-US 6 North Avenue	Construction	✓
23475-I-70B and SH141B Mesa County Resurfacing	Construction	
23557-US 50 MP 134.6-136 Passing Lanes	Construction	
23560-SH114 Sillsville South to MP30 Rural Sur	Construction	
23577-SH92 Hotchkiss to Crawford RR Resurface	Construction	
23961-US 6 Palisade Multimodal (MMOF)	Construction	
23963-Lake City 3rd St Ped/Drainage (MMOF)	Construction	
24077-GJ - 24 Road Multi-Modal Path (MMOF)	Construction	
24266-Ohio Ave Multimodal - Gunnison (MMOF)	Construction	
24470-Ohio Ave Multimodal - Gunnison (SRTS)	Construction	
25081-SH 92 Chip Seal MP 31.7-48.5	Construction	



## I-70B FIRST AND GRAND INTERSECTION PROJECT



I-70B First and Grand original alignment

Temporary traffic circle



Completed alignment



5 Phases of construction complete along the corridor



# Program Central Engineering

	Status	10 Yr
20169-I-70 Exit 105 Intch and US 6 - Garfield	Pre-Construction	✓
21901-SH 13 / SH 317 Hamilton South	Pre-Construction	✓
23039-SH 13 GarCo S of Rio Blanco Hill	Pre-Construction	
23845-Hayden US 40 Sidewalk Project (MMOF)	Pre-Construction	
23869-US40 West Trail Connect-Steamboat (MMOF)	Pre-Construction	
24375-US 40 and Downhill Drive Signal	Pre-Construction	✓
24493-US 6D STR F-06-A Elk Creek-New Castle	Pre-Construction	✓
24678-SH 82 Snowmass Canyon Resurfacing	Pre-Construction	✓
24679-SH 133 and US 6 Chip Seals	Pre-Construction	✓
24680-US 40 Steamboat PCCP Rehab	Pre-Construction	✓
25341-SH82/27TH Underpass TAP RAISE C	Pre-Construction	
25358-Glenwood 6th Street Safety Impv RMS	Pre-Construction	
25365-Rifle Gateway Ped/Traffic Safety	Pre-Construction	
25366-Walden 5th Street Sidewalks	Pre-Construction	
25367-Craig-North Yampa Ave Sidewalks MMOF	Pre-Construction	
25368-Steamboat Springs West Trail Connection	Pre-Construction	
25376-Glenwood Spgs Hwy 6 & 24 Shared Use Path	Pre-Construction	
25581-US 40 and SH 394 Culvert Repairs	Pre-Construction	
25603-I-70 Glenwood Canyon Bridge/Rail Improve	Pre-Construction	
25644-SH 82 Red Hill Rockfall Mitigation	Pre-Construction	✓
25682-US 40 Milner East and West	Pre-Construction	✓
25783-I-70 HLT Creek Debris Flow MP 125.57	Pre-Construction	

Key	
✓	On the 10 Yr Plan
	Local Agency
Closure	Construction Completed

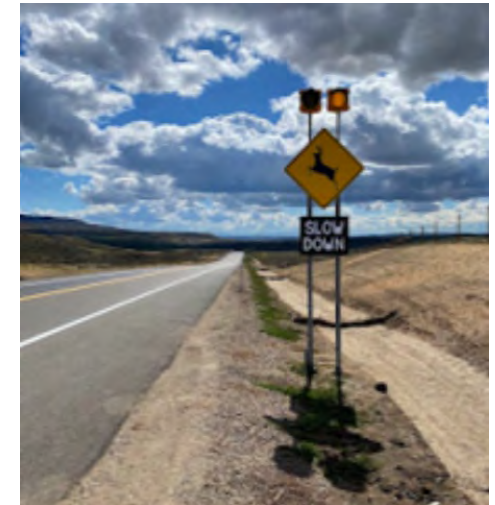
	Status	10 Yr
22933-Glenwood Springs S. Midland BUILD	Closure	
23500-SH139 Douglas Pass N & S Rural Resurface	Closure	✓
23831-Craig Yampa Ave Sidewalk Project (MMOF)	Closure	
23854-Silt I-70 Ped Overpass (MMOF)	Closure	
24688-ER I-70 GWC Material Flows 2021	Closure	
24767-PR I-70 GWC Material Flows 2021	Closure	
17881-SH13 GarCo RioBlanco Hill	Construction	✓
22776-SH13 Fortification Creek North	Construction	✓
22889-Steamboat CMAQ Park Lot Paving	Construction	
23126-US40 Sand Springs Gulch to Craig	Construction	✓
23134-SH82 Aspen Airport Biz. Center to Aspen	Construction	✓
23216-Riverview School SRTS Garfield County	Construction	
23499-SH 318 Browns Park East Rural Resurface	Construction	✓
23965-Aspen - Paepcke Mobility Hub (MMOF)	Construction	
23975-GWS 27th St/SH82 Crossing (MMOF)	Construction	
24229-I-70 Rifle to Silt Slab Replacement PH 3	Construction	✓
24233-SH 64 and SH 13 at Meeker	Construction	✓
24237-I-70 East of DeBeque	Construction	✓
24238-SH 82 Aspen/Independence Pass Chip Seal	Construction	✓
24247-SH 13B Chip Seals	Construction	✓
24279-SH 133 Rockfall N of McClure PH 2	Construction	✓
24471-Hayden US 40 Sidewalk Project (SRTS)	Construction	
24734-Craig - Yampa Ave Sidewalk Project (RMS)	Construction	



## CO 13 FORTIFICATION CREEK WILDLIFE MITIGATION



- Safety improvements include: roadway reconstruction and widening; 8-foot-high wildlife exclusion fence to direct deer and elk to a 24' x 10' arch underpass structure (MM 111.6) and two at-grade crossings with 4 foot high- low-fence segments (MM 112.3-113.1 and MM 114.25-114.75)
- These low fence segments allow animals to cross the highway where driver sight distance is more favorable creating a large animal crosswalk between segments of high-fence
- At the northern low-fence segment, MM 114.25-114.75, a **Radar Wildlife Detection System** was installed to alert motorists of wildlife approaching or crossing the highway
- The project also includes cattle guards with adjacent **electric wildlife deterrent mats (ZapCrete™)**, and newly designed **dual-sided escape ramps**
- Construction was completed last Fall.





# Program East Engineering

	Status	10 Yr
23982-I-70 Vail Pass Safety and Operations	Pre-Construction	✓
23465-US 6 Post Blvd Roundabout	Pre-Construction	
23523-Routt County CR179 Trout Creek Bridge	Pre-Construction	
24185-I-70 Vail Wildlife Fence Phase 2	Pre-Construction	
24311-US 24 South of Minturn Resurfacing	Pre-Construction	✓
24321-I-70 MP 170.5 Essential Wall Repair	Pre-Construction	
24438-I-70 Vail Pass Avalanche MIT MP 186.2	Pre-Construction	
24544-I-70 Silverthorne to EJMT Phase 2	Pre-Construction	
24560-US 40 Red Dirt Hill Study	Pre-Construction	✓
24567-Vail Pass Aux Phase 1 CP 4	Pre-Construction	✓
24776-Avon-US6 Mobility Improvement Project	Pre-Construction	
24873-I-70 Exit 203 Interchange Improvements	Pre-Construction	✓
24895-Vail Pass Aux Phase 1 CP 5	Pre-Construction	
24896-Vail Pass Aux BE F-12-AS Phase 1 CP 5	Pre-Construction	✓
24959-Rio Blanco County CR4 White River Brdg	Pre-Construction	
24960-Hayden Poplar Street Bridge	Pre-Construction	
24976-US 24 & US 40 Culvert Repair	Pre-Construction	
25141-SH 82 Twin Lakes	Pre-Construction	
25142-SH 34 Chip Seal	Pre-Construction	
25362-Minturn Main St Ped Impr	Pre-Construction	
25369-Winter Park - Ped. Improvements	Pre-Construction	
25372-Breckenridge Blue River Bike Path Design	Pre-Construction	
25375-Eagle Valley Eco Trails	Pre-Construction	
25378-Summit County Beaver Trail Design	Pre-Construction	
25414-East Vail Pass Wildlife Crossings	Pre-Construction	
25485-I-70 Gypsum to Eagle Resurfacing	Pre-Construction	
25560-Glenwood Devereux Road Bridge Rehab	Pre-Construction	
25628-I-70 EB Drive Lanes MM 180-185, 190-203	Pre-Construction	
25629-US 24 North Leadville Rural Rd Resurface	Pre-Construction	✓
25661-R3 High Mountain Water Quality	Pre-Construction	
25667 - Town of Granby US 40 Trail Connection	Pre-Construction	
25714-US 40 Berthoud Pass West Resurfacing	Pre-Construction	

Key	
✓	On the 10 Yr Plan
	Local Agency
Closure	Construction Completed

	Status	10 Yr
23510-Rio Blanco CR73 White River Bridge	Closure	
23542-SH14 Walden S & SH125 Walden N Rural Rd	Closure	
24403-Vail Pass Aux Phase 1 CAP 2	Closure	✓
22047-Blossom Road Bridge - Montrose County	Construction	
22372-SH 91 Culvert Repair	Construction	
22381-I-70 EB Aux Frisco to Silverthorne	Construction	✓
23064-R3 Eagle Residency ADA Ramp Improvements	Construction	
24166-SH 9 North of Silverthorne	Construction	
24167-Mountain RE FY23 Crack Seals	Construction	
24184-I-70 Vail Wildlife Fence Phase 1	Construction	
24404-Vail Pass Aux Phase 1 CAP 3	Construction	✓
24453-Steamboat Springs Soda Creek Bridges	Construction	
24894-Vail Pass Aux BE F-12-AT Phase 1 CP 3	Construction	✓





## I-70 VAIL AUXILIARY LANES

CDOT R3 is midway through delivery of this critical safety and traffic operations project which was awarded a \$60.7M INFRA grant including:

- MM 185 - 190 EB I-70 auxiliary lane
- MM 186 and 188 curve reconstruction
- MM 185.3 EB and WB bridge replacement (WB added in Sept. 2021)
- MM 182 Truck ramp reconstruction
- Six wildlife underpasses and fencing
- MM 185-187 Two miles of Vail Pass recreational trail relocation



**#1 Highest on I-70 in Colorado**  
Crashes/Million vehicle miles travelled in the State (based on data from 2010-2014)

**306**  
TOTAL HOURS OF FULL CLOSURE DUE TO INCIDENTS 2014-2017

**40% Reduction in crashes where completing improvements**





# I-70 R3 Mountain Passes: Focus on Freight Improvements



Original truck ramp was curved leading to most trucks tipping and many drivers injured or killed.



Completed truck ramp in Fall 2021, which was designed and constructed in 9 months.



New truck ramp in use. This truck had been traveling 90 mph. Experts believed the new truck ramp saved this driver's life.

Highlights of freight improvements on Straight Creek (Eisenhower Tunnel to Silverthorne) and Vail Pass:

- Truck signage optimized on Straight Creek
- Truck parking expansion underway near the Dillon Reservoir Scenic Overlook (MM 204.5), Vail Pass Rest Area (MM 190) and Vail Pass EB Truck Parking (MM 189).
- Truck ramp reconstruction at Vail Pass WB MM 182.5
- 3<sup>rd</sup> lane EB for Vail Pass MM 185-190 will be constructed



# Region 3 Materials Unit



Surface Treatment Asset Management administered nearly \$60 million in quality control testing.

## Region 3 Lab:

- 7 projects tested for voids acceptance
- Performed many tests typically taken to Central Lab to avoid delays to projects

## Region 3 Mobile Lab:

- 3 projects for voids acceptance
- 9 projects for verification testing
- Soils, aggregate and concrete testing for multiple projects





# Region 3 Materials Unit

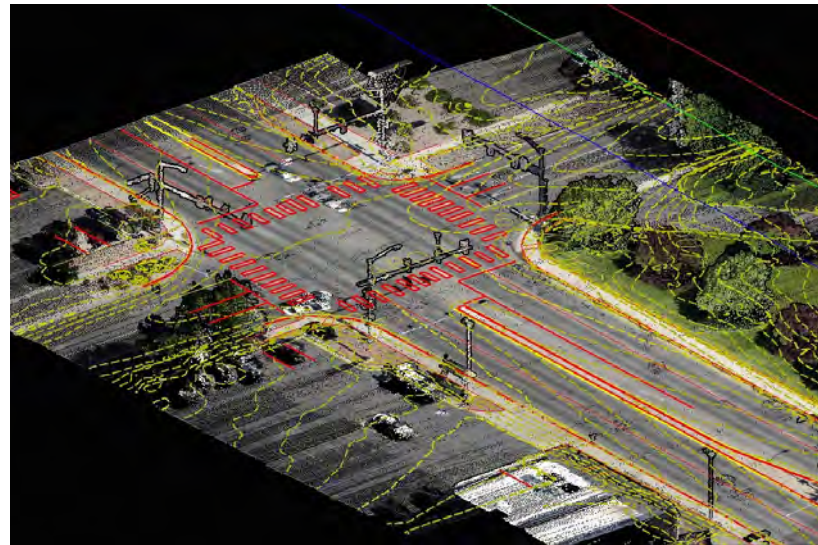
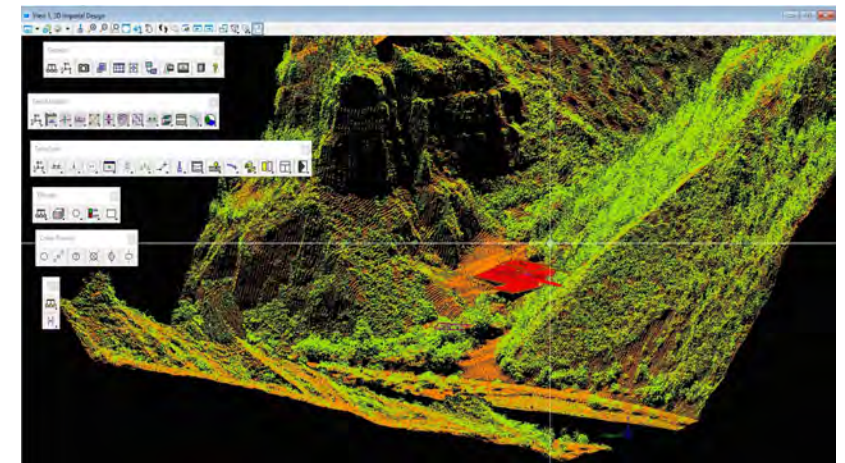
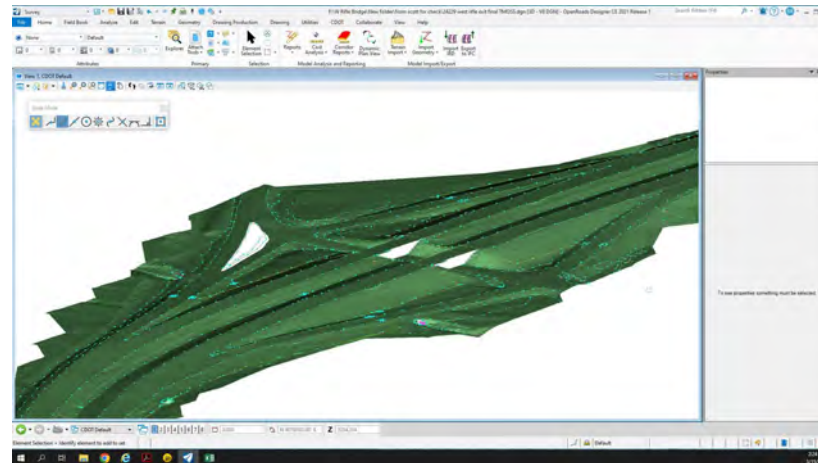


- Independent Assurance (IA) testing was performed on 24 projects, including 2 Local Agency projects
- The IA unit also performed drilling for pavement design
- The Finals Coordinator reviewed and closed 16 projects in 2022 and was praised for excellent performance based on the FHWA audit



# Right of Way

Region 3 uses Unmanned Aerial Systems (UAS) for collecting survey data and is the only Region to use LiDAR as part of their UAS survey program. Survey provides the foundation for design on all projects. The use of this technology improves accuracy and worker safety. It ensures CDOT remains on the cutting edge of technology and enables CDOT to review and standardize deliverables from survey consultants using similar tools. The Region continues to find additional UAS opportunities such as documenting progress on construction projects, obtaining densified existing conditions on asphalt surfaces to improve resurfacing, and capturing real time data for emergency situations.





## MAJOR SPRINGTIME FLOODING PROJECTS

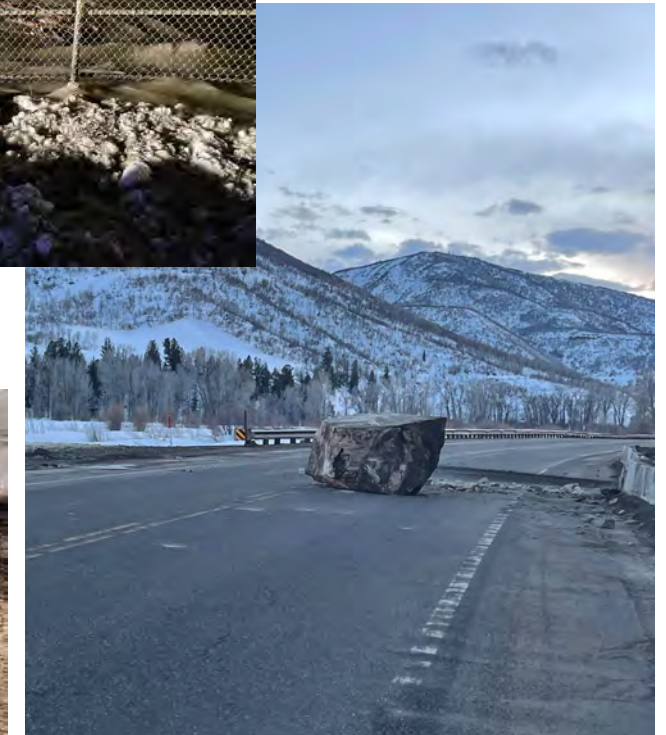
- Adding riprap
  - I-70 MM 58.1 Colorado River
  - CO 141 MM 96.8 Dolores River
- I-70 MM 125.0 Hanging Lake rest area ramps debris flow clean-up
- CO 133 MM 16.2 Bear Creek culvert washout (current safety closure)
- Bridge watch
  - I-70 MM 16.8 Skippers Island
  - CO 141 MM 110.9 Dolores River
  - CO 141 MM 152.8 Gunnison River
- Numerous smaller structures watch and emergency cleaning
- Numerous rockslide and debris flow clean ups





## MAJOR SPRINGTIME FLOODING PROJECTS

- US 40 Dry Creek flooding in Hayden
- US 40 at Routt CR 44 West Elk River flood watch
- Bridge watch
  - CO 13 White River Meeker
  - US 40 Fortification Creek Craig
  - CO 394 Yampa River Bridge
- CO 125 MM 3-9 mudslide debris flows
- US 40 MM 119.5 rock fall
- Numerous rockslide and debris flow clean ups
- US 40 pothole repairs





# Maintenance Special Crews Project

## CO 92 TIMBER STRUCTURE BRIDGE PROJECT

- Novel project to CDOT due to the specialized equipment needed to reach the 25 ft bridge deck for beam installation
- 19 sister beams of 24'x12" x6" galvanized steel were installed to reinforce the structure
- Example of strong inter-agency and inter-departmental collaboration to plan, organize and complete this complicated task successfully and without incident





## Behind-the-Scenes Work We Do Every Day

Along with our regular program of signing, striping, signal replacement and safety projects, we interact with *hundreds* of permit applicants and project personnel each year through our Specialty Units

- **Utility Program**

- Issued 1050 Utility and Special Use Permits in 2022
- Provided 1000+ hrs of field construction support
- Supported 87 different projects in 2022

- **Access Program**

- Issued 158 Access Permits
- Managed construction of about *\$9.1 million* in improvements on State Highways in 2022





Thank you





**DATE:** June 14, 2023  
**TO:** Transportation Commission  
**FROM:** Herman Stockinger  
**SUBJECT:** Update on TPR Boundary Study

---

Purpose

To provide an update on the TPR Boundary Study.

Action

Informational only.

Background

On April 28, 2023, Governor Polis signed HB 23-1101 which includes the provision requiring CDOT to analyze the TPR boundaries in a study and provide recommendations for possible changes to the Transportation Commission on or before November 30, 2023. This legislation directs the Transportation Commission to review the study and open the rules governing the TPR boundaries. It does not mandate that the Commission adopt the recommendations.

The Transportation Commission has the authority to promulgate rules related to TPR boundaries. The rules related to TPR boundaries are the State Planning Rules, the same rules that were amended to include requirements related to Greenhouse Gas pollutants, [2 CCR 601-22](#).

The amendment includes an extensive list of criteria that CDOT staff examine. The list in the bill is not in priority order:

- The Consistency and Transparency of the Transportation Planning Process Across the TPRs
- The boundaries of the Transportation Planning Regions (TPRs)
- Membership of the State Transportation Advisory Committee (STAC)
- Membership of the Special Interim Transit And Rail Advisory Committee (TRAC)

Pertaining to the boundaries, the study includes the following items to consider, also not in priority order:

- Highway, Transit Corridors and Transit District Boundaries
- Disproportionately Impacted Communities



- Vehicle Miles Traveled, Truck Vehicle Miles Traveled, Transit Vehicle Revenue Miles, and Lane Miles
- Population Trends
- Safety and Management Considerations
- Commuting, Commercial Traffic, Freight Movement, Tourism Impacts, and Other Travel Patterns
- Transit-Oriented Development and Access to Affordable Housing
- Levels of Air Pollutants, Criteria Pollutants, and Greenhouse Gas Pollutants
- Communities of Interest

Since the passage of the bill, CDOT staff have briefed all ten rural TPRs and two MPOs on the provisions of the bill related to the TPR study.

CDOT has formed an Advisory Committee and on June 7 the Advisory Committee had its first meeting. Staff is developing a mapping tool, assessing TPR IGAs and Bylaws, planning a series of public meetings, and beginning to work on a survey as an additional option for collecting public comments about our TPRs.

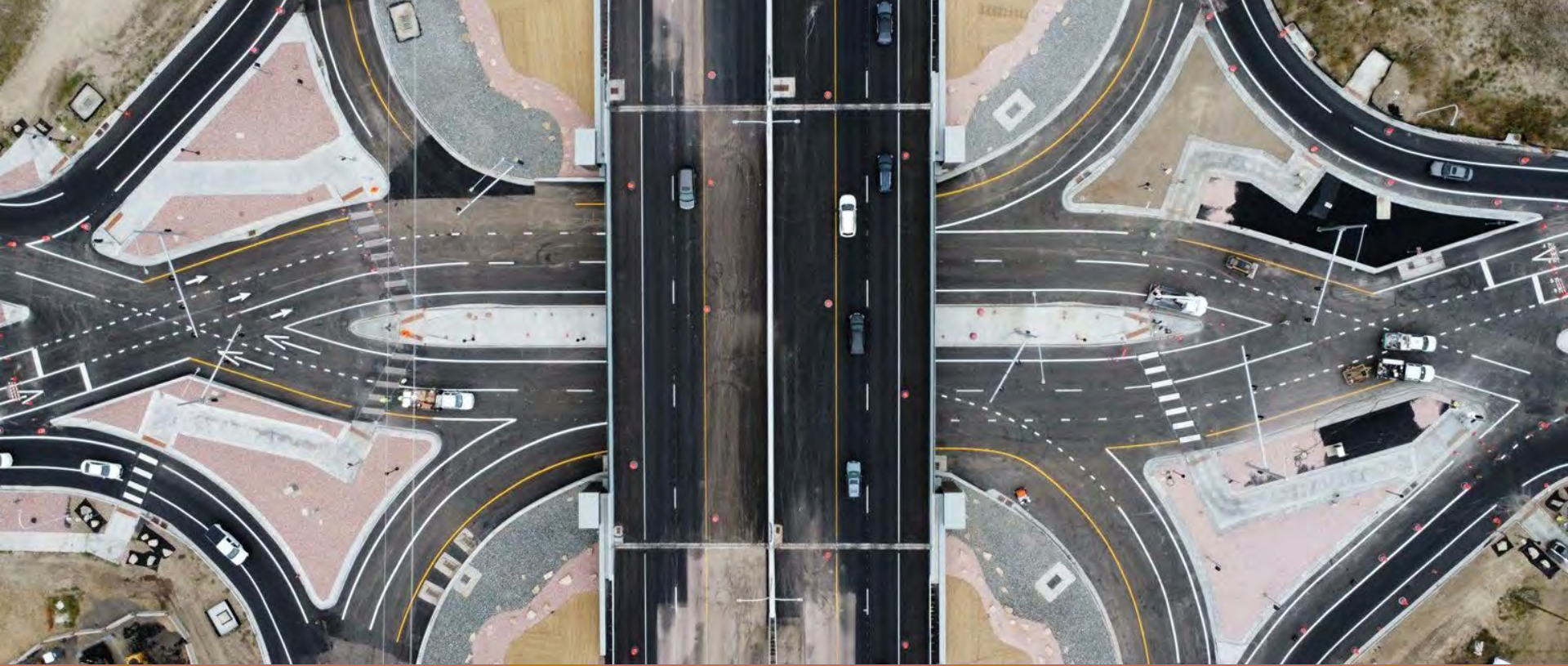
#### Next Steps

Staff can provide more information upon request.

#### Attachments

[The signed Act](#)





**COLORADO**  
Department of Transportation

# TPR Boundary Study

Page 156 of 274  
June TC Update



# Statutory Requirements

**On or before November 30, 2023**, The Department Shall Complete a Study and Study Report of:

- The boundaries of the Transportation Planning Regions (TPRs)
- Membership of the STAC
- Membership of the Special Interim Transit And Rail Advisory Committee (TRAC)
- The Consistency and Transparency of the Transportation Planning Process Across the TPRs

In conducting the study, **The Department shall provide opportunity for public comment throughout the State** and consider input from stakeholders throughout the State.

The Department shall submit the Study Report to the Transportation Commission and to the Transportation Legislation Review Committee on or before November 30, 2023.

Following completion of the study and with consideration of its findings, the Transportation Commission shall initiate updates to the rules before **June 1, 2024**.



