



Title VI Service Equity Analysis: January 2023 Proposed Service Changes

September 2022

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Executive Summary

This document summarizes the analysis of the service changes between the August 2022 and January 2023 runboards to ensure changes have not inequitably impacted 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 18 bus route/patterns and eight rail lines of RTD's forthcoming January 2023 runboard. Of these 26 changes, three services meet established thresholds for a major service change. The routes/lines listed below have proposed adjustments to service that were greater than 25% of baseline service or services being eliminated.

Service Adjustments (one service)	Route 30 – South Federal: extend span of service weekdays and Sundays in bi-directional pattern
Service Eliminations (two services)	C Line: regular service on the C Line is discontinued F Line: regular service on the F Line is discontinued

Findings

Alterations to the initial proposed January 2023 service changes include adding improvements to Route 30, which serves high concentrations of equity populations. Further, though staff is proposing that the C and F Lines be permanently discontinued, all stations currently served by the C and F Lines will continue to be served by rail service at 15-minute peak headways. The stations served prior to the discontinuation of the C Line will continue to be served by the D Line, with transfers at I-25•Broadway Station to either the W or E Line required to continue to Denver Union Station. Moreover, the stations served prior to the discontinuation of the F Line will continue to be served by the E Line, with transfers at I-25•Broadway Station to either the D or H Line required to continue to 18th•Stout Station. These service changes signify the agency's commitment to ensure an equitable distribution of service improvements and to minimize impacts with the permanent discontinuance of these rail lines.

When considering the demographics within the service areas of routes/lines with major service changes and as a proportion to the District overall, both minority and low-income equity populations received a greater increase in service (i.e., were more positively impacted) compared to non-equity populations. Minority areas had a +1.84% benefit above non-minority areas, and low-income areas received a +1.67% compared to higher income areas. For major service changes to rail service, minority populations are not disproportionately impacted by the elimination of service to the C and F Lines; however, the burden on low-income populations relative to higher income populations slightly exceeds the threshold.

Finally, though there were no cumulative adverse impacts at the network level, potential disparate impacts and disproportionate burdens were identified at the individual route-level: of the three routes/lines that had major service changes, two lines had a disproportionate burden finding.

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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 August 2022 and January 2023 runboards. Routes with major service changes include one major increase and two major service decreases (eliminations) of formerly suspended routes. 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.

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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 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

Per FTA Circular 4702.1B Chapter IV.7, RTD 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.

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2. **Disparate Impact Analysis:** A major service change should not adversely affect a minority population 10 percent more than non-minority populations; this level of impact is considered a disparate impact.
3. **Disproportionate Burden Analysis:** A major service change should not adversely affect a low-income population 10% more than higher 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 2014 to 2018 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 January 2023 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 route's/line's quarter-mile service area. 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 the Census Bureau 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 was based on the non-white and Hispanic or Latino count of total population. The service area was based on the collection of block groups within district boundaries.

Route/line service area population was determined using a quarter mile "catchment area" centered around bus stops and rail stations. This catchment area was then used to calculate the percentage overlap of census block-based population underneath. For instance, if a catchment area contained 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 calculated the net change in service hours for each route/line modification to provide the percent difference from baseline service hours. Any change at or above 25% from baseline was flagged as a major service change for further review.

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Public Outreach Overview

Three public meetings were conducted September 26-27, 2022. The comments collected on service changes during these meetings are summarized in the table below. In addition to the general outreach, the Transit Equity Office reached out to 10 community-based organizations and schools surrounding the routes/lines to inform and encourage community members to attend the open houses. Table 1 captures the meeting locations, dates, number of attendees and the common themes of attendees' comments pertaining to the three major service changes described in this analysis.

Table 1. Public meeting details

Date and Time Location	Comment Themes	Number of Attendees
September 26 at 12 p.m. Virtual	No attendee comments regarding the three major service changes	11
September 27 at 12 p.m. Virtual	Clarification sought on rationale behind dropping C and F Lines; encouragement to maintain C Line to access downtown area, ease commuting and reduce need for transfer; concern about transferring from C Line without increased service on D Line	8
September 27 at 6 p.m. Virtual	Concern expressed regarding recruiting operators to support Route 30 and the C and F Lines	9
		Total – 28

The public was also notified of the ability to submit comments to service.changes@rtd-denver.com, by phone at 303-299-2004 and by fax 303-299-2227.

