COLORADO
Department of Transportation

CDOT 2024 Greenhouse Gas Mitigation Action Plan Status Report

Submitted April 1, 2024

Executive Summary

Background

Following the submission of a GHG Transportation Report that contains a Mitigation Action Plan, CDOT is required to submit an annual status report update for each mitigation measure contained in the Mitigation Action Plan. The annual status report update is due to the Transportation Commission (TC) by April 1st each year as required by the GHG Reduction Planning Standard regulation (2 CCR 601-22, Section 8.02.7) and Policy Directive 1610 (effective June 15, 2023; Section VI.E.1).

The GHG Planning Standard outlines requirements for content of a Mitigation Action Plan under Section 8.02.6.3. This status report is the second annual status update to the Transportation Commission for CDOT's Mitigation Action Plan accepted by the TC with the GHG Transportation Report amended on September 7, 2022. A copy of the first annual status report from March 30, 2023 may be obtained online here. For each annual status report CDOT must provide details on the implementation timeline and the current status of implementation. In addition, for measures that are in progress or have been completed, the annual status report should quantify the benefit or the impact of each measure. Finally, if a measure has been delayed, canceled, or substituted, the update must provide an explanation of why that decision was made and, if located in a Disproportionately Impacted Community, how an equivalent benefit may be achieved.

Per PD 1610 (Section VI.E.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".

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

For reference, CDOT's GHG Transportation Report from September 2022 relied on mitigation action plan measures for the compliance years 2030, 2040 and 2050 as detailed in the Table 1 below. Notably, an update was made to Policy Directive 1610 in June 2023 which included changes to the calculation methodology for transit GHG Mitigation Measures. As a result, the amount of GHG reduction benefit CDOT could take credit for under the "Rural Transit Recovery Following the COVID-19 Pandemic" mitigation strategy changed. This did not affect CDOT's compliance with the GHG Reduction Levels in the GHG Transportation Planning Standard. Total GHG reductions achieved decreased slightly in 2030 and increased slightly in 2050 as represented in Table 1 below.

Table 1 - CDOT's GHG Reduction Results and Compliance

Compliance Steps	2025	2030	2040	2050
GHG Reductions Achieved from Baseline Plan through Modeling (MMT CO2e)	0.30	0.21	0.06	0.04
GHG Reductions Achieved from Baseline through Mitigation Measures (MMT CO2e)	N/A	0.155	0.249	0.136
Total GHG Reductions Achieved (MMT CO2e)	0.30	0.365	0.309	0.176
GHG Rule Required Reduction Target (MMT CO2e)	0.12	0.36	0.30	0.17
Compliance Result	Met	Met	Met	Met

Table 1 - A summary of CDOT's 2022 compliance with the GHG Transportation Standard, including the GHG reduction achieved through modeling compared to those achieved GHG mitigation measures.

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Annual Status Update Summary

Based on the 10 Year Plan adopted along with the Greenhouse Gas Transportation Report and associated Mitigation Action Plan accepted by the TC in September 2022 CDOT relies on both modeling and mitigation actions to achieve compliance with the GHG Planning Standard reduction levels in 2030, 2040 and 2050. This Mitigation Action Plan status report is the second report to the TC, the first of which was submitted on March 30, 2023. The updates provided herein are the latest information on progress implementing the mitigation measures established in the Mitigation Action Plan associated with the GHG Transportation Report accepted by the TC on September 7, 2022. Unlike last year's update, variables and concerns with each measure implementation are addressed under the current status discussion as needed. This update maintains the equity benefits analysis completed last year which was conducted as per the requirements of the GHG Planning Standard. At this time, the analysis does not include a burdens analysis component as guidance remains under development by CDOT's Office of Environmental Justice and Equity.

As of this update, the majority of the mitigation measures remain in process of development and implementation. However, a few have been completed. Of the four Transportation Demand Management (TDM) projects, three have been completed as determined by the end of their grant periods. Both transit strategies continue to make significant progress through implementation as detailed below. Work on measures to influence the built environment and electrify transit vehicles remain in the early phases of development. Operational improvements have made progress this past year with one of three planned roundabouts built.