# Statutory Requirements (cont)

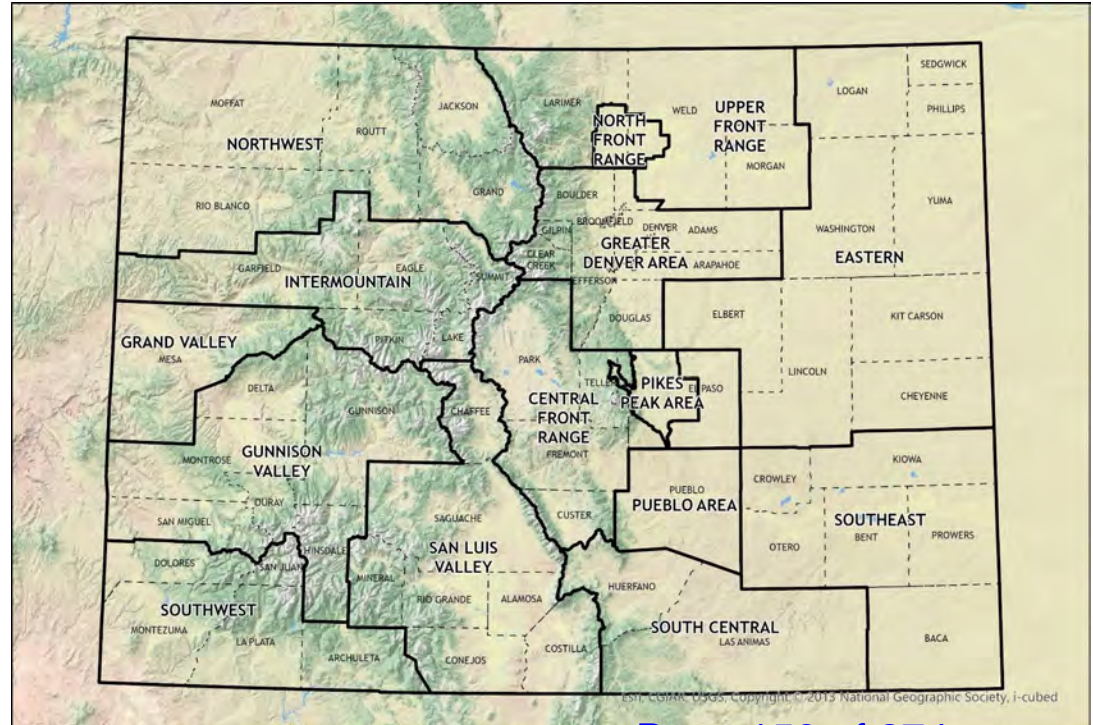
## Factors for consideration identified in legislation:

- Highway and Transit Corridors and Transit District Boundaries;
- Disproportionately Impacted Communities;
- Vehicle Miles Traveled, Truck Vehicle Miles Traveled, Transit Vehicle Revenue Miles, and Lane Miles;
- Population Trends;
- Safety and Management Considerations;
- Commuting, Commercial Traffic, Freight Movement, Tourism Impacts, and Other Travel Patterns;
- Transit-Oriented Development and Access to Affordable Housing;
- Levels of Air Pollutants, Criteria Pollutants, and Greenhouse Gas Pollutants;
- Communities of Interest;



# Status Update

- CDOT staff continues to meet with TPRs and others regarding the study.
- Developing a mapping tool with maps for each criteria and the ability to “layer” various requirements onto one map.
- Assessing TPR IGAs and Bylaws.
- Formed an Advisory Committee.
- Considering a survey to receive input.



ESRI, COMMAP, DeLorme. Copyright © 2013 National Geographic Society, I-cubed

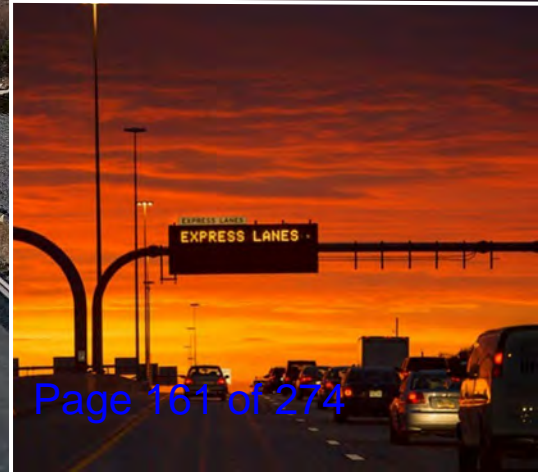


# Advisory Committee

Name	Area Represented	Position
Anna Stout	Grand Junction	Mayor
Jonathan Godes	Glenwood Springs	City Councilor
TBD	RFTA	TBD
Tamera Pogue	Summit County	County Commissioner
Dick Elsner	Park County	County Commissioner
Keith Baker	Chaffee County	County Commissioner
Suzette Mallette	North Front Range MPO	Executive Director
Ron Papsdorf	DRCOG	Transportation Planning & Operations Director
Andy Gunning	PPACG	Executive Director
Kristin Stephens	Larimer County	County Commissioner
Terry Hoffmeister	Phillips County	County Commissioner

- First meeting held on June 7.
- Monthly update meetings with Director Lew and boundary study staff.
- Assist in determining content of “public meetings.”
- Assist in development of questions and format for a survey.





**Workshops and Regular Meeting**

**Wednesday, May 17-18, 2023**

**TRANSPORTATION COMMISSION WORKSHOPS**

Wednesday, May 17, 2023

<https://www.youtube.com/watch?v=gp77vNFTtX4>

**Call to Order, Roll Call**

Nine Commissioners were present: Gary Beedy (TC Chair), Lisa Tormoen Hickey, Karen Stuart, Kathleen Bracke, Eula Adams, Yessica Holguin, Terry Hart, and Kathy Hall, Mark Garcia, with Commissioners Eula Adams and Commissioner Barbara Vasquez excused.

**Budget Workshop (Jeff Sudmeier and Bethany Nicholas) Timestamp 00:01:09**

**Purpose and Action:** Requested the TC to adopt a resolution for these 11th Budget Supplement requests:

- Division of Transportation Development - \$850,000 from the 10-Year Plan Program funds in order to address air quality monitoring for applicable 10-Year Plan projects, as required by Senate Bill 21-260 (SB21-260) and Colorado Revised Statute (CRS) 43-1-128.
- Region 1 - \$10,515,896 – 10-Year Plan Program -A transfer of savings from the Central 70 project to I-70 PPSL is requested in order to provide funding for a claim award resulting from recent arbitration.
- Region 3 - \$4,095,000 – TC Contingency Reserve – CO133 Bear Creek Culvert Failure – Funding is requested from the TC Contingency Reserve in order to address the failure of 72” corrugated metal pipe (CMP) type culvert on Highway 133 Mile Marker 16.2 (located between the Town of Paonia to the South and the Town of Somerset to the North).
- Cost Escalation Fund - \$4,095,000 – TC Contingency Reserve – CO 133 Bear Creek Culvert Failure – Funding is requested from the TC Contingency Reserve in order to address the failure of 72” corrugated metal pipe (CMP) type culvert on Highway 133 Mile Marker 16.2 (located between the Town of Paonia to the South and the Town of Somerset to the North).

**Discussion:**

Air Quality Monitoring Request

- In terms of where the \$850,000 for the 10-Year Plan would come from, potentially in the future, the TC would receive a request for these funds but right now we’ve identified four projects in the 10-Year-Plan that are moving forward that will trigger the air quality monitoring requirements in Senate Bill 260. Asking to allocate \$850,000 of the existing 10-Year Plan funds to do air quality monitoring activities for those projects because those costs were not built into the budget for those projects.
- The concept is to have one project for air quality monitoring to cover the monitoring equipment and services needed for all four projects.

**Transportation Commission Consent Agenda (Herman Stockinger) Timestamp 00:11:48**

**Purpose and Action:** Herman described the process and what is typically covered in the TC consent agenda items and what to anticipate for this month’s TC Regular meeting. The TC monthly notes cover the specific resolutions passed by the TC under the consent agenda. They mostly cover actions related to intergovernmental agreements (IGA’s), which are included in the powers and duties of the Executive Director and the Chief Engineer under Section 43.1.110, it also includes the authority of the CDOT Chief Engineer or Executive Director to represent the Department in negotiations with local governments concerning intergovernmental agreements. But those intergovernmental agreements are not effective without approval of the TC.

The other resolution on the consent agenda is the Policy Directive related to fuel controls. CDOT has policy directives that are adopted by the Commission. Statute lays out the broad formulate general policy under the

power of the TC, and then we have procedural directives that are under the authority of the Executive Director that directs the Department how to implement or enforce the policy directives.

**Discussion:**

- John Lorme, CDOT Director of Maintenance and Operations, provided an overview of the fuel control practices currently occurring at CDOT, and how vendors are used to monitor fuels, including electrical expenses for EVs.

**TPR Boundary Study Update (Herman Stockinger and Jamie Grim) Timestamp 00:17:39)**

**Purpose and Action:** To provide an overview of the TPR Boundary Analysis provision in SB23-1101. This is informational only.

CDOT is impacted by the legislation in two ways. The bill includes a provision requiring Transportation Planning Regions to add a transit agency representative as a voting member to the TPR board. It also includes the amendment requiring CDOT to analyze the TPR boundaries in a study and provide recommendations to the Transportation Commission on or before November 30, 2023. This legislation directs the Transportation Commission to review these recommendations and open the rules governing the TPR boundaries. It does not mandate that the Commission adopt the recommendations.

In anticipation of the passage of the bill, CDOT staff began traveling to the TPRs to give legislative updates in person and answer questions. So far, staff has given updates to the Central Front Range TPR, Gunnison Valley TPR, Intermountain TPR, Northwest TPR, South Central TPR, Southeast TPR, and Southwest TPR (virtually). Before the end of June, staff plan to attend the San Luis Valley TPR, Upper Front Range TPR, and Eastern TPR meetings. A description of the two conference committees associated with the HB 23-1101, and what revisions occurred with the bill over time were presented. The requirements related to TPR boundary review and the contents of a plan and the data required to review prior to suggesting any boundary revision options to present to the TC, most likely in November. Following the study the Rule Making process is anticipated to begin June 1, 2024 to align with the development of the 2050 Statewide Transportation Plan.

**Discussion:**

- A comment raised was to coordinate with the local communities on this work as well. It was explained that Direct Lew is considering doing a survey for local community input on the subject. Stockinger answered one of the things they're thinking about that was Director Lew's suggestion is maybe doing a survey and getting it out to those folks. In addition Herman and Jamie have met with folks outside the TPR process and some are not showing up to a TPR meeting because they feel disenfranchised. Need to know that too because that's going to be instructive on whether or not boundary changes are needed.. Given the state is now having TPRs dole out state funds and some of them do not have bylaws that dictate a voting process for how the state funds go out, is problematic. This becomes a financial and legal risk for TPRs and for CDOT. Since CDOT has the fiduciary responsibility for those funds, and to make sure they're expended in a proper way. These considerations are important to look at and to confirm that TPRs are relevant and current.
- A concern raised by a Commissioner was the involvement of the local communities in transportation decisions, as many do not participate. We need to figure out a method to involve them more.
- Another concern raised was that the composition of the STAC could change to have less rural representation. The maintenance of 10 TPRs and 5 MPOs is required from the bill and will keep 10 rural areas across the state.
- Commissioner Bracke noted the importance of this study and evaluation to ensure the proper transportation priorities consider needs appropriately across the entire state.

**Glenwood Canyon Structural Update (Roland Wagner and Jason Smith) Timestamp 00:31:56)**

**Purpose and Action:** Region 3 is providing information to the TC regarding the need for future funding for deferred maintenance of various assets in Glenwood Canyon, including tunnel assets, pavement resurfacing,

modular bridge joints and structural guardrail. No action is required at this time and the presentation is informationally only.

- Glenwood Canyon asset management has been underfunded for several decades, and funding will be needed to repair various assets that require routine maintenance.
- The canyon and burn scar areas have continued to stabilize after the 2020 Grizzly Creek wildfire and 2021 massive debris flows. As the canyon stabilizes and improves over the coming years, this provides reduced risk for delivering asset management projects and opportunities for needed projects to be contracted.
- A RAISE federal grant was applied for in February 2023, this grant included requests for modular bridge joint and structural guardrail replacements in Glenwood Canyon.
- A PROTECT federal grant application process was recently announced with submission due in August. Development of the grant application has commenced and the Glenwood Canyon scope for this grant is currently modular bridge joint and structural guardrail replacements.
- Region 3 will also advise the TC on the status of current federal grant applications for deferred asset maintenance

#### **Discussion:**

- Anytime work is done in the canyon, CDOT has to work with the forest service which is not typical for the other construction we do across the state.
- A Commissioner requested an estimate of the total cost to repair the canyon and the answer was \$249 million with inflation, cost, escalation and everything.
- Jeff Sudemeier, CDOT Chief Financial Officer, noted that the short answer is no - we don't save up set aside a bit year over year. We have our ongoing asset management programs which we use. The Regions usually plan 3 or 4 years in advance sort of what those projects are going to be. The challenge with the asset management programs is that they're generally not funded at the level that allows us to do really significant amounts of asset work like this. CDOT tries to sort of chip away on this as best as we can.
- A commissioner commented we need a way so that there could be forecasting to say it's not just \$240 million needed now, but a way to anticipate its going to be X amount 5 or 20 years from now if there could be a way. Several Commissioners saw the need for this type of analysis, recognizing the age of the Canyon's infrastructure.
- It was explained that CDOT does this type of analysis on a program level compared to a corridor level. CDOT has asset management modeling where we look at asset inventory current condition, look at performance curves at level of investment. The challenge is always there's not enough funding to allocate to all those assets to meet desired performance objectives on all those assets. In terms of funding in the Canyon, the fortunate part is that the bridges and tunnels qualify for the BTE program, if the state of repair is eligible.
- A Commissioner asked for an estimate of how much it would cost to just buy only the joints for replacement in the Canyon that are needed, not including construction and replacement. It was explained that the cost of joints alone would be roughly \$10 million. Materials will be a quarter of that-maybe \$2-\$3 million. Joints are dealt with on an emergency basis with a certain amount of funding to put a project together, and do one lane closures to get several of them at a time, with fewer overall impacts to the customers.

#### **Winter 22-23 Season Overview Brief (John Lorme) Timestamp 01:12:42)**

**Purpose and Action:** To provide an informational briefing on the Division of Maintenance and Operations (DMO) post winter season operations.

- The 2022/23 winter season was a tough winter by any standard, with record snowfall totals reflecting a steady procession of winter events throughout much of the season. Despite challenging conditions, reduced staffing, increased operational costs, CDOT met its overall performance target for the season, measured in terms of how often crews meet their individual targets for the time it takes to restore roads to bare-lane conditions after a winter event.
- The 2022/23 winter saw many days of high winds and gusts that caused blowing and drifting, increased avalanche hazards, and back-to-back storms that led to more plow miles than in recent years.

- In the face of rising de-icer product costs, high fuel prices and other challenges, CDOT spent \$115 million on winter maintenance in 2022/23. The department's commitment to environmental stewardship helped keep costs from rising higher; training programs and integration of innovative technologies helped operators use equipment and de-icers efficiently and incorporate alternative methods when appropriate.

**Discussion:**

- Commissioners commended John Lorme as his team for the good work done by this Division and recognized the great tour of the Golden Traffic Operations Center.
- Commissioner Bracke asked about the additional roadwork coming to patch potholes, etc. A list of those repairs is forthcoming. Commissioner Beedy noted that the funding is not new money, but a commitment of existing funds.

**Fee Based ROW Access for Fiber Progress Update (Allie Axley and Jonas Durham) Timestamp 01:35:30)**

**Purpose and Action:** CDOT is providing an update on the proposed, simplified fee structure and improved process to facilitate access to CDOT rights of way for the deployment of broadband as mandated by Colorado Executive Order D-2022-0023 and Senate Bill 22-083. This workshop is for informational purposes only.

- In April 2023 the program manager intended to request action on the proposed fee structure. After receiving comments on the structures days before the meeting, the program asked to remove the approval from the agenda. A small subcommittee of commissioners volunteered to help with reviewing the received comments on the proposed fee structure.
- The subcommittee met on May 2, 2023 and May 9, 2023. The subcommittee will also meet the morning of May 17 and prepare additional information to update the entire Transportation Commission in the afternoon workshop.
- In this informational presentation staff summarized the subcommittee meetings and a proposed revision to the fee structure present in March 2023's Transportation Commission workshops.
- The ITS Fiber Development Team will return with a more robust workshop in June to review and request action on a proposed fee structure for right of way access

**Discussion:**

- Commissioner Hickey thanked the sub-committee members, Commissioners Hart, Garcia and Adams for their work to review the proposed fiber fee structure.
- The subcommittee revised the fee structure and reduced it by 60% in response to customer concerns.
- Commissioner Holquin requested staff track the administrative costs of the program to ensure fees collected cover expenses.

**Adjournment:** Approximately 3:02 pm

**TRANSPORTATION COMMISSION MEETING 9:00 am to 10:30 am**

Thursday, May 18, 2023

<https://www.youtube.com/watch?v=WnN0iaD7f5I>

**1. Call to Order, Roll Call**

Nine Commissioners were present: Commissioner Gary Beedy (TC Chair), Lisa Tormoen Hickey, Karen Stuart, Kathleen Bracke, Eula Adams, Yessica Holguin, Terry Hart, Kathy Hall, Commissioner Eula Adams, and Commissioner Barbara Vasquez were excused.

**2. Public Comments Timestamp 00:01:55**

- Three written public comments were submitted to the committee addressing concerns about the roughness of I-70 east of Wyman to the Kansas border.

### **3. Comments of the Chair and Individual Commissioners Timestamp 00:02:24**

- Commissioner Kathleen Bracke was able to attend the north I-25 Coalition meeting and the North Front Range (NFR) MPO meetings, and attended the Denver Regional Council of Governments (DRCOG) Regional Transportation Committee (RTC) meeting as a transportation alternate along with Commissioner Holguin. The CDOT's presentation on Bustang was exceptional. The presentation on Bustang will be delivered to the TC in June. DRCOG shared an update on the work they are doing around an equity index at the RTC meeting. The index is to help generate data to evaluate projects that are coming forward. North Front Range MPOs doing a similar type of index.
- Commissioner Terry Hart would like to thank several groups of staff that the TC has been working closely with included Bob Fifer's team from the CDOT ITS Branch, and Frank Spinelli's team from the CDOT Audit Office. Commissioner Hart recognized Commissioner Hall for her leadership on the TC. CDOT experienced a very difficult winter and heading into a difficult spring with flooding and other potential hazards.
- Commissioner Yessica Holguin had the honor of attending the DRCOG's Transportation Demand Management (TDM) strategic Plan Focus Group, which focused on equity and transportation. Community members continue to highlight the request of ongoing community engagement throughout the project.
- Commissioner Kathy Hall and her group attended the Intermountain TPR meeting and were glad to see that all the towns and communities came together to hear what the TC had to say. The meeting was productive and communities came out pretty happy after.
  - The Central 70 project is now 99.9% completed. This project is very important to the health of Colorado's economy.
- Commissioner Karen Stuart would like to thank Tammy Harriet of Smart Commute and Audrey de Barros of Commuting Solutions for setting up a bus tour with the Highway 7 Coalition to highlight this stretch of highway. Stuart would also like to thank Jamie Grimm for the wonderful presentation she put together that was used at the Adams County economic partnership on a transportation forum. Jennifer Philips from CDOT DTR was recognized for attending the North Area Transportation Alliance (NATA) meeting in April to give a presentation on the work the DTR is doing around the state.
- Commissioner Mark Garcia would like to thank CDOT construction workers for being diligent and getting the work down in such a short construction season in District 8.
- Commissioner Lisa Hickey was able to attend the Pike Peak Area Council of Government (PPACG) Board meeting in May to talk about the fiber fee structure CDOT is developing. Hickey would like to applaud CDOT staff for their hard work in analyzing what costs CDOT incurs.
  - The Commissioner attended the Military Access Mobility and Safety Improvement Project (MAMSIP) ribbon cutting ceremony down in Fort Carson. The project includes a large roundabout with an apron and new road to get into the gate.
- Commission Chair, Gary Beedy attended a Freight Advisory Council (FAC) meeting at the start of the month. They had presentations including railroad emergency response, hazmat operations, and training available to first responders and communities that have railroads cutting through your communities. The FAC also gave an update to the Statewide Freight Plan update and the FHWA Freight funding program. 4P meetings will be held Monday and Tuesday in Commissioner Beedy's District 6.

### **4. Executive Director's Management Report (Shoshana Lew) Timestamp 00:31:06**

- There was a visit by the TC to see the failure of CO133 helping to show what the TC Districts specifically in CDOT Regions 3 and 5, are dealing with when it comes to the extreme weather patterns. The TC was able to get an emergency contract out quickly to help deal with the failure of CO133.

#### **5. Chief Engineer's Report (Bob Hayes) Timestamp 00:33:50**

- Keith Stefanik was not present at the TC meeting as he was in Seattle representing CDOT at the American Association of State Highway Transportation Officials ((AASHTO) conference. Bob Hayes stood in for him as the New CDOT Deputy Chief Engineer.
- The Central 70 Project has provided the TC with its last quarterly update for the construction phase of the project.
  - Back in August of 2017 CDOT selected Meridian Partners as the developer and maintenance provider for the Central 70 project for a 30-year term. Construction started in 2018 and 6 years later in February of 2023 CDOT partners have reached substantial completion of Central 70.
  - The project saw 20 new bridges being constructed and on those bridges new sidewalks were built to help connect communities back together. Improved north-south connectivity for the GES community. Over 2 million cubic yards of material was removed to build the viaduct. This work has brought the highway up to current standards in construction and safety.
  - Central 70, to the traveling public, is finished, but behind closed doors there is some paperwork and some project work needed to finish up.
- The local hire program exceeded expectations providing over 720,000 hours of work being conducted by people who lived in the zip code of the project area.

#### **6. Colorado Transportation Investment Office (CTIO) Director's Report (Nick Farber) Timestamp 00:42:24**

- Nick Farber provided an update of completed and ongoing projects of the CTIO. Two topics that were raised by the TC included a discussion on the Burnham Yard Plan and the status of the use of the dynamic toll pricing technology.

#### **7. FHWA Division Administrator Report (John Cater) Timestamp 00:49:16**

- The Regional Local Transportation Assistance Program (LTAP) was held in Colorado this week. LTAP is a program that CDOT and the FHWA have funding in that is aimed at training local governments and providing them with a whole range of assistance. This can come in the form of but not limited to, how to maintain gravel roads, how to maintain guardrails, how to deal with pathment, and maintenance issues.
  - Funding for LTAP has increased over the past few years, allowing it to expand into areas as workforce development through Cell-TAP, Innovation, Safety, and grant assistance.
- The National Association of City Transportation Officials (NACTO) conference was held in Colorado this week. Several Officials from the USDOT were present at the NACTO conference including Deputy Secretary Joe Jurrin. Deputy Jurrin was excited to see what has been accomplished and going on for Colorado's DOT and was taken on a tour of Central 70. Commission Cater would like to thank David M. from CDOT for leading the tour.
- Federal Highway has a public magazine called Public Roads, which the latest edition houses a piece about Central 70.

#### **8. Statewide Transportation Advisory Committee (STAC) Report (Vincent Rogalski) Timestamp 00:56:25**

- One of the issues TPRs keep on running into is when money is given out, the TPRs do not get the projects done in time as the deadlines get overlooked. There have been about 5 projects from the original MMOF of 2020 that needed extensions.
  - MMOF funding must be obligated by December of 2024 and fully expended by December of 2026.

- Herman and Jamie went out to visit some of the TRP meetings around the state of Colorado, and STAC Chair Rogalski thanked them for taking the time to reach out to TPRs and help guide them regarding HB 23-1101 and SB 213.
- CDOT is reviewing a program distribution as a lead-off for development of the 2050 plan. STAC will update all forecasts of revenue and revisit TC and FHWA directed distribution methodologies for formula programs, including, RPP, MMOF, Metro Planning, STBG Metro, Carbon Reduction, CMAQ, TAP, FASTER safety. Colorado has a deadline of August 2025 to get the 2050 Statewide Plan done and compliant with the federal regulations.
- STAC made a motion recommending the RPP discussion be held in August and MMOF to be held in October and was passed by the STAC.
- STAC passed a motion recommending August, September, and October be in person meetings due to the subjects that are going to be discussed at these meetings.

## 9. Legislative Report (Emily Haddaway) Timestamp 01:03:00

- Legislative session wrapped up this past Monday starting the Governors 30-day clock to sign all the bills that were passed in the past few weeks.
  - HB23-1233: Electric Vehicle Charging and Parking Requirements - is a bill setting various requirements for EV. This bill was passed and awaiting the Governor's signature.
  - HB23-1276: Scope of Bridge and Tunnel Enterprise (BTE) - this bill specifies that the BTE may repair, reconstruct, replace, and maintain a bridge that the department has rated as fair if the fair-rated bridge is included as part of a project to repair, reconstruct, replace, or maintain a poor designated bridge. This is one of CDOT's agency bills and has been signed by the Governor.
  - HB23-1102: Alcohol and Drug Impaired Driving Enforcement - this bill expands programs to include both alcohol and drug-impaired driving and requires an appropriation of \$1.5 million from the State Highway Fund for allocation to local governments. This bill has passed the Legislature and is awaiting the Governor's signature.
  - HB23-1267: Double Fines for Speeding Trucks On Steep Grades - this bill has passed both chambers and is headed to the Governor's desk.
  - SB23-200: Automated Vehicle Identification Systems - is a bill concerning the utilization of automated vehicle identification systems for increased traffic law enforcement by certain jurisdictions. This bill has passed both chambers. The last step is to return the bill to the Senate for concurrence on House Amendments.
  - SB23-268: Ten-year Transportation Plan Information - this bill creates new reporting requirements for each transportation project identified in the 10-year transportation plan. This bill passed the Senate, and is awaiting House Appropriations review.
  - SB23-283: Mechanisms For Federal Infrastructure Funding - this bill requires that on July 1, 2023, the state treasurer is to transfer \$84 million from the general fund to the "Infrastructure Investment and Jobs Act" cash fund. The bill also requires that on July 1, 2023, the state treasurer is to transfer \$5 million from the general fund to the state highway fund for use by DOT to develop comprehensive operational capacity (alternative transportation) projects. This bill has passed both chambers and is headed to the Governor's Desk.
  - HB23-1101: Ozone Season Transit Grant Program Flexibility This bill expands SB22-180 and increases the flexibility of the ozone season transit grant program. It also creates a new statute for transit agency participation in regional transportation planning. An amendment was added in the Senate that includes a review of Regional Transportation Planning District boundaries based on population, as well as many other criteria, including highway corridors, safety and asset management considerations, commuting and other travel patterns, and transit-oriented-development. Both the House and Senate approved the final conference committee report and the bill has been signed by the Governor. The final version of Section 4 tasks CDOT with a study of the TPR boundaries.
  - SB23-213: Land Use The bill is a package of various housing and land use related provisions, aimed at driving down the cost of housing by allowing more housing to be built in strategic locations. It is unclear at this time if these changes will pass.



**10. Act on Consent Agenda [Timestamp 01:12:52](#)**

A Motion by Commissioner Hall to approve, and seconded by Commissioner Hart passed unanimously.

- Proposed Resolution #1: Approve the Regular Meeting Minutes of April 20, 2023
- Proposed Resolution #2: IGA Approval >\$750,000
  - Correction: For the Breckenridge project in Region 3 it has been discovered that \$675,000 was in the state section when it should have been in the Federal Section.
- Proposed Resolution #3: Disposal: Parcel 1-EX High Street (Grand Jct.)
- Proposed Resolution #4: Disposal: Parcel 78 Rev-EX (Clear Creek)
- Proposed Resolution #5: Adoption of Policy Directive 6.0 "Fuel Controls for CDOT Fleet"

**11. Discuss and Act on Proposed Resolution #6: 11th Budget Supplement of FY 2023 (Jeff Sudmeier and Bethany Nicholas) [Timestamp 01:14:24](#)**

A Motion by Commissioner Bracke to approve, and seconded by Commissioner Hickey passed unanimously.

