

**We make lives better  
through connections.**

---

# **Title VI Service Equity Analysis Report**

**September 2024 Service Changes**

# Service Equity Analysis: September 2024

## Contents

- Executive Summary.....2
  - Methodology*.....2
  - Major Service Changes*.....2
  - Findings*.....2
- Introduction.....3
  - Title VI and Environmental Justice*.....3
  - Service Change Philosophy*.....3
  - RTD’s Title VI Equity Analysis Policies*.....4
- Analysis.....5
  - Data Sources and Methodology*.....5
  - Public Outreach Overview*.....6
  - Major Service Change, Disparate Impact and Disproportionate Burden Analyses*.....7
    - Changes by Transit Mode.....7
  - Major Service Change Review*.....8
    - Major Service Change Reductions.....8
    - Major Service Change Increases.....8
    - Route- and Line-Level Analysis .....8
    - Systemwide Analysis.....9
- Summary of Findings..... 15
- Appendix A: Systemwide Service Changes
- Appendix B: Analysis of Impact on Access to Employment, Social Services, Senior Housing & Facilities, Schools, Retail and Convenience Stores

# Service Equity Analysis: September 2024

## Executive Summary

This document summarizes the analysis of major service changes proposed for the **September 2024** runboards to ensure that the changes will not inequitably impact minority and low-income populations.

### Methodology

RTD's established Title VI program methodology defines the process to identify major service changes, disparate impacts and disproportionate burdens. Analyses were performed at the route and block group levels to identify any potential disparities in service changes based on race/ethnicity or income.

### Major Service Changes

RTD proposes changes to **38** bus route/patterns of RTD's forthcoming **September 2024** runboard. Of this change, **one** service met the established threshold for a major service change. The route tabulated below has proposed adjustments to service that were greater than 25% of baseline service and are proposed for the long-term (will remain in effect for 12 or more months).

<b>Service Adjustments (1 service)</b>	<b>Route 40:</b> Improve headways to 15 minutes weekday mornings through evenings along the entire route.
--	---

### Findings

Major service changes included in the proposed **September 2024** service changes include only the improvement of service levels of Route 40. This route serves populations in east Denver that are below the district average of minority populations and just under the district average for low-income populations.

When considering the demographics within the service area (within a quarter mile) of the major service increase and as a proportion to the district overall, low-income populations received a slightly lower increase in service (i.e., were less positively impacted) compared to non-low-income populations. Low-income areas received 0.02% less of a benefit than non-low-income areas. However, this difference does not meet the 10% disproportionate burden threshold. Minority areas received less of an increase in service (i.e., were less positively impacted) compared to non-minority populations. Minority areas benefitted 0.15% less than non-minority areas, a difference falling below the 10% disparate impact threshold. Thus, a potential disparate impact was identified at the route level for the changes proposed for Route 40. The systemwide service increases findings mirror the route analysis for Route 40 due to the Route 40 being the sole major service change.

# Service Equity Analysis: September 2024

## Introduction

### Title VI and Environmental Justice

Equity is a core principle of RTD's functional mission to provide mass transit service within the Denver region. An equitable mass transit system fairly distributes the benefits and adverse effects of transit service without regard for race, color, national origin, or low-income status. This principle is detailed and reinforced by Title VI of the Civil Rights Act of 1964 and Executive Order 12898 pertaining to environmental justice.

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color or national origin in programs receiving federal financial assistance. Specifically, Title VI states, "No person in the United States shall, on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

In 1994, President Clinton issued Executive Order 12898, which states that each federal agency "shall make achieving environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

The Federal Transit Administration's (FTA) Circular 4702.1B provides its recipients of FTA financial assistance with instructions for achieving compliance with Title VI and Environmental Justice. In this circular, the FTA requires RTD to evaluate, prior to implementation, any and all service changes that exceed the established major service change threshold, to determine whether those changes will have a disproportionately negative impact on minority or low-income populations.

This equity analysis report has been prepared to document changes that are proposed to occur between the current and proposed runboards. Routes with major service changes include one major increase and one reinstatement of a formerly suspended route pattern. These changes and all others have been reviewed individually at the route/line level and in aggregate at the block group level to identify potential impacts to the communities RTD serves.

### Service Change Philosophy

An equity analysis is triggered by proposed major service changes to the transit services provided by RTD. These changes include the addition of new routes/lines, the elimination of existing routes/lines and changes to the alignment and trip frequency within existing routes/lines. RTD has established principles to identify the service changes needed to meet the diverse travel needs of those within the district and maintain a high-performance, sustainable transit system.

# Service Equity Analysis: September 2024

## RTD Service Changes Guiding Principles

- Service performance evaluation based on service standards
- The effects on the overall integrity of the transit network and on transit dependent markets
- The availability of alternative services to affected riders
- Cost-effective distribution throughout the district and Family of Services and the ability to enhance service when possible
- Compliance with Title VI of the Civil Rights Act: benefits and services are provided without regard to race, color or national origin; also, disparate effects on low-income and minority populations
- Response to changes in the communities where services are provided

RTD services are divided into various service classes (the "Family of Services") depending on service type, route alignment and frequency. Each service class has its own service standards derived from the performance of all routes within each class. RTD continually and comprehensively adjusts services in response to changes in ridership and operational performance of the transit system. It is also the agency's responsibility to identify services that are underperforming and recommend modifications, curtailment or cancellation of service as warranted. In keeping with Colorado Revised Statutes, RTD utilizes official service standards to establish performance metrics used to identify underperforming services on a class-of-service basis. The agency uses these metrics to identify a series of service changes. Equity analyses examine the impact of the proposed major service changes on minority populations and low-income households at or below 150 percent of the Department of Health and Human Services Poverty Guidelines.

...The general assembly further finds that the district should be organized efficiently, economically, and on a demand-responsive basis and that the district should consider least-cost alternatives in discharging its responsibilities.