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Status of CDOT Mitigation Action Plan Measures

Transportation Demand Management (TDM)

CDOT Strategic TDM Grant Program: Creation of the Glenwood Springs Transportation Management Association

Measure Description

Creation of the Glenwood Springs Transportation Management Association (TMA) through CDOT funding, will develop new localized transportation demand management (TDM) 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. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-2.1.

Implementation Timelines

The development of the Glenwood Springs TMA was anticipated to start in August 2022. CDOT's grant funding expired on February 29, 2024 and TMA activity is ongoing after initial grant expiration.

Current Status

Glenwood Springs Transportation Management Agency has been stood up as a function of the city. Initial meetings were held with city staff and city council during Summer 2023. Recontact with the grantee was made during February 2024 as part of a larger regional TDM conversation. Reimbursement against the contract for all $64,000 funds has been requested and is processing with CDOT. All funds are currently planned to be issued in support of this effort during the contract period up to February 2024.

The local team at Glenwood Springs worked over the contract term with a subcontractor to outline a TDM plan and implementation steps for development of a TMA. Presentation of the final TMA Seed Funding report was given on March 21st to the City of Glenwood Springs city council which outlined the work product conclusion and proposed next steps. The final report is planned to be delivered to CDOT following the city council meeting by the city staff.

Separate from this grant effort, next steps outlined by the organization and parallel interests highlighted the need for a regional solution to address the corridor concerns around TDM implementation. CDOT staff traveled to support a regional TDM discussion at the end of March 2024. The city is working with other regional and county partners to pull together an application for additional grant funds and matching to apply the lessons of the first grant to a larger regional area for more impact and support.

Quantification of Benefit

CDOT projects a 1,157 metric ton GHG benefit by 2030 from this strategy. This will be achieved by 13,000 employees covered by a voluntary commute trip reduction program. The commuter trip reduction program is still under initial development as discussed under the current status.

Benefits to Disproportionately Impacted Communities

The creation of the TMA is a programmatic approach to GHG reductions, rather than project specific, and thus cannot currently be analyzed through the Transportation Equity Scorecard tool. The Transportation Equity Scorecard tool requires project location-specific data to assess how a project may address transportation inequities in neighborhoods and communities. Projects or programs whose direct geographic influence are not known or unable to be reasonably determined are not suitable for 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 TMA. Additionally, the goal of the TMA was to establish strategies which impact adjacent DIC which use Glenwood Springs as a transportation corridor.

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CDOT Strategic TDM Grant Program: I-70 Coalition Public Awareness Campaign & Research Effort

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. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-2.2.

Implementation Timelines

Work on this measure began in October 2021 and was completed in July 2022 at the end of the CDOT grant period.

Current Status

As of 2024, this program has been completely launched and implemented. $60,000 in grant funding was allocated and the grant agreement completed with all $60,000 in grant funds having been spent.

Quantification of Benefit

CDOT projects 120 metric tons of GHGs reduction will be achieved through this measure in 2030 through spending $60,000 as allocated in the grant.

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. The Transportation Equity Scorecard tool requires project location-specific data to assess how a project may address transportation inequities in neighborhoods and communities. Projects or

programs whose direct geographic influence are not known or unable to be reasonably determined are not suitable for the Transportation Equity Scorecard tool. Travelers who may benefit from the I-70 Coalition Awareness Public Campaign are not isolated to any one geographic region or neighborhood, as the users of that corridor come from across the entire state.

CDOT Strategic TDM Grant Program: City of Aspen, Micro Transit and Bike Share Pilot Expansion

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. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-2.3.

Implementation Timelines

The City of Aspen was awarded $50,000 in 2022, with procurement of additional infrastructure set to begin in July 2022. CDOT's grant funding expired in March 2023, but the use of the e-bike share program is ongoing after initial grant expiration.

Current Status

As of early 2023 the grant associated with this measure is complete with $44,060 grant funds spent. CDOT is working to gather the necessary metrics to determine GHG emission reductions resulting from this measure.

Quantification of Benefit

By 2030, CDOT anticipates that a full rollout of the program will result in 7 metric tons of GHG reduction. This is based on 46 e-bikes being placed into service from July 2022 through December 2030.