Major Service Change, Disparate Impact and Disproportionate Burden Analysis

Proposed service changes for the January 2023 runboard that resulted in a 25% or greater change in service were categorized by equity population (minority or non-minority, low-income or higher income) for comparison. Routes were categorized as either equity or non-equity based on their identification within the prior network using 2018 ACS five-year demographic data.

A comparative, proportional equity analysis was completed to review the routes/lines 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 finding of potential impact.

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Major Service Change Test

Identify routes with proposed major service changes (annual trips) of 25% or more

Changes by Transit Mode

As RTD continues to adapt to changes affected by the pandemic, nearly 19 bus routes will undergo service changes. Of these, five routes will see an increase of **bus service by 56 daily revenue service hours (56 weekday, 28 Saturday, 37 Sunday)**. One of the routes, Route 30, exceeded the major service change threshold and account for 16 of the additional daily revenue service hours. The suspended C and F Lines will be permanently removed from service.

Table 2. Summary of service changes by transit mode

Mode	Additional Daily Hours
All Rail	0
All Bus	56
Overall	56

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

Major Service Change Reductions/Eliminations

Two rail lines were previously suspended during the COVID-19 service reductions. The Board of Directors approved these suspensions during the April 2021 monthly meeting. The January 2023 service proposal includes the permanent discontinuance or elimination of these lines.

Major Service Change Increases

One bus route had major service changes, which includes service increases of 25% or greater. This includes one modification to span of service (Route 30).

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.

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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. In summary, the review of these adverse impacts determined the following:

- **Two lines met the threshold for a potential Disproportionate Burden**

A complete listing of all potential DI and DB findings can be found in Appendix B.

Network Analysis

In accordance with RTD's 2022 Title VI Program update, a network analysis is required in addition to route- and line-level analysis. A network 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 were 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).

The analysis of all service changes identified the following:

- Systemwide, bus service was increased by over 56 daily revenue hours
- Of the over 63,000 people served by stops within the service area with major service changes (both bus and rail), minority and low-income populations represented a higher share of population than district averages. Of this cumulative figure, 33,000 would receive service improvements for equity populations.
- At the route level, equity routes and non-equity routes¹ were compared only for those with major service changes. The one bus route with major service changes serves above-average minority or low-income populations

In review of Route 30, there are no adverse impacts. In review of all rail Lines (C Line and F Line), there were no adverse impacts for minority populations at the network level. However, there is a potential disproportionate burden for low-income populations when aggregating the proposed changes to all rail lines.

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

¹ Based on existence of the route within the August 2022 network and the population within a quarter mile of bus stops or rail stations. 2018 5-Year estimates were used for population identification.

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the August 2022 to January 2023 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 higher 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 (16.8%) and minority population (35.4%).

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

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

There are 1,916 block groups defined as being wholly within or mostly within the District². Using the 2018 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 35.4% was derived by using the base population of the service area (3.019 million) the low-income population percentage of 16.8% is derived from a slightly smaller population figure. This is due to the smaller population whose poverty status the Census Bureau can determine³. The thresholds summarized in Table 4 yielded 751 (39% of all) block groups above the district average for low-income population, and 715 (37%) block groups above the district average for minority population.

Table 3. District averages; NTD 2018; ACS 2014-2018 5-Year estimates

Service Area (sq. mi.)	Total Block Groups	Total Population	Percent Minority	Total Population (assessed)	Percent Low-Income
2,342	1,916	3,019,217	35.4%	2,974,027	16.8%

The proposed major service changes were examined in aggregate to determine overall impacts to underlying population. Table 5 summarizes the change in service for block group population within one quarter mile of bus or rail stops with proposed major service changes proportionally compared to population in the District. This 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. Table 6 summarizes the change in rail service using the same methodology.

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

³ The total population whose poverty status is determinable/assessed is lower than the estimate of total population and results in a different base population used to determine low-income percent of population.