*Colorado Revised Statutes 32-9-119.7 Farebox Recovery Ratios – Plans*

## RTD's Title VI Equity Analysis Policies

Based on requirements within FTA Circular 4702.1B Chapter IV.7, RTD, as an agency receiving federal funding, must establish a Major Service Change Policy, a Disparate Impact Policy and a Disproportionate Burden Policy. Collectively, these policies provide foundational requirements for evaluating service change proposals for equity and compliance with Title VI. These policies and their applicable thresholds are listed below:

1. **Major Service Change:** A major service change is defined as a 25% addition or reduction in the service hours of any route that would remain in effect for 12 or more months. All major service changes will be subject to an equity analysis that includes an analysis of adverse effects.
  - a. An **Adverse Effect** is defined as a geographical or temporal reduction in service that includes, but is not limited to, eliminating a route, shortening a route by eliminating segments, rerouting an existing route and increasing headways. RTD shall consider the degree of adverse effects and analyze those effects when planning major service changes.

# Service Equity Analysis: September 2024

2. **Disparate Impact Policy:** A major service change should not adversely affect a minority population 10% more than non-minority populations; this level of impact is considered a disparate impact.
3. **Disproportionate Burden Policy:** A major service change should not adversely affect a low-income population 10% more than non-low-income populations; this level of impact is considered a disproportionate burden. A low-income population is a group of households who are at or below 150% of the Department of Health and Human Services Poverty Guidelines.

If a proposed major service change results in a disparate impact or a disproportionate burden, RTD will consider modifying the proposed service change. RTD will then analyze the modification and make sure it removed the potential disparate impact or disproportionate burden. If a less discriminatory option cannot be identified and RTD can demonstrate a substantial legitimate justification for the proposed service change, the FTA may allow RTD to proceed with the proposed change.

## Analysis

### Data Sources and Methodology

Demographic data used for this analysis comes from the Census Bureau's American Community Survey (ACS) 5-Year Estimates for years 2018 to 2022 and is reviewed at the census block group geographic level. Other data related to the analysis includes route alignments and block group geography. The linking of these datasets into a service-geographic-demographic combination relates equity populations with changes in service at a geographic level to aid in reviewing potential impacts to district equity communities.

The equity analysis for the **September 2024** runboard looked at whether an individual route's major service changes impacted the communities it served. The review needed to determine the proportional difference in changes made to equity populations within a quarter-mile service area of a bus route or rail line. These proportional differences were compared against district population proportions of equity populations and route/line proportions of equity populations.

Low-income status for population within the district is derived from Census Bureau population estimates and is based on 150% of the United States federal poverty level (Department of Health and Human Services guidelines), based on local context, which is an annual income of \$32,580 for a family of three. Minority status is based on the non-white and Hispanic or Latino count of total population. The service area is based on the collection of block groups wholly or partially within district boundaries.

Route/line service area population is determined using a quarter mile "catchment area" centered around bus stops and rail stations. This catchment area is then used to calculate the percentage overlap of block group-based population underneath. For instance, if a catchment area contains 100% of the underlying block group, 100% of the population would be associated with the services within a quarter mile; if 50% of a block group was contained in the catchment area, only half of the underlying population would count as being included (ratios of population demographics would be unchanged).

RTD calculates the net change in service hours for each route/line proposal to provide the percent difference from baseline service hours. Any change meeting or exceeding a 25% change (either positive or negative) from baseline is flagged as a major service change for further review.

# Service Equity Analysis: September 2024

## Public Outreach Overview

Six public meetings were conducted between June 18-26, 2024. No comments regarding the major service change were collected during these meetings. Table 1 captures the meeting locations, dates, and number of attendees.

The Communications and Outreach department produced a recorded webinar and downloadable toolkits, which were provided to community-based organizations. Efforts were made to increase the use of social media platforms, and in-system promotional assets were used to inform the public about the service changes. RTD's newly formed Impact Team was deployed to inform and gather feedback at stops and stations.

The public was also notified of the ability to submit comments to [service.changes@rtd-denver.com](mailto:service.changes@rtd-denver.com), by phone at 303-299-6000 and by fax at 303-299-2227.

Table 1. Public meeting details

Date and Time   Location	Comment Themes	Number of Attendees
June 18 at 12 p.m.   Virtual	No comments on the major service changes	7
June 18 at 5:00 p.m.   1325 W 11 <sup>th</sup> Ave, Denver, CO, 80204	No comments on the major service changes	2
June 20 at 5:30 p.m.   1660 Blake St, Denver, CO, 80202	No comments on the major service changes	1
June 22 at 5:00 p.m.   2401 E Colfax Ave, Denver, CO, 80206	No comments on the major service changes	1
June 24 at 5:30 p.m.   Virtual	No comments on the major service changes	7
June 25 at 5:00 p.m.   1000 Englewood Pkwy, Englewood, CO, 80110	No comments on the major service changes	7
		<b>Total – 25</b>

In addition to the public meetings, the Transit Equity Office contacted 67 key public activity centers within a quarter mile of Route 40. These entities were informed of the proposed major service change, provided with instructions on how to offer feedback, and encouraged to attend the open houses.

The Transit Equity Office collaborated with three community-based organizations (CBO) to share information and collect feedback virtually and in-person. Of note, one CBO attended a community event and conducted direct outreach along the Route 40 corridor. A total of 39 customers responded to the survey administered by the CBO. Four additional survey responses were collected via the Service Changes website bringing the total survey responses for the Route 40 to 43. Of these 43 responses, 41.5% stated that the change has no impact on them, 14.6% indicated it has a somewhat positive impact, and 41.5% stated it is a very positive change. Table 2 captures the common themes of the feedback received and the total responses.

# Service Equity Analysis: September 2024

Table 2. Direct Survey Feedback

<b>Route 40</b>	This is amazing!
	Morning and evenings are vague. Suggest stating 7am- 8pm. Would love to see a limited 40
	Great change
	Would love to see this level of service on the weekends as well
<b>Total Responses – 43</b>	

## Major Service Change, Disparate Impact and Disproportionate Burden Analyses

Proposed service changes for the **September 2024** runboard that resulted in a 25% or greater change in service were categorized by equity population (minority or non-minority, low-income or non-low-income) for comparison. Routes were categorized as either equity or non-equity based on their identification within the prior (current) network using 2018-2022 ACS five-year demographic data.