Benefits to Disproportionately Impacted Communities

Using the Transportation Equity Scorecard Tool, a project can receive anywhere from 0 to 30 points. A score of 0 means the project provides no benefit to DI Communities. This project does not serve a community which meets the updated definition of a DI Community, thus this project gets a score of 0. Formerly, two census blocks groups served by this project met the previous definition of a DI Community, where 41.94% and 40.25% of residents in the census blocks were qualified as housing-cost burdened. Therefore, in last year's status report update this project had a score of 11. The housing-cost burdened threshold in the previous definition of a DI Community was a census block group where at least 40% of residents are spending 30% or more of their income on housing has now been updated, based on legislation passed in 2023 (HB23-1233), to census block groups where at least 50 % of residents spend 30% or greater of their income on housing, among other changes to the definition.

CDOT Strategic TDM Grant Program: Summit County, Trailhead Shuttle Pilot Expansion

Measure Description

The expansion of a pilot program initially launched for Quandary 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. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-2.4.

Implementation Timelines

The anticipated start date was May 2022 and the grant period ended in March 2023.

Current Status

As of 2023, this expansion is fully complete and operational. All $50,000 of grant funding has been allocated and spent on the shuttle operation. The grantee reported that the 2022 season resulted in 10,195 riders and 274 dogs in 3 months of operation. Notably, this is less than half the projected 21,000 riders that was cited as part of the grant application. CDOT will continue to track the outcomes of this measure in the coming years to determine the GHG benefit of this TDM program.

Quantification of Benefit

The projected GHG reduction of 102 metric tons in 2030 was calculated using the user-input method for new transit service that is included as part of PD 1610.

Benefits to Disproportionately Impacted Communities

Using the Transportation Equity Scorecard Tool, a project can receive anywhere from 0 to 30 points. A score of 0 means the project provides no benefit to DI Communities. This project gets an equity benefits score of 3. 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.

Transit Strategies

Bustang Service Expansion

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. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-3.1.

Implementation Timelines

The expansion is occurring in three phases, with the first phase implemented in the fall of 2022. The additional set of expansions will occur in late fall/early winter 2023, and the final third expansion will occur in the fall/winter of 2024.

Current Status

Baseline Bustang service levels in the first half of 2022 included six daily round trips Monday-Friday and two daily round trips Saturday and Sunday on the Bustang North and South lines. In addition, the West line included four total daily round trips seven days a week including: two round trips between Denver and Grand Junction, one round trip between Denver and Glenwood Springs and one round trip between Denver and Avon. Service expansion since the second half of 2022 has included: two additional daily round trips Monday-Friday on both the North and South lines. West line service was modified to eliminate the daily round trip between Denver and Avon and add an additional round trip between Denver and Grand Junction as well as an additional round trip between Denver and Glenwood Springs. Therefore, as of February 2024 the West line operates five daily round trips seven days a week. In addition, on the West line the Pegasus shuttle van service operates between Denver and Avon with the same stops as the West line Bustang service with six daily round trips Monday through Thursday and ten daily round trips Friday through Sunday. The second phase of service expansion experienced some delay in 2023 due to bus fleet constraints. Five new buses accepted in 2023 are in the process of outfitting for revenue service and an additional twenty buses are scheduled for delivery between April and August 2024. The third phase of Bustang expansion is expected to be implemented by November 2024 with a gradual ramp up in service between April through November. This is projected to include further increases in service to include twelve daily round trips Monday-Friday and six daily round trips Saturday and Sunday on both the North and South lines. In addition, the West line is projected to see a total of fifteen daily round trips seven days a week with a breakdown of the specific western termini still to be determined.

Bustang Outrider provides service to rural areas. Service expansion since May of 2022 has included: one daily round trip on Tuesday and Thursday between Sterling and Denver, one daily round trip on Monday, Wednesday and Friday between Sterling and Greeley and two daily round trips Monday-Friday between Trinidad to Pueblo. These service lines operate 14 passenger cutaway buses. Moving forward a second daily round trip is expected to be added between Crested Butte and Denver, the route between Sterling and Denver is expected to add service on Monday, Wednesday and Friday and a new route between Lamar and Colorado Springs is being considered.

Quantification of Benefit

This measure is projected to achieve 9,414 metric tons of GHG reduction in 2030, 4,707 metric tons GHG in 2040 and 4,707 metric tons GHG in 2050. Service expansions are not yet complete, therefore analysis of actual GHG reductions achieved from this measure has not yet been completed.

