Economic Impact of the Denver Regional Transportation District

Submitted by EBP

November 2026



EBP

Contents

Executive Summary 1

Methods 1

Findings 1

1. Introduction 3

2. Spending Impact 4

2.1. Data Inputs 4

2.2. Geography 6

2.3. Results 7

3. Performance Impacts and Community Benefits 10

3.1. Scenario Definitions 11

3.2. Enabled Trips 12

3.3. Time and Cost Savings for Riders and Non-Riders 16

3.4. Real Estate Impacts 20

3.5. Social and Community Impacts 22

4. Impacts Not Considered in this Analysis 25

Executive Summary

RTD generates substantial economic and community value for the Denver region through both its spending and the mobility it enables. This study evaluates those impacts and presents results across categories ranging from cost savings to safety improvements, jobs, and gross regional product (GRP).

Methods

To estimate these impacts, the analysis compares existing conditions, based on 2022 to 2024 spending and travel data, with a hypothetical scenario in which transit does not exist, and all transit trips are either reassigned to other modes or eliminated, reflecting the fact that some transit riders do not have alternatives.

The study considers two impact pathways. First, it examines spending impacts generated by RTD's operations, maintenance, and capital investments, including direct employment, supplier activity, and induced household spending. Second, it evaluates performance impacts and community benefits associated with transit service itself, including enabled trips, access to jobs and medical care, travel time and cost savings, safety improvements, emissions reductions, and the concentration of real estate value near high-capacity transit corridors.

We present results across different metrics and use two main accounting frameworks:

- Job and GRP impacts: economic impact accounting, including how direct economic impacts have indirect and induced impacts on the regional economy
- Social benefits accounting: monetization of benefits using methods including willingness-to-pay factors, standardly used in benefit-cost accounting

Findings

RTD supports the region's economy. Accounting for impacts of RTD spending and lost jobs by transit commuters without alternatives, every $1 invested in transit in the Denver region generates $2.42 in GRP in one year.[1] This represents 17,500 jobs and $2.1 billion in GRP, 0.7% of the regional GRP, that is at risk if RTD were eliminated. Of these impacts, approximately $1 billion in GRP and 9,300 jobs are the result of RTD expenditures, while the remaining impacts are estimated based on a model of expected job loss and its impact on the economy.

Using the framework of social benefits accounting, RTD generates $1.6 billion annually in benefits from enabled trips, household and business cost and time savings, safety improvements, and reduced emissions.

[1] All reported results are in 2025 dollars.

- Transit enables people to travel for work, medical appointments, and other purposes. According to the RTD onboard survey, about 21 percent of trips on RTD would not be made if RTD services were not available. Based on lost wages for eliminated work trips and the value of medical trips, these enabled trips can be valued at $557 million in one year.
- RTD saves transit riders money and saves travelers in the region time by reducing congestion. Eliminating transit would add about 464 million vehicle miles annually to the regional transportation system. The congestion relief benefit of existing transit service is valued at approximately $56 million in one year. Transit also helps residents avoid driving-related expenses and expensive taxi or TNC trips. This includes $211 million in avoided fixed car ownership costs (insurance, license and registration, depreciation, and financing charges)[2], and $443 million in avoided fuel, vehicle operation costs, and taxi and TNC fares, in one year. The average RTD trip costs roughly $1.13, compared with an average replacement cost of more than $22 for taxi/TNC trips and about $5.38 for driving.
- RTD provides community benefits, including improved safety and health, reduced emissions, and public cost savings. Traveling by bus is twice as safe as driving, while commuter rail travel is more than 7 times safer than driving.[3] Safety and emissions impacts are valued at $500 million in one year.
- High-capacity transit stops and stations are correlated with concentrated commercial and real estate value. For counties with Flatiron Flyer or light rail stops or stations, about 40 percent of commercial land value and 11 percent of residential land value is with a ½ mile of a high-capacity stop or station.

[2] These savings should not be added to the enabled trip valuation because the purchase of a car may allow transit riders to avoid job loss in the no transit scenario. Hence the total social benefit valuation of $1.6 billion nets out this impact.

[3] Based on risk of fatality per passenger trip. Rates of fatalities from national BTS NTS derived rates and risks based on RTD vehicle occupancies.

1. Introduction

Since the COVID-19 pandemic, RTD has faced multiple pressures: ridership has persistently remained below pre-pandemic levels, ridership patterns have shifted (i.e., lower proportion of trips by commuters to Downtown Denver), and the FasTracks Program remains incomplete without sufficient funds to complete it. Prior to the pandemic, RTD was expanding transit service throughout the Denver region, including commuter rail, light rail, and BRT lines, and rehabilitated Union Station under the voter-approved 2004 FasTracks Program. In part because of impacts of the Great Recession and the COVID-19 pandemic (commodity price inflation exceeding forecasts, expected sales tax revenue not being realized, and ridership for the new services falling short of forecasts), RTD has completed only 75% of the FasTracks Program, with the remaining 25% comprised of four incomplete corridors.

Despite these challenges, RTD provides critical mobility to commuters in the Denver area and enables other trips that provide economic benefits to transit users and non-users alike. This report quantifies and describes the economic benefits that its transit services generate in the Denver region. Compared to previous "Quality of Life" studies completed by RTD for the FasTracks Program, this study will focus on reporting impacts of public transit in terms of jobs, gross regional product (GRP), and monetized social benefits.

The way in which we measure this value is through economic impact analysis. There are two ways that public transit impacts the economy.

- One component of economic impact analysis is the impact of transit agency expenditures within the broader economy. This includes direct, indirect, and induced economic impacts generated by transit operations and capital expenditures. We refer to this component as "transit agency spending Impacts." These results are described in Section 2.
- Another component of public transit's economic impact is the way it improves mobility with impacts on the economy and the community. This includes improved economic efficiency due to access to jobs and labor markets; improved safety; health; and household, business, and government cost savings. These components have both direct and indirect (willingness-to-pay) economic impacts.[4] We refer to this component as "performance impacts and community benefits."[5] These results are described in Section 3.

[4] Some benefits of transit directly affect costs and business productivity within the economy, as measured by changes in Gross Domestic Product (GDP), whereas other benefits deliver improvements that people value, but that do not directly affect the movement of money in a market economy. These improvements are evaluated using a "willingness-to-pay" framework that monetizes outcomes and expresses them in terms of a GDP-equivalent.

[5] The evaluation of community benefits is typically referred to as "social benefit analysis." This memo refers to both the evaluation of community benefits and the measurement of transit agency spending impacts as economic impact analysis for simplicity.

2. Spending Impact

The spending impact analysis uses data on RTD's employment and capital and operations expenditures to develop an employment and spending profile for each transit mode in the region. Expenditures were assigned to distinct categories for input to the APTA My Economic Impact Tool. The Tool is a calculator that leverages geography-specific data from the IMPLAN model on industry linkages.

Within the tool, expenditures are adjusted to account for the type of spending and the proportion of industry demand that can be met locally. Agency spending activities affect the local economy only to the extent that agency spending on goods or labor remains within the local region, as opposed to being spent on goods or services imported from elsewhere.

2.1. Data Inputs

This analysis models the economic impact of all of RTD's directly operated and contracted services for a single year. Expenditures were assigned to four modes, matching those in NTD: bus, light rail, commuter rail, and demand response (including Access a Ride/FlexRide, Access on Demand, and WAV).