**12. Discuss and Act on Proposed Discuss and Act on Resolution #7: Tolling Operations and Maintenance IAA between CDOT and CTIO (Piper Darlington) [Timestamp 01:16:42](#)**

A Motion by Commissioner Stuart to approve, and seconded by Commissioner Holguin passed unanimously.

**13. Discuss and Act on Proposed Resolution #8: Adoption of the FY2024 - 2027 STIP (Jamie Collins and Darius Pakbaz) [Timestamp 01:21:39](#)**

A Motion by Commissioner Hall to approve, and seconded by Commissioner Hickey passed unanimously.

**14. Recognitions [Timestamp 01:23:19](#)**

- No Recognitions at this time.

**15. Other Matters (Chair Appointments Nominating Committee for New Officers) [Timestamp 01:23:24](#)**

- People that were asked to serve on the Nominating Committee for New TC Officers
  - Commissioner Hall
  - Commissioner Stuart
  - Commissioner Hart
- Commissioner Bracke recognized CDOT staff for including the transportation trends report in the packet and thanked CDOT DTD staff for their work on this.

**16. Adjournment - Approximately 10:25 am.**

**Transportation Commission Fiber and Broadband Subcommittee Meetings  
Tuesday, May 2, 2023, 10-11:30 a.m.; Tuesday, May 9, 2023, 10-11:30 a.m.;  
Wednesday, May 17, 2023, 10-11:30 a.m.; Tuesday, May 23, 2023, 10-11 a.m.**

At the April 19, 2023 Transportation Commission workshop on the draft fee structure and improved process to facilitate access to CDOT right-of-way for the deployment of broadband required by Executive Order D-2022-0023 and SB 22-083, the TC discussed establishing a TC subcommittee on this subject and Commissioners Adams, Hart, Hickey, and Garcia volunteered to serve on this newly formed Fiber and Broadband Subcommittee. The Subcommittee met with CDOT staff and representatives from the Attorney General's Office, on May 2, 9, 17, and 23, 2023, to discuss the draft fee structure, public comments that have been received on the draft fee structure, and to prepare and review presentations that will be made to the entire Transportation Commission.



**COLORADO**  
**Department of Transportation**  
Office of the Chief Engineer

Engineering Contracts  
2829 W. Howard Place, Ste. 339  
Denver, CO 80204-2305

## Memorandum

---

**TO: Transportation Commission**

**FROM: Lauren Cabot**

**DATE: May 23, 2023**

**SUBJECT: Intergovernmental Agreements over \$750,000.00**

Purpose Compliance with CRS §43-1-110(4) which requires intergovernmental agreements involving more than \$750,000 must have approval of the Commission to become effective. In order stay in compliance with Colorado laws, approval is being sought for all intergovernmental agencies agreements over \$750,000 going forward.

Action CDOT seeks Commission approval for all IGAs contracts identified in the attached IGA Approved Projects List each of which are greater than \$750,000. CDOT seeks to have this approval extend to all contributing agencies, all contracts, amendments and option letters that stem from the original project except where there are substantial changes to the project and/or funding of the project.

Background CRS §43-1-110(4) was enacted in 1991 giving the Chief Engineer the authority to negotiate with local governmental entities for intergovernmental agreements conditional on agreements over \$750,000 are only effective with the approval of the commission.

Most contracts entered into with intergovernmental agencies involve pass through funds from the federal government often with matching local funds and infrequently state money. Currently, CDOT seeks to comply with the Colorado Revised Statutes and develop a process to streamline the process.



Next Steps Commision approval of the projects identified on the IGA Project List including all documents necessary to further these projects except where there are substancial changes to the project and/or funding which will need reapproval. Additionally, CDOT will present to the Commission on the Consent Agenda every month listing all of the known projects identifying the region, owner of the project, project number, total cost of the project, including a breakdown of the funding source and a brief description of the project for their approval. CDOT will also present any IGA Contracts which have already been executed if there has been any substantial changes to the project and/or funding.

Attachments IGA Approved Project List





**MEMORANDUM**

**TO: THE TRANSPORTATION COMMISSION**  
**FROM: KEITH STEFANIK, P.E. CHIEF ENGINEER**  
**DATE: JUNE 15, 2023**  
**SUBJECT: DISPOSAL: SH 85 & JEWELL, DENVER**  
**(PARCELS 15-EX, 16-EX, 17-EX, 18-EX, AND 53-EX)**

**Purpose**

CDOT Region 1 is proposing to dispose of Parcels 15-EX, 16-EX, 17-EX, 18-EX, and 53-EX, comprising a total of 53,618 sq ft (1.23 acres) of right of way that is no longer needed for transportation purposes.

**Action**

CDOT Region 1 is requesting a resolution, in accordance with C.R.S. 43-1-210(5), approving the disposal of 53,618 sq ft (1.23 acres) of right of way that is no longer needed for transportation or maintenance purposes.

**Background**

Parcels 15-EX, 16-EX, 17-EX, 18-EX, and 53-EX were purchased the under project IXFCU 082-2 (11) between 1980 and 1987. The City and County of Denver is constructing a bicycle and pedestrian bridge over SH 85 (Santa Fe Ave.) at Jewell Ave for the purpose of improving safety and access. The City has requested CDOT convey Parcels 15-EX, 16-EX, 17-EX, 18-EX, and 53-EX for nominal value for public use in accordance with C.R.S. 43-2-210(5).

The Code of Federal Regulations 23.710.403 allows CDOT to dispose of property for less than fair market value to other governmental agencies for continued non-proprietary public use.

**Next Steps**

Upon approval of the Transportation Commission, CDOT will execute quitclaim deeds to convey Parcels 15-EX, 16-EX, 17-EX, 18-EX, and 53-EX to the City and County of Denver for nominal value, pursuant to the provisions of the C.R.S, 43-1-210(5) and 23 CFR 710.403. The deeds will include a reversion provision stating that if the property that is the subject of the quitclaim deed is not used for non-proprietary public use , title to such property will automatically revert back to CDOT. The deeds will be recorded in the office of the Denver County Clerk and Recorder.

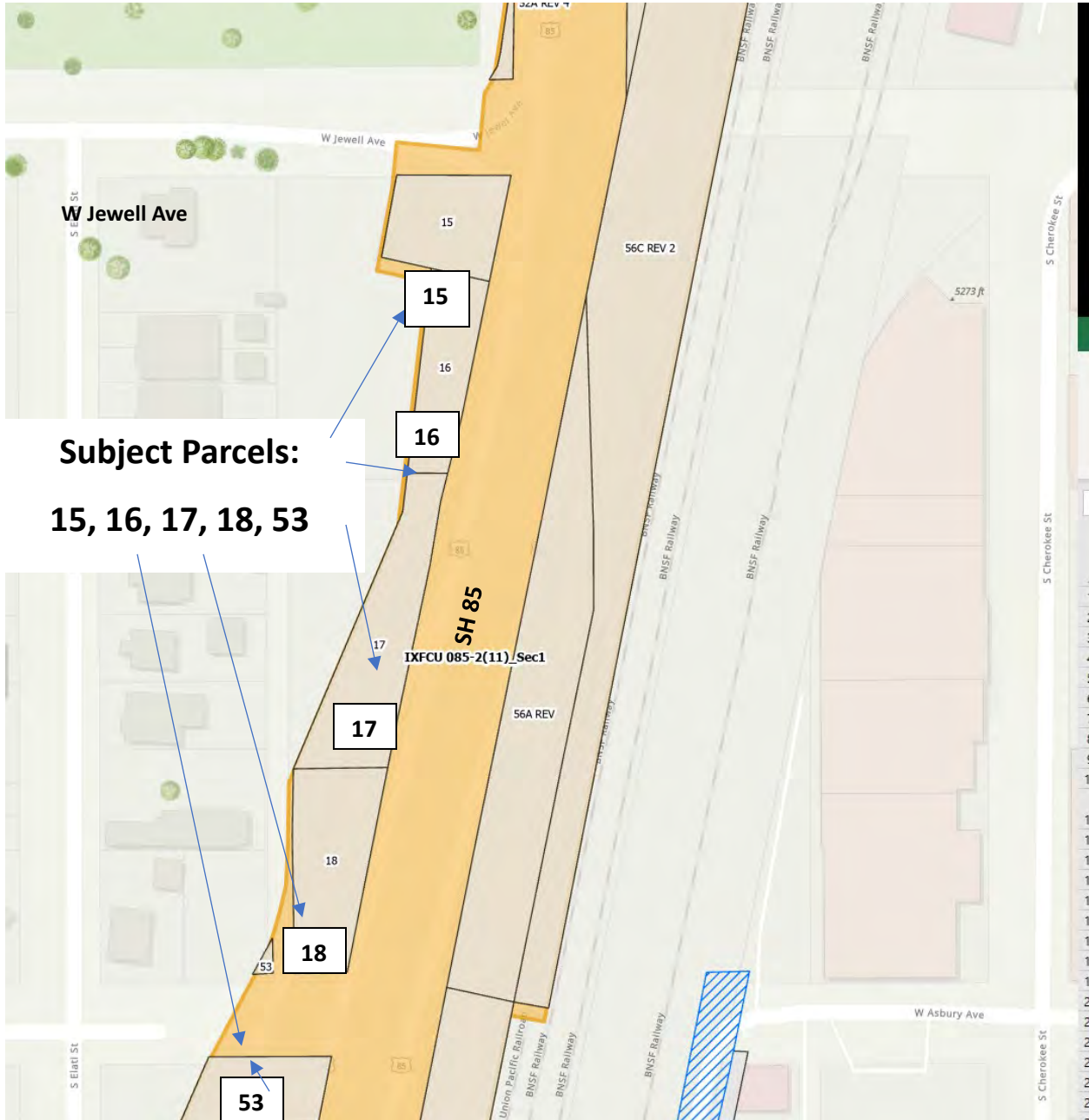
**Attachments**

Exhibits Depicting the Disposal Property



# Exhibit

## Proposed Resolution #4: Disposal SH 85 & W Jewell Ave







**COLORADO**  
**Department of Transportation**

Division of Maintenance & Operations  
425C Corporate Circle  
Golden, CO 80401

**TRANSPORTATION COMMISSION REQUEST**

**TO:** Transportation Commission  
**FROM:** John Lorme, Director of Maintenance & Operations  
**CC:** Herman Stockinger, Deputy Director and Director of Policy

**DATE:** JUNE 15, 2023  
**SUBJECT:** FY 24 Maintenance Project List

Purpose

The Maintenance Sections have identified 55 projects valued at between \$150,000 and \$250,000 for construction in FY 24. The resolution details additions to project locations, type, and dollar value.

Action Requested

Per CRS 24-92-109, and PD 703.0 require CDOT to prepare estimates of proposed work exceeding \$150,000 up to \$250,000 for Transportation Commission approval prior to undertaking the work.

Background

The program allows the Maintenance Sections the flexibility to react to current needs by treating individual segments of highways showing distress.

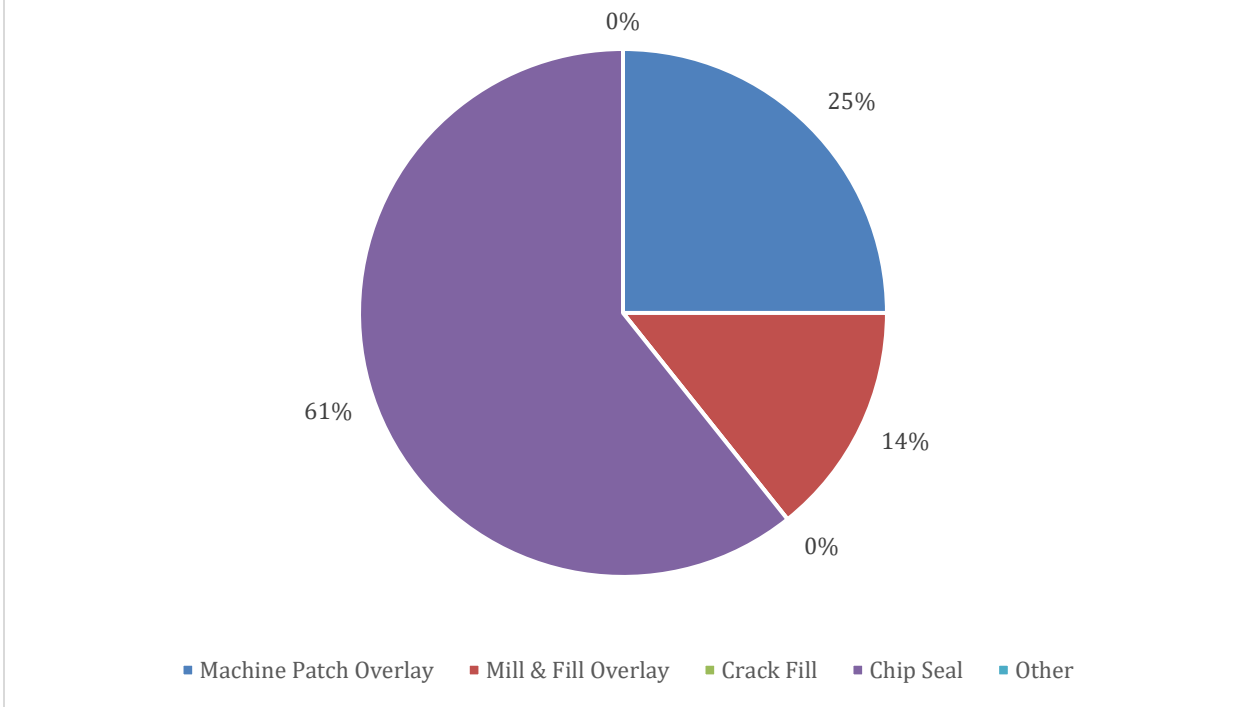
Sufficient funds exist within the appropriate MPA's to pursue these projects. The projects are in accordance with the directive and all other requirements. The Division of Maintenance & Operations recommends approval of the FY 24 over \$150,000 project list.

Key Benefits

Approval of these projects will allow the Maintenance forces to proceed with these projects ensuring the safety and mobility of the traveling public and enabling the continuation of commerce along the state highway system.



### Fiscal-Year-to-Date Percentage for Each Project Category



#### Next Steps

Upon approval, the Maintenance forces will proceed with construction of these projects in FY 24.

#### Attachments

Resolution for Transportation Commission Approval - Includes Project List







**COLORADO**  
**Department of Transportation**  
Office of Policy and Government Relations

2829 W. Howard Place  
Denver, CO 80204-2305

**MEMORANDUM**

**DATE:** May 30, 2023  
**TO:** Transportation Commission  
**FROM:** Herman Stockinger, Deputy Executive Director and OPGR Director  
Frank Spinelli, Audit Division Director  
Sari Weichbrodt, Rules, Policies, and Procedures Advisor  
**SUBJECT:** Adopting Updated Policy Directive 4.0 "Audit Division Policy"

---

**Purpose**

This memorandum provides a summary of the proposed changes to Policy Directive 4.0 "Audit Division Policy" for its adoption by the Transportation Commission.

**Action**

To pass a resolution adopting the updated Policy Directive 4.0 "Audit Division Policy."

**Background**

Policy Directive 4.0 "Audit Division Policy" was last updated in 2019 and is due for review this year. The Directive implements the statutory requirement for the Colorado Department of Transportation (CDOT) to maintain an Audit Division governed by an internal auditor to ensure CDOT's financial integrity and its efficient and effective operations.

**Details**

The Policy Directive requires only minor changes to be current for 2023. There are no substantive changes required.

**Next Steps**

CDOT's Audit Division will continue to assess CDOT's financial integrity and operations and work closely with the Transportation Commission's Audit Review Committee.

**Attachments**

Attachment b: Redlined Version of Policy Directive 4.0  
Attachment c: Clean Version of Policy Directive 4.0



<b>COLORADO DEPARTMENT OF TRANSPORTATION</b>		<input checked="" type="checkbox"/> <b>POLICY DIRECTIVE</b> <input type="checkbox"/> <b>PROCEDURAL DIRECTIVE</b>	
Subject			Number
<b>Audit Division Policy</b>			<b>4.0</b>
Effective	Supersedes	Originating Office	
<del>11.21.19</del>	<del>11.21.19</del> <del>10.18.18</del>	<b>Audit Division</b>	

## I. PURPOSE AND INTRODUCTION

A. Pursuant to § 43-1-106(12)(a), C.R.S., the Executive Director of the Colorado Department of Transportation (Department) shall appoint an internal auditor, who shall have the status of a Division Director and shall have the authority to appoint such personnel as may be necessary for the efficient operation of the Audit Division (Division). ~~Prior to the appointment, the Executive Director shall give presumptive consideration to the recommendations of the Transportation Commission (Commission).~~

B. In addition, pursuant to §§ 43-1-106 (8)(o) and (12)(a) through (e), C.R.S., the Commission has powers and duties to require the Division’s Director to perform audits and furnish other information or assistance to help ensure the financial integrity, and efficient and effective operations of the Department. The Division will also provide Work Product materials to assist the Commission in reaching decisions within the scope of their authority. In addition, the Division will conduct and supervise federally required audits as are delegated to the Commission or Department to perform.

C. Pursuant to § 43-1-106 (12)(c), C.R.S., the Commission shall establish an Audit Review Committee from the Commission membership which shall oversee the operations of the Audit Director and ~~Division~~~~his or her~~ staff.

## II. AUTHORITY

Transportation Commission, Audit Review Committee, § 43-1-106(12)(c), C.R.S.

GAGAS (Generally Accepted Government Auditing Standards, as amended)  
~~<https://www.gao.gov/yellowbook/overview>~~

~~§§ 43-1-106(8)(a) and (o), and (12)(a) through (e), C.R.S.~~

~~§ 24-106-106, C.R.S., (Right to Audit Records of State Contracts)~~

~~§ 24-72-202, C.R.S. (Public Records, Inspection, Copying, or Photographing, Definitions)~~

~~§ 24-6-401, C.R.S. (Colorado Sunshine Law, Open Meetings, Declaration of Policy)~~

### III. APPLICABILITY

This Policy Directive applies to all Department Divisions, Regions, Offices, and Branches and the employees of the Office of Information and Technology as it relates to the Department. It also applies to vendors and consultants contracting with the Department.

### IV. DEFINITIONS

“Audit” ~~shall~~ means an attest function designed with the intention of independently opining on financial and performance audits and other types of attestation engagements such as examinations, reviews, and agreed-upon procedures performed in accordance with GAGAS.

“Audit Director” ~~shall~~ means the internal auditor as set forth in § 43-1-106(8)(o) and 12(a) through (e), C.R.S.

“Audit Review Committee” (“ARC”) ~~shall~~ means the committee established from Transportation Commission membership pursuant to § 43-1-106(12)(c), C.R.S. which oversees the operations of the Audit Director and Audit Division~~his or her~~ staff.

“Auditee” ~~shall~~ means a Division, Region, Office, or Branch of the Department, or a contractor, consultant, or vendor performing work on behalf of the Department in which an Audit is being conducted.

“Consulting Services” ~~shall~~ means professional services other than Audits.

“Executive Director” ~~shall~~ means the head of the Colorado Department of Transportation created in § 43-1-103, C.R.S.

“Final Report” ~~shall~~ means any final version of a Report, together with the final version of any supporting material attached thereto.

“Report” ~~shall~~ means the report resulting from Audit work or other Consulting Services, generated by the Division, on an entity, including but not limited to those enumerated in § 43-1-106(12)(b), C.R.S., which include : 1) Internal Audits of the Department, 2) External Audits of persons entering into contracts with the Department, as deemed necessary or advisable by the Commission, 3) Such federally required Audits as are delegated to the Commission or the Department to perform, or 4) Financial and/or performance Audits. In addition, Work Product materials may be provided to assist the Commission in reaching decisions within the scope of their authority.

“Third Party Audit” ~~shall~~ means an Audit conducted by an outside party, for example, the Office of the State Auditor (“OSA”), on Department activities.

“Transportation Commission” or “Commission” ~~shall~~ means the Transportation Commission created pursuant to § 43-1-106, C.R.S.

“Work Product” for purposes of this Directive ~~shall~~ means the draft version of any document, papers, or Report that is not yet in a final version. –“Work Product” also includes underlying analyses, work papers, notes, memorandums, or compilations of evidence related to or supporting a Report.

## V. MISSION AND SCOPE OF WORK

A. The mission of the Division is to support the Department and Commission to help achieve its objectives by providing independent and objective Audit and Consulting Services that will improve the efficiency, effectiveness, and overall function of its various operations. -To that end, the Division shall deliver quality Audits and Consulting Services that maximize efficiency, reduce costs, and promote confidence and integrity in the Department.

B. To maintain an optimal level of efficiency and effectiveness, the Division shall be guided, as deemed appropriate, by Generally Accepted Government Auditing Standards (GAGAS). The Division’s activity and compliance with its mission and scope are further detailed in its Division Manual.

C. The Audit Director and staff of the Audit Division shall:

1. Conduct and supervise:

- a.) Internal Audits of the Department;
- b.) External Audits of persons entering into contracts with the Department, as deemed necessary or advisable by the Commission;
- c.) Such federally required Audits as are delegated to the Commission or Department;
- d.) Financial Audits in order to ensure the financial integrity of the Department;
- e.) Performance Audits to determine the efficiency and effectiveness of Department operations; and
- f.) Other Consulting Services as the Audit Director, ARC, Commission, and/or Department’s Executive Director may request.

2. Have unrestricted access to all Department divisions, functions, system, records, property, and personnel.

3. Have full and free access to the ARC and Commission.

4. Allocate resources, set frequencies, select areas of Consulting Service and Audit focus, determine scope of work and services, develop a risk-based annual Audit plan and apply techniques required to accomplish engagement objectives.

5. Obtain the necessary cooperation of Department personnel where work is performed by the Division, and seek other specialized services that may be needed at times to better achieve engagement objectives.

D. The Audit Director and staff of the Division shall not:

1. Perform any operational or management duties of the Department or its affiliates, such as designing or implementing internal controls, install systems, preparing management records, initiating or approving financial transactions external to the Division, or engaging in any other activity that may impair their independence.
2. Direct the activities of any Department employee not employed by the Division, except to the extent such employees have been appropriately assigned to auditing teams or to otherwise assist the Division.

## VI. INDEPENDENCE AND OBJECTIVITY

- A. In all matters related to Audit work, the Audit Director and Division must be independent, in both mind and appearance, and must not compromise their objectivity and professional judgment. Independence in appearance means the absence of circumstances that would cause a reasonable and informed third party to reasonably conclude that the integrity, objectivity, or professional skepticism of an audit organization or member of the audit team has been compromised.- *See* GAGAS.
- B. The independence and objectivity of the Audit Director and staff shall be governed by GAGAS.
- C. The Audit Director and staff shall adhere to relevant laws, rules and regulations, and policies or procedures adopted by the ARC and the Commission.
- D. The Audit Director and staff shall be sufficiently removed from external or internal pressures to inappropriately influence the conduct of an Audit and/or Consulting Service, or the content of their findings, opinions, and conclusions objectively without fear of political reprisal. *See* GAGAS.
- E. The Audit Director and staff shall exhibit the highest level of professional objectivity in gathering, evaluating, and communicating information about the activity or process being analyzed. -The Division shall make a balanced assessment of all the relevant circumstances and not be unduly influenced by their own interests or others in forming judgments.

## VII. ACCOUNTABILITY

### A. Audit Division

1. In the discharge of ~~his or her~~ duties, the Audit Director:
  - a.) Shall report directly to the Audit Review Committee, which supervises and oversees the operations of the Division with the exception of b.) below.
  - b.) Shall report administratively to the Executive Director. -The Executive Director shall conduct performance evaluations and other personnel matters related to the

Audit Director and may seek input from the ARC.

c.) -Shall periodically provide the ARC an assessment on the adequacy and effectiveness of the Department's processes for controlling its activities and managing its risks in the areas set forth under the Mission and Scope.

d.) Shall report significant issues related to the processes for controlling the activities of the Department and its affiliates, including potential improvements to those processes, and provide information concerning such issues through resolution.

e.) Shall periodically provide information to the ARC on the status and results of the annual risk-based Audit plan and the adequacy of the Division's resources.

f.) The Audit Director, or his or her designee, shall be the main point of contact and liaison for all third-party Audits on behalf of the Department regarding any findings and recommendations.

#### B. Department

1. Management of the Department is responsible for taking appropriate and timely action to respond to requests from the Division and resolve any concerns identified in the engagement.

2. The appropriate Department personnel shall be given at least fifteen (15) calendar days to prepare timely written responses to any engagement findings and/or recommendations contained in Reports.

3. The appropriate Department personnel must either agree or disagree to any engagement findings and/or suggested recommendations presented within a Report.

4. Management or staff of the Department shall notify the Audit Director or ~~his or her~~ designee soon after receipt of notice whenever a third party notifies the Department of an Audit of its operations.

5. Management or staff of the Department shall inform the Audit Director immediately when they become aware of fraud or financial improprieties involving the Department or one of its employees, vendors, contractors, local entities, or anyone receiving inappropriate payment or resources from the Department.

#### C. Contractors, Subcontractors, and Vendors

1. Pursuant to § 24-106-106, C.R.S., the Audit Division shall be entitled to audit the books and records of any contractor or subcontractor under any negotiated contract or subcontract to the extent that the books and records are related to the performance of a state contract or subcontract. In conducting any such audit, confidentiality shall be maintained of any information contained in the books and records that is deemed proprietary as determined by

the state.

2. -Such books and records shall be maintained by the contractor for a period of six (6) years after the date of final payment under the contract or subcontract, unless a shorter period is otherwise authorized in writing.

## VIII. RESPONSIBILITIES

A. The Audit Director and staff of the Division has the responsibility to:

1. Develop an annual Audit plan using appropriate risk-based methodology, also taking into consideration any risks or control concerns previously identified, and submit that plan to the ARC for review and approval.
2. Implement the approved Audit plan, including, and as appropriate, any special projects requested by management and/or the ARC.
3. Maintain a professional audit staff with sufficient knowledge, skills, and experience to meet the requirements of this Policy Directive.
4. Establish a quality assurance program to help measure the operation of the Division's internal audit activities, which will also include an external peer review performed at least once every three (3) years by reviewers independent of the Division.
5. Perform Consulting Services beyond auditing assurance services to help management and the Commission in reaching decisions within the scope of their authority and assist them in meeting their strategic objectives.
6. Issue periodic Reports or summations to the ARC for Division activities during the fiscal year such as, but not limited to, results of: 1) Internal Audits, 2) External Audits, and 3) Consulting Services.
7. Keep informed of emerging trends and successful best practices in internal auditing and the transportation industry.
8. Assist in the investigation of suspected fraudulent activities within the Department and notify Department management and ARC of the results.
9. Consider the scope of work of outside auditors, as appropriate, for the purposes of providing optimal Audit coverage to the Department at a reasonable overall cost.
10. The Audit Director shall be the main point of contact and liaison for the Division regarding Colorado Open Records Act and Freedom of Information Act requests pursuant to Procedural Directive 25.1. -At the discretion of the Audit Director, he or she may share CORA and FOIA requests and responses with the ~~Audit Review Committee~~ARC Chair prior to fulfilling the request.