Benefits to Disproportionately Impacted Communities

Using the Transportation Equity Scorecard Tool, a project can receive anywhere from 0 to 30 points. A score of 0 means the project provides no benefit to DI Communities.The West Line, South Line, and North Line Bustang expansions each receive an equity benefits score of 12. 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.

Rural Transit Recovery following the COVID Pandemic

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. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-3.2.

Implementation Timelines

This recovery will begin to occur, effective immediately, and is expected to achieve pre-COVID levels by 2030 or earlier.

Current Status

As of the end of 2023, the most recent year for which National Transit Database data exists is 2022. Updates for this mitigation measure will be based on 2022 National Transit Database data. Some rural transit lines have recovered or even exceed pre-pandemic service and ridership levels, while others are still rebuilding to pre-pandemic levels. In total, 2022 service levels show a 37% reduction compared to pre-pandemic, 2019 service. Local transit routes have actually exceeded pre-pandemic service levels by 56%. Demand response and intercity transit are still on their way to recovery, showing a 48% and 45% service reduction compared to 2019, respectively. Notably, intercity transit vehicle revenue miles decreased 25% from 2021 to 2022. However, it should be noted that unlinked passenger trips (the number of passengers who board public transportation vehicles) for intercity transit service increased between 2021 and 2022, from 38% to 14% ridership reduction compared to 2019. Local transit ridership has increased 8% from the 2019 baseline, exceeding original riderships levels. Demand response ridership is 38% below the ridership in 2019.

Further, it should be noted that in June 2023 an update was made to Policy Directive 1610 which included changes to the calculation methodology for transit GHG Mitigation Measures. As a result, the amount of GHG savings credit that CDOT could take credit for in local and demand response transit decreased. This did not affect CDOT's compliance with the GHG Reduction Levels in the GHG Transportation Planning Standard.

Quantification of Benefit

Table 2: Intercity Transit

Tracking Indicator	Mitigation Action Plan Target - 2019 service levels	2021 Progress Update	2022 Progress Update
Vehicle Revenue Miles (VRM)	2,060,742	1,519,026	1,143,135
Unlinked Passenger Trips	8,450,910	5,202,124	7,227,132
Annual GHG Savings in 2030	4,121 MT	3,038 MT	2,286 MT
Annual GHG Savings in 2040	2,061 MT	1,519 MT	1,143 MT
Annual GHG Savings in 2050	2,061 MT	1,519 MT	1,143 MT

Table 2 - A summary of the recovery of intercity transit service in the non-MPO areas to 2019 service levels, which established the Mitigation Action Plan target for this measure. While unlinked passenger trips are not the unit by which the GHG savings of this mitigation measure are calculated, ridership of rural transit lines is an important datapoint to track the recovery of rural transit service.

Table 3: Local Transit

Tracking Category	Mitigation Action Plan Target - 2019 service levels	2021 Progress Update	2022 Progress Update
Vehicle Revenue Hours (VRH)	84,004	50,983	131,447
Unlinked Passenger Trips	5,927,845	4,805,155	6,423,981
Annual GHG Savings in 2030	336 MT	204 MT	526 MT
Annual GHG Savings in 2040	420 MT	255 MT	657 MT
Annual GHG Savings in 2050	588 MT	357 MT	920 MT

Table 3 - A summary of the recovery of local transit service in the non-MPO areas to 2019 service levels, which established the Mitigation Action Plan target for this measure. While unlinked passenger trips are not the unit by which the GHG savings of this mitigation measure are calculated, ridership of rural transit lines is an important datapoint to track the recovery of rural transit service.

Table 4: Demand Response Transit

Tracking Category	Mitigation Action Plan Target - 2019 service levels	2021 Progress Update	2022 Progress Update
Vehicle Revenue Miles (VRM)	695,128	110,206	330,405
Unlinked Passenger Trips	433,855	201,371	201,599
GHG Savings 2030	0 MT	0 MT	0 MT
GHG Savings 2040	695 MT	110 MT	330 MT-
GHG Savings 2050	1390 MT	220 MT	661 MT

Table 4 - A summary of the recovery of demand response transit service in the non-MPO areas to 2019 service levels, which established the Mitigation Action Plan target for this measure. While unlinked passenger trips are not the unit by which the GHG savings of this mitigation measure are calculated, ridership of rural transit lines is an important datapoint to track the recovery of rural transit service.