A comparative, proportional equity analysis was completed to review the route/line individually. This analysis identified the equity and non-equity populations within a route/line service area and compared those against the equity and non-equity populations of the district. If impacted equity populations within the route/line service area received 10% or greater impacts compared to non-equity populations, the route/line had a potential finding of disparate impact (for minority populations) or disproportionate burden (for low-income populations) and was flagged for a potential finding of impact.

### Major Service Change Test

Identify routes with proposed major service changes (based on trips or hours) of 25% or more

## Changes by Transit Mode

For the **September 2024** runboard, 32 bus routes and six rail lines will undergo various service changes. Of these, **6 routes will see combined increases in bus service of over 115 total weekday revenue service hours and 51 additional weekend service hours.** While temporary and technically not meeting major service change requirements, with the ending of the Downtown Rail Reconstruction Project the discontinuation of temporary service on the Free MetroRide with reinvestment of its resources into improving Free MallRide service levels is a combined cost neutral change. The improvement of service on the Free MallRide allows for service every 5 minutes between Denver Union Station and Civic Center Station along an updated alignment along 15<sup>th</sup> and 17<sup>th</sup> Streets. The L Line is also proposed to resume operations downtown in September.

Table 3. Summary of service changes by transit mode

Mode	Change in Weekday Daily Hours
<b>All Bus</b>	<b>+115</b>
<b>All Rail</b>	<b>0</b>
<b>Overall</b>	<b>+115</b>



# Service Equity Analysis: September 2024

## Major Service Change Review

A complete listing of all service changes can be found in Appendix A. Changes were first reviewed in aggregate equity groupings of routes/lines prior to individual review of routes/lines, route/line block groups and overall network levels; equity grouping comparison occurred at every level. Major service changes are categorized as the following:

- **Major Service Reductions** (a service reduction of 25% or more)
- **Major Service Increases** (service increases of 25% or more related to new or restructured service)

### Major Service Change Reductions

There are no major service reductions proposed for the proposed **September 2024** runboard.

### Major Service Change Increases

One bus route, the Route 40, had a proposed major service increase which includes service increases of 25% or greater. Improved headways are proposed on Route 40 for the **September 2024** runboard as outlined in the RTD Board approval of the Systemwide Optimization Plan (SOP).

### Route- and Line-Level Analysis

Having identified the service changes which meet the definition of Major Service Change, the next step in the analysis is to look at each route/line individually to determine potential disparate impacts (DI) and/or disproportionate burdens (DB). Both service reductions and service increases are analyzed. For service increases, the analysis examines the extent to which the benefits of the improvements are inclusive of minority and low-income populations. For service decreases, the analysis examines the extent to which the adverse effects of the reductions are disproportionately borne by minority and low-income populations.

#### **Disparate Impact and Disproportionate Burden Analysis**

For each route/line with a major service change, determine the percent of the route's/line's impacted equity and non-equity populations comprising the district's equity and non-equity populations; if the difference is greater than 10% for equity populations, additional review is required for potential adverse impacts

In concert with RTD's Title VI policies, the demographics of each of major service change routes were reviewed for potential DI or DB findings. For service increases, the following analysis examines the extent to which the benefits of the improvements are inclusive of minority and low-income populations. Because these are proposed service increases, protected populations falling below these thresholds are flagged for potential concerns. The narrative analysis of each individual line follows, which includes further considerations of access to jobs, education, health care, food and social services for minority and low-income populations.

#### **Route 40**

*Proposal: As outlined in the RTD Board-approved System Optimization Plan (SOP), it is proposed to implement 15-minute headways weekdays, mornings through evenings, along the full corridor. This also ensures there is a Collective Bargaining Agreement compliant restroom at each terminal.*

As shown in **Table 4**, a slightly lower percentage of the district's low-income population stands to benefit from the proposed major service increase as compared to non-low-income population (0.99% vs. 1.01%, respectively). However, this difference falls below the 10% disproportionate burden threshold (0.91%). Therefore, no potential route-level disproportionate burden is found. However, a lower percentage of the

# Service Equity Analysis: September 2024

district's minority population benefits from the proposed major service increase as compared to the non-minority population (0.91% vs. 1.06%, respectively). This difference falls below the 10% disparate impact threshold (0.95%). Thus, there is a potential disparate impact found at the route level requiring further examination (i.e., access to key public service destinations, community engagement and network level analysis).

Table 4. Route 40 Disparate Impact and Disproportionate Burden Analysis

<b>Route 40 - Colorado Boulevard</b>				
<b>May 2024 to September 2024 Service Change Analysis</b>				
	<b>Non-Minority Population</b>	<b>Minority Population</b>	<b>Non-Low-Income Population</b>	<b>Low-Income Population</b>
<b>Route Service Area Impacted</b>	<b>20,315</b>	<b>10,456</b>	<b>26,183</b>	<b>4,246</b>
District Statistics	1,915,350	1,149,204	2,590,598	430,356
District Total Base Population	3,064,553		3,020,954	
<i>% of District Not Impacted</i>	<i>98.94%</i>	<i>99.09%</i>	<i>98.99%</i>	<i>99.01%</i>
<b>% District Impacted</b>	<b>1.06%</b>	<b>0.91%</b>	<b>1.01%</b>	<b>0.99%</b>
<b>Thresholds</b>	<b>Disparate Impact (DI)</b>		<b>Disproportionate Burden (DB)</b>	
<i>DI &amp; DB Thresholds Are 90% for service increases and 110% for service decreases of % District Impacted Population</i>	<i>DI Threshold</i>	<i>Min Pop Impacted</i>	<i>DB Threshold</i>	<i>L-I Pop Impacted</i>
	<b>0.95%</b>	<b>0.91%</b>	<b>0.91%</b>	<b>0.99%</b>

The improvement of service would increase access to:

- About 44,340 jobs
  - 51.3% low-to-medium wage jobs, which is above the RTD District average (45.1%)
  - 17.1% jobs held by minorities, which is above the RTD District average (13.6%)
  - 18.3% jobs held by Hispanic/Latino workers, which is above the RTD District average (17.9%)
- 119 retail/convenience stores
- 66 human and social services centers
- 9 senior housing and facilities
- 27 colleges, middle schools and elementary schools

## Systemwide Analysis

In accordance with RTD's 2022 Title VI Program Update, a systemwide analysis is required in addition to route- and line-level analyses. A system level analysis provides further understanding of changes to service levels for Title VI protected populations at aggregate levels.