## IX. REPORTING AND MONITORING

### A. Review of Reports

1. After completing a draft Report, the Audit Director shall provide the draft to the appropriate Department personnel for review and comment. Management shall provide complete, accurate, and timely responses to Division Work Products, including draft Reports, when requested by the Division.
2. After receiving input from appropriate Department personnel, the Audit Director may make any changes deemed necessary to the draft Report and provide a copy to the Executive Director and appropriate members of senior management.
3. The Audit Director, after making any necessary changes, shall provide the draft Report to the ARC members in a packet separate from the materials provided to the Commission.
4. The Audit Director shall submit, no later than one week prior to the ARC meeting, an overview of the meeting materials to allow each ARC member the opportunity to appropriately review the materials.
5. It is the intent of this Policy Directive to afford the ARC members an opportunity to review draft Reports and other Division Work Products and to individually, or no more than two Committee members together, ask questions of the Audit Director concerning them. -The ARC's review shall adhere to the requirements of § 24-6-401, *et seq.*, C.R.S.
6. A Report provided to ARC members for review within their ARC material packet is deemed to be in ***draft format*** and considered Work Product of the Division until the ***Report is voted for release*** in its entirety or partially (limited basis) by the ARC.

### B. The ARC, at the next meeting, may:

1. Vote to release the Report without the need to discuss the Report. However, at the discretion of the Audit Director, a presentation may be provided to the ARC by a Division team member.
2. Vote to release the Report and thereafter discuss the Report at the ARC meeting.
3. Vote to release the Report on a limited basis subject to confidentiality or based on propriety information which is subject to exclusions under the Colorado Opens Records Act (CORA) pursuant to relevant law and GAGAS Standards or in consultation with the Office of the Attorney General. If released on a limited basis, the Report shall be provided to whomever the ARC deems appropriate.
4. Vote to not release the Report without discussion of the Report, referring it back to the Audit Director to allow for consideration of further questions, potential subsequent events,



or the gathering of further factual information, and the Report will be referred back to the Audit Director for any action deemed appropriate.

5. Following the ARC’s release of the Report, the Audit Director finalizes the Report by his or her signature, and it is deemed a Final Report.

6. The Audit Director shall then provide the Final Report to Commission members.

7. Commission members, individually or no more than two Commissioners together, may ask questions of the Audit Director concerning a Final Report or other Division Work Product.

8. The Commission may further discuss a Report or other Division Work Product at an executive session.

C. The Audit Director shall keep the ARC informed of Division services requested by the Executive Director and senior management.

**X. CDOT DOCUMENT REFERENCED IN THIS POLICY DIRECTIVE**

The Audit Division Manual

**XI. IMPLEMENTATION PLAN**

~~A.~~—This Policy Directive shall be effective immediately upon signature.

~~B.~~—All Division employees shall receive a copy of this Policy Directive within one week of the effective date and for new Division employees, upon date of hire.

The Office of Policy and Government Relations shall post this Directive on the intranet as well as on public announcements.

**XII. ~~REVIEW DATE~~ review Date**

This Policy Directive shall be reviewed on or before October ~~2023~~2028.

\_\_\_\_\_  
Herman Stockinger  
Transportation Commission Secretary

\_\_\_\_\_ 11/21/19 \_\_\_\_\_  
Effective Date

<b>COLORADO DEPARTMENT OF TRANSPORTATION</b>		<input checked="" type="checkbox"/> <b>POLICY DIRECTIVE</b> <input type="checkbox"/> <b>PROCEDURAL DIRECTIVE</b>	
Subject			Number
<b>Audit Division Policy</b>			<b>4.0</b>
Effective	Supersedes	Originating Office	
	11.21.19	<b>Audit Division</b>	

## I. PURPOSE AND INTRODUCTION

A. Pursuant to § 43-1-106(12)(a), C.R.S., the Executive Director of the Colorado Department of Transportation (Department) shall appoint an internal auditor, who shall have the status of a Division Director and shall have the authority to appoint such personnel as may be necessary for the efficient operation of the Audit Division (Division). Prior to the appointment, the Executive Director shall give presumptive consideration to the recommendations of the Transportation Commission (Commission).

B. In addition, pursuant to §§ 43-1-106 (8)(o) and (12)(a) through (e), C.R.S., the Commission has powers and duties to require the Division’s Director to perform audits and furnish other information or assistance to help ensure the financial integrity, and efficient and effective operations of the Department. The Division will also provide Work Product materials to assist the Commission in reaching decisions within the scope of their authority. In addition, the Division will conduct and supervise federally required audits as are delegated to the Commission or Department to perform.

C. Pursuant to § 43-1-106 (12)(c), C.R.S., the Commission shall establish an Audit Review Committee from the Commission membership which shall oversee the operations of the Audit Director and Division staff.

## II. AUTHORITY

Transportation Commission, Audit Review Committee, § 43-1-106(12)(c), C.R.S.

[GAGAS](#) (Generally Accepted Government Auditing Standards, as amended)

§§ 43-1-106(8)(a) and (o), and (12)(a) through (e), C.R.S.

§ 24-106-106, C.R.S. (Right to Audit Records of State Contracts)

§ 24-72-202, C.R.S. (Public Records, Inspection, Copying, or Photographing, Definitions)

§ 24-6-401, C.R.S. (Colorado Sunshine Law, Open Meetings, Declaration of Policy)

## III. APPLICABILITY

This Policy Directive applies to all Department Divisions, Regions, Offices, and Branches

and the employees of the Office of Information and Technology as it relates to the Department. It also applies to vendors and consultants contracting with the Department.

#### IV. DEFINITIONS

“Audit” means an attest function designed with the intention of independently opining on financial and performance audits and other types of attestation engagements such as examinations, reviews, and agreed-upon procedures performed in accordance with GAGAS.

“Audit Director” means the internal auditor as set forth in §§ 43-1-106(8)(o) and 12(a) through (e), C.R.S.

“Audit Review Committee” (“ARC”) means the committee established from Transportation Commission membership pursuant to § 43-1-106(12)(c), C.R.S. which oversees the operations of the Audit Director and Audit Division staff.

“Auditee” means a Division, Region, Office, or Branch of the Department, or a contractor, consultant, or vendor performing work on behalf of the Department in which an Audit is being conducted.

“Consulting Services” means professional services other than Audits.

“Executive Director” means the head of the Colorado Department of Transportation created in § 43-1-103, C.R.S.

“Final Report” means any final version of a Report, together with the final version of any supporting material attached thereto.

“Report” means the report resulting from Audit work or other Consulting Services, generated by the Division, on an entity, including but not limited to those enumerated in § 43-1-106(12)(b), C.R.S., which include : 1) Internal Audits of the Department, 2) External Audits of persons entering into contracts with the Department, as deemed necessary or advisable by the Commission, 3) Such federally required Audits as are delegated to the Commission or the Department to perform, or 4) Financial and/or performance Audits. In addition, Work Product materials may be provided to assist the Commission in reaching decisions within the scope of their authority.

“Third Party Audit” means an Audit conducted by an outside party, for example, the Office of the State Auditor (“OSA”), on Department activities.

“Transportation Commission” or “Commission” means the Transportation Commission created pursuant to § 43-1-106, C.R.S.

“Work Product” for purposes of this Directive means the draft version of any document, papers, or Report that is not yet in a final version. “Work Product” also includes underlying analyses, work papers, notes, memorandums, or compilations of evidence related to or

supporting a Report.

## V. MISSION AND SCOPE OF WORK

A. The mission of the Division is to support the Department and Commission to help achieve its objectives by providing independent and objective Audit and Consulting Services that will improve the efficiency, effectiveness, and overall function of its various operations. To that end, the Division shall deliver quality Audits and Consulting Services that maximize efficiency, reduce costs, and promote confidence and integrity in the Department.

B. To maintain an optimal level of efficiency and effectiveness, the Division shall be guided, as deemed appropriate, by Generally Accepted Government Auditing Standards (GAGAS). The Division's activity and compliance with its mission and scope are further detailed in its Division Manual.

C. The Audit Director and staff of the Audit Division shall:

1. Conduct and supervise:

- a. Internal Audits of the Department;
- b. External Audits of persons entering into contracts with the Department, as deemed necessary or advisable by the Commission;
- c. Such federally required Audits as are delegated to the Commission or Department;
- d. Financial Audits in order to ensure the financial integrity of the Department;
- e. Performance Audits to determine the efficiency and effectiveness of Department operations; and
- f. Other Consulting Services as the Audit Director, ARC, Commission, and/or Department's Executive Director may request.

2. Have unrestricted access to all Department divisions, functions, system, records, property, and personnel.

3. Have full and free access to the ARC and Commission.

4. Allocate resources, set frequencies, select areas of Consulting Service and Audit focus, determine scope of work and services, develop a risk-based annual Audit plan and apply techniques required to accomplish engagement objectives.

5. Obtain the necessary cooperation of Department personnel where work is performed by the Division, and seek other specialized services that may be needed at times to better achieve engagement objectives.

D. The Audit Director and staff of the Division shall not:

1. Perform any operational or management duties of the Department or its affiliates, such as designing or implementing internal controls, install systems, preparing management

records, initiating or approving financial transactions external to the Division, or engaging in any other activity that may impair their independence.

2. Direct the activities of any Department employee not employed by the Division, except to the extent such employees have been appropriately assigned to auditing teams or to otherwise assist the Division.

## VI. INDEPENDENCE AND OBJECTIVITY

A. In all matters related to Audit work, the Audit Director and Division must be independent, in both mind and appearance, and must not compromise their objectivity and professional judgment. Independence in appearance means the absence of circumstances that would cause a reasonable and informed third party to reasonably conclude that the integrity, objectivity, or professional skepticism of an audit organization or member of the audit team has been compromised. *See GAGAS.*

B. The independence and objectivity of the Audit Director and staff shall be governed by GAGAS.

C. The Audit Director and staff shall adhere to relevant laws, rules and regulations, and policies or procedures adopted by the ARC and the Commission.

D. The Audit Director and staff shall be sufficiently removed from external or internal pressures to inappropriately influence the conduct of an Audit and/or Consulting Service, or the content of their findings, opinions, and conclusions objectively without fear of political reprisal. *See GAGAS.*

E. The Audit Director and staff shall exhibit the highest level of professional objectivity in gathering, evaluating, and communicating information about the activity or process being analyzed. The Division shall make a balanced assessment of all the relevant circumstances and not be unduly influenced by their own interests or others in forming judgments.

## VII. ACCOUNTABILITY

### A. Audit Division

1. In the discharge of duties, the Audit Director:

a. Shall report directly to the Audit Review Committee, which supervises and oversees the operations of the Division with the exception of b below.

b. Shall report administratively to the Executive Director. The Executive Director shall conduct performance evaluations and other personnel matters related to the Audit Director and may seek input from the ARC.

c. Shall periodically provide the ARC an assessment on the adequacy and

effectiveness of the Department's processes for controlling its activities and managing its risks in the areas set forth under the Mission and Scope.

d. Shall report significant issues related to the processes for controlling the activities of the Department and its affiliates, including potential improvements to those processes, and provide information concerning such issues through resolution.

e. Shall periodically provide information to the ARC on the status and results of the annual risk-based Audit plan and the adequacy of the Division's resources.

f. The Audit Director, or his or her designee, shall be the main point of contact and liaison for all third-party Audits on behalf of the Department regarding any findings and recommendations.

## B. Department

1. Management of the Department is responsible for taking appropriate and timely action to respond to requests from the Division and resolve any concerns identified in the engagement.

2. The appropriate Department personnel shall be given at least fifteen (15) calendar days to prepare timely written responses to any engagement findings and/or recommendations contained in Reports.

3. The appropriate Department personnel must either agree or disagree to any engagement findings and/or suggested recommendations presented within a Report.

4. Management or staff of the Department shall notify the Audit Director or designee soon after receipt of notice whenever a third party notifies the Department of an Audit of its operations.

5. Management or staff of the Department shall inform the Audit Director immediately when they become aware of fraud or financial improprieties involving the Department or one of its employees, vendors, contractors, local entities, or anyone receiving inappropriate payment or resources from the Department.

## C. Contractors, Subcontractors, and Vendors

1. Pursuant to § 24-106-106, C.R.S., the Audit Division shall be entitled to audit the books and records of any contractor or subcontractor under any negotiated contract or subcontract to the extent that the books and records are related to the performance of a state contract or subcontract. In conducting any such audit, confidentiality shall be maintained of any information contained in the books and records that is deemed proprietary as determined by the state.

2. Such books and records shall be maintained by the contractor for a period of six (6)

years after the date of final payment under the contract or subcontract, unless a shorter period is otherwise authorized in writing.

## VIII. RESPONSIBILITIES

A. The Audit Director and staff of the Division has the responsibility to:

1. Develop an annual Audit plan using appropriate risk-based methodology, also taking into consideration any risks or control concerns previously identified, and submit that plan to the ARC for review and approval.
2. Implement the approved Audit plan, including, and as appropriate, any special projects requested by management and/or the ARC.
3. Maintain a professional audit staff with sufficient knowledge, skills, and experience to meet the requirements of this Policy Directive.
4. Establish a quality assurance program to help measure the operation of the Division's internal audit activities, which will also include an external peer review performed at least once every three (3) years by reviewers independent of the Division.
5. Perform Consulting Services beyond auditing assurance services to help management and the Commission in reaching decisions within the scope of their authority and assist them in meeting their strategic objectives.
6. Issue periodic Reports or summations to the ARC for Division activities during the fiscal year such as, but not limited to, results of: 1) Internal Audits, 2) External Audits, and 3) Consulting Services.
7. Keep informed of emerging trends and successful best practices in internal auditing and the transportation industry.
8. Assist in the investigation of suspected fraudulent activities within the Department and notify Department management and ARC of the results.
9. Consider the scope of work of outside auditors, as appropriate, for the purposes of providing optimal Audit coverage to the Department at a reasonable overall cost.
10. The Audit Director shall be the main point of contact and liaison for the Division regarding Colorado Open Records Act and Freedom of Information Act requests pursuant to Procedural Directive 25.1. At the discretion of the Audit Director, he or she may share CORA and FOIA requests and responses with the ARC Chair prior to fulfilling the request.

## IX. REPORTING AND MONITORING

A. Review of Reports

1. After completing a draft Report, the Audit Director shall provide the draft to the appropriate Department personnel for review and comment. Management shall provide complete, accurate, and timely responses to Division Work Products, including draft Reports, when requested by the Division.
  2. After receiving input from appropriate Department personnel, the Audit Director may make any changes deemed necessary to the draft Report and provide a copy to the Executive Director and appropriate members of senior management.
  3. The Audit Director, after making any necessary changes, shall provide the draft Report to the ARC members in a packet separate from the materials provided to the Commission.
  4. The Audit Director shall submit, no later than one week prior to the ARC meeting, an overview of the meeting materials to allow each ARC member the opportunity to appropriately review the materials.
  5. It is the intent of this Policy Directive to afford the ARC members an opportunity to review draft Reports and other Division Work Products and to individually, or no more than two Committee members together, ask questions of the Audit Director concerning them. The ARC's review shall adhere to the requirements of § 24-6-401, *et seq.*, C.R.S.
  6. A Report provided to ARC members for review within their ARC material packet is deemed to be in *draft format* and considered Work Product of the Division until the **Report is voted for release** in its entirety or partially (limited basis) by the ARC.
- B. The ARC, at the next meeting, may:
1. Vote to release the Report without the need to discuss the Report. However, at the discretion of the Audit Director, a presentation may be provided to the ARC by a Division team member.
  2. Vote to release the Report and thereafter discuss the Report at the ARC meeting.
  3. Vote to release the Report on a limited basis subject to confidentiality or based on propriety information which is subject to exclusions under the Colorado Open Records Act (CORA) pursuant to relevant law and GAGAS Standards or in consultation with the Office of the Attorney General. If released on a limited basis, the Report shall be provided to whomever the ARC deems appropriate.
  4. Vote to not release the Report without discussion of the Report, referring it back to the Audit Director to allow for consideration of further questions, potential subsequent events, or the gathering of further factual information, and the Report will be referred back to the Audit Director for any action deemed appropriate.
  5. Following the ARC's release of the Report, the Audit Director finalizes the Report by his



or her signature, and it is deemed a Final Report.

6. The Audit Director shall then provide the Final Report to Commission members.

7. Commission members, individually or no more than two Commissioners together, may ask questions of the Audit Director concerning a Final Report or other Division Work Product.

8. The Commission may further discuss a Report or other Division Work Product at an executive session.

C. The Audit Director shall keep the ARC informed of Division services requested by the Executive Director and senior management.

## **X. CDOT DOCUMENT REFERENCED IN THIS POLICY DIRECTIVE**

The Audit Division Manual

## **XI. IMPLEMENTATION PLAN**

This Policy Directive shall be effective immediately upon signature.

All Division employees shall receive a copy of this Policy Directive within one week of the effective date and for new Division employees, upon date of hire.

The Office of Policy and Government Relations shall post this Directive on the intranet as well as on public announcements.

## **XII. REVIEW DATE**

This Policy Directive shall be reviewed on or before October 2028.

---

Herman Stockinger  
Transportation Commission Secretary

---

Effective Date

Colorado Transportation Commission  
Audit Review Committee Agenda  
Wednesday, June 14, 2023

Eula Adams, Chair  
District 3

Karen Stuart  
District 4

Terry Hart  
District 10

All commissioners are invited to attend this Committee meeting

1.	Call to Order	Verbal
2.	Motion to Approve March 15, 2022 Minutes	p. 1
3.	External Audit Team Results and Plan	Verbal
4.	Cyber Security	Verbal
5.	Financial Security	Verbal
6.	Peer Review	Verbal

THE AGENDA MAY BE ALTERED AT THE CHAIR'S DISCRETION



MEMORANDUM

TO: THE TRANSPORTATION COMMISSION  
FROM: JEFF SUDMEIER, CDOT CHIEF FINANCIAL OFFICER  
DATE: JUNE 15, 2023  
SUBJECT: STATE INFRASTRUCTURE BANK (SIB) INTEREST RATE RECOMMENDATION FOR THE FIRST HALF OF FISCAL YEAR 2023-24

Purpose

The purpose of this memorandum is to outline the proposed State Infrastructure Bank (SIB) interest rate for loans originating in the first half of State Fiscal Year 2023-24 and the origination fee schedule for Fiscal Year 2023-24.

Action

The Division of Accounting and Finance (DAF) recommends that the Transportation Commission (TC) hold the current SIB interest rate at 3.50% for loans originating in Fiscal Year 2023-24 Q1/Q2, and maintain the recommended origination fee schedule detailed in the memorandum.

Background

SIB Loan Rates: The SIB, established in 43-1-113.5(3) CRS. Rule V. Article 2 of 2CCR 605-1, requires that the TC set bi-annual interest rates for SIB Loans. Established rates over the past 18 months have been:

FY 2021-22 Q3/Q4: 2.00%	FY 2022-23 Q1/Q2: 3.00%	FY 2022-23 Q3/Q4: 3.50%
-------------------------	-------------------------	-------------------------

Origination Fee Schedule: Rule V, Article 3 of 2 CCR 605-1 outlines the following origination fee schedule to be maintained for the current fiscal year as adopted by the TC. The TC may at their discretion apply the fee, the maximum of:

- 1.00% for loan proceeds up to \$1 million
- 0.75% on the loan proceeds over \$1 million up to \$2.5 million
- 0.50% on the loan proceeds over \$2.5 million up to \$5 million
- 0.25% on the loan proceeds over \$5 million

Rate Recommendations/Interest Rate Outlook for US Treasury Market

The current U.S. Treasury market and Federal Funds Rate, as well as the Department’s Financial Advisor’s projections for the US Treasury market and Federal Funds Rate are used to determine the SIB interest rate. Current interest rates (Taxable and Tax-Exempt) have stabilized over the past several weeks, after hitting recent highs at the end of 2022. The market consensus projections have interest rates flat to slightly lower throughout the rest of this year. After a series of interest rate hikes, the Fed is likely to begin slowing future rate increases at their next several meetings. The market consensus has a 69% probability of a 25 basis point increase this month, followed by a 36% probability at the July meeting and 0% probability for the balance of the Fed meetings in 2023. Notably, the 10-year US Treasury yield, which serves as the benchmark for the SIB interest rate, is projected to fall below 3.50% by the end of the year.

This recommendation is based on the following:

- According to Fed Governor Christopher Waller, should the Fed move to the sidelines in June, it would likely be a true pause and not an end to further tightening as the market expects. While it may be beneficial to take time to assess the impact of earlier policy moves as well as tighter credit conditions, there is still likely a need for further Fed action. Speaking recently at an event hosted by the University of California Santa Barbara, Waller said, *"I do not support stopping rate hikes unless we get clear evidence that inflation is moving down towards our 2% objective. But whether we should hike or skip at the June meeting will depend on how the data come in over the next three weeks."*
- Waller is the latest Fed official to acknowledge the two sides of the policy coin. While some are anxious to slow the pace of tightening with a pause next month, the data do not yet suggest the Committee has done enough to reach a sufficiently restrictive level of rates. With inflation still more than double the Fed's target level, there is more work to be done.
- The debate-ceiling saga continues to dominate rate action in the near term with rating agencies putting the country's AAA rating on watch. According to Fitch, the United States is in danger of losing its top sovereign debt status due to *"increased political partisanship that is hindering reaching a resolution to raise or suspend the debt limit."*
- While most still expect a deal to eventually be reached before the X-date, it is clear the consequences of waiting until the last minute are already mounting.

Market Consensus Interest Rate Forecast					
	Current	Q2 2023	Q3 2023	Q4 2023	Q1 2024
Fed Funds Rate	5.25	5.30	5.25	5.10	4.70
US 2-Year	4.54	4.08	3.91	3.70	3.48
US 10-Year	3.80	3.53	3.46	3.37	3.33
US 30-Year	3.96	3.84	3.80	3.73	3.69

Source: Bloomberg (5/26/2023)

### Options and Recommendation

1. **Staff Recommendation:** Hold the interest rate to 3.50% for all SIB loans originating in Fiscal Year 2023-24 Q1/Q2, and maintain the recommended origination fee schedule for all loans during the same period.
2. Adopt a new interest rate determined by the Transportation Commission.
3. Deny the recommended SIB loan interest rate, request additional staff analysis, and/or delay approval consideration for a future month.

### Next Steps

If approved as recommended, Department staff will apply the approved interest rate and origination fee schedule to all SIB loans originating in the first half of Fiscal Year 2023-24.

### Attachments:

Attachment A: Proposed SIB Rate Resolution

# Region 2's 2<sup>nd</sup> Annual Trash Clean Up Day

# Region 2 Employees Cleaned Up Trash in 14 Counties

Employees from all departments volunteered for the efforts



# Safety Tailgate Talks Were Conducted

What hazards lie waiting for us? Snakes and hazardous waste to name a few



# This year Region 2 Had Outside Volunteers!

Special Thanks to MAMSIP





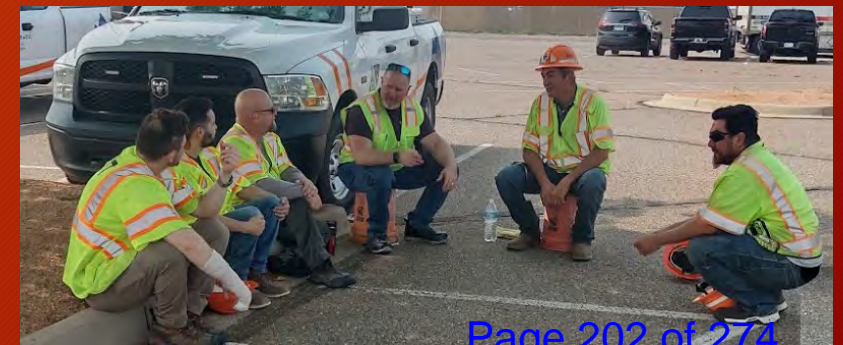
# More Outside Volunteers!

Special thanks to PPACG



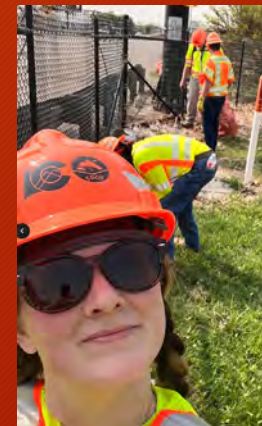
# Crews Worked Throughout the day

Enduring the heat! Breaks and water were a must!

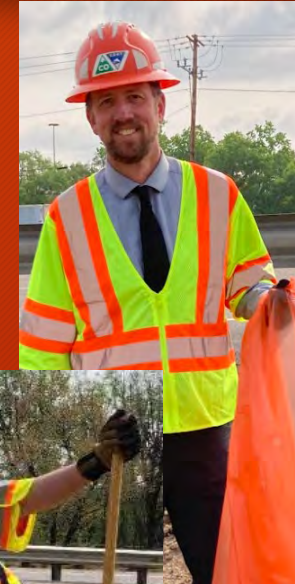


# Good for the Environment and Good for the Soul

Building new relationships, comradery, and memories...



# Building Relationships and Memories



# Bags of Trash Collected

- Colorado Springs - 550



Lamar - 301



LaJunta - 149



Fairplay- 470



Pueblo - 881



Trinidad - 255



# Total Bags Collected 2606!!





**MEMORANDUM**

---

**TO: THE BRIDGE AND TUNNEL ENTERPRISE BOARD OF DIRECTORS**  
**FROM: PATRICK HOLINDA, BRIDGE AND TUNNEL ENTERPRISE**  
**PROGRAM MANAGER**  
**DATE: JUNE 15, 2023**  
**SUBJECT: ASSET OWNERSHIP OF BRIDGE AND TUNNEL ENTERPRISE**  
**FUNDED AND COMPLETED STRUCTURES**

**Purpose**

This memorandum is to inform the Bridge and Tunnel Enterprise Board of Directors (Board) of bridges that have become new assets of the Bridge and Tunnel Enterprise (BTE) in Fiscal Year (FY) 2022-23.

**Action**

This month the Board is being asked to approve Proposed Resolution #BTE-2, Acknowledgement of New Bridge Assets Funded by BTE and Completed in Fiscal Year 2022-23, that will formally acknowledge and accept new BTE assets and apply the proper accounting treatment to new structures completed in FY 2022-23.

**Background**

On an annual basis, the Board is asked to formally acknowledge structures that have become assets of the BTE in the current fiscal year. Under the current accounting policy, CDOT no longer transfers the existing bridge to BTE, except when the structure is scheduled for rehabilitation. This process is consistent with BTE Guidance Document (2011 Number 11; dated November 17, 2011) Asset Transfer/Ownership Policy for Replacement of an Existing Bridge. The ten bridges being recognized as BTE assets this fiscal year are tabulated below.



Region	New Structure	Facility Carried over Featured Intersection	Date New Structure Open to Traffic
1	G-17-AI	US 85 ML over Sand Creek	06/30/22
1	H-17-CT	I-25 ML over Upper Lake Gulch Road	10/31/21
1	H-17-CR	County Road 404 over I-25	10/31/21
1	F-19-EA	US 36 ML over Draw	07/11/22
1	F-20-JA	US 40 ML over Draw	10/23/22
1	F-20-LA	I-70 Service Road over Draw	10/23/22
2	H-13-H	US 285 ML over S. Fork South Platte River	10/21/22
3	F-13-V	I-70 ML WB over Forest Service Road	10/30/22
3	F-13-VA	I-70 ML EB over Forest Service Road	10/30/22
3	I-05-VA	SH 92 ML over Gunnison River	08/31/22

For document record keeping purposes, BTE needs to formally acknowledge asset ownership of the replacement structures based upon the following criteria:

- The Board approved the allocation of BTE funding to replace the structures via the monthly budget supplement process.
- The project was completed, and structures were open for traffic by the end of FY 2022-23.