Benefits to Disproportionately Impacted Communities

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. The Transportation Equity Scorecard tool requires project location specific data to assess how a project may address transportation inequities in neighborhoods and communities. Projects or programs whose direct geographic influence are not known or unable to be reasonably determined are not suitable for the Transportation Equity Scorecard tool. The rural transit recovery effort is directed towards rural transit as a whole, rather than any one individual transit agency or transit line. Further, the data with which CDOT uses to track this measure is based on federal reporting to the National Transit Database. Transit agencies conglomerate and report data into categories of transit mode (intercity, demand response, etc.), rather than by individual transit line. It is not currently possible to reasonably gather data on the location of each transit stop in each transit line in each rural transit agency that reports to the National Transit Database. However, it is worth noting that many

of Colorado's rural communities are made of census block groups that meet the definition of a DI Community. 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.

Built Environment

CDOT Multimodal Investments and Internal Policies to Encourage High-Density Rezonings

Measure Description

This mitigation measure focuses on increasing residential density, job density and mixed use transit-oriented development through rezoning. 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 municipal boundaries. For the TOD categories, rezonings must be within ½ mile of an eligible transit station.

It is important to note that these rezonings are currently within the authority of the local government. 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 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:

- development of a network of Mobility Hubs (particularly along I-70 Bustang routes)
- transit investments in Bustang, Pegasus, Outrider, and regional transit agency partners
- first-last mile ped/bike connections through 10-year Plan projects

- grant programs that build multimodal infrastructure (Revitalizing Main Streets, MMOF, etc.)

CDOT will work to develop a methodology to track the rezonings that occur within communities where a CDOT multimodal project has improved multimodal infrastructure. For example, CDOT may periodically review zoning maps (which are public documents typically posted online) to identify any changes that have occurred within the "assistance areas". CDOT will work to determine efficient methods to coordinate with local governments to understand the details of the rezonings, while being mindful of additional workloads on local staff. Once this step is completed, CDOT will measure the acreage of these rezonings, and calculate the corresponding GHG reductions per the 1610 PD. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-4.1.

Implementation Timelines

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 CDOTs investments on rezonings was instigated with the adoption of the 2022 10-Year Plan. CDOT will calculate GHG tons reduced periodically, with 2022 as a starting point. The timing of construction of various improvements will be approximately as follows. Between 2022 and 2050 there will be investments in mobility hubs along I-70 and I-25, implementation of grant programs such as Revitalizing Main Streets to connect multimodal projects to dense housing and will include Bustang, Outrider and Pegasus service expansion.

CDOT will periodically review rezoning data in municipalities to track targets identified in this measure. With that information CDOT will consider adjusting above policies and investment strategies as needed and be responsive to local entities on connecting transportation investments to housing programs and initiatives

Current Status

In 2022, a baseline for all significant non-MPO communities was established so that zoning could be reassessed on a periodic basis. Given the timelines over which zoning changes take

place, and the amount of coordination needed with local governments, an assessment of zoning changes to date has not yet occurred. There are ongoing efforts to create a more integrated system for gathering updated zoning data that will be useful for multiple agencies. For example, other programs such as Proposition 123 have reporting requirements for housing and zoning that are on three-year schedules to avoid overburdening local governments. CDOT is also working on measuring GHG reductions from built environment changes on-model. These efforts will eventually lead to more regular and accurate assessments of zoning changes that can inform the built environment mitigation measure.

This mitigation measure also involved "internal policies to encourage high-density rezonings". This effort has been a part of the Governor's Strategic Growth Executive Order issued in August 2023 and is still underway, but not yet completed.

Similar to last year, there are some variables and concerns regarding this measure given that zoning and subdivision regulations currently 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 choose to not pursue rezonings, this will minimize progress in achieving the outcomes proposed for this measure. In addition, developing a process to gather and interpret disparate local rezoning data remains a challenge.

Quantification of Benefit

These measures are projected to achieve 136,720 metric tons of GHG reduction in 2030, 231,095 metric tons of GHG in 2040 and 122,940 metric tons of GHG in 2050. As of this status report rezoning progress since 2022 is still being assessed.

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.