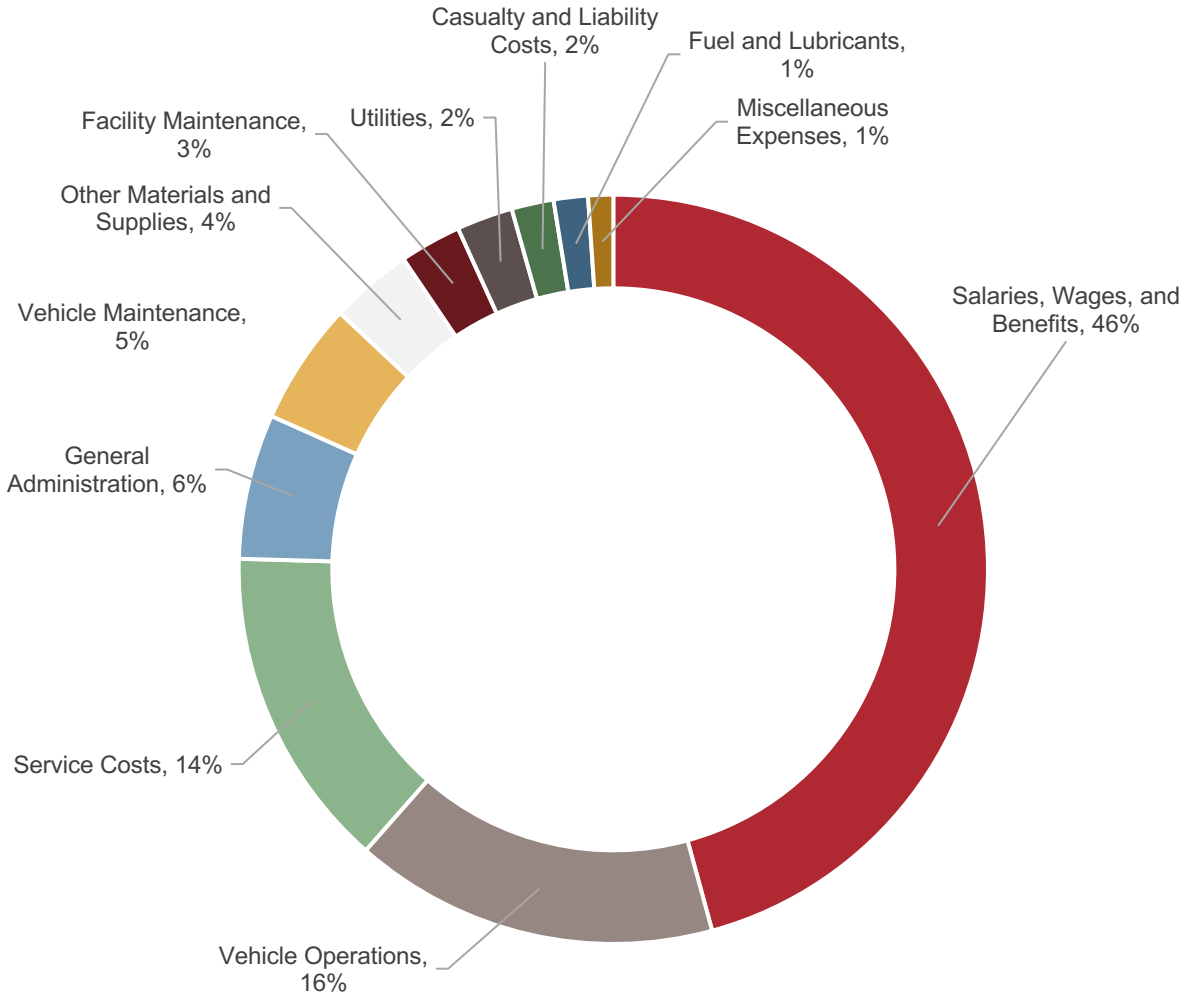
EBP collected operating and capital expenses data for each mode from NTD for 2022-2024. The project team adjusted these inputs to 2024 dollars and took the 3-year average to use as inputs, because the Tool uses 2024 IMPLAN multipliers and dollar year (results reported below are then adjusted to 2025 dollars).

For employment inputs, EBP collected total employment data for the agency's directly operated services from RTD's 2024 Annual Comprehensive Financial Report for years 2022-2024. EBP also collected reported employment by mode from NTD for 2022-2024. EBP applied the distribution of employment by mode to the total annual employment counts from RTD to assign employment counts to each mode. NTD data did not include any employment for demand response, while it did include administrative labor expenses. To account for this anomaly, the project team estimated employment associated with the agency's demand response services by applying the agency's average labor expenses per employee (including salary, paid absences, and fringe benefits) to administrative labor expenses reported for paratransit in NTD.[6] We then adjusted employment counts for other modes proportionally to ensure the total direct employment matched the total from the RTD 2024 Annual Comprehensive Financial Report.

Of operating costs, 46 percent were allocated to worker salaries, wages, and benefits, as shown in Figure 1.

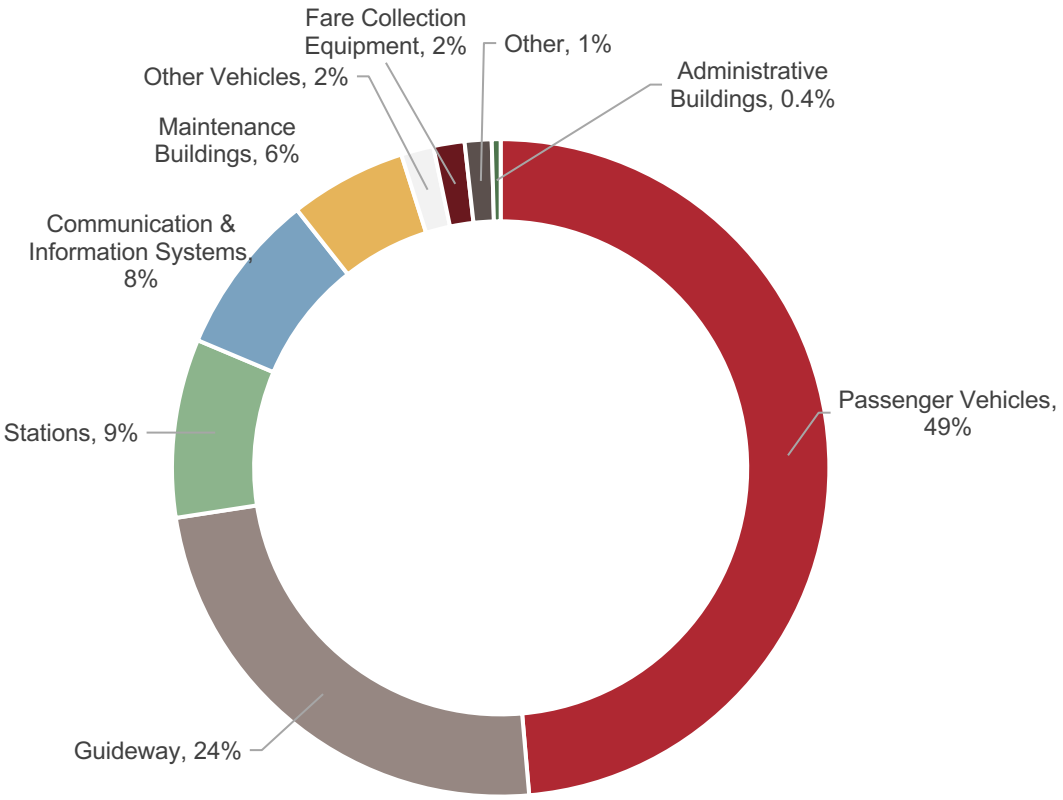
[6] While the majority of RTD's paratransit service is contracted, RTD reported some labor expenses associated with paratransit to NTD. This suggests that some RTD administrative and maintenance employees dedicate a significant portion of time to paratransit operations, and that the model should reflect associated employment for a more precise analysis.

Figure 1. Distribution of RTD Operating Expenditures by Category (2022-2024 Average)



Major capital expenditures include the purchase of new vehicles, work on transit guideways (e.g., rail tracks or dedicated bus lanes), and improvements to stations. Nearly half of RTD's average annual capital investments between 2022-2024 were for the purchase of new buses. The distribution of RTD's capital expenditures is shown in Figure 2.