### Next Steps

- 1) BTE staff will coordinate with the Staff Bridge Branch, the Enterprise Controller and CDOT accounting staff to ensure the structures approved in Resolution #BTE-2 are properly accounted for during the year-end process.
- 2) BTE staff will continue to present asset acknowledgement resolutions to the Board on an annual basis.







**MEMORANDUM**

**TO:** THE TRANSPORTATION COMMISSION  
**FROM:** JEFF SUDMEIER, CDOT CHIEF FINANCIAL OFFICER  
**DATE:** JUNE 15, 2023  
**SUBJECT:** MONTHLY CASH BALANCE UPDATE

**Purpose**

To provide an update on cash management, including forecasts of monthly revenues, expenditures, and cash balances in Fund 400, the State Highway Fund.

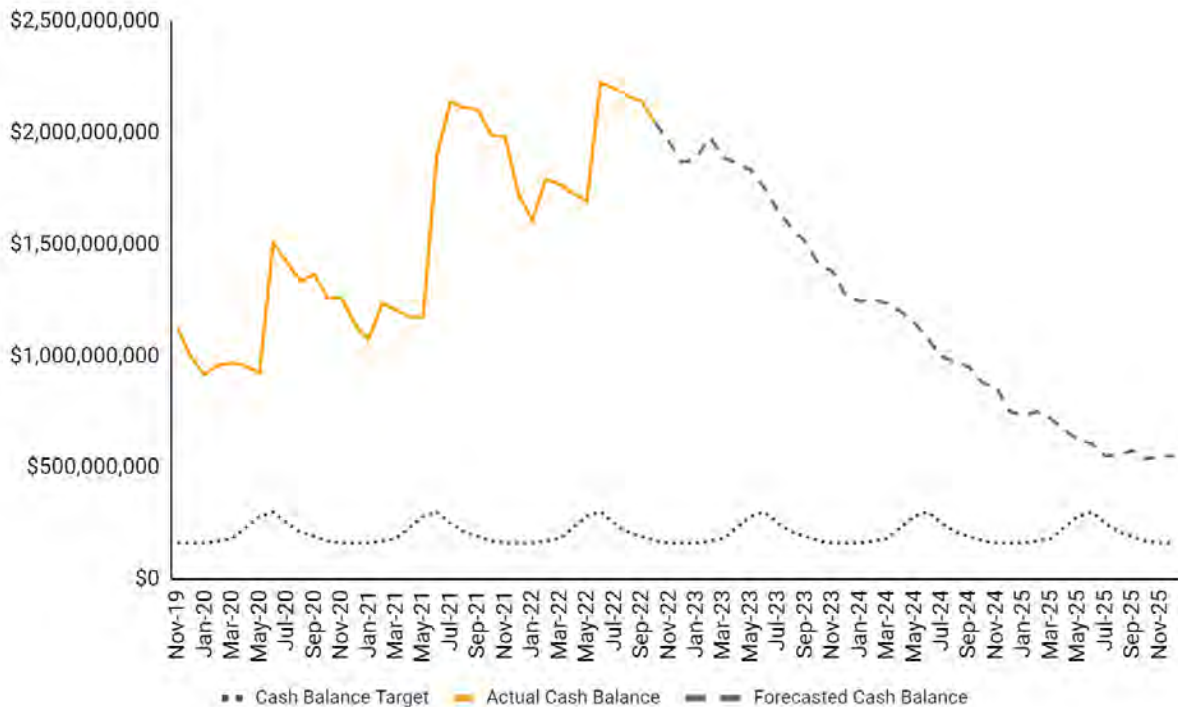
**Action**

No action is requested or required at this time.

**Background**

Figure 1 below depicts the forecast of the closing Fund 400 cash balance in each month, as compared to the targeted minimum cash balance for that month (gray shaded area). The targeted minimum cash balances reflect the Transportation Commission’s directive (Policy Directive #703) to limit the risk of a cash overdraft at the end of a month to, at most, a probability of 1/1,000 (1 month of 1,000 months ending with a cash overdraft).

**Figure 1 – Fund 400 Cash Forecast**





**Summary**

The actual closing cash balance for April 2023 was \$1.86 billion; \$1.63 billion above that month’s cash minimum cash balance target of \$230 million. April’s cash balance consists of \$558.82 million in the State Highway Fund and \$1.14 billion in the Senate Bill 267 trustee account. The actual cash balance for April 2023 was \$6.8 million higher than forecasted. The variance in the forecast is primarily due to higher than expected HUTF revenue and lower than expected payments to contractors.

The large cash balance results from the additional revenues listed in the section below.

**Cash Revenues**

The cash balance forecast is limited to the State Highway Fund (Fund 400 and affiliated funds and trustee accounts), and does not include other statutory Funds including the Multimodal Mitigation and Transportation Options Fund and Funds associated with the following Enterprises:

- Colorado Transportation Investment Office
- Statewide Bridge and Tunnel Enterprise
- Clean Transit Enterprise
- Nonattainment Area Air Pollution Mitigation Enterprise

The State Highway Fund revenue forecast includes revenues from:

- **Highway Users Tax Fund** - This primarily includes Motor Fuel Taxes, Vehicle Registration Fees, Road Usage Fees, and Retail Delivery fees.
- **Miscellaneous State Highway Fund Revenue** - This revenue includes proceeds from the sale of state property, interest earned on the money in the cash fund, the issuance of oversize/overweight permits, and revenue from various smaller sources.
- **SB 17-267** - This bill directed the State Treasurer to execute lease-purchase agreements on existing state facilities to generate revenue for priority transportation projects. A summary of this revenue can be found in the table below.
- **Other Legislative Sources**- This includes revenue transferred from the General Fund to the State Highway Fund through legislation passed by the Colorado General Assembly. A summary of this revenue can be found in the table below.

Cash balances will be drawn down closer to the target balances over the course of fiscal years 2022, 2023, and 2024 as projects funded with SB 17-267 and other legislative sources progress through construction.

Legislative Initiatives	2019	2020	2021	2022	2023
SB 21-267	\$424,154,455	\$559,809,594	\$620,559,397	\$624,425,703	\$0
SB 18-001	\$346,500,000	\$105,000,000	\$0	\$0	\$0
SB 19-262	\$0	\$60,000,000	\$0	\$0	\$0
SB 21-110	\$0	\$0	\$30,000,000	\$0	\$0
SB 21-260	\$0	\$0	\$182,160,000	\$170,000,000	\$6,748,728
SB 22-176	\$0	\$0	\$0	\$0	\$6,500,000
SB 22-180	\$0	\$0	\$0	\$40,000,000	\$0
SB 21-265	\$0	\$0	\$0	\$124,000,000	\$0





**Cash Payments to Construction Contractors**

The current forecast of payments to construction contractors under state contracts (grants paid out under inter-government agreements for construction are accounted for elsewhere in the expenditure forecast) from Fund 400 is shown in Figure 2 below.

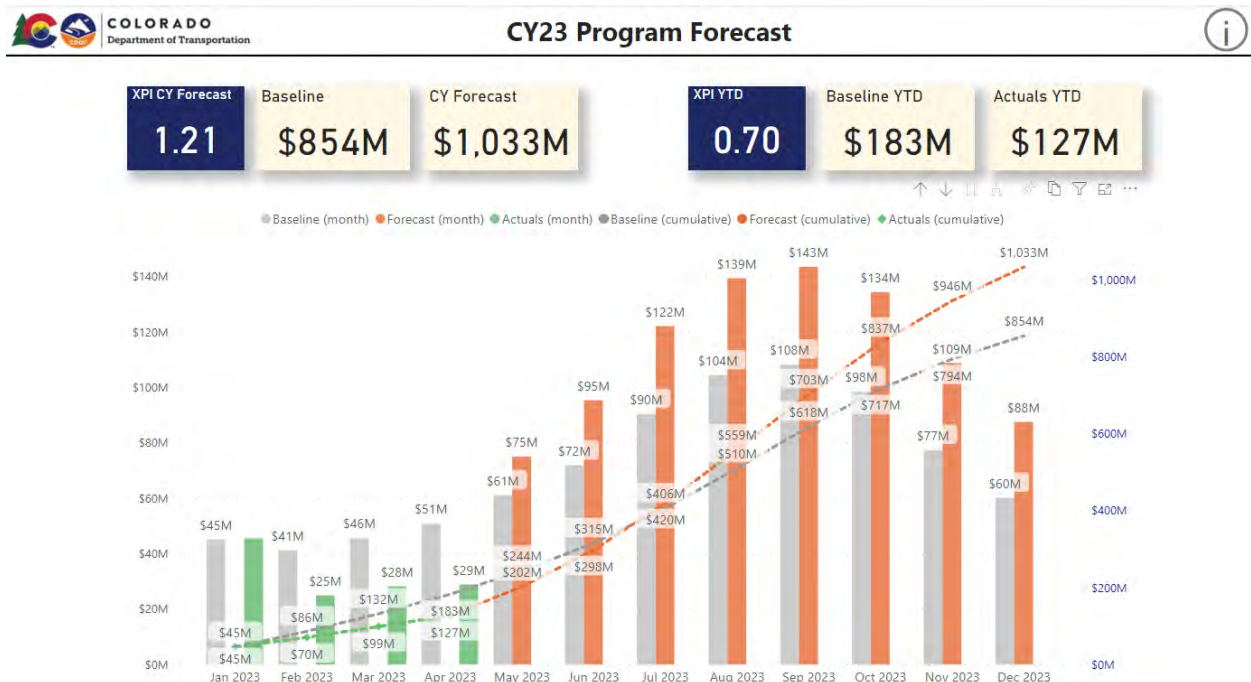
**Figure 2 – Forecasted Payments - Existing and New Construction Contracts**

\$ millions	CY 2017 (actual)	CY 2018 (actual)	CY 2019 (actual)	CY 2020 (actual)	CY 2021 (actual)	CY 2022 (actual)	CY 2023 (forecast)	CY 2024 (forecast)
Expenditures	\$642	\$578	\$669	\$774	\$615	\$841	\$869	\$850*

\*This is preliminary information based on the 10-Year Plan update which was considered by the Transportation Commission for approval in September 2022. This information will be updated as additional project schedule detail becomes available.

Figure 3 details CY23 baseline and actual expenditures for the State Highway Fund (see Figure 2 above) as well as Bridge and Tunnel Enterprise. CDOT sets the CY baseline in January each year, using the best estimates, forecast, and schedule information available at the time.

Including Bridge Enterprise, April month end expenditures were corresponding to an Expenditure Performance Index (XPI) of 0.70 (actual expenditures vs. baseline). The CY 23 baseline includes expenditures from 170 projects.





**MEMORANDUM**

**TO:** COLORADO TRANSPORTATION COMMISSION  
**FROM:** HANNAH L. REED, FEDERAL GRANTS COORDINATOR IN OPGR  
**DATE:** JUNE 14<sup>TH</sup>, 2023  
**SUBJECT:** UPDATE TO TRANSPORTATION COMMISSION ON SUBMITTED, IN PROGRESS, AND FORTHCOMING GRANT APPLICATIONS TO IJJA DISCRETIONARY PROGRAMS

---

**Purpose**

To share progress on submitted applications, as well as current and future coordination of proposals to anticipated federal discretionary programs, primarily under the Infrastructure Investment Jobs Act (IIJA).

**Action**

Per PD 703.0, when the department intends to apply for grants with a match consisting of previously approved funding, no action is necessary by the Commission, but we provide the Commission with the projects we intend to pursue. If the match requires an additional commitment of funds not already approved by the Commission, or Bridge & Tunnel Enterprise (BTE), staff brings the projects to the Commission as an action item, with the additional funding being made contingent on a successful application and grant award.

As always, Commissioners and CDOT staff are encouraged to contact CDOT's in-house grant team with questions, comments, and suggestions.

**Background and Details**

*\*\*For information on closed 2022 grant programs and awarded proposals, please refer to 2022 TC Grants Memos from December 2022 or prior.\*\**

The following FY22 discretionary grant programs have closed and all proposals have been reviewed:

1. NATIONAL SCENIC BYWAY PROGRAM (NSBP)
  - DTD Colorado Byways Team received 26 project proposals from local agencies statewide. Three eligible and competitive applications were submitted by CDOT:
    - Alpine Loop and Silver Thread Facilities, Safety, and Recreation Upgrades in Regions 3 & 5
      - **\$640k AWARDED**
    - Scenic Highway of Legends Wayfinding and Interpretive Materials Implementation in Region 2
    - Mount Evans Collaborative Renaming, Re-signing, and Educational Emphasis in Region 1
2. STRENGTHENING MOBILITY and REVOLUTIONIZING TRANSPORTATION (SMART)
  - CDOT-led ATMA proposal with MN DOT, OK DOT, and WI DOT as subrecipients
    - **AWARDED \$1.89M**

The following FY22 discretionary grant programs have closed, but applications are still being reviewed:

3. Enabling Middle Mile Broadband
  - CDOT submitted a \$119M proposal to build 7 new middle mile fiber corridors across the state
    - Region 3: 46 miles of fiber between Grand Junction and Delta

- Region 2: 119 miles of fiber between Pueblo and Lamar.
  - Region 2 & 4: 119 miles of fiber Lamar to Burlington.
  - Region 4: 37 miles of fiber between Greeley and Wiggins
  - Region 4: 60 miles of fiber from Sterling to the Nebraska State Line.
  - Region 4: 5 miles of fiber between Boulder and Longmont.
  - Region 5: 115 miles of over pull fiber from South Fork to Walsenburg.
4. RAILROAD CROSSING ELIMINATION (RCE)
    - A planning application to study the elimination of two at-grade highway-rail crossings on US 34 in Region 4
    - CDOT also provided letters of support for two local applications in Fort Collins
    - According to the most current FRA Grants Calendar, these will be announced in May/June 2023
  5. FTA's ADVANCED DRIVER ASSISTANCE SYSTEMS (ADAS)
    - Install ADAS demonstrative technologies into three of CDOT's Bustang fleet
  6. CONSOLIDATED RAIL INFRASTRUCTURE & SAFETY IMPROVEMENTS (CRISI)
    - US 50/US 550 Reconfigured Intersection for Safety and Consolidation (RISC) in Region 3
    - According to the most current FRA Grants Calendar, these will be announced in Aug/Sept 2023

The following FY23 program(s) have closed, but applications are still being reviewed:

1. RAISE 2023
  - A brief internal analysis of the previous two RAISE cycles (FY 2021 and FY 2022) revealed that an overwhelming majority of awards were granted to "Locals"
    - For reference, in FY21 out of 63 awarded proposals, 36 went to a City, Town, or County; and in FY22 out of 164 awarded proposals, 105 went to a City, Town, or County.
    - In acknowledgement of these statistics, CDOT strategically leveraged established partnerships with local agencies to share lead applicant responsibilities, effectively reducing internal agency competition and casting the widest net of funding for Colorado statewide.
  - The City of Lakewood and CDOT revised and resubmitted the 6th & Wadsworth Interchange Reconstruction proposal.
  - Boulder County and CDOT revised and resubmitted the CO 119 Diagonal Multimodal Improvements proposal.
  - Grand County and CDOT revised and resubmitted the US 40 Passing Lanes & Red Dirt Hill Safety Reconstruction proposal.
  - Morgan and Weld Counties and CDOT revised and resubmitted the I-76 Phase IV Regional Improvements for Safety and Efficiency (RISE) proposal.
  - La Plata County and CDOT revised and resubmitted the US 160 Safety and Mobility Improvements proposal.
  - CDOT submitted an application for the preliminary phase of the I-70 Corridor Resiliency and Connectivity Improvements project.
  - CDOT, with Summit County and Summit County Safe Passages, submitted an application for the I-70 East Vail Pass Wildlife Crossings project.
  - According to the USDOT RAISE website, awards will be announced by June 28th, 2023
2. CORRIDOR IDENTIFICATION DEVELOPMENT PROGRAM (CIDP)
  - CDOT and FRPR-D co-sponsored an application for the Colorado Front Range Corridor

#### IN PROGRESS

CDOT is actively pursuing the following discretionary grant program(s):

1. As in previous years, CASTA and FHU Consulting coordinated applications with local agencies for the 5339 discretionary grant programs (Low-No Emissions and Bus & Bus Facilities); CDOT then reviewed applications and submitted under its UEI and Grants.gov profile
  - Archuleta County Mountain Express Low-E Fleet and Bus Facility Project
  - Avon Transit Diesel Bus Replacement with GILLIG Electric Bus

- Gunnison Valley RTA's City of Gunnison Multimodal Transit Center
  - Town of Telluride Galloping Goose ZEV Incremental Costs and Facility Upgrades
  - ECO Transit Battery Electric/Hybrid Bus Replacement and Expansion
  - ECO Transit Vehicle Storage Facility Electrification Project
  - RFTA - Ten Battery Electric Buses to Replace Diesel Buses
  - RFTA Regional Transit Center Phase 6 and Phase 8 Construction
  - ADA Bus for Wet Mountain Valley Rotary Transportation
  - Mountain Express Bus Storage, Maintenance, and Operations Facility
  - Breckenridge Free Ride: Diesel to Electric Bus Transition & Safety and Efficiency Improvements
  - SMART Vanpool Vehicle Replacement Project
  - Durango Transit Replacement Vehicles
  - Via Mobility Renewable Energy Microgrid for Enhanced Electric Transit Bus Charging
  - First Electric Bus & Charging Infrastructure Installation for the Town of Winter Park
2. WILDLIFE CROSSING PILOT PROGRAM (WCPP)
- Douglas County and CDOT are revising the application for the Greenland Wildlife Overpass, as the final component of the I-25 Gap project in Region 1.
  - CDOT, with Summit County, is repackaging the existing RAISE 2023 proposal of the I-70 East Vail Pass Wildlife Crossings project in Region 3.
  - CDOT is also preparing a US 160 “corridor initiative” application to include both Elmore’s East and East of Cortez crossings in a single application in Region 5.
  - A planning application for wildlife mitigation in Region 3 on US 40 and CO 13 is also being considered.
3. PROMOTING RESILIENT OPERATIONS for TRANSFORMATIVE, EFFICIENT and COST-SAVING TRANSPORTATION (PROTECT):
- CDOT is preparing a scalable proposal to address resiliency in and around rural Western Colorado, specifically in and around Glenwood Canyon. The collective transportation network includes I-70, Blue Hill on Cottonwood Pass, US 40, SH 13, and SH 9.
  - The City of Boulder and CDOT are collaborating on an application in Region 4 to replace two poor span bridges on CO 7 and with a new single bridge. The existing bridges experience recurring flooding/overtopping that restrict accessibility of the highway.
    - This project will likely also be eligible for the FY23 cycle of Bridge Investment Program (BIP).

#### NEW & FORTHCOMING OPPORTUNITIES

The following discretionary programs are expected to be released in the near future. CDOT is interested in pursuing eligible and competitive projects or partnerships for each program:

1. SAFE STREETS AND ROADS FOR ALL (SS4A): Funding for regional, local, and Tribal initiatives to prevent roadway deaths and serious injuries.
  - Like last year, CDOT is not eligible for this opportunity, however will sign letters of support for other applications.
2. MULTIMODAL PROJECT DISCRETIONARY GRANTS (MPDG): A substantial, multi-billion dollar “umbrella” program that contains Mega, INFRA, and Rural Surface Transportation programs within it.
  - According to the most current update from USDOT, the FY23 cycle of this program will open in June 2023
  - CDOT, with local agency partners, is prepared to revise and resubmit all eligible applications from the FY22 cycle, utilizing USDOT advice and guidance from FY22 application debriefs:
    - I-76 Phase IV Reconstruction in Region 4
    - US 160 Safety & Mobility Improvements in Region 5
    - US 50 Safety Highway Improvements for Freight and Travel in Region 2
    - US 40 Passing Lanes & Red Dirt Hill Improvements in Region 3

- Other proposals in consideration, pending final details from the MPDG FY23 NOFO:
  - I-70 East Vail Pass Wildlife Crossings in Region 3
  - Another scalable iteration of the I-70 Resiliency in Rural Western Colorado proposal in Region 3
  - North I-25 Segment 5 in Region 4 with Weld County

#### **CDOT DISCRETIONARY GRANT PROGRESS BY THE NUMBERS**

Since the IIJA was signed into law in November 2021...

- CDOT has applied for approximately \$906.8M across 12 programs
  - Including co-sponsored applications between CDOT and Local partners: \$1.17B across 16 programs
- We have been awarded approximately \$174.2M, with nearly \$181M yet to be announced
- For FY23-FY24, CDOT already has over \$600M across 7 programs lined up for submission

#### **Next Steps**

MPDG NOFO will be released in June 2023

RAISE 2023 awards will be announced by June 28th, 2023

SS4A applications are due July 10th, 2023

WCPP applications are due August 1st, 2023

PROTECT applications are due August 18th, 2023



**DATE:** June 1, 2022

**TO:** Transportation Commission

**FROM:** Darius Pakbaz, Director, Division of Transportation Development  
Theresa Takushi, Greenhouse Gas Program Manager  
Herman Stockinger, Deputy Director

**SUBJECT:** Submission of CDOT and DRCOG Annual Mitigation Action Plan

**Purpose**

The Agency Coordination Committee Commissioners requested that the Annual Mitigation Action Plan reports be submitted to the TC as information only.

**Action**

None

**Background**

As outlined in the GHG Planning Rule 2 CCR 601-22 (Rule 8.02.7) and Policy Directive 1610 (Section VI.D.1), an MPO or CDOT that have utilized Mitigation Measures and a Mitigation Action Plan as part of compliance with the GHG rules must submit an annual report, by April 1, and include information regarding the status of each GHG Mitigation Measure.

**Details**

Both CDOT and DRCOG used GHG Mitigation measures to comply with the GHG Planning Standard. These reports were submitted on March 30, 2030 (before the April 1 deadline outlined in the rule). These reports are also available on the GHG Program website.

The Annual Reports from CDOT and DRCOG are included as attachments. CDOT and DRCOG anticipate that these reports will show more progress over time as these GHG Mitigation measures are implemented.



CDOT: As of the most recent update, CDOT cannot reach the Greenhouse Gas Planning Standard compliance levels beyond 2025 by solely modeling the projects in the current version of the 10 Year Plan. Therefore, GHG emissions through mitigation measures will aid in reaching compliance levels for 2030, 2040, and 2050. This allows off-model transportation projects to be accounted for as to their ability to reduce GHG emissions. For each update of the MAP, measures must be reported upon with each project's current status to evaluate where each stands in their implementation. The projects included in the MAP can be expanded upon in future years to further reduce emissions.

DRCOG: The MAP details the region's approach to using mitigation measures to help achieve the GHG reduction levels required for the DRCOG MPO area for 2030, 2040, and 2050. DRCOG's mitigation measures are regional, policy-based, and represent the sum of potential local actions.

### **Next Steps**

None

### **Attachments**

- Attachment A - CDOT's MAP
- Attachment B - DRCOG's MAP



CDOT's GHG Mitigation Action Plan (MAP) Annual Status Report  
2023 Update  
Submitted March 30, 2023

## Executive Summary

### Background

Following the submission of a GHG Transportation Report, if the report contains a Mitigation Action Plan, CDOT (and the MPOs) are required to submit an annual status update. This will be reported annually by April 1 and include information regarding the status of each GHG Mitigation Measure to the Transportation Commission. In order to abide by this, CDOT (and the MPOs) must follow specific reporting guidelines for each listed measure as outlined in the Rule (8.02.7) and Policy Directive 1610 (Section VI.D.1).

The Mitigation Action Plan is an annual requirement of compliance for both the GHG Reduction Planning Standard (the Rule) and the Policy Directive 1610; both of which list the same requirements for reporting on mitigation measures. Each measure in the MAP requires an implementation timeline, detailing when a project will commence, when it will be completed, and any other important dates associated. For each update of the MAP, measures must be reported upon with each project's current status to evaluate where each stands in their implementation. Measures that are in progress or have been completed must also show quantification of the benefit, or the impact, of each project. Finally, if a measure has been delayed, canceled, or substituted, the update must describe how this happened. Furthermore, if that measure was to benefit a Disproportionately Impacted Community, it must be described as to how an equivalent benefit may be achieved. Per PD 1610 (Section VI.D.1), "If an agency fails to implement or find a substitute for a delayed or canceled GHG Mitigation Measure, the Commission will need to consider whether an Applicable Planning Document is in compliance, as per subsection 8.02.6.4 of the Rule. The Commission shall consider failure to submit reports and any analysis therein in subsequent review of future plans presented for consideration".



Each mitigation project will be reported upon with information regarding the following:

Component	Description
Measure Description	Summary of the project scope and timeline.
Timing	Suggested timeline of the project's specifics.
GHG Reductions	The amount of proposed greenhouse gas emissions that will be reduced due to the completion of the project, for each compliance year that applies.
Co-benefits	Benefits of a project outside of GHG emissions; including transportation improvements and reductions of other air pollutants.
Current Status	Where the project stands as of this update; in terms of progress, implementation, and the current emissions reductions that are being accounted for.
Variables/ Concerns	Any factor that could inhibit the success of a project. These could be factors that inhibit a project's implementation, or factors that inhibit a project's intended ability to reduce greenhouse gas emissions.
Benefits to Disproportionately Impacted Communities	Description of if and how a project has the ability to benefit communities with analysis through



	the Transportation Equity Scorecard tool.
Measure Origin and History	How the project plan came to fruition and its path to implementation.
Funding/ Resources/ Partnerships	Description of the parties involved in making the project possible.
Other Info As Needed	Any additional details that may be important to a project's implementation.

The Mitigation Action Plan is a tool for CDOT and the MPOs to reach GHG compliance outside of modeling alone. This allows transportation projects to be accounted for as to their ability to reduce GHG emissions. Updating this on a yearly basis ensures that mitigation measures are effective in working towards each organization's GHG compliance.



## Annual Status Update

As of this update, CDOT cannot reach compliance levels beyond 2025 by solely modeling the projects in the current version of the 10 Year Plan. Therefore, GHG emissions through mitigation measures will aid in reaching compliance levels for 2030, 2040, and 2050. This report will provide updated information for each of the mitigation measures that had been established in the creation of the MAP. The completion of these projects is accounted for in the projected result of meeting emissions reduction compliance for 2030, 2040, and 2050. The projects included in the MAP can be expanded upon in future years to further reduce emissions. However, the goal of this report is to provide a status update on the projects already in the process of implementation.

As of this update, the majority of the mitigation measures have made varying degrees of progress; with a couple having been already completed. Given that this update is within the first year of the MAP, only limited progress within the mitigations can be expected. However, a number of these projects have still made significant steps towards completion.

Of the four Transportation Demand Management (TDM) projects, 2 have been fully implemented; with another likely to be completed in the coming months. The transit projects included in this update have also made significant advancements since they started last year. Since the end of 2021, rural transit has especially made substantial progress towards recovery of pre-pandemic services. Local transit lines have even exceeded 2019 levels by almost 50%. Through the revival of existing lines, as well as the introduction of new services, rural transit recovery has resulted in significant success so far. As for the built environment and electrification of transit vehicles, these projects have yet to be active; however, substantial progress has been made in preparation for implementation. Likewise, the operational improvements included are all within the pre-construction phase, with each likely to break ground in the near future.