The major service change threshold of 25% or greater used for individual route-level analyses was used as precedent to determine potential adverse impacts overall and to identify structural issues in areas requiring further review. Once average district thresholds for low-income and minority populations are established, subsequent equity analyses focused on the subset of district block groups that experienced major service changes of 25% or greater (additions or reductions in service), and whether equity block groups with major service changes experienced service changes of 10% or more compared to non-equity block groups. Routes with major service changes are later comparatively reviewed for potential adverse effects at route-block group levels (block groups within route service areas).

# Service Equity Analysis: September 2024

The analysis of all service changes identified the following:

- Systemwide, bus service increases by over 115 weekday revenue hours
- Of the over 31,000 people served by stops within the service area with major service changes, equity populations represented an average share of population compared to district averages. Of this total, nearly 4,300 low-income people and nearly 10,500 minorities would receive service improvements.
- At the systemwide level, equity routes and non-equity routes<sup>1</sup> were compared only for those with major service changes. The one bus route with major service increases serves slightly below-average low-income and minority populations and is not classified as an equity route.

**In review of the proposed Route 40 changes at the systemwide level, there is a potential disparate impact finding.**

An analysis of all district block groups and their service levels was conducted to establish the baseline equity thresholds for low-income and minority populations and to determine the systemwide magnitude of impacts of the **May 2024** to **September 2024** service change. Block groups with low-income and minority populations at or above the district average are referred to in this analysis as “equity” block groups whereas on-low-income and non-minority block groups are referred to as “non-equity” block groups.

## Network Analysis Process

Determine block groups at/above district averages for low-income population (14.2%) and minority population (37.5%).

Determine which block groups experienced service changes of 25% or more.

Of block groups with a major service change, compare the difference in population for equity versus non-equity block groups; if the difference is more than 10%, review for potential adverse impacts.

There are 2,197 block groups defined as being wholly within or mostly within the District.<sup>2</sup> Using the 2018-2022 5-Year ACS Estimates, total population residing within these block groups was calculated as well as the total minority population and total low-income population, calculated separately, to determine the District-wide low-income and minority rates which set the thresholds for which block groups are classified as above average. While the percent minority figure of 37.5% was derived by using the base population of the service area (3.064 million), the low-income population percentage of 14.2% is derived from a slightly smaller population figure (3.02 million). This is due to the smaller population whose poverty status the Census Bureau can determine.<sup>3</sup> The thresholds summarized in **Table 4** yielded 824 (37.5% of all) block groups above the district average for low-income population, and 846 (38.5%) block groups above the district average for minority population.

<sup>1</sup> Based on existence of the route within the May 2024 network and the population within a quarter mile of bus stops or rail stations. 2018-2022 5-Year ACS estimates were used for population identification.

<sup>2</sup> Some block groups are not completely contained within district boundaries due to differences in boundaries between the District and Census-defined geographies.

<sup>3</sup> The total population whose poverty status is determinable/assessed is lower than the estimate of total population due to the inability of the Census to determine income for everyone estimated to reside in a particular block group.

# Service Equity Analysis: September 2024

Table 5. District averages; NTD 2023; ACS 2018-2022 5-year estimates

Service Area (sq. mi.)	Total Block Groups	Total Population	Percent Minority	Total Population (assessed)	Percent Low-Income
2,342	2,197	3,064,553	37.5%	3,020,954	14.2%

The proposed major service changes were examined in aggregate by transit mode to determine overall impacts to underlying population. **Table 6** summarizes the change in service for total block group populations underlying the bus stops with proposed major service increases proportionally compared to population in the District. There are no proposed service decreases. The comparison reviews the equity composition of those who may be impacted by proposed service changes compared to the overall equity composition of the District overall. For the proposed runboard, systemwide service increases mirror the route analysis for Route 40 due to the Route 40 being the sole major service change.

No major service changes (longer than 12 months) were proposed for rail services with the **September 2024** runboard.

Table 6. Systemwide disparate impact and disproportionate burden equity analysis summary for all major service increases

Systemwide Disparate Impact and Disproportionate Impact Analysis: All Increases				
	Non-Minority Population	Minority Population	Non-Low-Income Population	Low-Income Population
<b>Impacted Block Group Population</b>	<b>33,296</b>	<b>15,749</b>	<b>41,916</b>	<b>6,746</b>
<b>District Population</b>	1,915,350	1,149,204	2,590,598	430,356
District Total	3,064,553		3,020,954	
% District Population Not Impacted	98.26%	98.63%	98.38%	98.43%
% District Population Impacted	<b>1.74%</b>	<b>1.37%</b>	<b>1.62%</b>	<b>1.57%</b>
<b>Thresholds</b>	<b>Disparate Impact (DI)</b>		<b>Disproportionate Burden (DB)</b>	
<i>DI &amp; DB thresholds are 90% for service increases &amp; 110% for service decreases</i>	<i>DI Threshold</i>	<i>Minority Pop Impacted</i>	<i>DB Threshold</i>	<i>Low Inc. Pop Impacted</i>
	<b>1.56%</b>	<b>1.37%</b>	<b>1.46%</b>	<b>1.57%</b>

For system-level service changes (service increases solely on Route 40), **minority populations stand to benefit less than non-minority populations** (1.37% vs. 1.74%, respectively). This difference falls below the disparate impact threshold of 1.56%. Therefore, a system-level disparate impact finding is found with the proposed major service increase. **Low-income populations stand to benefit slightly less than non-low-income populations** (1.57% vs. 1.62%, respectively). The difference does not fall below the 10% disproportionate burden threshold of 1.46%. Therefore, no system-level disproportionate burden is found with the proposed major service increase.

**Figures 1 and 2** illustrate the locations of above average low-income and minority block groups within the District as well as highlight services with major service changes (orange). Compared to the District overall, Route 40 serves populations in east Denver close to but below district averages for minority and low-income populations.