Figure 2. Distribution of RTD Capital Expenditures by Category (2022-2024 Average)



2.2. Geography

The following counties were included in the RTD region defined within the APTA Tool:

- Adams County
- Arapahoe County
- Boulder County
- Broomfield County
- Denver County
- Douglas County
- Jefferson County
- Weld County

RTD also has impacts outside of the RTD region. While there are some limitations of this analysis in estimating results outside the region, statewide results are presented for context in Section 2.3.1.

2.3. Results

From 2022-2024, RTD invested an average of about $880 million (in 2025 $s), including $817 million to support operations and maintenance, and $63 million on capital projects annually.

These expenditures generate both direct and multiplier impacts within the economy, as shown in Figure 3. Transit agencies rely on their workforce to deliver safe and effective service. Agencies provide their employees with jobs that are accessible to people with a wide range of skills. Employees, in turn, support regional businesses when they spend their income.

Figure 3. Direct Multiplier Impacts of Agency Expenditures



The total economic impacts of RTD's transit operations, maintenance, and capital expenditures include activity that RTD directly supports through employing workers and paying them wages, as well as additional multiplier effects on suppliers in the region and from RTD employees spending their income on purchases from businesses in the region.

2.3.1. Total Impacts

In 2022-2024, the annual average RTD operating expenditures supported the following economic activity in the Denver region:

- Every $1 invested in transit in the Denver region generates $1.18[7] in regional business sales, representing an 18 percent return on investment. This is in addition to the ways in which transit services more broadly support the regional economy, such as by helping people to save money and connecting people with jobs.

[7] All reported results are in 2025 dollars.

- Operations and maintenance expenditures supported nearly 9,100 jobs in the region, contributing over $1 billion in gross regional product (GRP).
- Capital expenditures supported 200 jobs and contributed an additional $30 million in GRP.

The table below shows the estimated annual direct, indirect, and induced impacts of RTD operating and capital investments.

Table 1. Annual Economic impacts of RTD transit investments (2025 dollars)

Impact Type	Employment	Labor Income ($M)	Value Added ($M)	Output ($M)
Total Effect	**9,300**	**$ 800.00**	**$ 1,040.00**	**$ 1,560.00**
Driven by Operations & Maintenance	9,100	$ 780.00	$ 1,010.00	$ 1,520.00
Driven by Capital Investment	200	$ 20.00	$ 30.00	$ 50.00

Impacts of capital investment are significantly lower than impacts of operations & maintenance both because the majority of RTD's spending is on operations & maintenance and because capital spending is primarily on vehicles and equipment produced outside the RTD region.

Some impacts are felt outside of the RTD region, reflecting suppliers outside the region and workers spending money in other parts of the state or country. Analysis of the impacts of RTD spending on the entire state of Colorado therefore shows slightly greater impacts on jobs (9,500) and output ($1.590 billion).[8] Considering impacts on the entire United States is expected to generate even greater impacts, as it would include impacts from suppliers in other states. National analysis shows that transit expenditures in the United States, on average, generate $1.42 in value added for every $1 invested.[9]

2.3.2. Jobs by Industry and Occupation

The jobs directly supported by RTD consist of RTD's in-house labor, primarily in the transportation and construction sector (Figure 4). The indirect and induced jobs, supported by supplier purchases and income spending, are distributed across a wide range of sectors and occupations (Figure 5).

[8] Statewide impacts are likely an underestimate because wages and productivity per worker are lower for the full state of Colorado compared to the Denver region. Expenses were not specifically traced for assignment to the RTD region vs the rest of state to enable a more nuanced rest of state analysis.

[9] Economic Impact of Public Transportation Investment (February 2026), https://www.apta.com/wp-content/uploads/2026/03/APTA-Economic-Impact-of-Public-Transportation-022026.pdf

Figure 4. Annual indirect and induced jobs by industry sector

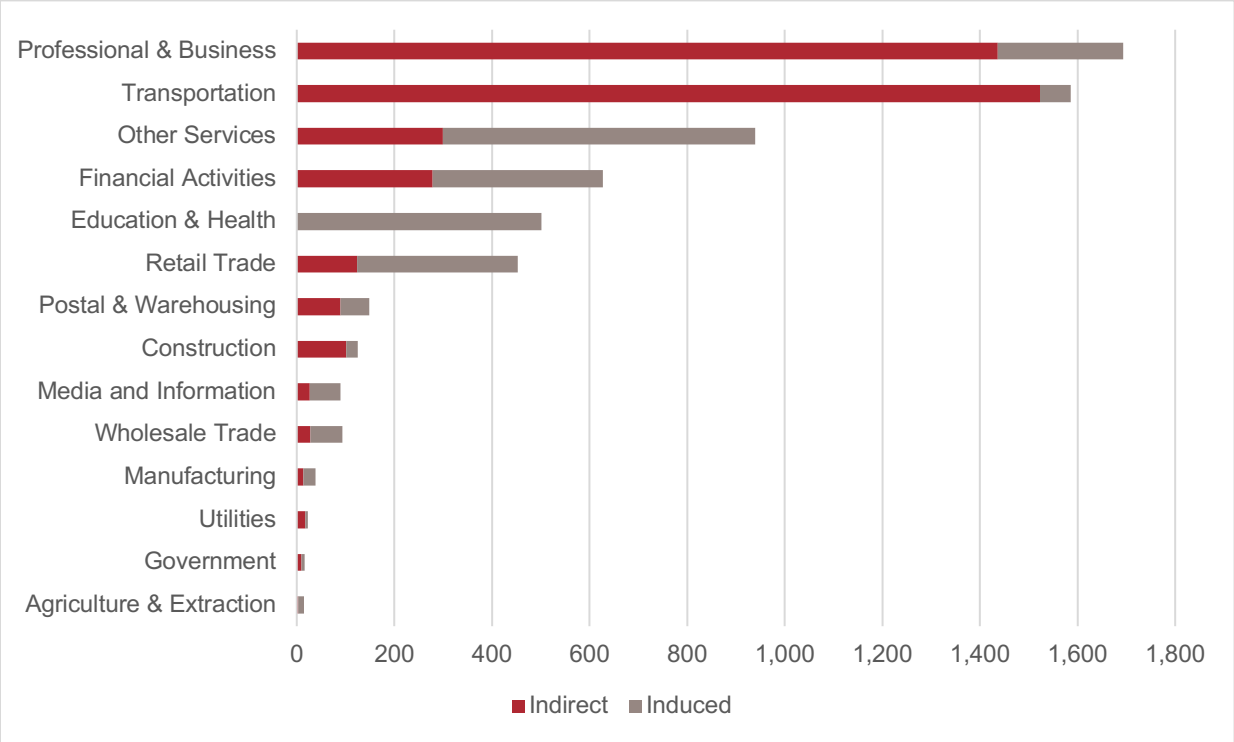
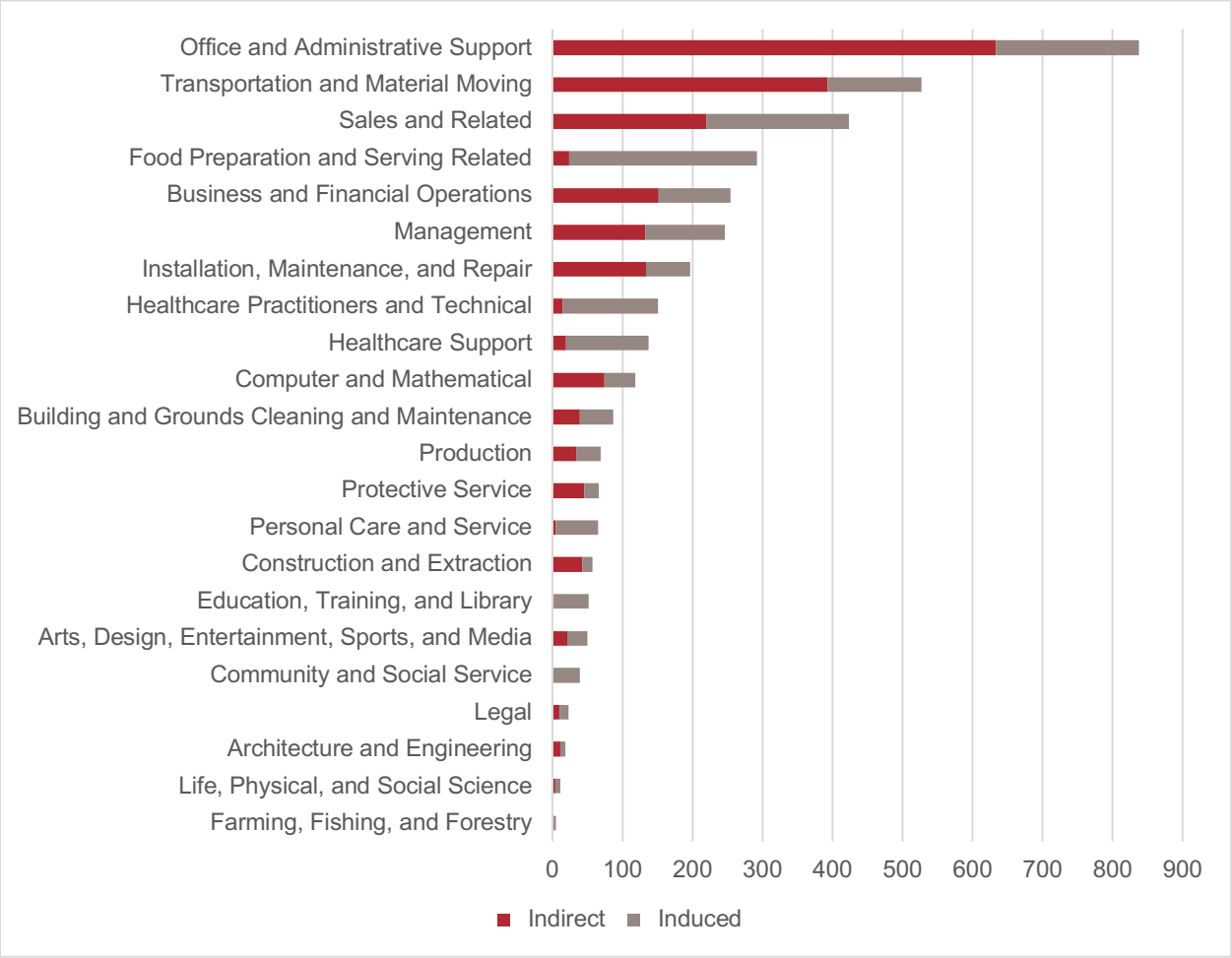