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Table 4. Systemwide disparate impact and disproportionate burden equity analysis summary: Bus Route 30

Systemwide Disparate Impact and Disproportionate Impact Analysis: Bus				
	Non-Minority Population	Minority Population	Higher Income Population	Low-Income Population
Route Service Area Impacted	11,050	25,173	23,323	12,548
District	1,949,880	1,069,337	2,475,594	498,433
District Total	3,019,217		2,974,027	
% District Not Impacted	99.4%	97.6%	99.1%	97.5%
% District Impacted	0.57%	2.35%	0.94%	2.52%
Thresholds	Disparate Impact (DI)		Disproportionate Burden (DB)	
<i>DI and DB Thresholds Are 90% Non-Equity % District Impacted Population</i>	<i>DI Threshold</i>	<i>Min Pop Impacted</i>	<i>DB Threshold</i>	<i>L-I Pop Impacted</i>
	0.51%	2.35%	0.85%	2.52%

For bus service, equity populations stand to benefit more than non-equity populations, with minority populations benefitting 1.84% more than non-minority population and low-income populations benefitting 1.67% more than higher-income populations. For major service changes to rail service, minority populations are not disproportionately impacted by the elimination of service to the C and F Lines; however, the burden on low-income populations relative to higher income populations slightly exceeds the threshold.

Table 5. Systemwide disparate impact and disproportionate burden equity analysis summary: Rail Lines C and F

Systemwide Disparate Impact and Disproportionate Impact Analysis: Rail				
	Non-Minority Population	Minority Population	Higher Income Population	Low-Income Population
Route Service Area Impacted	19,974	7,686	20,305	5,628
District	1,949,880	1,069,337	2,475,594	498,433
District Total	3,019,217		2,974,027	
% District Not Impacted	99.0%	99.3%	99.2%	98.9%
% District Impacted	1.02%	0.72%	0.82%	1.13%
Thresholds	Disparate Impact (DI)		Disproportionate Burden (DB)	
<i>DI and DB Thresholds Are 110% Non-Equity % District Impacted Population</i>	<i>DI Threshold</i>	<i>Min Pop Impacted</i>	<i>DB Threshold</i>	<i>L-I Pop Impacted</i>
	1.13%	0.72%	0.90%	1.13%

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Figures 1 and 2 illustrate the locations of above average low-income and minority block groups within the District, as well as highlight the one bus route and two rail lines with major service changes (orange). The Route 30 benefits equity populations, serving Federal Blvd with longer hours throughout weekdays and Sundays. The C and F Lines are currently suspended and are proposed to be permanently discontinued. However, all stations currently served by the C and F Lines will continue to be served by rail service at 15-minute peak headways.