As of this update, four of the GHG Mitigation Measures have sufficient detail to conduct an equity benefits analysis: the City of Aspen's Micro Transit and Bike Share Pilot Expansion, the Summit County Trailhead Shuttle Pilot Expansion, Bustang Service Expansion, and Roundabouts in the Updated 10 Year Plan. This equity benefits analysis was conducted as per the requirements of the GHG Planning Standard. At this time, the analysis does not include a burdens analysis component. Guidance on analyzing project and program effects which may burden communities requires thoughtful involvement of impacted communities. This guidance is being developed as part of the development of the GHG Mitigation Measure Equity Standards, per the requirements of Policy Directive 1610.



**COLORADO**  
Department of Transportation

The Transportation Commission will receive this report annually, and the next update will be prepared and reported no later than April 1, 2024. The projects currently included in this report will be updated annually, as well as new projects that may be eligible to be used for mitigations will be included as well. By that time, it is expected that further progress will be made towards completing the mitigation projects listed in this update.



**COLORADO**  
Department of Transportation

# **GHG Mitigation Action Plan Annual Status Report 2023 Update**



## Table of Contents

1. Table A1- 1.1 - Summary table of GHG Emissions Analysis and the Mitigation Action Plans (MAPs)
2. Mitigation Action Plans:
  - Transportation Demand Management (TDM)**
  - \*Table A1-2.1 - CDOT Strategic TDM Grant Program: Creation of the Glenwood Springs Transportation Management Association
  - \*Table A1-2.2 - CDOT Strategic TDM Grant Program: I-70 Coalition
  - \*Table A1-2.3 - CDOT Strategic TDM Grant Program: City of Aspen, Micro Transit and Bike Share Pilot Expansion
  - \*Table A1-2.4 - CDOT Strategic TDM Grant Program: Summit County, Trailhead Shuttle Pilot Expansion

### **Transit**

- \*Table A1-3.1 - Bustang Service Expansion
- Table A1-3.2 - Rural Transit Service Recovery

### **Built Environment**

- Table A1-4.1 - CDOT Multimodal Investments and Internal Policies to Encourage High-Density Rezoning

### **Medium Duty - Heavy Duty Electrification**

- Table A1-5.1 - Zero Emission Transit Buses Awarded in Non-MPO Areas

### **Operational Improvements**

- \*Table A1-6.1 - Roundabouts in the Updated 10 Year Plan





**Table A1-1.1 Summary table of GHG Emissions Analysis and the Mitigation Action Plans (MAPs)**

Table A1-1.1 shows how CDOT is using mitigation measures to reach emissions reduction targets for each 2030, 2040, and 2050 compliance year. According to Section 8.02.6.3 of the rule, “If GHG Mitigation Measures are needed to count toward the GHG Reduction Levels in Table 1, the MPO or CDOT may submit a Mitigation Action Plan that identifies GHG Mitigation Measures, if any, needed to meet the GHG Reduction Levels within Table 1”. Considering that CDOT is able to reach compliance with 2025 emission reduction levels through modeling alone, accounting for reductions through mitigation measures is not needed for this year. Therefore, 2025 is not used as a target year to evaluate CDOT’s mitigation measures. In 2030, 2040, and 2050, CDOT achieves compliance through the combination of modeling and GHG mitigation measures. The Reductions achieved through GHG Mitigations are presented individually in the Tables A1-2.1- A1-6.1.

	2025	2030	2040	2050
Table 1 Reduction Target (MMT)	0.12	0.36	0.30	0.17
Reductions achieved through Modeling	0.30	0.21	0.06	0.04
Reductions achieved through GHG Mitigations	n/a	0.156	0.249	0.135
Total Reductions achieved	0.30	0.366	0.309	0.175
Compliance Result	Met	Met	Met	Met



**Table A1-2.1 Transportation Demand Management (TDM) Grant: Creation of the Glenwood Springs Transportation Management Association**

Component	Description of information to be submitted with application.			
Measure Description	Creation of the <i>Glenwood Springs Transportation Management Association</i> (GSTMA) through CDOT funding, will develop new localized transportation demand management strategies. By 2030, the Association will have dedicated resources to communicate travel options, engage with local employers to implement TDM strategies, advocate for TDM principles in local developments and land use regulations, have established incentives for participation, as well as have created a methodology for tracking performance.			
Timing	<ul style="list-style-type: none"> <li>• <b>Anticipated Start Date:</b> August 2022</li> <li>• <b>Completion Date:</b> Ongoing program, current CDOT grant period and funding due to end 03/30/2024.</li> </ul>			
GHG Reductions	<b>2030: 1,157 Metric Tons</b>			
	<b>Mitigation Project Type</b>	<b>Metric (per 1,000 covered employees)</b>	<b>Points per Metric in 2030</b>	<b>Total</b>
	Commute Trip Reduction Program - Voluntary	13	89	1,157
Co-benefits				
	<b>VMT change per 1,000 covered employees</b>	<b>1,000 covered employees</b>	<b>Total</b>	
	317,500	13	4,127,500	



	Pollutants Avoided	Estimated Kg avoided annually (2030)
	CO	9,373
	NOx	257
	PM 2.5	27
	SO2	7
	VOCs	195
Current Status	As of early 2023, no progress has been made in the development of the GSTMA. However, there is currently \$64,000 allocated for the development of this program.	
Variables/ Concerns	None	
Benefits to Disproportionately Impacted Communities	The creation of the GSTMA is a programmatic approach to GHG reductions, rather than project specific, and thus cannot currently be analyzed through the Transportation Equity Scorecard tool. It is worth noting that Glenwood Springs has several census blocks that meet the definition of a Disproportionately Impacted Community. TDM programs reduce GHG emissions typically through various strategies that reduce VMT, thus one can expect a decrease in co-pollutants in the area due to the GSTMA. Estimated co-pollutant reductions are reported in the co-benefits section.	
Measure Origin and History	CDOT's Strategic Transportation Demand Management (TDM) Grant Program was developed by the Office of Innovative Mobility to support communities and organizations as they expand, enhancing existing trip-reduction initiatives and develop new innovations that are capable of meeting Colorado's evolving transportation challenges. The three funding opportunities within the Strategic TDM Grant Program represent a multi-faceted approach	



	<p>to advancing the capacities and practice of TDM statewide:</p> <ol style="list-style-type: none"> <li>1. The Transportation Management Organization (TMO) Support Grants are designed to supplement existing TDM programming and allow established TDM leaders to expand their reach and impact;</li> <li>2. The TMO Seed Funding Grants facilitate the creation of new TMOs in currently un-represented areas of the state and add new perspectives to the TDM conversation that have the potential to increase TDM success in non-urban areas;</li> <li>3. And the TDM Innovation Grants support projects that incentivize innovative ideas to help TDM reach new audiences, address current TDM gaps, and scale up existing best practices to expand their impact.</li> </ol> <p>Using the grant money from the TMO Seed Funding program, the GSTMA will be designed and implemented to address the unique traffic and transit concerns of the area. Glenwood Springs was identified as an area of high need for dedicated TDM programming by both the 2019 Statewide TDM Plan and the MOVE study conducted by the City of Glenwood Springs and RFTA in 2020. As a regional hub for employment, recreation, and tourism at the junction of I-70 and the CO-82 corridor through the Roaring Fork Valley, CDOT identified significant potential for trip and emissions reductions. The creation of a permanent framework and advocate for local and regional coordination around transportation issues, and TDM specifically, would aid in this effort.</p>
<p>Funding/ Resources/ Partnerships</p>	<p>Through CDOT’s TDM Grant Program, the GSTMA has received an initial \$60,000 to support the development of the program. The award of Seed Funding grants is pursued by CDOT in line with a long-term strategy for creating capacities and representatives across Colorado for TDM consistency with an increasingly coordinated approach. In this vein, CDOT has already begun to lay foundations for a long-term partnership with the City of Glenwood Springs and the GSTMA; through the creation of a practitioner network and cross-regional mentorship programs. As the GSTMA matures, the organization will become eligible for continuing TMO Support funding designed to advance TDM priorities and to serve as a basis for ongoing partnership in regional and statewide emissions-reductions efforts.</p>
<p>Other Info As Needed</p>	<p>N/A</p>



**Table A1-2.2 TDM Grant: I-70 Coalition Public Awareness Campaign & Research Effort**

Component	Description of information to be submitted with application.											
Measure Description	A research effort into I-70 travelers' behaviors, the effectiveness of existing travel alternatives and marketing efforts, and the identification of new opportunities in order to calibrate the messaging, medium, and approach of a redesigned trip-reduction marketing campaign. The campaign aims to drive travelers to non-single occupancy vehicle (SOV) travel modes, to encourage more efficient travel behaviors (e.g. off-peak travel and travel to higher-capacity destinations along the road network), and to promote existing resources and tools designed to convert audiences into routine users of alternative travel modes.											
Timing	<ul style="list-style-type: none"> <li>● <b>Start Date:</b> October 2021.</li> <li>● <b>Milestones:</b> February 2022 (launch)</li> <li>● <b>Completion Date:</b> July 2022 (end of CDOT grant period).</li> </ul>											
GHG Reductions	<p><b>2030: 120 Metric Tons</b></p> <table border="1"> <thead> <tr> <th>Mitigation Project Type</th> <th>Metric (per program \$1,000)</th> <th>Points per Metric in 2030</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Trip Reduction - Marketing</td> <td>60</td> <td>2</td> <td>120</td> </tr> </tbody> </table>				Mitigation Project Type	Metric (per program \$1,000)	Points per Metric in 2030	Total	Trip Reduction - Marketing	60	2	120
Mitigation Project Type	Metric (per program \$1,000)	Points per Metric in 2030	Total									
Trip Reduction - Marketing	60	2	120									
Co-benefits	<table border="1"> <thead> <tr> <th>Annual VMT reduced per program \$1,000</th> <th>Program \$1,000</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>7</td> <td>60</td> <td>420</td> </tr> </tbody> </table>				Annual VMT reduced per program \$1,000	Program \$1,000	Total	7	60	420		
Annual VMT reduced per program \$1,000	Program \$1,000	Total										
7	60	420										



	Pollutants Avoided	Estimated Kg avoided annually (2030)
	CO	954
	NOx	24
	PM 2.5	3
	SO2	0.6
	VOCs	18
Current Status	<p>As of 2023, this program has been completely launched and implemented. All \$60,000 grant funding has been allocated.</p> <p>2030 GHG Reductions: 120 Metric Tons</p>	
Variables/ Concerns	None	
Benefits to Disproportionately Impacted Communities	This mitigation is a programmatic approach to GHG reductions, rather than project specific, and thus cannot currently be analyzed through the Transportation Equity Scorecard tool.	
Measure Origin and History	CDOT's Strategic Transportation Demand Management (TDM) Grant Program was developed by the Office of Innovative Mobility to support communities and organizations as they expand and enhance existing trip-reduction initiatives and develop new and innovative projects and programs that are capable of meeting Colorado's evolving transportation challenges.	



	<p>The three funding opportunities within the Strategic TDM Grant Program represent a multi-pronged approach to advancing the capacities and practice of TDM statewide:</p> <ol style="list-style-type: none"> <li>1. The Transportation Management Organization (TMO) Support Grants are designed to supplement existing TDM programming and allow established TDM leaders to expand their reach and impact;</li> <li>2. The TMO Seed Funding Grants facilitate the creation of new TMOs in currently un-represented areas of the state and add new perspectives to the TDM conversation that have the potential to increase TDM success in non-urban areas;</li> <li>3. And the TDM Innovation Grants support projects that incentivize innovative ideas to help TDM reach new audiences, address current TDM gaps, and scale up existing best practices to expand their impact.</li> </ol> <p>Using the grant money from the TMO Support program, the I-70 Coalition sought to address the increasing share of recreational trips along the I-70 Corridor by better calibrating program and message interventions, designed to influence the behaviors of recreational travelers, through market research and by creating a structure for a long-term marketing campaign informed by their findings.</p>
Funding/ Resources/ Partnerships	Through CDOT’s TDM Grant Program, the I-70 coalition has received an initial \$60,000 to support the development and advertisement of the program.
Other Info As Needed	N/A



**Table A1-2.3 TDM Grant: City of Aspen, Micro Transit and Bike Share Pilot Expansion**

Component	Description of information to be submitted with application.				
Measure Description	The expansion of an existing micro transit service program, demonstrating new, on-demand service models and approaches to users requesting services. The program will also include the installation of permanent e-bike share infrastructure and the purchase of additional shared e-bikes for the existing fleet. By 2030, the program anticipates adding more than 46 e-bikes and incorporating successful micro-transit models demonstrated within the pilot into long-term transit programming within the city.				
Timing	<ul style="list-style-type: none"> <li>• <b>Anticipated Start Date:</b> July 2022</li> <li>• <b>Completion Date:</b> March 2023 (end of CDOT grant period).</li> </ul>				
GHG Reductions	<b>2030: 7 Metric Tons</b>				
	<b>Mitigation Project Type</b>	<b>Metric (per 100 bikes)</b>	<b>Points per Metric in 2030</b>	<b>Total</b>	
	Bikeshare Program	0.46	15	7	
Co-benefits	<b>Annual VMT reduced per bike</b>		<b>Number of bikes</b>		<b>Total</b>
	531		46		54,426
	<b>Pollutants Avoided</b>			<b>Estimated Kg avoided annually (2030)</b>	
	CO			56	





	<table border="1"> <tr> <td>NOx</td> <td>2</td> </tr> <tr> <td>PM 2.5</td> <td>0.1</td> </tr> <tr> <td>SO2</td> <td>0.05</td> </tr> <tr> <td>VOCs</td> <td>1</td> </tr> </table>	NOx	2	PM 2.5	0.1	SO2	0.05	VOCs	1
NOx	2								
PM 2.5	0.1								
SO2	0.05								
VOCs	1								
Current Status	As of early 2023, this program is 89% complete. 2030 GHG Reductions: 6 Metric Tons								
Variables/ Concerns	None								
Benefits to Disproportionately Impacted Communities	This project gets an equity benefits score of 11, using the Transportation Equity Scorecard Tool. The project serves two census block groups which meet the definition of a DI Community. These two census blocks groups are housing burdened, with at least 41.94 and 40.25% of residents in the census blocks qualifying as being housing-cost burdened. This project improves access to education, employment, community services, health care, healthy food, increases community livability, decreases the share of household income consumed by transportation and housing, provides access to affordable housing units, and increases the availability of affordable transportation options. Users of the bikeshare program can use the bikes for up to 30 minutes without cost.								
Measure Origin and History	CDOT's Strategic Transportation Demand Management (TDM) Grant Program was developed by the Office of Innovative Mobility to support communities and organizations as they expand, enhancing existing trip-reduction initiatives and develop new innovations that are capable of meeting Colorado's evolving transportation challenges. The three funding opportunities within the Strategic TDM Grant Program represent a multi-faceted approach to advancing the capacities and practice of TDM statewide:								



	<ol style="list-style-type: none"> <li>1. The Transportation Management Organization (TMO) Support Grants are designed to supplement existing TDM programming and allow established TDM leaders to expand their reach and impact;</li> <li>2. The TMO Seed Funding Grants facilitate the creation of new TMOs in currently un-represented areas of the state and add new perspectives to the TDM conversation that have the potential to increase TDM success in non-urban areas;</li> <li>3. And the TDM Innovation Grants support projects that incentivize innovative ideas to help TDM reach new audiences, address current TDM gaps, and scale up existing best practices to expand their impact.</li> </ol> <p>Using the grant money from the TDM Innovation program, the City of Aspen seeks to expand and introduce new service models to its existing microtransit programming – and to expand its shared micromobility fleet in response to growing congestion, parking management issues, as well as mobility and access concerns identified in recent planning and outreach efforts.</p>
Funding/ Resources/ Partnerships	Through CDOT’s TDM Grant Program, the City of Aspen has received an initial \$50,000 to support the pilot of the new, on-demand micro transit model and the expansion of its bikeshare program.
Other Info As Needed	N/A



**Table A1-2.4 TDM Grant: Summit County, Trailhead Shuttle Pilot Expansion**

Component	Description of information to be submitted with application.														
Measure Description	The expansion of a pilot program initially launched for Quandry Peak and McCullough Gulch, which will operate daily shuttle service to the highly trafficked trailheads in Summit County while reducing congestion in the region; serving as a foundation for additional demand and parking management strategies.														
Timing	<ul style="list-style-type: none"> <li>• <b>Anticipated Start Date:</b> May 2022</li> <li>• <b>Completion Date:</b> March 2023 (end of CDOT grant period).</li> </ul>														
GHG Reductions	<p><b>2030: 102 Metric Tons</b></p> <p>The GHG reductions for this strategy were calculated using the user-input method for new transit service that is included as part of PD 1610. The following inputs were used:</p> <table border="1"> <thead> <tr> <th>Variables</th> <th>2025</th> </tr> </thead> <tbody> <tr> <td>Planned new annual vehicle revenue miles</td> <td>30,480</td> </tr> <tr> <td>Anticipated new ridership</td> <td>21,000</td> </tr> <tr> <td>Anticipated share of new riders who previously drove</td> <td>90%</td> </tr> <tr> <td>Average unlinked trip length of new riders</td> <td>18</td> </tr> <tr> <td>Transit vehicle size</td> <td>15-20' van</td> </tr> <tr> <td>Transit vehicle technology</td> <td>Fleet average</td> </tr> </tbody> </table>	Variables	2025	Planned new annual vehicle revenue miles	30,480	Anticipated new ridership	21,000	Anticipated share of new riders who previously drove	90%	Average unlinked trip length of new riders	18	Transit vehicle size	15-20' van	Transit vehicle technology	Fleet average
Variables	2025														
Planned new annual vehicle revenue miles	30,480														
Anticipated new ridership	21,000														
Anticipated share of new riders who previously drove	90%														
Average unlinked trip length of new riders	18														
Transit vehicle size	15-20' van														
Transit vehicle technology	Fleet average														



Co-benefits	<p>VMT reduction in 2030: 421,200 miles. VMT reduction of this strategy was also calculated using the user-input method for new transit service.</p>	
	<b>Pollutants Avoided</b>	<b>Estimated Kg avoided annually (2030)</b>
	CO	930
	NOx	25
	PM 2.5	3
	SO2	0.7
	VOCs	19.9
Current Status	<p>As of 2023, this expansion is fully complete and operational. All \$50,000 of grant funding has been allocated. 2030 GHG Reductions: 102 Metric Tons</p>	
Variables/ Concerns	None	
Benefits to Disproportionately Impacted Communities	<p>This project gets an equity benefits score of 3, using the Transportation Equity Scorecard Tool. The project serves a census block group which meets the definition of a DI Community, with 59.75% of residents being housing-cost burdened. This project improves access to community services, improves livability through design and the reduction of pollutants, and improves transit service in the area.</p>	
Measure Origin and History	<p>Summit County, alongside local partners, launched a pilot parking reservation and shuttle program in 2021 to help address public safety issues in the area, due to significant increases in visitation to Quandary Peak and McCullough Gulch over the past several years. Illegally parked vehicles block emergency access on</p>	



**COLORADO**  
Department of Transportation

	roadways and limit resident’s ability to access or feel safe in their own neighborhoods. The parking reservation system and shuttle service alleviates these pressures while making it easier for hikers to safely and legally access trailheads.
Funding/ Resources/ Partnerships	Through CDOT’s TDM Grant Program, Summit County has received an initial \$50,000 to support the expansion of its trailhead shuttle program and to explore complementary demand management strategies.
Other Info As Needed	N/A



**Table A1-3.1: Bustang Service Expansion**

Component	Description of information to be submitted with application.																															
Measure Description	Implement enhanced levels of service on I-70 and I-25 that will allow Bustang to serve more people and provide increased flexibility to residents and visitors of Colorado. Over the next three years, service on the I-25 North/South corridor, Fort Collins to Denver and Colorado Springs to Denver, will increase by 100% on weekdays and 200% on weekends. Service along I-70 West, Grand Junction to Denver, will increase by approximately 250%. A comprehensive media campaign will be developed to increase public awareness of Bustang’s existence and expansion.																															
Timing	The expansion will occur in three phases, with the first phase scheduled to be implemented in the fall of 2022. The set of expansions will occur in late fall/early winter 2023, and the final third expansion will occur in the fall/winter of 2024.																															
GHG Reductions	<p>2030: 9,414 Metric Tons 2040: 4,707 Metric Tons 2050: 4,707 Metric Tons</p> <table border="1"> <thead> <tr> <th>Project (New/increased fixed-route transit service - intercity - fleet average)</th> <th>Metric (per 1,000 new VRM)</th> <th>Points per Metric in 2030</th> <th>Points per Metric in 2040</th> <th>Points per Metric in 2050</th> <th>Total Emissions Reduction 2030</th> <th>Total Emissions Reduction 2040</th> <th>Total Emissions Reduction 2050</th> </tr> </thead> <tbody> <tr> <td>North Line Bustang Expansion</td> <td>2</td> <td>2</td> <td>1</td> <td>1</td> <td>4</td> <td>2</td> <td>2</td> </tr> <tr> <td>South Line (DUS)</td> <td>12</td> <td>2</td> <td>1</td> <td>1</td> <td>24</td> <td>12</td> <td>12</td> </tr> </tbody> </table>								Project (New/increased fixed-route transit service - intercity - fleet average)	Metric (per 1,000 new VRM)	Points per Metric in 2030	Points per Metric in 2040	Points per Metric in 2050	Total Emissions Reduction 2030	Total Emissions Reduction 2040	Total Emissions Reduction 2050	North Line Bustang Expansion	2	2	1	1	4	2	2	South Line (DUS)	12	2	1	1	24	12	12
Project (New/increased fixed-route transit service - intercity - fleet average)	Metric (per 1,000 new VRM)	Points per Metric in 2030	Points per Metric in 2040	Points per Metric in 2050	Total Emissions Reduction 2030	Total Emissions Reduction 2040	Total Emissions Reduction 2050																									
North Line Bustang Expansion	2	2	1	1	4	2	2																									
South Line (DUS)	12	2	1	1	24	12	12																									



	Bustang Expansion							
	West Line Bustang Expansion	3,929	2	1	1	7,858	3,929	3,929
	Outrider Routes	764	2	1	1	1,528	764	764
	<b>Total Points</b>					<b>9,414</b>	<b>4,707</b>	<b>4,707</b>
<p>CDOT is taking credit for the new bus vehicle revenue miles (VRM) that occur only within the non-MPO areas, as some of the new VRM occurs within the boundaries of the state's five MPOs.</p>								
Co-benefits	<p>Expanded Bustang service results in about 170 additional Bustang riders each weekday (Compliance versus Baseline), or about 51,000 more riders annually (2030). The connections created by the Bustang network can result in local operators seeing additional ridership, while their service levels are constant. That is, the 170 additional Bustang riders above may also be making additional rides on local systems at either end of their journey.</p>							
	<b>Annual VMT reduced per 1,000 new VRM</b>		<b>New 1,000 VRM</b>			<b>Total VMT reduced/year</b>		
	9,200		4,707			43,304,400		
<b>Pollutants Avoided</b>		<b>Estimated Kg avoided annually (2030)</b>		<b>Estimated Kg avoided annually (2040)</b>		<b>Estimated Kg avoided annually (2050)</b>		



	CO	96,348	43,823	15,118
	NOx	945	448	159
	PM 2.5	240	248	208
	SO2	73	47	21
	VOCs	1946	1,198	559
Current Status	As of the beginning of November 2022, Phase 1 is currently underway. Services along I-70 have expanded by 15%, as well as services along Northern I-25 and Southern I-25 have each expanded 30% respectively. As of this update (March 2023), the I-70 line operates 4 daily round trips; 3 between Denver and Grand Junction and 1 between Denver and Glenwood Springs. For both Northern and Southern I-25 services, each runs 8 daily round trips on weekdays and 2 daily round trips on weekends.			
Variables/ Concerns	There are a few constraints inhibiting the Bustang expansion. Firstly, the need for new vehicles, as well as the need to replace outdated vehicles, serves as a limiting factor for service expansion. Furthermore, driver availability is proving to be a limiting constraint as well. Within Bustang, there is a current focus on maintaining consistency of services, rather than expanding beyond the resource availability. Given these constraints, the implementation of Phase 1 and beyond is subject to change; both in terms of scale and timeframe.			
Benefits to Disproportionately Impacted Communities	The West Line, South Line, and North Line Bustang expansions each receive an equity benefits score of 12, using the Transportation Equity Scorecard Tool. Each of these projects serves a high concentration of census blocks that meet the definition of a DI Community, with many census blocks meeting more than one qualifying criteria (e.g., a census block that is both greater than 40% people of color and low income). Each of these projects improve access to education, community services, health care, and affordable housing. These projects also improve livability through design through reduction of pollutants and			





	improves transit access and service in the I-70 and I-25 corridor.
Measure Origin and History	<p>CDOT launched Bustang service in the I-25 and I-70 corridors in 2015, providing much needed transit to and from the communities along these routes. In 2018, Bustang Outrider services were launched across the state, bringing rural connections to the Bustang I-70 and I-25 services. In March 2020, the COVID-19 pandemic shut down Bustang services, but were reinstated in January of 2021. System-wide ridership is currently at 75% pre-COVID levels of service, and the West Line along I-70 was at 136% of pre-pandemic ridership as of March 2022.</p> <p>CDOT is planning to expand Bustang for a three-year period, aiming to attract additional travelers into a transit option on our busiest interstate corridors. This expansion, made possible by new funding from the state legislature, includes new, enhanced service on I-70 and I-25 that will allow Bustang to serve more people and provide increased flexibility for existing riders.</p>
Funding/ Resources/ Partnerships	The passage of SB-180 gave \$30 million in direct funding for the expansion of Bustang service throughout the 3-year pilot program. Further, the dedication of the State’s portion of the MMOF funds to State Transit Operations and Maintenance ensures that existing Bustang services, the operation and maintenance of the State’s mobility hubs, and the future expansions of the Bustang Family of services can continue as an integral part of Colorado’s transportation system. Additionally, within the 10-Year Plan, CDOT has committed nearly \$120 million in Bustang investments with mobility hubs and bus purchases.
Other Info As Needed	<p>Route expansion details.</p> <p>I-25 North (Fort Collins to Denver)</p> <ul style="list-style-type: none"> <li>- <b>Phase 1: Increasing from 6 daily round trips on weekdays to 8 daily round trips</b></li> <li>- Phase 2: 10 daily round trips on weekdays and going from 2 daily round trips on weekends to 4 daily round trips</li> <li>- Phase 3: 12-13 daily round trips weekdays, 6 daily round trips weekends</li> </ul> <p>I-25 South (Colorado Springs to Denver)</p> <ul style="list-style-type: none"> <li>- <b>Phase 1: Increasing from 6 daily round trips on weekdays to 8 daily round trips</b></li> <li>- Phase 2: 10 daily round trips on weekdays and increasing from 2 daily round trips on weekends to 4</li> </ul>