# Service Equity Analysis: September 2024

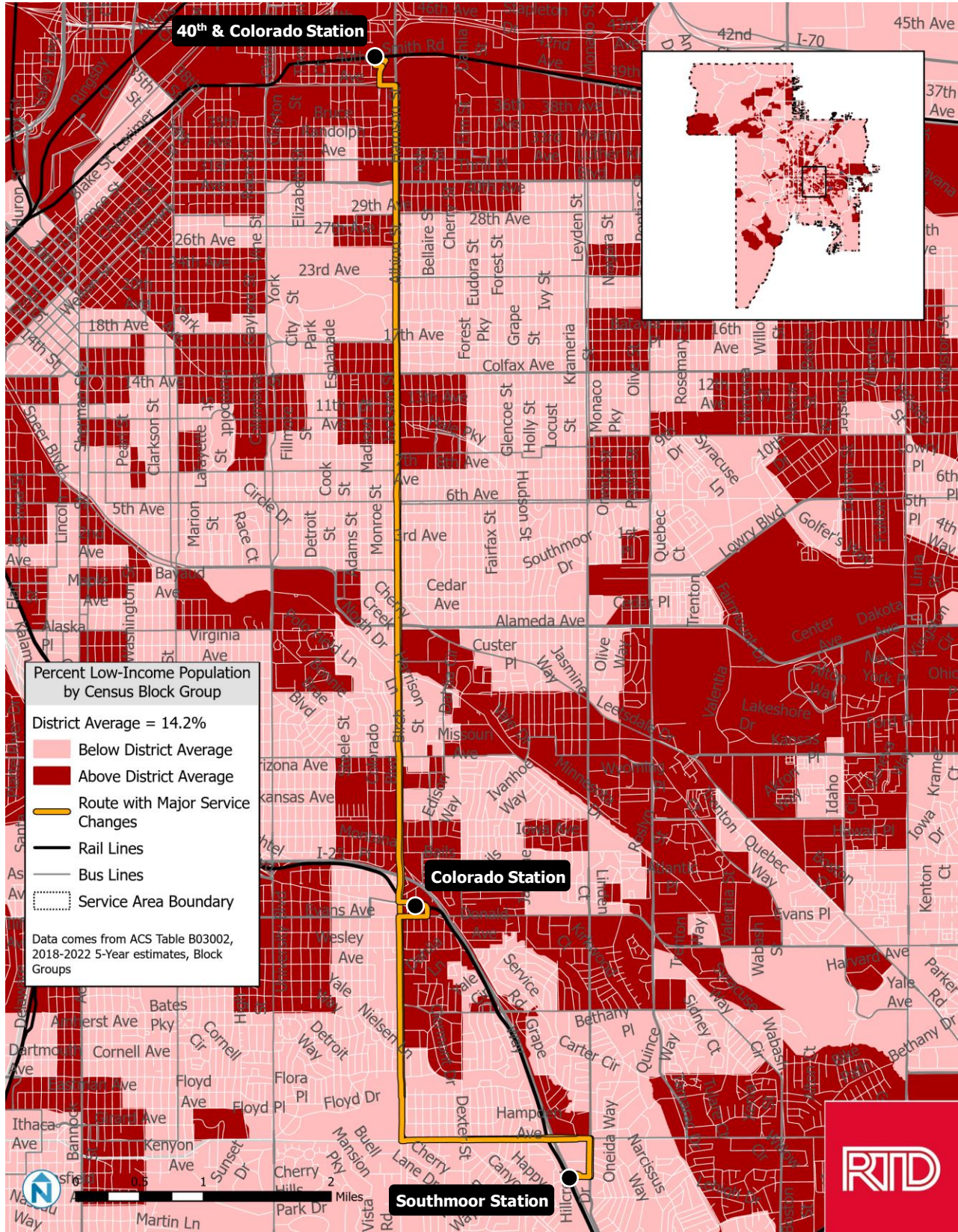


Figure 1. Block groups with above-average low-income population and routes with major service changes; US Census Bureau 2018-2022 5-Year Estimates