Figure 5. Annual indirect and induced jobs by occupation



3. Performance Impacts and Community Benefits

Beyond the impacts of RTD spending, RTD services generate a variety of other social benefits and economic impacts. These impacts include:

- **Enabled trips** (including enabled commuting and enabled medical trips)
- **Time and cost savings for riders and non-riders** (congestion relief; car ownership, travel, and parking cost savings)
- **Real estate value** impacts
- **Social and community** impacts (emissions reductions, safety improvements, road construction cost savings, and health impacts)

These impacts will include a mix of direct contributions to the gross regional product (GRP) and monetized social benefits that represent values to households and the community, including cost savings and quality of life improvement.

3.1. Scenario Definitions

This analysis is conducted by comparing the entire regional impacts of a "No Transit" scenario (i.e., complete service elimination) to the current RTD service, "Existing Conditions" scenario.

To develop the Existing Conditions scenario, we collected data on existing transit trips, passenger miles traveled (PMT), vehicle miles traveled (VMT).

- Annual bus, light rail, and commuter rail trips, PMT, and VMT are taken from the National Transit Database (NTD), using the annual average of the years 2022 to 2024.
- Demand-response (DR) trips were provided by RTD, which accounted for some trips not reported to NTD. PMT, and VMT for DR are calculated by scaling NTD data by the ratio of DR trips provided by RTD to DR trips in NTD.

In the No Transit scenario, all public transit trips were either reassigned to other modes or eliminated. Assignment to alternatives was as follows:

- For fixed route, alternatives are those reported in the onboard survey in response to the question "If RTD services were not available, how would you have made this trip?" To be analogous to the NTD, which reports unlinked trips, we calculated these using the unlinked trips weight.
- Alternatives for demand-response are taken from our analysis of Michigan survey data. Michigan has both paratransit and other demand response services that do not have eligibility requirements.

Table 2 shows the distribution of alternatives used.

Table 2. Distribution of alternatives to transit for RTD riders by current transit mode

	MB (Bus, BRT, Commuter Bus, Trolley Bus)	LRT (Light Rail, Streetcar)	Commuter Rail (Commuter Rail, Hybrid Rail)	All Fixed Route	Demand-Response
Walk	13%	7%	4%	11%	10%
Drive	12%	24%	27%	16%	3%
Be driven	19%	16%	14%	18%	31%
Bike	8%	5%	4%	7%	10%
Taxi/TNC	27%	26%	36%	28%	8%
No trip	21%	21%	15%	21%	38%

Source: RTD Onboard Survey

VMT in the No Transit scenario is calculated by multiplying trips by the average road distance by mode and alternative for trips in the onboard survey.

- Road distance is given by Open Street Maps driving distance using the centroids of origin and destination census block groups provided by the onboard survey.
- Demand-response distance per trip for alternatives is given by dividing existing demand-response PMT by demand response trips. This comes to a similar distance to the average distance for all modes combined. (It is the same for every alternative.)
- For the taxi/TNC alternative, a factor of 1.2 is applied to VMT to account for deadhead mileage driven by these vehicles. This factor is not used when calculating the cost to taxi/TNC passengers, which is based on the trip mileage, excluding deadhead mileage.
- For "be driven," no factor is applied. We assume some of these trips will require detours and extra mileage while others are existing trips and therefore generate less (or no) additional mileage. These two components approximately balance out.

Overall, the No Transit scenario results in about 464 million additional vehicle miles traveled in the region annually, compared to the Existing Condition scenario.

All impacts represent a single year, monetized in 2025 dollars. The scenario analysis reflects short term impacts expected in the first year without transit, rather than long term changes such as population and job migration or redistribution.