	<p>daily round trips</p> <ul style="list-style-type: none"><li>- Phase 3: 12-13 daily round trips on weekdays to 6 daily round trips on weekends</li></ul> <p>I-70 west (Grand Junction to Denver)</p> <ul style="list-style-type: none"><li>- Phase 1: Increasing from 2 daily round trips to 4 daily round trips</li><li>- Phase 2: 9-10 daily round trips between Grand Junction and Denver</li><li>- Phase 3: 13-15 daily round trips between Grand Junction and Denver</li></ul> <p>Phase 1: Proposed for Fall 2022 Phase 2: Planned for Late 2023 Phase 3: Planned for Late 2024</p>
--	--



**Table A1-3.2: Rural Transit Service Recovery following the COVID-19 pandemic**

Component	Description of information to be submitted with application.
Measure Description	Following the COVID-19 pandemic, traffic in many parts of the state returned to pre-pandemic levels; while transit ridership and service remained low. Through state and federal funds, CDOT aims to return the intercity, local, and demand response service levels of the state’s rural transit agency to pre-COVID levels by 2030 or earlier.
Timing	This recovery will occur, effective immediately, and is expected to achieve pre-COVID levels by 2030 or earlier.
GHG Reductions	Local rural transit lines (metric tons) <b>2030: 1,680</b> <b>2040: 1,260</b> <b>2050: 588</b> Intercity rural transit lines (metric tons) <b>2030: 4,600</b> <b>2040: 2,300</b> <b>2050: 2,300</b> Demand response transit service (metric tons) <b>2030: 354</b> <b>2040: 295</b> <b>2050: 118</b>



Mitigation Project Type	Metric (per 1,000 new VRH for local, per 1,000 new VRM for intercity)	Points per Metric in 2030	Points per Metric in 2040	Points per Metric in 2050	Total Emissions Reduction 2030	Total Emissions Reduction 2040	Total Emissions Reduction 2050
New/ increased fixed-route transit service	84	20	15	7	1,680	1,260	588
New/ increased fixed-route transit service - intercity	2,300	2	1	1	4,600	2,300	2,300
New/ increased demand-response bus service	59	6	5	2	354	295	118
Co-benefits	<i>Intercity</i>						
	Annual VMT reduced per 1,000 new VRM		New 1,000 VRM		Total VMT reduced/year		
	9,060		2,300		21,157,905		



*Local*

Annual VMT reduced per 1,000 new VRH	New 1,000 VRH	Total VMH reduced/year
89,700	84	7,534,800

*Demand response*

Annual VMT reduced per 1,000 new VRH	New 1,000 VRH	Total VMH reduced/year
11,884	59	1,687,509

*New/increased fixed-route transit service - intercity*

Pollutants Avoided	2030 (Estimated kg)	2040 (Estimated kg)	2050 (Estimated kg)
CO	47,079	21,412	7,386
NOx	462	219	78
PM 2.5	117	121	102
SO2	36	23	10
VOCs	951	586	273



<i>New/increased fixed-route transit service - local</i>			
Pollutants Avoided	2030 (Estimated kg)	2040 (Estimated kg)	2050 (Estimated kg)
CO	16,143	7,625	2,630
NOx	-	78	28
PM 2.5	21	43	36
SO2	12	8	4
VOCs	276	208.53	97.26
<i>New/increased demand response bus</i>			
Pollutants Avoided	2030 (Estimated kg)	2040 (Estimated kg)	2050 (Estimated kg)
CO	3,418	1,706	588
NOx	91	17	6
PM 2.5	9	9	8
SO2	3	2	1
VOCs	80	47	22



<p>Current Status</p>	<p>As of the end of 2021, some lines have exceeded service compared to pre-pandemic levels, as well as some additional lines are being accounted for which were not included in the original rural transit baseline. In total, 2021 service levels show only a 9.69% reduction compared to 2019 levels. Local routes have actually exceeded pre-pandemic service levels by 49%. Demand response lines show a 59.44% reduction compared to 2019, and intercity lines show a 27.32% service reduction.</p> <p>As of the end of 2021, the GHG Reductions accounted for are as follows (in Metric Tons):</p> <p>Local rural transit lines  <b>2030: 2,503</b>  <b>2040: 1,878</b>  <b>2050: 876</b></p> <p>Intercity rural transit lines  <b>2030: 3,343</b>  <b>2040: 1,672</b>  <b>2050: 1,672</b></p> <p>Demand response transit service  <b>2030: 143</b>  <b>2040: 119</b>  <b>2050: 48</b></p>
<p>Variables/ Concerns</p>	<p>Due to some service lines being ineligible for accounting, they had to be omitted; which slightly altered the original baseline for both the intercity and demand response lines.</p> <p>Vehicle Revenue Miles for 2021 show only a 4.37% reduction compared to 2019 and Total Vehicle Revenue Hours for 2021 show only a 2.59% reduction; including the surplus. However, the metrics used do not take into account the measurement of unlinked passenger trips, which has not rebounded in the same way. While the service levels have seemed to rebound quite significantly, the measure of 2021 unlinked</p>



**COLORADO**  
Department of Transportation

	<p>passenger trips is still 30.67% below 2019 levels. While it makes sense that services would rebound before passenger levels do, it will be important to assess whether passenger levels are able to be revived in 2022 or 2023. If not, the metrics for accounting progress for Rural Transit Mitigation may have to be reassessed.</p>
Benefits to Disproportionately Impacted Communities	<p>Rural transit recovery is a programmatic approach to GHG reductions, rather than project specific, and thus cannot currently be analyzed through the Transportation Equity Scorecard tool. It is worth noting that many of Colorado’s rural communities are made of census block groups that meet the definition of a DI Communities. Qualitatively, we can assume that this project will provide benefits to these communities in the form of increased access to opportunity, reduction in harmful pollutants, and increased mobility.</p>
Measure Origin and History	<p>The following rural transit agencies saw decreases in transit service operations due to the COVID-19 pandemic. These agencies also receive state and federal funding:</p> <ul style="list-style-type: none"> <li>- Bent County Transit, The Lift (City of Winter Park), ECO Transit (Eagle County), Gunnison Valley RTA, Mountain Express, Northeast Colorado Association of Local Governments (NECALG), RFTA, San Miguel Authority for Regional Transportation (SMART), SRDA, Southern Colorado Community Action Agency (SoCoCAA, based in Ignacio), Steamboat Springs Transit (SST), Summit Stage, Black Hawk &amp; Central City Tramway, Cripple Creek Transit, Durango Transit, Ride Glenwood Springs, La Junta, Envida, East Central Council of Local Governments, All Points Transit (Montrose), Prowers County, Summit Stage, Teller County, Canon City, Avon Transit, Mountain Village, Snowmass Village, Galloping Goose, Via Mobility Services, Wet Mountain Valley Rotary, Dolores County, South Central COG, and Montezuma County.</li> </ul>
Funding/ Resources/ Partnerships	<p>Rural transit agencies operations are funded primarily through FTA formula funds for rural areas (FTA 5311 and FTA 5310), and local funding sources. Rural capital projects are funded through FASTER, SB228, SB267, FTA 5304, 5310, 5311, and 5339 funds.</p>
Other Info As Needed	<p>N/A</p>





**Table A1-4.1: Built Environment**

Component	Description of information to be submitted with application.				
Measure Description	The parameters for this mitigation measure are set by PD 1610:				
	<b>Mitigation Measure</b>	<b>Metric</b>	<b>2030 Points/ Metric</b>	<b>2040 Points/ Metric</b>	<b>2050 Points/ Metric</b>
	Increase Residential Density	Per acre rezoned from <10 units/acre to at least 15-25 units/acre meeting "smart growth" criteria	22	13	6
	Increase Job Density	Per acre rezoned from <0.5 FAR to at least 1.0 FAR meeting "smart growth" criteria	18	11	5
	Mixed-use Transit-Oriented Development (higher intensity)	Per acre of area rezoned for mixed-use TOD accommodating at least 25 residential units/acre and 150 jobs/acre, within 1/2 mile of fixed-guideway transit station	49	28	13
	Mixed-use Transit-Oriented Development (moderate intensity)	Per acre of area rezoned for mixed-use TOD accommodating at least 15 residential units/acre and 100 jobs/acre, within 1/2 mile of high-frequency bus transit or fixed-guideway station	40	23	11
In order to be eligible, per PD 1610, a rezoning must meet a requirement for "smart growth". For the purposes of "Residential Density" rezonings, smart growth will be defined as infill growth within existing					



	<p>municipal boundaries. For the TOD categories, rezonings must be within ½ mile of an eligible transit station.</p> <p>It is important to note that these rezonings are wholly within the authority of the local government. Land use is an area where CDOT has no authority. Any rezonings that occur will be voluntary, and responsive to local policy, market, and demographic factors. Where local governments do have this vision, CDOT can be responsive, as it always has been, by providing infrastructure. CDOT's 10-Year Plan includes numerous strategic investments that are intended to complete the multimodal networks in partnership with local investments. These investments will create synergies that will not only increase the attractiveness of multimodal options, but provide the infrastructure necessary for successful high-density development in downtowns, neighborhood centers, and Transit-Oriented Developments (TODs). These investments include:</p> <ul style="list-style-type: none"> <li>• development of a network of Mobility Hubs (particularly along I-70 Bustang routes)</li> <li>• transit investments in Bustang, Pegasus, Outrider, and regional transit agency partners</li> <li>• first-last mile ped/bike connections through 10-year Plan projects</li> <li>• grant programs that build multimodal infrastructure (Revitalizing Main Streets, MMOV, etc)</li> </ul> <p>In order to track the rezonings that occur within communities where a CDOT multimodal project has assisted with making this more feasible, each year, CDOT will review zoning maps (which are public documents typically posted online) to identify any changes that have occurred within the "assistance areas" (defined below). CDOT will measure the acreage of these rezonings, and calculate the corresponding GHG reductions per the 1610 PD.</p>
<p>Timing</p>	<p>The investment changes will occur through a phased approach as set forth below. It is important to note that the planning for both rezonings (by local governments) and investments (by CDOT) take several years, and that the influence of CDOT's investments on rezonings was instigated with the adoption of the 2022 10-Year Plan. CDOT will calculate points annually on that basis, with 2022 as a starting point. The timing of construction of various improvements will be approximately as follows:</p>



	<p><b>Start date - 2022; Completion date - 2050</b></p> <ul style="list-style-type: none"> <li>• Investments in mobility hubs along I-70 and I-25.</li> <li>• Implement grant programs such as RMS to connect multimodal projects to dense housing.</li> <li>• Bustang, Outrider and Pegasus Expansion</li> </ul> <p>Annually:</p> <ul style="list-style-type: none"> <li>• Track rezoning in municipalities to track targets identified in table below</li> <li>• Adjust above policies and investment strategies as needed</li> <li>• Continue to be responsive to local entities on connecting transportation investments to housing programs and initiatives</li> </ul>																														
GHG Reductions	<p><b>2030: 136,720 Metric Tons</b> <b>2040: 231,095 Metric Tons</b> <b>2050: 122,940 Metric Tons</b></p> <p><b>2030 Mitigations</b></p> <table border="1"> <thead> <tr> <th>Mitigation Measure</th> <th>2030 Points/Metric</th> <th>Metric: acres of rezoning (goal)</th> <th>2030 total points</th> <th>total "assistance area" (acres) per type of rezoning for 43 largest non-MPO communities</th> <th>% of "assistance area" - projection for rezonings (acres)*</th> </tr> </thead> <tbody> <tr> <td>High-density Residential</td> <td>22</td> <td>3,585</td> <td>78,870</td> <td>143,379 (this equals average size of RRC municipal boundary)</td> <td>2.5%</td> </tr> <tr> <td>High density TOD</td> <td>49</td> <td>650</td> <td>31,850</td> <td>21,740 (this equals size of ½ mile of TOD)</td> <td>3.00%</td> </tr> <tr> <td>Medium density TOD</td> <td>40</td> <td>650</td> <td>26,000</td> <td>21,740 (this equals size of ½ mile of TOD)</td> <td>3.00%</td> </tr> <tr> <td colspan="2">TOTAL</td> <td>4,885</td> <td>136,720</td> <td></td> <td></td> </tr> </tbody> </table>	Mitigation Measure	2030 Points/Metric	Metric: acres of rezoning (goal)	2030 total points	total "assistance area" (acres) per type of rezoning for 43 largest non-MPO communities	% of "assistance area" - projection for rezonings (acres)*	High-density Residential	22	3,585	78,870	143,379 (this equals average size of RRC municipal boundary)	2.5%	High density TOD	49	650	31,850	21,740 (this equals size of ½ mile of TOD)	3.00%	Medium density TOD	40	650	26,000	21,740 (this equals size of ½ mile of TOD)	3.00%	TOTAL		4,885	136,720		
Mitigation Measure	2030 Points/Metric	Metric: acres of rezoning (goal)	2030 total points	total "assistance area" (acres) per type of rezoning for 43 largest non-MPO communities	% of "assistance area" - projection for rezonings (acres)*																										
High-density Residential	22	3,585	78,870	143,379 (this equals average size of RRC municipal boundary)	2.5%																										
High density TOD	49	650	31,850	21,740 (this equals size of ½ mile of TOD)	3.00%																										
Medium density TOD	40	650	26,000	21,740 (this equals size of ½ mile of TOD)	3.00%																										
TOTAL		4,885	136,720																												



\*Targets for acres of rezonings were set based on a projection for a percentage of the "assistance area" that would be rezoned by local governments; where feasibility has been increased by CDOT investments. The "assistance area" is the area adjacent to a CDOT project where a new multimodal infrastructure project may make rezoning more feasible.

- For "**High-Density Residential**", the assistance area is defined as the **municipal boundary**. The total area of larger non-MPO municipalities (43 municipalities above 5,000 pop.) is 143,379 acres. Staff projects that 2% of land within municipal boundaries will be rezoned to "High Density Residential" by 2030, which equals 2,865 acres.
- For the two "**TOD**" categories, the assistance area is defined as **½ mile radius around the transit station**. The total size of this area in larger non-MPO municipalities (43 total above 5,000 pop.) equals 21,740 acres. Staff projects that 3% of land within the ½ mile radius will be rezoned to each "TOD" category by 2030; equaling 650 acres each.

In PD 1610, increasing residential density and mixed-used Transit-Oriented Development (TOD) of moderate and higher intensity have a lifetime of 30 years. The rezonings that occur between present day and 2030 will have GHG impacts until 2050, and beyond in some cases. The 2040 and 2050 GHG points for the rezonings that occur before 2030 are calculated below, as well as the 2050 points for the new rezonings which occur between 2030 and 2040.

	2040 Points/Metric	2050 Points/Metric	Metric: acres of rezoning (goal)	2040 total points carried forward from 2030	2050 points carried forward from 2030	2050 points carried forward from 2040
High-density Residential	13	6	3,585	46,605	21,510	21,600
High density jobs	N/A	N/A	N/A	N/A	N/A	25,000
High density TOD	28	13	650	18,200	8,450	15,600
Medium density TOD	23	11	650	14,950	7,150	12,100



TOTAL	<b>79,755</b>	<b>37,110</b>	<b>74,300</b>
-------	---------------	---------------	---------------

To help achieve compliance with the 2040 and 2050 reduction levels, additional land use and built environment mitigations are needed after 2030.

2040 targets	points per acre	acres of rezoning (goal)	total points	total assistance area (acres)	% of influence area - goal for rezonings (additional acres)
High density Res	13	3,600	46,800	143,379	2.5%
High density jobs	11	5,000	55,000	143,379	3.5%
High density TOD	28	1,200	33,600	21,740	5.5%
medium density TOD	23	1,100	25,300	21,740	5%
<b>TOTAL</b>		<b>10,900</b>	<b>160,700</b>		

2050 targets	points per acre	acres of rezoning (goal)	total points	total assistance area (acres)	% of influence area - goal for rezonings (acres)
High-density Res	6	360	2,160	143,379	0.25%
High density jobs	5	360	1,800	143,379	0.25%
High density TOD	13	225	2,925	21,740	1%
medium density TOD	11	815	8,965	21,740	3.75%
<b>TOTAL</b>		<b>1,760</b>	<b>15,850</b>		



Co-benefits	High-density rezonings						
	Annual VMT reduced per metric	2030 Metric (rezoned acres)	2040 Metric	2050 Metric	2030 Annual VMT Reduced	2040 Annual VMT Reduced	2050 Annual VMT Reduced
	77,800	3,585	7,185	7,545	278,913,000	558,993,000	587,001,000
	High density TOD						
	Annual VMT reduced per metric	2030 Metric (rezoned acres)	2040 Metric	2050 Metric	2030 Annual VMT Reduced	2040 Annual VMT Reduced	2050 Annual VMT Reduced
	174,706	650	1,850	2,075	113,558,900	323,206,100	362,514,950
	Medium density TOD						
	Annual VMT reduced per metric	2030 Metric (rezoned acres)	2040 Metric	2050 Metric	2030 Annual VMT Reduced	2040 Annual VMT Reduced	2050 Annual VMT Reduced
	109,269	650	1,750	2,565	71,024,850	191,220,750	280,274,985
	<i>Increase job density</i>						
Annual VMT reduced per metric	2040 Metric (rezoned acres)	2050 Metric	2040 Annual VMT Reduced	2050 Annual VMT Reduced			
64,525	5,000	5,360	322,625,000	345,854,000			



Pollutants Avoided	Estimated Kg avoided annually 2030 - High-density rezonings	Estimated Kg avoided annually 2030 - High-density TOD	Estimated Kg avoided annually 2030 - Medium-density TOD
CO	633,199	257,864	210,068
NOx	17,372	7,075	5,763
PM 2.5	1,810	737	601
SO2	493	201	164
VOCs	13,160	5,359	4,366

Pollutants Avoided	Estimated Kg avoided annually 2040 - High-density rezonings	Estimated Kg avoided annually 2040 - Increase job density	Estimated Kg avoided annually 2040 - High-density TOD	Estimated Kg avoided annually 2040 - Medium-density TOD
CO	565,563	326,574	327,079	252,051
NOx	2,883	3,337	3,342	2,575
PM 2.5	1,598	1,849	1,852	1,427
SO2	303	350	351	270



	VOCs	7,717	8,931	8,945	6,893
	<b>Pollutants Avoided</b>	<b>Estimated Kg avoided annually 2050 - High-density rezonings</b>	<b>Estimated Kg avoided annually 2040 - Increase job density</b>	<b>Estimated Kg avoided annually 2050 - High-density TOD</b>	<b>Estimated Kg avoided annually 2050 - medium-density TOD</b>
	CO	97,346	120,768	126,554	127,442
	NOx	1,025	1,272	1,333	1,342
	PM 2.5	1,338	1,660	1,739	1,752
	SO2	133	165	173	175
	VOCs	3,599	4,465	4,679	4,712
Current Status	As of November 2022, a baseline for all significant non-MPO communities has been established. From this point, these communities will be reassessed on a periodic basis to evaluate land use changes, and therefore, mitigation metrics.				
Variables/ Concerns	Zoning and subdivision regulations fall under the authority of local governments. Therefore, CDOT does not have the oversight to enforce any kind of regulation associated with land use. If communities chose to not pursue rezonings, this will equate to no increase in mitigation metrics.				





Benefits to Disproportionately Impacted Communities	This mitigation is a programmatic approach to GHG reductions, rather than project specific, and thus cannot currently be analyzed through the Transportation Equity Scorecard tool.
Measure Origin and History	CDOT recognizes rezoning authority rests with local entities and recognizes that transportation facilities play a significant role in the feasibility of the built environment. In order to maximize the benefits associated with state transit and multimodal investments, CDOT has developed opportunities to support rezonings through infrastructure programs that provide multimodal investments. This process began in 2021 when CDOT initiated a series of new programs including the Revitalizing Main Streets and Safer Main Streets Programs; aiming to better link transportation investments to job and housing opportunities. Additionally, CDOT committed to record levels of investment in rural transit in 2022; through mobility hubs and expanded Bustang service.
Funding/ Resources/ Partnerships	Funding Sources: While the rezonings that will be used as a measure will not be directly funded by CDOT, SB21-260, SB22-180, and 10-Year Plan Strategic funds will be used to fund the transportation programs, projects, and grants that seek to encourage and support such built environment changes. Partnerships: Municipalities, Counties, and other state agencies such as DOLA and CEO.
Other Info As Needed	N/A



**Table A1-5.1: Electric transit buses**

Component	Description of information to be submitted with application.			
Measure Description	The replacement of diesel transit buses with electric transit buses in non-MPO areas.			
Timing	Between January 2020 and July 2022, 11 electric transit buses have become operational in Eagle County, Summit County, Estes Park, and Vail. Between present day and 2030, 15 additional electric transit buses will become operational.			
GHG Reductions	<b>2030: 2125 Metric Tons</b>			
	<b>Mitigation Project Type</b>	<b>Metric (per new vehicle)</b>	<b>Points per Metric</b>	<b>Total</b>
	Replace diesel transit buses with battery-electric buses	31	85	2,635
Co-benefits	<b>Pollutants Avoided</b>		<b>Estimated Kg avoided annually (2030)</b>	
	CO		3,420	
	NOx		3,656	
	PM 2.5		90	
	SO2		5	



	VOCs	246
Current Status	Since the previous update, no new electric transit vehicles are eligible for credit. However, a total of 15 vehicles are currently awarded or on-order; which should become operational in the coming years.	
Variables/ Concerns	While 8 new electric transit vehicles became operational since the previous update, they all operate within MPO areas - which exclude them for credit under the MAP. A total of 43 electric transit vehicles are currently on order or awarded state-wide. However, only 15 of these will be able to be credited in the MAP; due to operating outside MPO boundaries.	
Benefits to Disproportionately Impacted Communities	CDOT staff will need to collect additional data to provide an equity score for these diesel replacements. However, some of these transit agencies operate in census blocks that meet the definition of Disproportionately Impacted Community. The replacement of diesel transit buses reduce GHG emissions through the elimination of tailpipe emissions, thus one can expect a decrease in co-pollutants in the areas these transit vehicles operate. Estimated co-pollutant reductions are reported in the co-benefits section.	
Measure Origin and History	The CDOT Division of Transit & Rail (DTR) has helped to support the regular replacement of transit vehicles reaching the end of their service life with new transit vehicles (including hybrid and zero-emission models) for many years. In 2018, Colorado adopted its state Beneficiary Mitigation Plan (BMP) for the approximate \$68.7 million allocation of the national Volkswagen Diesel Emission Settlement, which dedicated \$30.6 million in the state's funding for the Settlement Program transit bus replacement grants. Settlement Program grants can fund up to 110% of the incremental cost of replacing an existing diesel vehicle with a zero-emission alternative. Since 2019, more than \$21 million of the original amount has been awarded. This funding compliments direct FTA grants for zero-emission vehicles, such as FTA 5339(b) ad 5339(c), and will be further supplemented by the new grant programs created by the Clean Transit Enterprise (CTE) in 2022 and beyond.	



Funding/ Resources/ Partnerships	Current and future planned battery electric buses in non-MPO areas:				
	Location	Operational	Awarded	Procured/Bus Build	Funding
	Eagle County	3	2		Settlement Program, 5339(b), and 5339(c)
	Summit County	3	3	1	Settlement Program, 5339(a), and 5339(c)
	Avon	2			5339(c)
	Breckenridge	2	1		Settlement Program, 5339(c)
	Estes Park	1	1		5339(b) and 5339(c)
	Vail	4	2	6	Local funds, VW settlement, and 5339(c)
Other Info As Needed	n/a				



**Table A1-6.1 - Roundabouts in the Updated 10 Year Plan**

Component	Description of information to be submitted with application.																		
Measure Description	The following roundabouts were updated in the 10 Year Plan, occurring entirely in Region 4: <ul style="list-style-type: none"> <li>• US 36 and Community Drive</li> <li>• CO 52/CR 59 Roundabout and Safety Improvements</li> <li>• CO 1 Safety Improvements</li> </ul>																		
Timing	The three roundabouts are all prioritized for funding as indicated below: <table border="1"> <thead> <tr> <th>Project</th> <th>Year Funded</th> </tr> </thead> <tbody> <tr> <td>US 36 and Community Drive roundabout</td> <td>FY 23-26</td> </tr> <tr> <td>CO 52/CR 59 Roundabout and Safety Improvements</td> <td>FY 23-26</td> </tr> <tr> <td>CO 1 Safety Improvements</td> <td>FY 23-26</td> </tr> </tbody> </table>	Project	Year Funded	US 36 and Community Drive roundabout	FY 23-26	CO 52/CR 59 Roundabout and Safety Improvements	FY 23-26	CO 1 Safety Improvements	FY 23-26										
Project	Year Funded																		
US 36 and Community Drive roundabout	FY 23-26																		
CO 52/CR 59 Roundabout and Safety Improvements	FY 23-26																		
CO 1 Safety Improvements	FY 23-26																		
GHG Reductions	<b>2030: 336 Metric Tons</b> <table border="1"> <thead> <tr> <th>Project Name</th> <th>AADT</th> <th># of roundabouts</th> <th>Points per Metric 2030</th> <th>Points per Metric 2040</th> <th>Points per Metric 2050</th> </tr> </thead> <tbody> <tr> <td>US 36 and Community Drive</td> <td>7,500</td> <td>1</td> <td>155</td> <td>91</td> <td>38</td> </tr> <tr> <td>CO 52/CR 59 Roundabout and Safety Improvements</td> <td>3,000</td> <td>1</td> <td>62</td> <td>36</td> <td>15</td> </tr> </tbody> </table>	Project Name	AADT	# of roundabouts	Points per Metric 2030	Points per Metric 2040	Points per Metric 2050	US 36 and Community Drive	7,500	1	155	91	38	CO 52/CR 59 Roundabout and Safety Improvements	3,000	1	62	36	15
Project Name	AADT	# of roundabouts	Points per Metric 2030	Points per Metric 2040	Points per Metric 2050														
US 36 and Community Drive	7,500	1	155	91	38														
CO 52/CR 59 Roundabout and Safety Improvements	3,000	1	62	36	15														



	<table border="1"> <tr> <td>CO 1 Safety Improvements</td> <td>5,800</td> <td>1</td> <td>119</td> <td>70</td> <td>29</td> </tr> <tr> <td>TOTAL</td> <td></td> <td></td> <td>336</td> <td>197</td> <td>82</td> </tr> </table>	CO 1 Safety Improvements	5,800	1	119	70	29	TOTAL			336	197	82
CO 1 Safety Improvements	5,800	1	119	70	29								
TOTAL			336	197	82								
Co-benefits	<p>Roundabouts do not typically provide reduced VMT benefits, rather their GHG savings come from the more efficient flow of traffic through an intersection.</p> <p>Calculating the co-pollution emission benefits of roundabouts is an area that will need further analysis, as the benefits would not be based on VMT reduction. It is likely that project level traffic simulation modeling would be a helpful tool to determine the co-pollutant reduction benefits of these projects.</p>												
Current Status	As of the beginning of 2023, all three of the roundabout projects are still within pre-construction stages.												
Variables/ Concerns	N/A												
Benefits to Disproportionately Impacted Communities	The planned improvements along CO 1 and US 36 and Community Drive do not occur within an Disproportionately Impacted Community, thus receiving a score of 0. The CO 52/CR 59 Roundabout and Safety Improvements project has an equity benefits score of 2. The project serves a census block group which meets the definition of a DI Community, with 40.96% of residents qualifying as low income. This project improves livability through improving air quality through the reduction of pollutants and improving safety in a non-high crash location.												
Measure Origin and History	While the safety and mobility benefits of roundabouts have been widely accepted in the transportation sector, CDOT began to explore how roundabouts have the potential to lower emissions while developing the GHG rule in 2021. Through extensive analysis, CDOT has established that in addition to the extensive set of safety and mobility benefits, roundabouts also go a long way towards reducing emissions. As such, CDOT has updated its 10 year plan to include more roundabouts for improved safety, mobility, and air quality.												