# Service Equity Analysis: September 2024

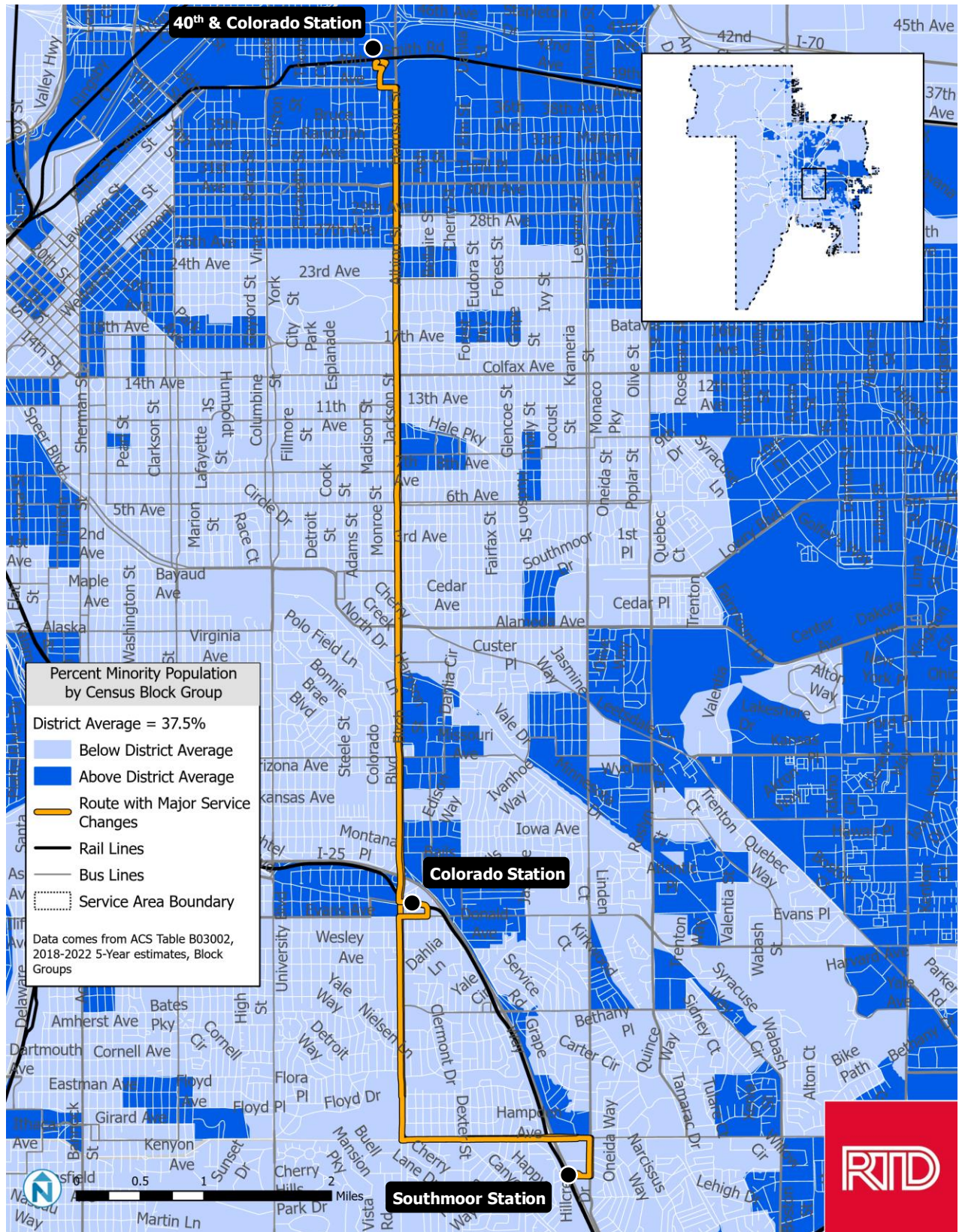


Figure 2. District block groups with above-average minority population and routes with major service changes; US Census Bureau 2018-2022 5-Year Estimates



# Service Equity Analysis: September 2024

Major service changes from **May 2024** to **September 2024** are captured in **Figure 3**. This map provides a generalized view of where service is changing at the route pattern level. The current bus network is shown with the change in service levels colored according to the percentage change in service hours. Route 40 is shown in teal (36% service change). All other bus routes, shown in gray, are proposed to undergo minimal (e.g., schedule adjustments, minor realignments) or no service changes in **September 2024**.

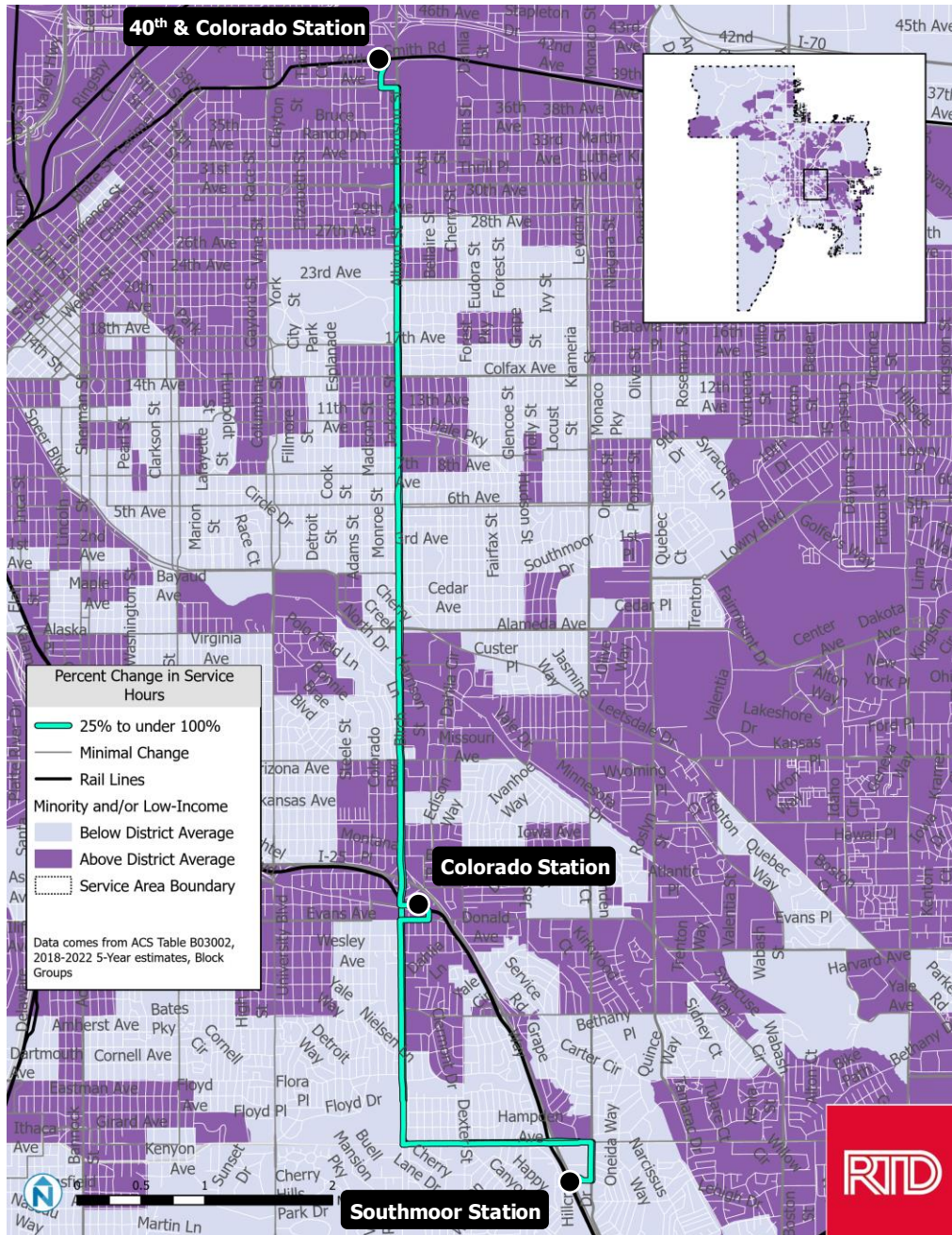


Figure 3. Depiction of route changes by percent change in service hours

# Service Equity Analysis: September 2024

## Summary of Findings

The systemwide service modifications proposed between **May 2024** and **September 2024** include schedule adjustments, suspension of school trips, changes to fall/winter schedules and trip availability and additional service. The sole major service change proposed for this runboard was for service increases on Route 40.