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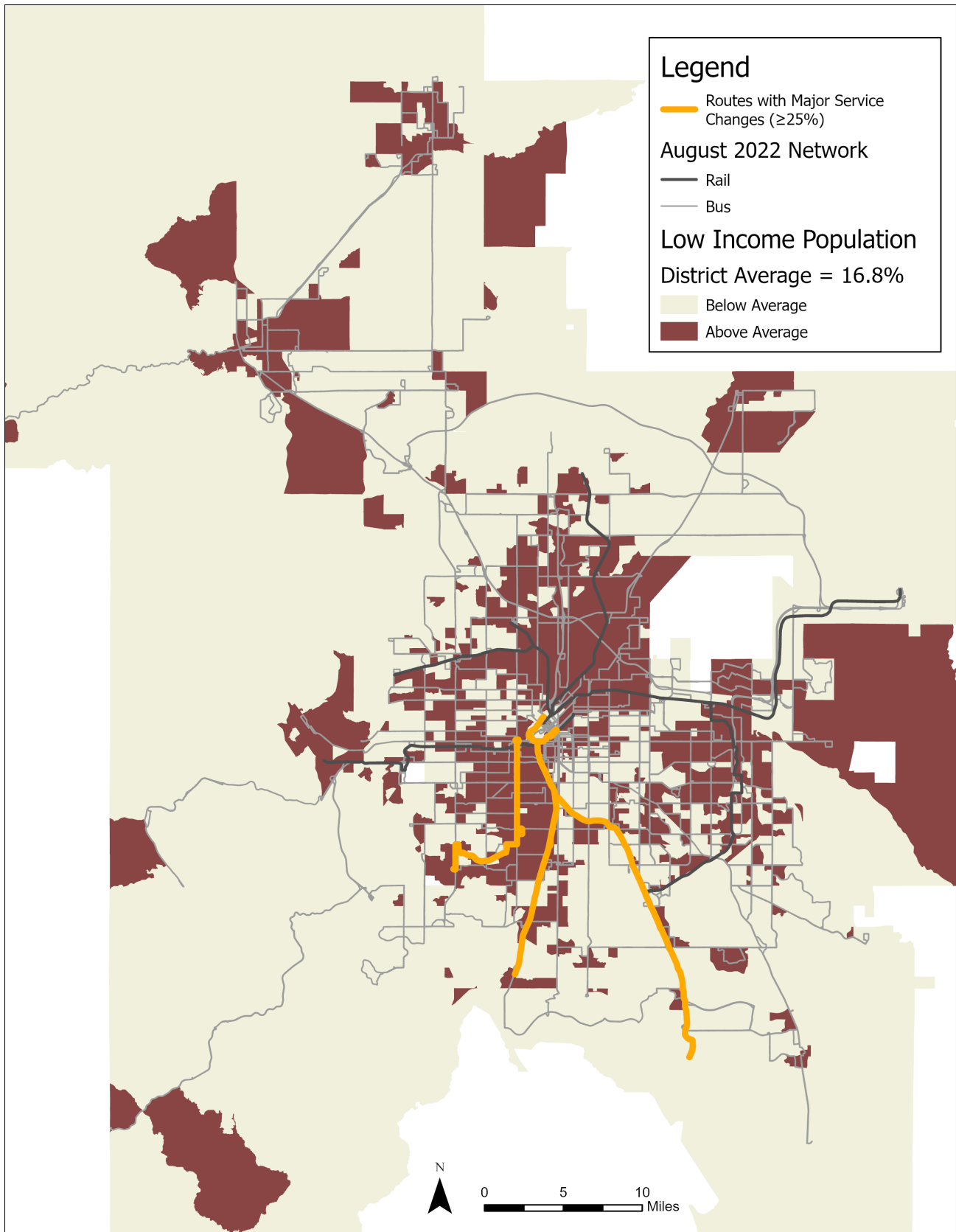


Figure 1. District block groups with above-average low-income population (red); US Census Bureau 2014-2018 5-Year Estimates