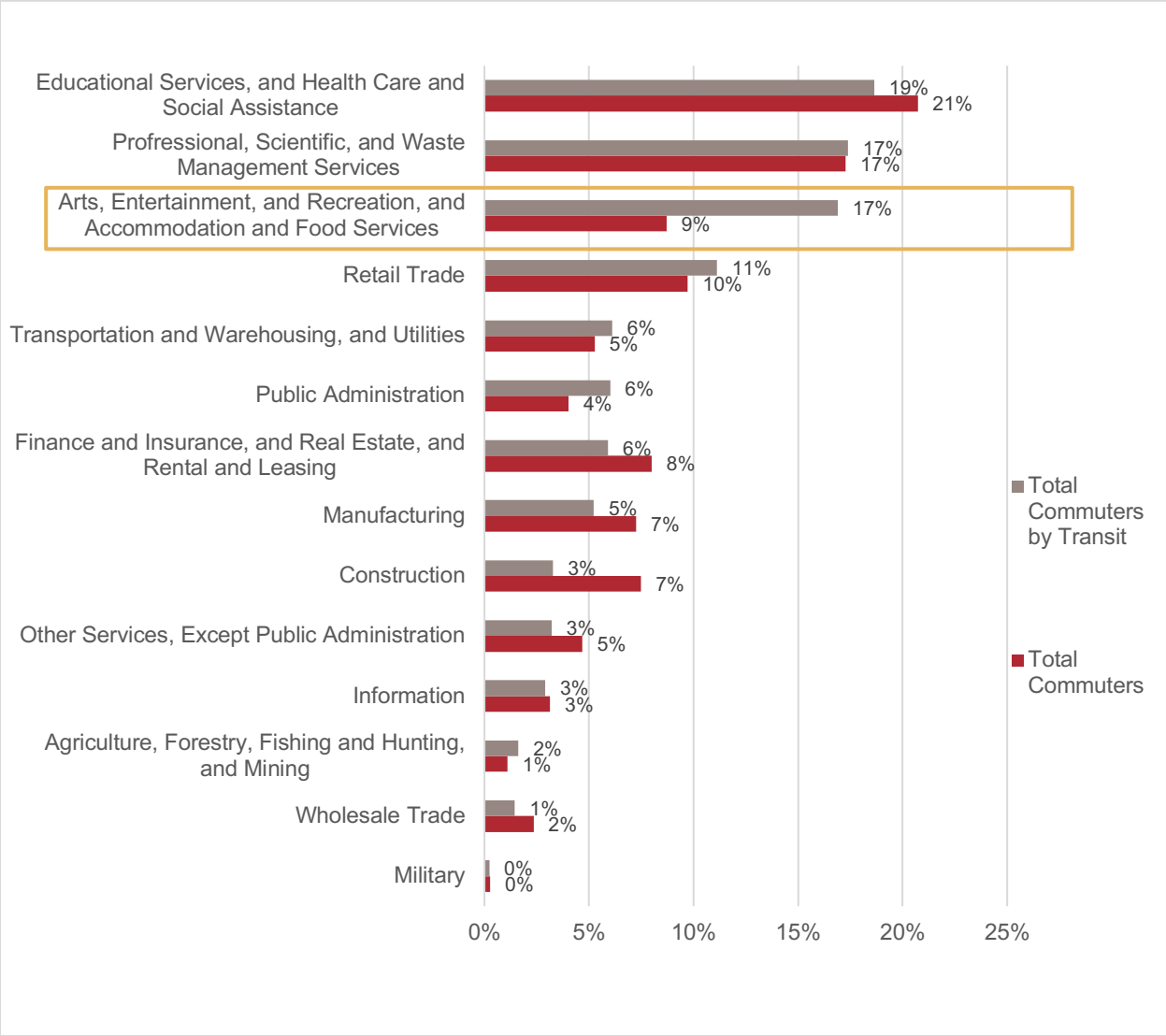
3.2. Enabled Trips

Transit enables people to make trips that they otherwise would not be able to make. Based on on-board surveys, approximately 21 percent of RTD fixed route trips would not be made if transit were not available. Trips of all purposes have value and sometimes the consumer surplus method is used to estimate the value of all trips based on willingness-to-pay assumptions. Work and medical trips tend to carry higher values and therefore we focus our analysis on more nuanced valuation of these two trip types.

3.2.1. Enabled Work Trips

Data from the American Community Survey's (ACS) 2023 5-year sample for the Denver region show that workers who commute by transit work in industries at a different distribution than all workers in the region (Figure 6). While 9% of all commuters work in the arts, entertainment, recreation, accommodation, and food services industry, 17% of transit commuters work in this industry. Thus, transit plays a disproportionate role in supporting hotels, restaurants, and entertainment in the region.

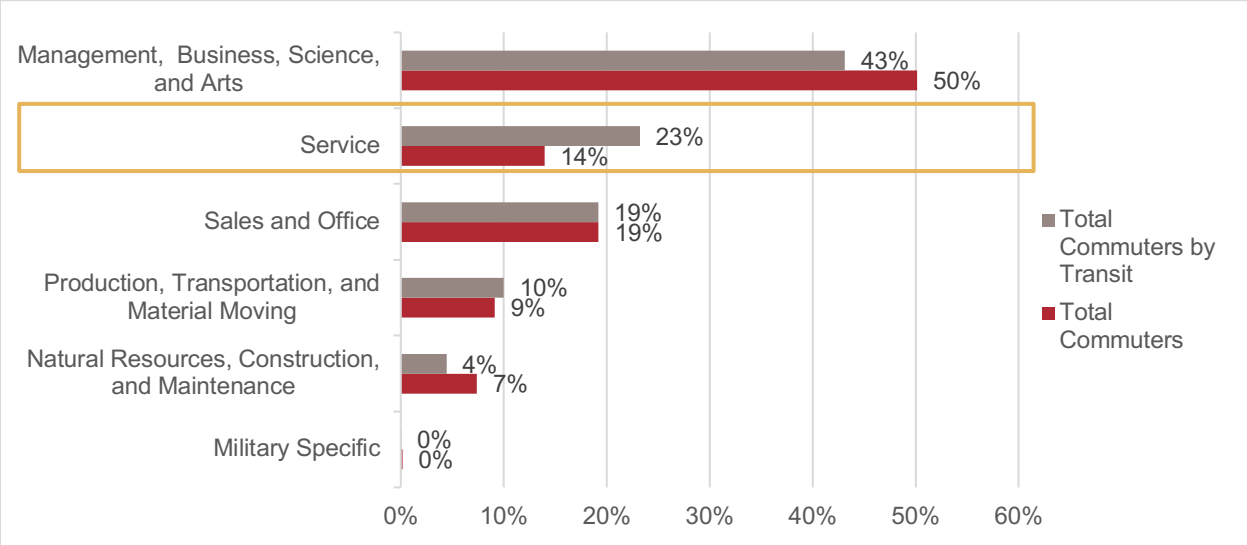
Figure 6. Commuters by industry (Percentages are of total transit commuters—approximately 46,000—and of total commuters—approximately 1.712 million.)



Source: ACS 2023 5-year sample

In addition, ACS data shows that in the Denver region transit commuters work in service occupations at a disproportionate rate, 23% for transit commuters compared to 14% of all commuters (Figure 7). Similar to the distribution by industry, this highlights the importance of transit for service sector workers.

Figure 7. Commuters by occupation (Percentages are of total transit commuters—approximately 46,000—and of total commuters—approximately 1.712 million.)



Source: ACS 2023 5-year sample

Of note, ACS data for the region includes commuters by modes we did not expect in the RTD region, including "subway or elevated" and "ferryboat". We included the former as transit commuters (and excluded the latter).

Job Loss and Impacts on the Economy

The elimination of transit is expected to result in job loss in the region. A significant number of workers do not have consistent access to a dependable automobile, and relying on other alternatives such as walking, biking, requesting a ride from family or friends, or paying for a taxi may be too large of a barrier for them to always be present and on time for their jobs.

The job loss model is estimated using the annual number of trips recorded in NTD, distributed by the rates of work trips by transit mode and alternative mode determined using the onboard survey. The percentages of work trips with no alternative by current transit mode are shown in Table 3.

Table 3. Distribution of transit work trips with no alternatives

Alternative	Bus	Light Rail	Commuter Rail	All
No trip	14%	16%	14%	15%

Source: RTD Onboard survey

To convert these trips to jobs, trips were divided by 500, reflecting that each job requires approximately 500 trips per year (i.e., two trips every weekday for 50 weeks annually). These

jobs were then associated with ACS distributions of occupations of transit commuters by each transit mode (The distribution of occupations by transit mode of commuting were calculated using the population of transit commuters within the PUMAs that we have associated with the RTD service area.) For each of these occupations, we estimated the rough proportion that would be required to be in-person. For example, a lawyer or software developer likely can work remotely while a cook or janitor cannot. We used these estimated proportions to adjust (reduce) the estimated job loss, accounting for the fact that jobs that could shift to remote work would not be lost. Based on this analysis, we estimated that **4,498 jobs** and **$367 million in labor income** would be lost in one year directly due to the elimination of transit.

This loss of jobs has further impacts throughout the economy, with the reduced economic activity resulting in additional job, labor income, and gross regional product (GRP) loss. To estimate this loss, the estimated lost jobs following the adjustment were assigned to ACS industries using the industry distribution of transit commuters in the region. These industries were linked to North American Industry Classification System (NAICS) codes, which then were linked to IMPLAN industry codes. IMPLAN considers the total headcount of employees by industry rather than the employed individuals in the region, and we assume that jobs calculated above represent a similar headcount rather than individual commuters or employed people. The IMPLAN model was used to estimate employee wages and indirect and induced impacts (Table 4).