**COLORADO**  
 Department of Transportation

Funding/ Resources/ Partnerships	Project Name	Region	Total Project Cost	Strategic Funding Secured
	US 36 and Community Drive	Region 4	\$5 million	\$550,000
	CO 52/CR 59 Roundabout and Safety Improvements	Region 4	\$12 million	\$7,600,000
	CO 1 Safety Improvements	Region 4	\$6 million	\$4,000,000
Other Info As Needed	The statewide model is not currently able to differentiate roundabout traffic movements (merging, weaving, yielding) from those of more conventional at-grade intersections.			

# DRCOG 2023 Greenhouse Gas Mitigation Action Plan Report

March 30, 2023

## Introduction

DRCOG has prepared this 2023 Greenhouse Gas Mitigation Action Plan Report to comply with the requirements of the [Greenhouse Gas \(GHG\) Transportation Planning Standard](#) (known as the GHG rule) adopted by the Colorado Transportation Commission in December 2021. Because DRCOG prepared a Mitigation Action Plan in 2022 as part of its strategy framework to comply with the GHG rule, the rule requires annual reports addressing the implementation status of the Mitigation Action Plan. The Colorado Department of Transportation’s (CDOT) [Policy Directive 1610](#) specifies the following information to include in the annual GHG Mitigation Action Plan Report for each mitigation measure:

- The implementation timelines;
- The current status;
- For measures that are in progress or completed, quantification of the annual benefit of such measures;
- For measures that are delayed, canceled, or substituted, an explanation of why that decision was made and, how these measures or the equivalent will be achieved, and
- For measures located in a Disproportionately Impacted Community that are delayed, canceled, or substituted, an explanation of why that decision was made and, how these measures or the equivalent will still be achieved in Disproportionately Impacted Communities

## Summary of DRCOG Mitigation Action Plan Measures

The GHG rule provides for preparing a Mitigation Action Plan (MAP) as a final step to close the remaining gap in meeting the rule’s required reduction levels. Through its [Greenhouse Gas Transportation Report](#), DRCOG determined a MAP is needed for the 2030, 2040, and 2050 analysis compliance years (but not for 2025), as shown in Table 1:

**TABLE 1. GREENHOUSE GAS EMISSION REDUCTION RESULTS, MILLION METRIC TONS PER YEAR**

	2025	2030	2040	2050
<b>2050 RTP update modeling</b> (Network updates, programmatic funding and observed data)	0.68	0.68	0.57	0.35
<b>Additional programmatic transportation investments</b> (Active transportation, complete street retrofits, signal timing and CDOT Bustang)	N/A	0.07	0.05	0.03
<b>Mitigation Action Plan</b> (Commitment to further action in Appendix A)	N/A	0.10	0.12	0.08
<b>Total greenhouse gas reductions</b>	<b>0.68</b>	<b>0.85</b>	<b>0.74</b>	<b>0.46</b>
<b>Reduction level requirement from Table 1 of the greenhouse gas rule</b> (2 CCR 601-22, Section 8.02.6)	<b>0.27</b>	<b>0.82</b>	<b>0.63</b>	<b>0.37</b>
<b>Reduction level achieved</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>



The MAP details the region’s approach to using mitigation measures to help achieve the GHG reduction levels required for the DRCOG MPO area for 2030, 2040, and 2050. DRCOG’s mitigation measures are regional, policy-based, and represent the sum of potential local actions related to:

- increasing residential and employment densities
- mixed-use transit-oriented development
- reducing or eliminating minimum parking requirements while also setting maximum levels
- adopting local complete streets standards

Table 2 shows the GHG emission reductions associated with the MAP mitigation measures for each measure and each analysis year:

**TABLE 2. GREENHOUSE GAS EMISSIONS REDUCTIONS FROM MITIGATION ACTION PLAN STRATEGIES**

Mitigation Measure		Greenhouse gas reduction (metric tons)		
		2030	2040	2050
Land use strategies	Increase residential density from <10 units/acre to at least 15 to 25 units/acre	13,548	16,011	10,557
	Increase job density from <0.5 floor area ratio to at least 1.0 floor area ratio	2,309	2,822	1,833
	Mixed-use transit-oriented development higher intensity: Area rezoned for mixed-use transit-oriented development at least 25 units/acre and 150 jobs/acre	8,588	9,814	6,510
	Mixed-use transit-oriented development moderate intensity: Area rezoned for mixed-use transit-oriented development at least 15 units/acre and 100 jobs/acre	18,397	21,157	14,455
Parking strategies	Reduce or eliminate minimum parking requirements and set low maximum levels (residential)	37,750	43,795	29,573
	Reduce or eliminate minimum parking requirements and set moderate maximum levels (residential)	18,332	21,281	14,347
	Reduce or eliminate minimum parking requirements and set maximum levels (commercial)	4,373	3,940	3,511
Adopt local Complete Streets standards		369	243	44
<b>Grand total</b>		<b>103,666</b>	<b>119,063</b>	<b>80,829</b>

At the local government level, mitigation measures are voluntary, and the MAP does not require local jurisdictions to implement any mitigation measure in any specific location or within any specific timeframe. However, the mitigation measures were specifically chosen to build on the Denver region’s foundation of integrated transportation-land use planning, particularly around the region’s existing and planned rapid transit system and urban centers.

**Tracking Mitigation Measures Implementation**

DRCOG is integrating the tracking of mitigation measure implementation into existing workflows as much as possible. The anticipated tracking plan is outlined below, with details related to the land use strategies, parking strategies, and complete streets policies shown separately where needed.

### ***Local government outreach***

DRCOG staff develop and maintain relationships with local government planners to understand, anticipate and coordinate local and regional growth priorities. The need for these relationships and this understanding is connected to several official roles DRCOG fulfills:

- as part of the regional transportation planning process required of all **metropolitan planning organizations** to promote consistency between transportation investments and local planned growth, housing, and economic development patterns,
- to update and help local governments implement Metro Vision, the region’s plan for its physical development DRCOG prepares as a **regional planning commission**, and
- because local governments are voluntary members of DRCOG as an **association of local governments**.

With many changes to local government operations and staff turnover throughout the COVID-19 pandemic, DRCOG staff have initiated an effort in 2023 to regularly visit local government planning offices. While the new framework being piloted for these visits allows the local governments to tailor this collaboration, it also provides the opportunity for DRCOG staff to identify when local governments are updating local plans, zoning codes (i.e. local zoning text amendments), parking standards, or Complete Streets standards to assess potential applicability to the MAP.

### ***Land use strategies tracking***

As a part of the regional transportation planning process, DRCOG maintains a portfolio of regionally comprehensive datasets for use in allocating county-level household and job growth forecasts across over 2,800 transportation analysis zones. DRCOG refers to this as its small-area forecast. DRCOG relies on a predictive model, the UrbanSim block model, to simulate household and employment location choices within the natural and regulatory constraints of each block. This work connects to the land use strategies in the MAP because of the work DRCOG does to represent regulatory constraints within this modeling framework. DRCOG staff estimate local zoning district capacity of approximately 2,000 unique districts. Relevant portions of this process are described below, and are further detailed in [Appendix F](#) of the [2050 Metro Vision Regional Transportation Plan](#).

Early every calendar year, DRCOG staff collect geospatial data from local governments, harvesting it from public geographic information systems (GIS) data portals and through direct requests. These include addresses, parcels, open space, bicycle facilities/trails, municipal boundaries, special district boundaries, bicycle counts and, most important to the work above, zoning. Attributes in zoning data do not include allowable densities. Consistently, this zoning data only includes district name and a shorthand notation.

While DRCOG has year-over-year data on local zoning maps, staff only have the resources to estimate capacity if the agency is anticipating the need for a new small-area forecast – updated every four years at minimum during the cycle for developing a new regional transportation plan. DRCOG staff first eliminates significant overlap in the local zoning file, then adds in several datasets: natural constraints (e.g. floodplain, waterbodies), protected ownership (e.g. schools, rights-of-way, protected open space). DRCOG then uses observable, point-level housing and employment data it licenses, collects and compiles from a variety of sources to understand the range of densities currently observed in different blocks throughout these different zoning districts.

This observation-based approach to estimating zoning capacity has limited ability to capture new or novel zoning that represents greater future densities than can be observed today. DRCOG staff currently rely on local government planning staff feedback on a draft small-area forecast to identify where capacity overrides may be necessary in the modeling process. Staff are exploring different partnerships or other opportunities that could provide additional resources to translate different dimensional standards, allowed uses, and allowed building forms into the housing unit and employment per acre metrics of the mitigation measures – potentially following the scope and schema of the National Zoning Atlas ([www.zoningatlas.org](http://www.zoningatlas.org)).

DRCOG staff are also considering the development of methods to track year-over-year change even without re-estimation of capacity to track the role of local zoning map amendments (i.e. rezonings, annexation). This may involve the use of a hexagonal geospatial indexing system, which would allow DRCOG to evaluate regulatory capacity alongside current development levels of housing units and employment, as well as projected levels in the small-area forecast. Importantly, this could also allow for DRCOG to:

1. evaluate changes from the baseline small-area forecast used in the development of DRCOG’s GHG baseline forecast in terms of both increased capacity and observed development,
2. evaluate success by looking at these areas in terms of vehicle miles traveled (VMT) per household or job as estimated by DRCOG’s activity-based travel demand model, Focus, to understand how both capacity and development are changing in areas that may be more location-efficient, and
3. target future outreach and implementation assistance efforts in areas that offer greater opportunities for success in terms of emissions reductions and MAP compliance.

To supplement this further, DRCOG may test the feasibility of creating a workflow that relies on local interagency referral processes to track zoning map amendments, and possibly even zoning text amendments and changes to parking standards. This process feasibility assessment is anticipated to be included in DRCOG’s FY 2024 and FY 2025 Unified Planning Work Program. The main limiting factor will continue to be staffing and financial constraints to routinely be able to conduct this breadth and depth of work.

#### ***Parking strategies tracking***

DRCOG staff are currently identifying baselining activities related to parking standards for potential inclusion in the FY 2024 and FY 2025 Unified Planning Work Program. The primary purpose of this work will be to help with outreach and implementation assistance efforts, and may also help develop a community of practice around parking standards, which will help staff track the adoption of new parking standards that implement these strategies from the MAP. This work and community of practice will be integrated with current parking-related efforts being developed in DRCOG’s [Transportation Demand Management Strategic Plan](#) to the maximum extent possible.

#### ***Complete Streets standards tracking***

DRCOG adopted a [Regional Complete Streets Toolkit](#) in 2021. Development of the toolkit required collaboration with a wide range of stakeholders, including local governments, giving DRCOG a strong baseline understanding of the state of Complete Streets standards in the region, as well as the relationships needed to track implementation into the future. DRCOG staff is exploring a process to periodically survey local governments (as part of the local government described above, or separately)

to understand and update the status of jurisdictions developing and adopting local Complete Streets standards. The other important aspect is how Complete Streets standards are used to inform the design and implementation of transportation investments, particularly roadway projects. As provided for in the Bipartisan Infrastructure Law, DRCOG has developed a Complete Streets prioritization toolkit that synthesizes data layers from multiple DRCOG plans and datasets to graphically illustrate locations and street segments in the region that score highest for multimodal project investments. The Toolkit is intended to assist local governments and other project sponsors in developing multimodal projects for funding through DRCOG’s Transportation Improvement Program as well as locally funded projects. Accordingly, DRCOG staff will also be working with local governments over time to track not just the status of adopting Complete Streets standards, but their application to multimodal project design and implementation, which is one of the mitigation measures in the MAP.

**MAP Measures Implementation Timeline**

Since this first annual MAP Report is required only six months after DRCOG Board adoption of the MAP (as part of the updated 2050 Metro Vision Regional Transportation Plan) in September 2022, there is not yet meaningful implementation progress to report. Instead, this 2023 report focuses on exploring a potential framework for tracking MAP measures over time.

Tables 3 through 6 illustrate an anticipated implementation timeline that makes increasing progress towards the first required horizon year (2030) for the land use strategies, as outreach and implementation assistance activities are resourced and developed over time.

**TABLE 3. LAND USE STRATEGIES ANTICIPATED CUMULATIVE IMPLEMENTATION, ACRES REZONED**

	2022	2024	2026	2028	2030
Increase residential density	-	31	154	339	616
Increase job density	-	6	32	70	128
Mixed-use transit-oriented development: moderate intensity	-	23	115	253	460
Mixed-use transit-oriented development: higher intensity	-	9	44	96	175

**TABLE 4. RESIDENTIAL PARKING STRATEGIES ANTICIPATED CUMULATIVE IMPLEMENTATION, DWELLING UNITS ALLOWED**

		2022	2024	2026	2028	2030
Eliminate minimum and set low maximum parking levels	urban core	-	676	3,382	7,439	13,526
	urban	-	609	3,043	6,695	12,173
	suburban	-	150	752	1,653	3,006
Eliminate minimum and set moderate maximum parking levels	urban core	-	847	4,233	9,313	16,933
	urban	-	391	1,954	4,298	7,815
	suburban	-	163	814	1,791	3,256

**TABLE 5. COMMERCIAL PARKING STRATEGIES ANTICIPATED CUMULATIVE IMPLEMENTATION, 10,000 SQUARE FEET OF FLOOR AREA**

		2022	2024	2026	2028	2030
Reduce or eliminate minimum and set maximum parking level	maximum two-and-a-half spaces per 1,000 square feet	-	31	153	337	613
	maximum two spaces per 1,000 square feet	-	4	18	39	70
	maximum one-and-a-half spaces per 1,000 square feet	-	9	43	94	170
	maximum one space per 1,000 square feet	-	9	43	94	170

**TABLE 6. LOCAL COMPLETE STREETS ANTICIPATED CUMULATIVE IMPLEMENTATION, MILES**

	2022	2024	2026	2028	2030
Adopt local complete streets standards: urban	-	1	3	7	14
Adopt local complete streets standards: suburban	-	2	8	17	32

These timelines are dependent on resources for outreach and implementation assistance that have yet to be integrated into the forthcoming FY 2024 and FY 2025 Unified Planning Work Program. They also rely on the interest, capacity, priorities, and actions of local governments to ultimately implement.

***Mitigation Action Plan fulfillment***

As noted previously, DRCOG is currently developing its FY 2024 and FY 2025 Unified Planning Work Program. In addition to the potential identification of tasks and resources to facilitate tracking mitigation measure implementation, this work program can also identify tasks and resources to allow for outreach and implementation assistance, as all mitigation measures identified in DRCOG’s MAP are dependent on direct action by local governments to implement.

Initial draft ideas DRCOG staff are exploring include:

- a parking utilization study of different cases throughout the region to allow decision makers to calibrate parking standards, as stakeholder engagement and education alone may not be sufficient to change local policy,
- a parking-related cohort or workshop series to help create a community of practice for local governments seeking to eliminate parking minima and establish maxima in the region,
- an inventory of local parking minimum and maximum standards, as well as other parking policies so that decision makers can see how their standards compare to other local governments while also developing a baseline understanding of local parking policies,
- local government outreach and engagement specifically on local growth priorities and a potential role for new or expanded urban centers to be designated through Metro Vision,
- developing greater analysis and technical assistance capabilities to assist local governments with small-area planning,
- developing a housing-transportation coordination plan, and
- a zoning-related cohort or workshop series to help local governments identify opportunities for greater density or intensity or development.

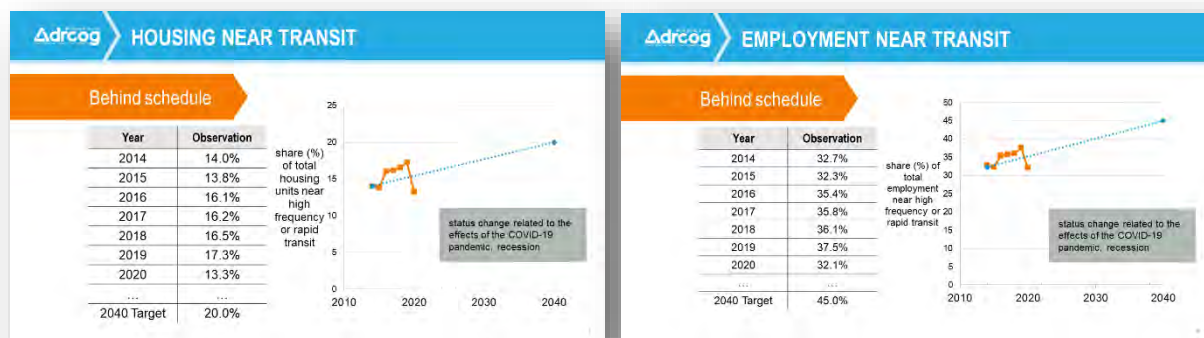
DRCOG staff are also identifying opportunities for outreach and implementation assistance within its existing Unified Planning Work Program and Transportation Improvement Program policy, such as:

- a Metro Vision Idea Exchange panel on setting parking maxima on March 30, 2023, featuring speakers from other local governments in the region;
- ad hoc opportunities under the stakeholder engagement activity to have DRCOG staff meet directly with local government staff to discuss potential parking and zoning changes;
- a pilot program focusing on the land use-transportation connection that is connecting three local governments to technical assistance support near different station areas;
- a pilot program focusing on corridor planning assistance, that will likely include important land use considerations, and
- the development of new set-asides to sustain both the corridor and land-use transportation connection (livable centers) pilots noted above.

**Mitigation Action Plan success**

All mitigation measures contained in DRCOG’s MAP are dependent on direct action by local governments to implement. Because the mitigation measures are qualitative, policy-based, and local government-driven – not project- or service-based – tracking their implementation is more difficult, as is measuring success over time. However, DRCOG maintains a wide array of data as part of the regional transportation planning process that can be leveraged in the future.

First, historical and current point-level housing unit and employment data can identify locations of new, observable development and increased densification. Second, several license-restricted data sources DRCOG utilizes can help identify near-term future developments. Third, household vehicle miles traveled (VMT) estimates from its travel model, Focus, can help DRCOG understand the relative location-efficiency of these different places. In conjunction with robust statistical regression techniques, these estimates allow DRCOG staff to identify areas in the Denver region that are conducive to lower VMT per household while controlling for confounding, non-place-based factors. Such VMT estimates are directly related to greenhouse gas emissions. Using these data sources, DRCOG staff can seek to estimate VMT for the recent and near-term development and compare against a counterfactual consistent with development levels used to create DRCOG’s Greenhouse Gas Transportation Report and MAP as part of the 2050 Metro Vision Regional Transportation Plan.



Tracking development in this manner better fits DRCOG’s existing workflows than tracking local policy change, while also providing a metric that may be a more direct assessment of MAP success with its

estimate of vehicle travel and actual development. Examples of how DRCOG uses this type of performance measurement for its [Metro Vision Plan](#) are shown below for reference.

### **Adjusting Mitigation Measures**

Because DRCOG does not need mitigation measures for compliance purposes until the 2030 analysis year, the MAP is meant to be dynamic. As DRCOG begins to track and assess the implementation and effectiveness of the MAP's current mitigation measures, it may adjust the MAP to incorporate more or less of certain existing measures; measures may also be removed or added as needed. If and when DRCOG makes changes to its MAP mitigation measures, it will provide an explanation in the applicable MAP annual report of why those decisions were made and whether or how achievement of the mitigation measures would be affected.

### **Mitigation Measures and Disproportionally Impacted Communities**

CDOT's Policy Directive 1610 defines a disproportionately impacted community as "a community that is in a census block group...where the proportion of households that are low income is greater than 40%, the proportion of households that identify as minority is greater than 40%, or the proportion of households that are housing cost-burdened is greater than 40%."

Because DRCOG's MAP mitigation measures are policy-based and not project- or location-based, they are not directly subject to the Disproportionally Impacted Communities provisions of the GHG rule or PD 1610. Even so, this is a critically important topic to DRCOG in its MAP and GHG work. DRCOG's MAP included an analysis of the mitigation measures by mapping the disproportionately impacted community geographies within the DRCOG metropolitan planning organization area. Then, staff used GIS to compare the spatial overlaps between the conceptual mitigation measure analysis geographies that DRCOG staff used for analysis purposes with the disproportionately impacted community geographies to illustrate where both geographies overlap.

As this analysis showed in the MAP, there is meaningful overlap between the two geographies. Because the mitigation measure analysis geographies are anchored around rail stations, future bus rapid transit corridors, urban centers, and pedestrian focus areas, the policy changes associated with the land use and parking mitigation measures can provide disproportionately impacted community benefits not just at specific locations — such as adjacent to a rail station — but through access to the rail network across the region. For example, increased residential densities in transit-efficient locations can lead to reduced total housing and transportation costs. Similarly, increased job densities in transit-efficient locations can increase accessible job opportunities for people with less access to private vehicles. In these ways, encouraging integrated land use and transportation planning through the mitigation measures provides potential disproportionately impacted community benefits at both the specific location level and the network or system level.

Of course, some policy changes associated with land use and parking mitigation may lead to displacement of current residents and existing market-rate affordable housing units. Additionally, because the mitigation measures are voluntary and not location-constrained, there is also flexibility to implement them over time where and when they are most effective and needed, including to maximize disproportionately impacted community benefits.

Additionally, DRCOG has been undertaking a four-phase equity analysis project to improve the agency's environmental justice and equity analyses for transportation plans, projects and programs. While this

work will be completed later in 2023, DRCOG is committed to applying lessons learned, tools, data, and other outcomes from the equity project as applicable to its MAP and mitigation measures implementation activities.

### **Conclusion**

This 2023 Greenhouse Gas Mitigation Action Plan Report is the first annual report required by the Transportation Commission's Greenhouse Gas Transportation Planning Standard. This report is required to address the implementation of DRCOG's Mitigation Action Plan prepared as part of its updated 2050 Metro Vision Regional Transportation Plan adopted by the DRCOG Board in September 2022. This initial report, due six months after plan adoption, focuses on exploring a framework for tracking, measuring, and assessing the implementation over time of the mitigation measures contained in the Mitigation Action Plan. Through the required annual reporting process, DRCOG will build on this initial framework to work in partnership with its local governments to optimize the greenhouse gas reductions through the mitigation measures in the Mitigation Action Plan.





MEMORANDUM

TO: THE TRANSPORTATION COMMISSION  
FROM: KEITH STEFANIK, CHIEF ENGINEER  
DATE: JUNE 14, 2023  
SUBJECT: UPDATE FOR \$25M ALLOCATION FOR CRITICAL PAVEMENT CONDITIONS

Purpose

On April 20, 2023, the Transportation Commission (TC) passed Resolution #TC-2023-04-10 which reallocated \$25,000,000 from the TC Program Reserve Fund in the Commission Reserve Funds line to Surface Treatment for projects to address critical pavement conditions statewide resulting from severe winter weather conditions. The Resolution also required the Department to report back to the TC detailing what projects/corridors and delivery methods were prioritized to receive this critical funding.

Action

No action is requested or required at this time. Please see below for a copy of the CDOT press release that was distributed on May 30, 2023, and includes details regarding the projected distribution of those funds.

***CDOT invests additional pavement funds to upgrade road conditions in 12 locations***

*STATEWIDE – The Colorado Department of Transportation is investing additional funds received last month to address road conditions after one of the most intense winters in recent decades damaged some roads beyond what they normally sustain each year. Twelve stretches of roadway across the state have been identified, and preparations are now underway to make repairs as soon as possible. More than \$17.6 million in funding has been distributed to two emergency projects, and \$7.4 million is being managed by CDOT's Division of Maintenance and Operations to reimburse local maintenance teams that either perform roadwork or oversee contracted projects. Weather conditions across the state have finally warmed enough that permanent repairs can be made to roads.*

*Two large stretches of mountain highways will receive extensive work under emergency contracts with private construction contractors. US Highway 40 on the north side of Berthoud Pass, near Winter Park, has experienced badly deteriorating conditions since mid-winter and maintenance crews have spent weeks making temporary fixes during the seasonal freeze-thaw cycles. A stretch of Interstate 70 from just east of the Eisenhower-Johnson Memorial Tunnels will also receive pavement resurfacing. This new stretch of road will connect to a project that was already planned near Georgetown and Silver Plume.*

*Ten additional sections of roadways will receive funding for projects that CDOT maintenance staff will oversee. As work scopes and cost estimates continue to be refined, the Department will determine*



whether maintenance staff can perform the work directly in accordance with state law or whether projects will be contracted to private construction firms and overseen by maintenance supervisors.

All of this work and the \$25 million investment supporting it will allow CDOT to address urgent pavement condition issues without having to delay any planned projects or maintenance work scheduled for the coming months. Winter operations have only recently wound down in high country locations, and maintenance and construction activities are set to continue through the summer at near-record levels.

<i>Route</i>	<i>Begin/End Mile Points</i>	<i>Delivery Method</i>
<i>US 40</i>	<i>MP 233 - 243 (Berthoud Pass)</i>	<i>Contracted construction project</i>
<i>I-70</i>	<i>MP 215.7 - 223 (Eisenhower Tunnel to Georgetown)</i>	<i>Contracted construction project</i>
<i>I-70</i>	<i>MP 190 - 203 (east side of Vail Pass to Frisco)</i>	<i>Contracted construction project - maintenance managed</i>
<i>I-76</i>	<i>MP 2.25 - 2.85 (Eastbound only, in Denver)</i>	<i>On-call contract</i>
<i>US 50</i>	<i>MP 433 - 434 (north of Lamar)</i>	<i>Maintenance Staff</i>
<i>CO 151</i>	<i>MP 27 - 27.8 (east of Ignacio)</i>	<i>Maintenance Staff</i>
<i>I-70</i>	<i>MP 81.7 - 86.2 (east of Parachute)</i>	<i>Maintenance Staff</i>
<i>CO 94</i>	<i>MP 54.75 - 55.75 (east of Colorado Springs)</i>	<i>Maintenance Staff</i>
<i>CO 257</i>	<i>MP 16.6 - 17.6 (north of Windsor)</i>	<i>Maintenance Staff</i>
<i>US 160</i>	<i>MP 278.5 - 279 (La Veta Pass)</i>	<i>Maintenance Staff</i>
<i>CO 125</i>	<i>MP 0 - 10 (north of Granby)</i>	<i>Contracted construction project - maintenance managed</i>
<i>US 350</i>	<i>MP 46.7 - 49.7 (between Trinidad and La Junta)</i>	<i>Maintenance Staff</i>

The 2022-23 winter season was one of the most severe in recent decades. Colorado saw the second-most number of days with snowfall requiring road treatment, and the statewide snowpack peaked well above annual averages. Remote weather stations on high mountain passes across the state measured liquid precipitation above 40 inches since October; this equates to roughly 400-600 inches or more of snow. In addition to the impressive snowfall amounts, this season's October - March period was the coldest since 2010. March 2023 was the fifth consecutive month with below-average temperatures and the coldest March since 1970. Arctic cold outbreaks affected the state in November, December, January, and February, and two-day temperature swings in both December and February neared all-time records on the Front Range.