### Route-level Findings:

- Of the 38 total services with proposed changes, taken individually, **one had a potential finding**
- **Route 40 has a potential disparate impact** finding due to minority populations receiving 0.15% less benefit than non-minority populations. Low-income populations benefited 0.02% less than non-low-income populations but the difference did not meet the disproportionate burden threshold

**Table 7** summarizes major service changes by change type, provides findings of potential disparate impacts and disproportionate burdens based on a comparative difference analysis, and provides the individual route service change.

*Table 7. Summary of major service changes by change type and impact*

Service Change Type	Route	Potential Disparate Impact?	Potential Disproportionate Burden?	Service Change Pct
Increase	Route 40	Yes	No	36%

### Systemwide-level Findings:

- Route 40 comprises the September 2024 runboard's only major service change
- Almost 31,000 people live near Route 40 bus stops. Both minority and low-income populations are represented at slightly lower shares of the population than district averages (34% and 14%, respectively). **Low-income populations received a slightly lower benefit (were less positively impacted) compared to non-low-income populations.** Low-income areas benefited 0.02% less compared to non-low-income areas. However, this difference did not fall below the disproportionate burden threshold. **Minority populations received a lower benefit (were less positively impacted) compared to non-minority populations.** Minority areas benefited 0.15% less compared to non-minority areas. This difference fell below the disparate impact threshold; therefore, **a system-level disparate impact was found with the proposed change**
- When considering the proposed service increase on Route 40 for the nearly 50,000 people within the block groups that include the route's stops and as a proportion to the district overall, **minority populations stand to benefit less compared to non-minority populations.** Minority population areas received 0.37% less of a benefit compared to non-minority areas. The difference was below the disparate impact threshold by 0.19%; therefore, **a potential systemwide disparate impact was found. Low-income populations received 0.05% less of a benefit than non-low-income populations.** The difference was 0.11% above the threshold for a potential disproportionate burden; therefore, no potential disproportionate burden was found with the proposed service decrease



# Service Equity Analysis: September 2024

---

## Next Steps for Potential Disparate Impacts and Disproportionate Burden Findings

Given a potential disparate impact or disproportionate burden, RTD will evaluate whether there is an alternative that would serve the same objectives and with a more equitable impact. Otherwise, RTD will either:

- a) Alter the service proposal to avoid, minimize, or mitigate potential disparate impacts/disproportionate burdens, or
- b) Provide a substantial legitimate justification for keeping the proposal as-is and show that there are no alternatives that would have a less disparate impact on minority riders or disproportionate burden on low-income customers but would still accomplish the project or program goals

Alterations to the initially proposed **September 2024** service changes<sup>4</sup> include an improvement in service levels along Route 40 which serves low-income populations at a below average rate than as the District average.

RTD recommends keeping the **September 2024** service plan as proposed as there are no practical alternatives to avoid, minimize or mitigate the disparate impact (Route 40). The substantial legitimate justification for the Route 40 service improvement follows RTD Board approval of the System Optimization Plan (SOP) which recommends frequent service levels along the entire Route 40 corridor between 40<sup>th</sup> and Colorado Station and Southmoor Station. Moreover, the improvement also ensures there is a Collective Bargaining Agreement compliant restroom at each terminal. Thus, providing the substantial legitimate justification for the service improvement.

Additionally, the overall potential benefits to customers of the proposed overall service plan are significant with a large benefit to minority and low-income customers. Specifically, a total of 5 of the 6 minor changes (of the 38 service changes, just those routes with non-cost-neutral impacts to hours) are considered low-income-serving bus routes and a total of 2 out of 6 are considered minority-serving bus routes. Other minor changes include improvements to on-time performance for 15 bus routes, reinstatement of fall/winter tripper service on 8 routes, 3 individual implementations of the SOP, and 4 changes related to finalization of the Downtown Rail Replacement Project.

---

<sup>4</sup> <https://www.rtd-denver.com/service-changes>

# Service Equity Analysis: September 2024

## Appendix A: Systemwide Service Changes

Change Type	Service Changes	
	Route	Description
<i>Modified</i>	<b>0/0B</b>	As described in the RTD Board-approved Systems Optimization Plan (SOP), it is proposed to separate the Route 0 into two separate route services to improve reliability and better match service levels to customer utilization. The new <b>Route 0 - Broadway</b> would operate north of Englewood Station to Civic Center Station, while the new <b>Route 0B – South Broadway</b> service would operate between Englewood Station and Highlands Ranch Town Center.
	<b>3</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed for weekday and Saturday service.
	<b>3L</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	<b>6</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed for weekday and Saturday service.
	<b>11</b>	Reinstate seasonal fall/winter service levels.
	<b>19</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance, are proposed for Saturdays only.
	<b>20</b>	Reinstate seasonal fall/winter service levels.
	<b>24</b>	Reinstate seasonal fall/winter service levels.
	<b>30</b>	Reinstate seasonal fall/winter service levels.
	<b>38</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed for weekdays, Saturday and Sunday services. It is also proposed to relocate the western terminal of the route to the new Lutheran Hospital campus in Clear Creek Crossing.
	<b>40</b>	As outlined in the RTD Board-approved System Optimization Plan (SOP), it is proposed to implement 15-minute headways weekdays, mornings through evenings, along the full corridor. This also ensures there is a Collective Bargaining Agreement compliant restroom at each terminal.
	<b>49</b>	It is proposed to adjust departure times to allow for better connectivity at Commerce City & 72nd Avenue Station.
	<b>51</b>	Reinstate seasonal fall/winter service levels.
	<b>65</b>	Reinstate seasonal fall/winter service levels.
	<b>73</b>	Reinstate seasonal fall/winter service levels.
	<b>88</b>	It is proposed to adjust departure times at Commerce City & 72nd Avenue Station to allow for better connectivity with the N Line.
	<b>88L</b>	It is proposed to adjust departure times at Commerce City & 72nd Avenue Station to allow for better connectivity with the N Line.
<b>93L</b>	It is proposed to adjust trip arrive and leave times at Thornton Crossroads & 104th Avenue Station for better connections between bus and rail, for weekdays, Saturdays and Sundays.	
<b>120L</b>	It is proposed to adjust the trip arrive times at Eastlake and 124th Ave Station to allow better connections to/from Route 120 as well as to/from N Line, for weekdays, Saturdays, and Sundays.	