Table 4. Annual job loss and impacts

Impact	Employment (headcount)	Labor Income (2025 millions)	Value Added (2025 millions)	Output (2025 millions)
1 - Direct	4,498	$367	$552	$993
2 - Indirect	1,557	$175	$244	$425
3 - Induced	2,116	$154	$295	$464
Total	8,172	$696	$1,090	$1,882

Source: EBP analysis of 2022-2024 NTD, RTD onboard survey, and ACS 2023 5-year sample data, calculated using the 2024 IMPLAN model.

The approximately 4,500 employee headcount of one-year job loss can be contextualized by the fact that there are approximately 46,000 transit commuters in the region according to ACS. (Note, it is likely, however, that on average each transit commuter represents greater than 1 job.)

Demand response is not included in these calculations, given the difficulty of determining trip purpose and that there likely are relatively few work-related, demand-response trips.

Commuting cost savings. In addition to the potential impacts of the loss of transit on jobs and the regional economy, commuters who can rely on transit save money, as public transit is more affordable than driving or taking a taxi or TNC. These savings are quantified in Section 0.

Additional context. Using information gathered from the US Department of Health and Human Services Administration for Children and Families (administering TANF) and the USDA (administering SNAP), we estimate that in Colorado the state would spend $10,026 in one year per household with a lost job.

3.2.2. Enabled Medical Trips

Transit enables people to access medical services. Many people who have chronic conditions, such as depression, hypertension, and asthma, or who require preventative care, such as for dental problems, forgo medical care because of lack of transportation for non-emergency medical trips (NEMT). Providing these NEMT leads to enhanced life expectancy and quality of life and prevents more costly emergency medical care and transportation. Research has valued the impact of each enabled medical trip on these factors at $511.[10]

We used onboard survey data to estimate the number of medical trips for which transit users do not have an alternative travel option (based on survey response "I would not make this trip.") For demand response, we apply the rates reported in the 2025 Survey Results presentation of 41% of AaR and 45% of AoD used for medical trips applied to the national rates for mode alternatives for demand-response trips (specifically no trip) to determine the proportion of demand response trips that are for medical purposes and would not be taken without transit. Based on the per trip value, the total annual value of enabling these medical trips is **$190.0 million** in one year.

3.3. Time and Cost Savings for Riders and Non-Riders

Transit provides an affordable alternative to options such as driving or taking a taxi or TNC. It also provides an efficient way to move people through busy corridors, alleviated congestion and providing valuable time savings for all people and goods that travel on these corridors. This section describes two key ways that transit provides time and cost savings in the region: through congestion relief and through cost savings for riders.

3.3.1. Congestion Relief

Transit services can improve regional business productivity and provide time savings for non-users of transit by alleviating regional congestion.

To determine the difference in congestion costs between current transit operations and alternatives under the "No Transit" scenario, we use factors provided by the USDOT DOT BCA guidance on the external costs of congestion caused by additional VMT. The total savings from reduced congestion provided by transit is **$56 million** in one year. Table 5 shows the congestion costs from bus and demand response in the Existing Conditions scenario and the

[10] Godavarthy et al., Cost-Benefit Analysis of Rural and Small Urban Transit, North Dakota State University, 2014. The original 2014 dollar value is updated to 2025 dollars.

congestion costs from the drive, carpool, and taxi trips replacing transit trips in the No Transit scenario. Note, taxi includes a 1.2 factor penalty on VMT to account for deadhead mileage.

Table 5. Congestion reduction cost savings (2025 $ millions)

		Transit Mode in Existing Conditions Scenario				
Scenario	Alternative (Replacement Mode in No Transit Scenario)	Bus	Light Rail	Commuter Rail	Demand Response	Total
Existing Conditions		$ (6.6)			$ (1.4)	$ (8.0)
No Transit	Drive	$ 7.7	$ 5.3	$ 4.8	$ -	$ 17.8
No Transit	Be driven	$ 9.0	$ 3.0	$ 2.8	$ 0.2	$ 15.1
No Transit	Taxi	$ 16.5	$ 5.5	$ 9.0	$ 0.1	$ 31.0
Difference between Scenarios	Total Cost Savings	$ 26.6	$ 13.8	$ 16.6	$ (0.8)	$ 56.2

Source: EBP Analysis of NTD 2022-2024 and RTD Onboard Survey data with USDOT BCA Guidance for congestion valuation.

3.3.2. Cost Savings for Riders

There are several components of cost savings that transit provides to its riders: (1) it helps some riders avoid the significant fixed costs of car ownership, (2) it provides a cheaper alternative to driving or taking a taxi/TNC on a per-trip basis, and (3) it saved on parking chargers for trips to locations with paid parking.

Car Ownership

Without transit, households in the Denver region would likely have to purchase additional cars to use to reach their jobs, attend medical appointments, access schools, grocery stores, and recreational activities. The fixed costs of car ownership, consisting of insurance, license and registration, depreciation, and finance charges are $8,767 annually. Particularly for low-income households, bearing this cost significantly reduces disposable income to spend on other purchases.

To estimate the number of additional cars that households in the Denver region would have to purchase if transit were no longer available, we used ACS data to estimate the number of vehicles per person for households in the region with at least one transit commuter and for households with no transit commuters by 22 household income groupings to further account for how car ownership may vary across incomes. In fact, variation in car ownership between income groups is not significant for households without transit commuters. However, for households with transit commuters, low-income households have significantly lower levels of car ownership. We then assumed that, within each income grouping, car ownership rates (per

person) in the No Transit Scenario would increase from the rates for households with at least one transit commuter to the rates for households with zero transit commuters. As this analysis used household-level data from the ACS, unlike other analyses in this project it did not incorporate the distributions by mode alternatives to transit or transit usage based on trip purpose. (ACS only considers the primary mode of transportation for commuting.)

Based on this method, in the No Transit Scenario, there would be 24,074 more cars in the region, at a fixed cost of **$211.1 million** for one year. This is the equivalent of about 0.6 additional cars per household for those households in the region with existing transit commuters (0.02 additional cars per household in the region overall). Based on the income-based analysis, about 27 percent of these cars would be purchased by households with incomes less than $50,000.

Per Trip Cost Savings

In addition to fixed costs from owning a car, in the No Transit Scenario, households spend more on a per trip basis.

We estimated the additional costs for transit users who would drive, carpool, or take taxis in the No Transit scenario using the distributions of trips by alternative mode from the onboard surveys and average distance and time estimates for the alternative trips based on origins and destinations in the onboard survey data.

Table 6 shows average costs per trip for transit and alternatives. Alternative costs for taxi trips are based on both mileage and time, using rate data from Lyft, while drive and be driven costs are based on per mile costs for fuel and vehicle operation. The cost savings RTD riders experience vary by trip.

Table 7 shows cost comparisons for example trips.

Table 6. Average cost per trip by mode (2025 $s)

Alternative	Bus	Light Rail	Commuter Rail	Demand Response	Total
Transit	$ 0.89	$ 1.07	$ 2.31	$ 0.41	$ 1.13
Taxi	$ 19.68	$ 21.22	$ 32.79	$ 20.24	$ 22.15
Drive	$ 4.76	$ 5.14	$ 7.13	$ 3.58	$ 5.38
Be driven	$ 3.20	$ 4.20	$ 6.97	$ 3.58	$ 3.76
Average	$ 6.50	$ 7.50	$ 14.66	$ 2.82	$ 7.69

Source: EBP Analysis of Onboard survey, NTD fares 2022-2024, AAA 2024 Your Driving Cost, Lyft pricing estimator

Table 7. Per-trip cost of trips to Downtown Denver from example origins by transit and alternative modes.