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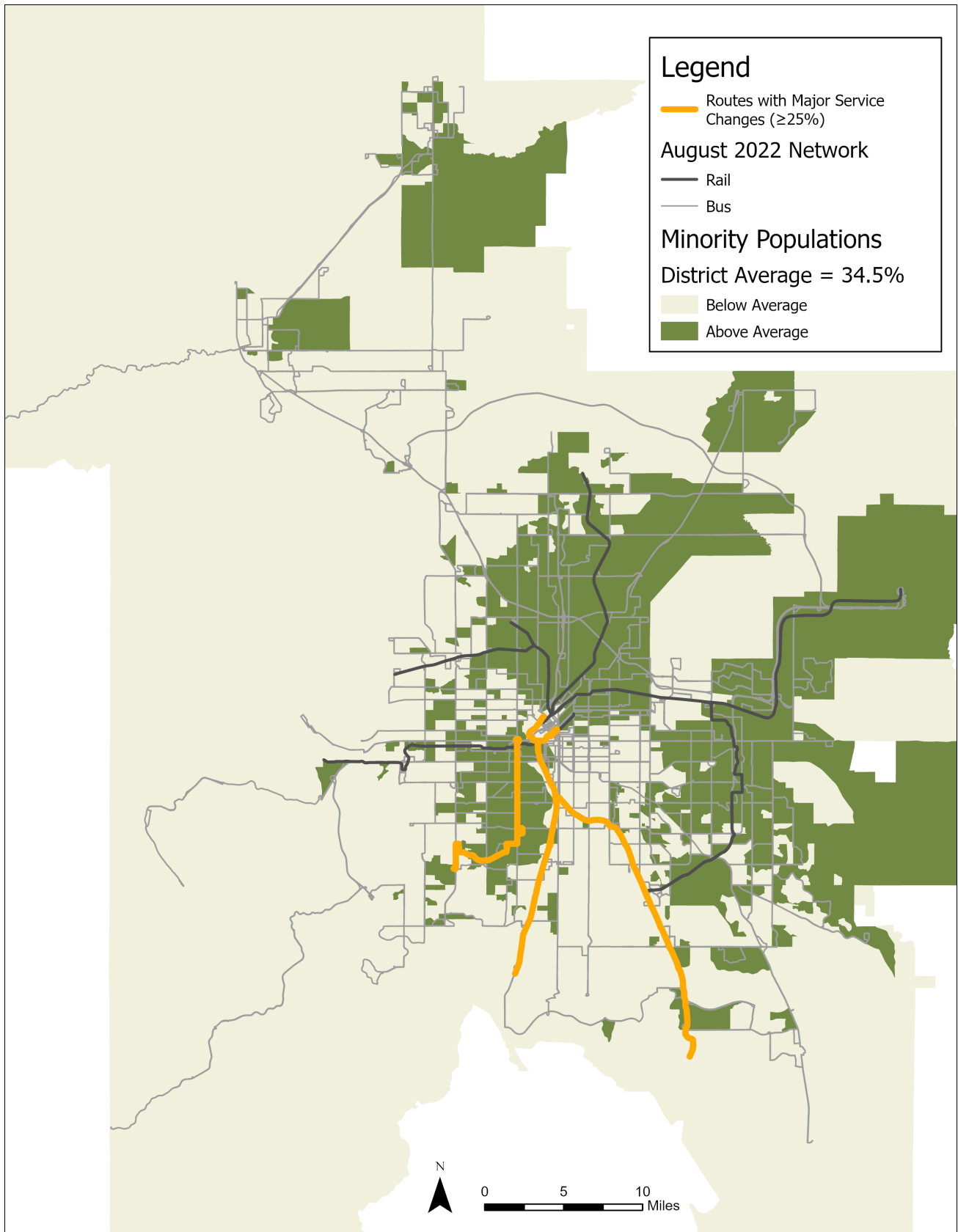


Figure 2. District block groups with above-average minority population (green); US Census Bureau 2014-2018 5-Year Estimates

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The August 2022 to January 2023 service changes are captured in Figure 3 and vary by the extent of the route and segment changes. This map provides a generalized view of where service is changing at the route pattern level. The August 2022 bus network is colorized according to the percentage change in service hours. Rail service on the C and F Lines are shown in blue (100% service change) due to the discontinuation of the services. The network includes one route (Route 30) in teal, representing significant modifications and one route (12) in green as a minor modification. Route 12 will be split into two routes with a new Route 7 serving the northern half of the existing corridor. All other routes bus routes, shown in grey, are programmed to undergo minimal (e.g., schedule adjustments, minor realignments) or no service changes in January 2023.