# Service Equity Analysis: September 2024

Change Type	Service Changes	
	Route	Description
	<b>204</b>	Due to road closures related to road construction along 19 <sup>th</sup> Street, between Quince Avenue and Violet Avenue, March 2024 through Winter 2026, Route 204 will have to detour via Quince Avenue, Broadway and Violet Avenue. Route 204 will be detoured from Wednesday, March 6 through Wednesday, December 30, 2026 due to these closures. Affected stops northbound: 19th St & Riverside Ave (#10389) 19th St & Upland Ave (#10392) Available alternate stops: 19th St & Poplar Ave (#10388) 19th St & Avocado Rd (#10365) Southbound routing is not expected to see any changes.
	<b>205</b>	It is proposed to adjust the 4:07pm northbound trip, from Downtown Boulder Station, to 4:05pm leave time to allow better balance of passenger loads between Route 205 and Route BOLT, related to Boulder High School boardings along Canyon Boulevard.
	<b>225</b>	Return weekday service frequency to fall/winter service levels.
	<b>AB</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance, are proposed for weekdays, Saturdays, and Sundays/Holidays.
	<b>BOUND</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance, are proposed for weekdays only.
	<b>DASH</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance, are proposed for weekdays, Saturdays, and Sundays/Holidays. Return weekday service frequency to fall/winter service levels.
	<b>Free MallRide</b>	Contingent upon the completion of Phase 1 of the Downtown Rail Reconstruction Project the Free Mall Ride is recommended to have 5-minute service frequency restored to an updated detour routing via 15 <sup>th</sup> and 17 <sup>th</sup> Streets. Cost impacts offset by proposed cancellation of Free Metro Ride services.
	<b>JUMP</b>	Return weekday service frequency to Fall/Winter service levels.
	<b>NB</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed for weekdays only. Extend trips to Eldora Ski Resort to allow for seasonal connections.
	<b>P</b>	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	<b>SKIP</b>	Return weekday service frequency to regular service levels.
	<b>D Line</b>	Pending completion of Phase One of the Downtown Rail Reconstruction Project, it is proposed to discontinue the detour to Denver Union Station and restore trips to Central Downtown from DUS.
	<b>E Line</b>	Pending completion of the Coping Panel Project it is recommended to restore 15-minute frequency weekdays 6:00 a.m. - 6:00 p.m., Saturday and Sunday 9:00 a.m. - 6:00 p.m.
	<b>H Line</b>	Pending completion of the Coping Panel Project and Phase One of the Downtown Rail Reconstruction Project it is recommended to restore service to central downtown and restore 15-minute frequency weekdays 6:00 a.m. - 6:00 p.m., Saturday and Sunday 9:00 a.m. - 6:00 p.m.
	<b>W Line</b>	As outlined in the RTD Board-approved System Optimization Plan (SOP), and due to increased ridership, it is recommended to restore weekday 15-minute frequency between Jeffco Government Center and Denver Union Station between 6:00 a.m. - 6:00 p.m.

# Service Equity Analysis: September 2024

Change Type	Service Changes	
	Route	Description
	<b>R Line</b>	Due to changes to E and H Lines some R Line trips need to be adjusted to allow for E and H Line service restoration.
<b>Reduction</b>	<b>OL</b>	Pending the completion of Phase One of the Downtown Rail Reconstruction Project, the midday service of the Route 0 Ltd that was provided as a part of the May 2024 Service change will be discontinued.
<b>Reinstatement</b>	<b>L Line</b>	Pending completion of Phase One of the Downtown Rail Reconstruction Project, it is recommended to restore full service on the L Line alignment.
<b>Suspension</b>	<b>Free MetroRide</b>	Contingent upon the completion of Phase 1 of the Downtown Rail Reconstruction Project it is proposed to discontinue service for the Free Metro Ride. The anticipated return of 5-minute service frequency on the Free Mall Ride will offset the need for the Free Metro Ride until resources become available to fully restore the Free Metro Ride as outlined in the System Optimization Plan. Cost impacts offset by restoration of frequency on the Free Mall Ride.

# Appendix B: Analysis of Impact on Access to Employment, Social Services, Senior Housing & Facilities, Schools, Retail and Convenience Stores

## Route 40

Increase in service

	Employment	Total KAC	Social Services	Senior Housing & Facilities	Elementary Schools	Middle Schools	High Schools	Colleges	Retail (Includes Grocery)	Convenience Stores												
Improved Access	<p>Improvement in access to an estimated <b>44,340 jobs</b></p> <table border="1"> <caption>Employment Access Comparison</caption> <thead> <tr> <th>Category</th> <th>Route 40 (%)</th> <th>District (%)</th> </tr> </thead> <tbody> <tr> <td>Low/Medium Wage Jobs*</td> <td>51.3%</td> <td>45%</td> </tr> <tr> <td>Jobs Held by Workers of Color*</td> <td>17.1%</td> <td>14%</td> </tr> <tr> <td>Jobs Held by Hispanic/Latino Workers*</td> <td>18.3%</td> <td>18%</td> </tr> </tbody> </table> <p>Legend: ■ Route 40 ■ District</p>	Category	Route 40 (%)	District (%)	Low/Medium Wage Jobs*	51.3%	45%	Jobs Held by Workers of Color*	17.1%	14%	Jobs Held by Hispanic/Latino Workers*	18.3%	18%	238	66	9	14	5	0	8	119	17
Category	Route 40 (%)	District (%)																				
Low/Medium Wage Jobs*	51.3%	45%																				
Jobs Held by Workers of Color*	17.1%	14%																				
Jobs Held by Hispanic/Latino Workers*	18.3%	18%																				

\* Low/Medium wage jobs defined as having earnings of under \$3,333 per month, or about \$40,000 per year. Jobs held by workers of color include jobs where the race indicated was not "White Alone." Jobs held by Hispanic/Latino workers include jobs where the ethnicity indicated was Hispanic/Latino. Source: US Census Bureau, 2019.