Origin	Transit	Drive	Taxi
North Denver Metro	$2.75	$7	$30
Boulder	$2.75	$10	$41
DEN Airport	$10.00	$8	$38 for rideshare or $72 flat-rate taxi

Table 8 shows the cost savings generated by transit for those whose alternative to transit is to take taxis/TNCs, drive or are driven. There are a significant number of bus trips that would be replaced with taxi or TNC trips in the no transit scenario which drive the bulk of the savings.

Table 8. Travel cost savings (2025 $ million) in Year One Without Transit

Alternative	Bus	Light Rail	Commuter Rail	Demand Response	Total
Taxi	$ 211.6	$ 65.9	$ 90.6	$ 1.7	$ 369.8
Drive	$ 20.0	$ 12.4	$ 10.9	$ 0.1	$ 43.4
Be driven	$ 18.6	$ 6.4	$ 5.3	$ 1.0	$ 31.4
Total	$ 250.2	$ 84.8	$ 106.7	$ 2.9	$ 444.6

Source: EBP Analysis of Onboard survey, NTD fares 2022-2024, AAA 2024 Your Driving Cost, Lyft pricing estimator

A significant share of these cost savings, about **$209 million in one year, are on trips to or from work**, while rest of the $445 million in savings are for other trip purposes.

Parking Cost Savings

The elimination of transit is expected to result in additional driving to Downtown Denver and increased demand for parking.

Those transit users who would either drive themselves or be driven downtown, if transit were no longer available, will experience increased costs in the No Transit scenario, including parking costs. We estimated these parking costs based on the number of annual trips to downtown, estimated as described above, multiplied by the daily cost of parking ($14.30 in 2025 $s). These total parking costs are estimated to be about **$6.5 million** in one year. A majority of these parking costs, $4.9 million, are for people making work trips. Transit enables households in the region to avoid these costs, possibly freeing up funds to be spent on other consumer goods and services in the region.

This analysis does not include estimates of parking savings for trips to downtown Boulder, also served by RTD, due to limited information on these costs. It also did not specifically consider

parking costs for sports games and special events, which may be higher than regular daily costs. As such, it is likely an underestimate of parking cost savings.

3.4. Real Estate Impacts

The area around stops and stations on high-capacity transit lines may have higher land value due to the connectivity provided by transit, improving access to jobs, services, and people. RTD's 8-county region is comprised of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, and Weld Counties. Of these, 5 have Flatiron Flyer service.

Table 9. Distribution of LRT Stations

County	LRT Stations	Flatiron Flyer Service
Adams	13	Yes
Arapahoe	14	No
Boulder	0	Yes
Broomfield	0	Yes
Denver	35	Yes
Douglas	5	No
Jefferson	10	Yes
Weld	0	No
Total	**77**	

For each county with either LRT presence or Flatiron Flyer service, we calculate the share of the county's land value that is near high-capacity lines. We also calculate land area of these same parcels and categorize them by land-use type (commercial or residential), to show that for most counties, residential land value and commercial land value is disproportionately weighted to the areas around high-capacity stops, showing the economic significance of high-capacity transit access.

In Arapahoe county, for example, commercial land near LRT stations constitutes 6.7% by square mileage but represents nearly a third of the land value at 32.0%. We see similar trends weighted to the value of station-adjacent land in residential terms. Jefferson County, for example, has 10 LRT stations and a few Flatiron Flyer stops. Residential land within a half mile of these stations and stops constitutes only 1.2% of the residential land area, but 5.3% of the total residential land value of the county. Between commercial and residential in these counties, only commercial real estate in Broomfield breaks this pattern (where respective shares are nearly equal).

For the six counties of Adams, Arapahoe, Boulder, Broomfield, Denver, and Jefferson, the total commercial land value near high-capacity transit is 40.3% of the total, but only 11.9% of the actual land area. Similarly, for residential uses, these numbers are 11.3% of land value and 2.7% of land area.

Table 10. Shares of commercial land within 1/2 mile of high-capacity transit

County	Actual Value Within Buffer, $B	Share of All Actual Value in County	Millions of Sq Mi of Land Within Buffer	Share of All Commercial Land in County
Adams	$1.8	9.8%	7.8	7.9%
Arapahoe	$5.2	32.0%	7.7	6.7%
Boulder	$5.1	31.6%	3.3	6.3%
Broomfield	$0.6	17.6%	2.2	18.5%
Denver	$41.1	55.8%	27.1	22.4%
Douglas	$3.8	23.2%		
Jefferson	$3.4	23.0%	10.7	11.0%
Six County Region	$57.1	40.3%	58.8	11.9%

Note: Land area is not included for Douglas County because of ambiguities in how parcels are represented in the data for that county. For that reason, Douglas County is not included in the six-county total.

Table 11. Shares of residential land within 1/2 mile of high-capacity transit

County	Actual Value Within Buffer, $B	Share of All Actual Value in County	Millions of Sq Mi of Land Within Buffer	Share of All Residential Land in County
Adams	$5.8	6.5%	9.0	3.3%
Arapahoe	$10.7	7.3%	8.5	3.3%
Boulder	$13.0	12.1%	6.2	2.1%
Broomfield	$1.2	5.8%	0.7	2.9%
Denver	$39.9	20.3%	12.6	11.2%
Douglas	$0.8	0.7%		
Jefferson	$7.3	5.5%	8.3	1.2%
Six County Region	$77.9	11.3%	45.5	2.7%

Note: Land area is not included for Douglas County because of ambiguities in how parcels are represented in the data for that county. For that reason, Douglas County is not included in the six-county total.

To complete this analysis, primary parcel data is taken from the Colorado Public Parcels dataset, made available by the CO OIT GIS. The land use description field was recoded to indicate one of five categories, including Commercial, Residential, Agricultural, Civic and Other uses. “Commercial” is used for land use descriptions that are obviously industrial, retail, lodging, manufacturing, warehouse, or other business uses. This data includes assessed value for each parcel.

Buffers around stops and stations were defined using a ½ mile threshold, representing about a 12-minute walk for a slower walker.

3.5. Social and Community Impacts

Transit provides a wide range of social and community benefits, many of which can be monetized based on a combination of direct accounting of costs associated with externalities and willingness-to-pay factors. In this section, we estimate the monetized safety and emissions impacts of transit and comment on other potential impacts: road and parking construction costs, and health impacts.

3.5.1. Safety Cost Savings

Transit is generally safer than driving or riding in a car. Therefore, transit service makes regional mobility safer. Using the VMT by mode estimates for the No Transit and Existing Conditions scenarios, we estimated the differences in fatalities, injuries, and damaged vehicles. The analysis uses national crash rates by mode from Bureau of Transportation Statistics' (BTS) National Transportation Statistics (NTS) data, estimated for TREDIS software. As shown in Table 12, providing public transit as a safer alternative to other modes saves approximately **19 fatalities, 778 injuries, and damage to 1,955 vehicles** for one year. Based on per passenger trip risk of fatalities, travel by bus is twice as safe as driving and travel by commuter rail is more than seven times safer than driving.

Table 12. One-year change in safety incidents

Crash Type	Bus	Light Rail	Commuter Rail	Demand Response	Total
Fatalities	12	3	3	0	19
Injuries	420	165	190	3	778
Involved Vehicles	1,014	426	540	-26	1,955

Source: EBP analysis of RTD onboard survey data, BTS NTS derived rates developed for TREDIS software

These incidents can be valued using USDOT factors to estimate the value of the reduction in incidents, which is summarized in Table 13.