Heavy Duty Electrification

Electric Transit Buses

Measure Description

The replacement of diesel transit buses with electric transit buses in non-MPO areas. For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-5.1.

Implementation Timelines

Between January 2020 and December 2030, 25 electric transit buses will become operational in the non-MPO areas of the state, with the potential to exceed this target as more awards and procurements continue.

Current Status

Between January 2020 and March 2024, 17 electric transit buses have become operational in the non-MPO areas of the state. Between the development of CDOT's September 2022 GHG Transportation Report and associated Mitigation Action Plan and the April 2023 Mitigation Action Plan annual status report to the Commission, the Town of Vail had six electric buses move to the procurement stage and was awarded two additional grants for the purchase of zero-emission transit vehicles. The Town of Breckenridge was awarded two additional grants for the purchase of zero-emission transit vehicles. Since the 2023 MAP annual status report, Archuleta County, the Town of Winter Park, and the City of Durango each received one award for the purchase of a zero-emission transit vehicle. Two of the Town of Vail's awards for vehicles moved into the procurement stage. Three electric transit vehicles were deployed in the Town of Breckenridge.

Table 5: Electric Transit Bus Implementation

Transit Agency	Number of Electric Buses in Operation (2020-March 2024)	Number of Electric Buses in Procurement (2020 - March 2024)	Number of Electric Bus Grants Awarded (2020- March 2024)
Eagle County	3	-	2
Summit County	3	1	3
Avon	2	-	1
Town of Breckenridge	3	-	2
Town of Estes Park	2	-	-
Town of Vail	4	8	-
City of Durango	-	-	1
Town of Winter Park	-	-	1
Archuleta County	-	-	1
Total	17	9	11

Table 5 - A summary table tracking the roll out of electric transit vehicles from 2020 to March 2024 in the non-MPO areas. "Procurement" of electric buses in this table refers to both buses that have been ordered as well as buses that have been delivered but are not yet in operation. This data reflects survey results of transit agencies conducted in February and March 2024, data collection is still ongoing.

A recent variable or concern associated with this measure is that the market of manufacturers of zero emissions buses is going through a period of turbulence resulting in delays in the ability to deliver buses to transit agencies. This highlights a challenge in the transit agency procurement space due to growing national demand and decreases in supply.

Quantification of Benefit

This measure is projected to achieve 2,125 metric tons of GHG reduction in 2030 through the replacement of 25 diesel transit buses with battery-electric buses.

Benefits to Disproportionately Impacted Communities

CDOT staff will need to collect additional data on the routes typically traveled by these electric buses 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.

Operational Improvements

Roundabouts in the 10 Year Plan

Measure Description

CDOT updated its 10 Year Plan in 2022 to include a number of operational improvements such as roundabouts. While roundabouts have long been recognized for their safety and mobility benefits, the increased efficiency that they provide at intersections also benefit air quality by reducing GHG emissions. In addition to over 10 roundabouts that were prioritized for funding during initial 10 Year Plan Development, CDOT has updated its plan to add three additional roundabouts. As the statewide travel model does not distinguish between a roundabout and traditional signalized intersection, CDOT has included them in the Mitigation Action Plan to capture the additional air quality benefits that the newly added roundabout projects bring to the 10 Year Plan. The following additional roundabouts were included in the updated 10 Year Plan, occurring entirely in Region 4:

- US 36 and Community Drive
- CO 52/CR 59 Roundabout and Safety Improvements
- CO 1 Safety Improvements

For detailed information on this measure see the Mitigation Action Plan from the September 7, 2022 GHG Transportation Report in Table A1-6.1.

Implementation Timelines

All three roundabouts are prioritized for funding in FY 23-26.

Current Status

The US 36 and Community Drive project, a local agency project, is now built. The CO 52/CR 59 project is still in the design phase, but is planning on moving forward as a roundabout. Construction on this project is expected to begin in the spring of 2026. The CO 1 Safety Improvements project required a re-scope, and thus is in the early design phase.

Quantification of Benefit

These projects are projected to achieve 336 metric tons of GHG reduction in 2030, 197 metric tons of GHG in 2040 and 82 metric tons of GHG in 2050.

Benefits to Disproportionately Impacted Communities

Using the Transportation Equity Scorecard Tool, a project can receive anywhere from 0 to 30 points. A score of 0 means the project provides no benefit to DI 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.