Table 13. One-year safety savings (2025$ millions)

Crash Type	Bus	Light Rail	Commuter Rail	Demand Response	Total
Fatalities	$ 171.1	$ 41.0	$ 46.9	$ 5.3	$ 264.3
Injuries	$ 101.9	$ 40.1	$ 46.1	$ 0.6	$ 188.8
Involved Vehicles	$ 5.8	$ 2.4	$ 3.1	$ (0.1)	$ 11.1
Total	$ 278.8	$ 83.5	$ 96.1	$ 5.8	$ 464.2

Source: EBP analysis of RTD onboard survey data, BTS NTS derived rates developed for TREDIS software, USDOT BCA Guidance for valuation factors

3.5.2. Emissions Cost Savings

Transit provides high-capacity transportation, resulting in avoided emissions compared to a No Transit scenario.

To estimate this impact, in the No Transit scenario, transit VMT is eliminated and replaced by a combination of private vehicle, taxi and TNC miles as well as walking and cycling miles, while some transit trips are not replaced with any trips (trips that would not be made).

To estimate the emissions impacts of public transit, we compare emissions generated by transit VMT in the Existing Conditions scenario to emissions from the replacement VMT in the No Transit scenario. Emissions costs include VOCs, NO_x, SO_2, PM2.5, and CO_2. Components of the analysis include:

- VOCs, NO_x, SO_2, and PM2.5 emissions rates by mode and fuel type are derived from a national MOVES run used in the TREDIS software.
- CO_2 emissions were estimated based on fuel efficiencies by mode and CO_2 production per gallon of fossil fuel consumed. Fuel efficiency for passenger cars is from a national MOVES run used to estimate rates in the TREDIS software. Fuel efficiency for diesel buses is calculated using mileage and fuel consumption reported in the NTD. CO_2 emissions rates are from EIA estimates converted to pounds per gallon.
- Diesel bus rates and electric bus emissions rates were combined proportionally based on RTD bus mileage by fuel type.
- Emissions for demand response vehicles are assumed to match gasoline bus rates, because gasoline fuel efficiency (determined using fuel consumption and mileage for demand response reported in the NTD) is similar to that of the gasoline bus rates contained in the TREDIS software.
- RTD commuter rail and light rail are electric and assumed to have no emissions.
- We use the emissions cost factors from USDOT BCA Guidance to value emissions reductions. NO_X, SO_2, and PM2.5 valuation factors are from the 2025 USDOT BCA guidance. The valuation factor for VOCs is from the 2020 USDOT BCA guidance (not updated since) and the CO_2 valuation factor is from the 2024 USDOT BCA guidance (not included in more recent guidance).

Based on this analysis, transit results in VOC, SO_2, PM2.5, and CO_2 emissions avoided and excess NO_x emissions with proportional financial impacts compared to a No Transit scenario (Table 14 and Table 15). The 125 thousand metric tons of CO_2 avoided in one year is equivalent to powering 26 thousand homes in the United States for one year or to the impact of two million trees grown for ten years.[11]

[11] This calculation was made using the EPA's Greenhouse Gas Equivalencies Calculator (https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator).

Table 14. One-year change in emissions by transit mode (metric tons)

Pollutant	Bus	Light Rail	Commuter Rail	Demand Response	Total
VOC	54	24	29	-12	94
NO_x	-33	15	18	-4	-3
SO_2	0	0	0	-0	1
PM2.5	2	1	1	-0	3
CO_2	44,838	41,210	49,661	-10,445	125,264

Source: See assumptions and data sources in bullet points above.

Table 15. Financial impact of emissions avoided, by transit mode (2025$ millions)

Pollutant	Bus	Light Rail	Commuter Rail	Demand Response	Total
VOC	$ 0.2	$ 0.1	$ 0.1	$ (0.0)	$ 0.3
NO_x	$ (0.7)	$ 0.3	$ 0.4	$ (0.1)	$ (0.1)
SO_2	$ 0.0	$ 0.0	$ 0.0	$ (0.0)	$ 0.1
PM2.5	$ 1.7	$ 1.0	$ 1.1	$ (0.3)	$ 3.5
CO_2	$ 11.6	$ 10.7	$ 12.8	$ (2.7)	$ 32.4
Total	$ 12.7	$ 12.0	$ 14.5	$ (3.1)	$ 36.2

Source: See assumptions and data sources in bullet points above.

3.5.3. Road and Parking Construction

As described in Section 3.1, transit eliminates about 464 million vehicle miles of travel annually by providing higher capacity alternatives to driving and taxis/TNCs. In general, road construction demands in a region are correlated with peak period VMT. Urban highway construction has annualized costs of about $200,000 to $500,000 per lane mile.[12] More research on the distribution of additional VMT in the No Transit scenario and of road capacity is required to estimate potential road construction costs that would result from the elimination of transit in the Denver region.

Parking construction costs can be significant: estimated to be about $15,000 per parking spot in a surface lot and $35,000 per parking spot in a garage. However, we do not expect there to be sufficient additional demand generated by the elimination of transit to require additional parking.

Determining additional parking demand uses data from the Onboard Survey to estimate the percentage of transit trips by mode with the alternative “drive” and “be driven” that are to the downtown core parking area (mapped in the 2024 Parking Study Report), applying a parking demand-per-trip factor of 10 percent for “be driven” trips, to account for the fact that many of these trips may be either drop off trips or trips that were already going to downtown. This

[12] Litman, Todd. Evaluating Public Transit Benefits and Costs: Best Practices Guidebook. Victoria Transport Policy Institute, 2026.

percentage is applied to total annual trips by mode from the National Transit Database. We then divided by a factor of 330, reflecting a conversion of annual trips to weekday trips. (According the 2024 Parking Study Report, “parking demand [peaks] on Tuesdays, Wednesdays, and Thursdays between 8 a.m. and 6 p.m., aligning with typical commuting patterns of downtown employees”.) This leads to a total additional demand of 1,389 parking spaces per weekday.

Downtown Denver’s annual visits by employees are still under 50% of pre-pandemic levels. According to the 2024 Parking Study Report, at an example parking garage “average utilization during [peak demand] hours is estimated to remain well below 50 percent.” In 2024, there were 32,947 total stalls at 95 parking locations in 7 sub-districts throughout Downtown Denver. With 50 percent capacity, the additional 1,389 spaces required would be accommodated.

We also considered whether there would be any need for additional parking at specific sub-districts. At a utilization of 50 percent, the Golden Triangle, the sub-district with the fewest parking stalls, would have an excess capacity of 583. If the 1,389 parking spaces demanded were distributed equally among the downtown sub-districts, this would be an additional demand of 199 spaces per sub-district, still well within the capacity of even the Golden Triangle.

3.5.4. Health

Research shows that walking and cycling can lead to improved health outcomes. Many transit users walk or bike to access transit services. When transit trips are replaced by driving or taxis or are not made, this also results in the individuals who would have made these transit trips walking or cycling less. USDOT guidance values each induced walking trip at $8.36 and each induced cycling trip at $7.45 (for an average trip length of 0.86 miles and 2.38 miles, respectively).[13] This analysis did not include accounting of walk and bike access mileage that would have been eliminated.

4. Impacts Not Considered in this Analysis

This analysis was not exhaustive in evaluating all potential social benefits and economic impacts generated by RTD. Other potential impacts include:

- **Time savings for people whose alternative to transit is walking.** About 11 percent of respondents to the RTD onboard survey stated that if RTD was not available, they would walk. For these trips, RTD likely provides time savings which could be estimated and monetized.
- **Monetization of the value of enabled trips that are not for work or medical purposes.** While work and medical trips are generally the highest values, all enabled trips, including social and shopping trips, have value. A consumer surplus method is often employed to estimate the value of enabled trips across trip purposes.

[13] USDOT Benefit Cost Analysis Guidance 2026

- **Special event access and attraction.** Transit can provide critical access to large events, such as sporting events, conferences, and concerts, where parking is limited and congestion can become particularly problematic. The presence of transit in the region likely makes it more attractive for conferences and events, which positively impact the regional economy.
- **Agglomeration impacts.** The concentration of employment and improved labor access enabled by transit has been found to have positive impacts on economic productivity.
- **Health and road construction impacts.** These impacts are described in Section 3, but not estimated in this analysis.