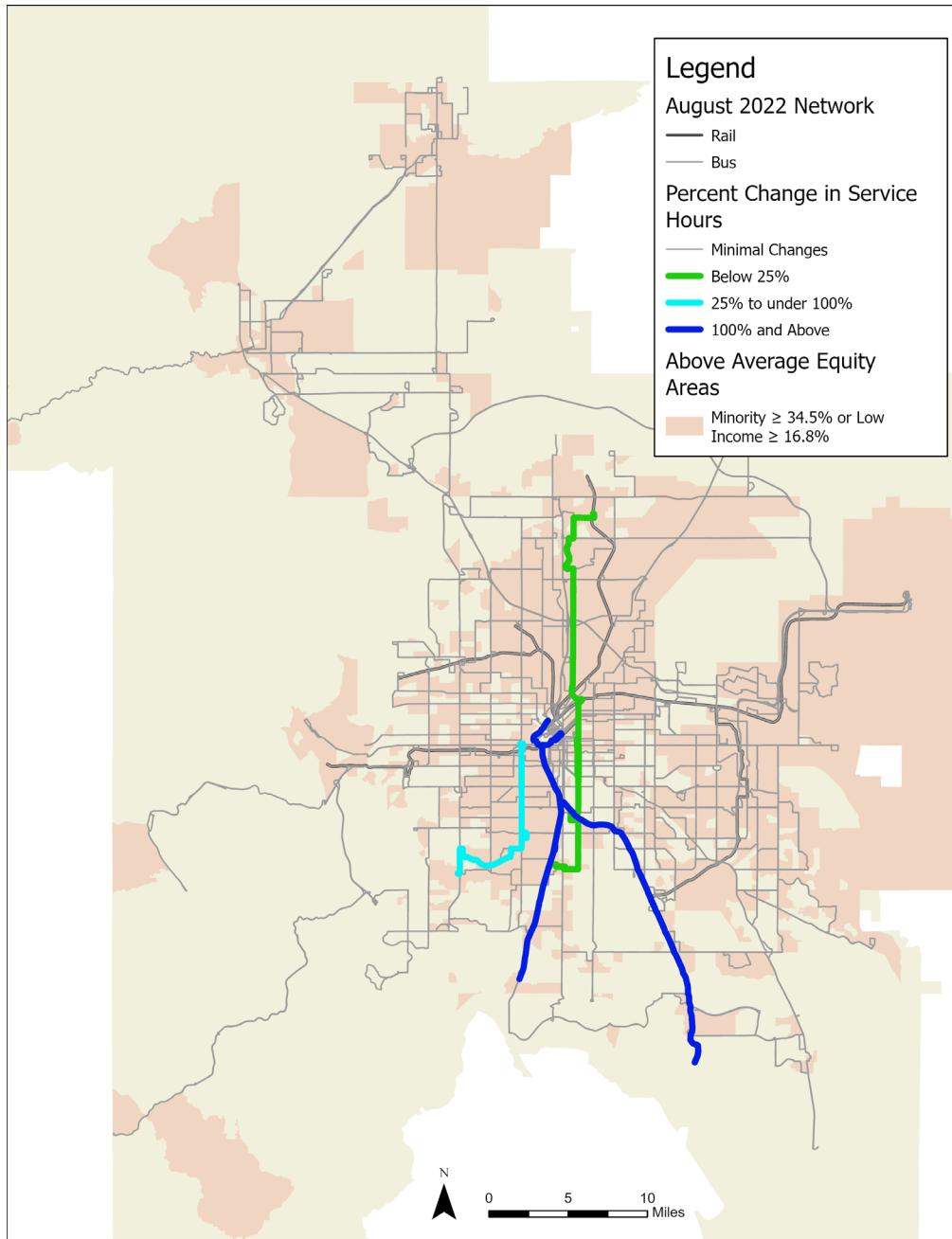


Figure 3. Depiction of route and segment changes by severity of change, August 2022 to January 2023

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Summary of Findings

The network changes that are proposed between August 2022 and January 2023 include modifications to service that include additional trips and longer spans of service. The major service change increases were entirely invested in bus services. Major service change decreases resulted in the discontinuation of the C and F Lines. The C Line has been suspended since January 2021, and the F Line has been suspended since September 2020.

Route-level Findings:

- Of the 26 total services with proposed changes, taken individually, **two had a potential disproportionate burden finding.**

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 6. Summary of major service changes by change type and impact

Change Type	Number	Route	Potential Disparate Impact?	Potential Disproportionate Burden?	Service Change Pct
Modifications	30	South Federal	No	No	83%
Discontinued	C	Union Station – Littleton-Mineral	No	Yes	100%
	F	18 th and Stout – RidgeGate Parkway	No	Yes	100%

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:

- Alter the service proposal to avoid, minimize, or mitigate potential disparate impacts/disproportionate burdens, or
- 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 initial proposed January 2023 service changes⁴ include adding improvements to Route 30, which serves high concentrations of equity populations. Although the C and F Lines are proposed to be permanently discontinued, stations currently served by the C and F Lines will continue to be served by rail service at 15-minute peak headways. The stations served prior to the discontinuation of the C Line will continue to be served by the D Line, with transfers at I-25•Broadway Station to either the W or E Line required to continue to Denver Union Station. The stations served prior to the discontinuation of the F Line will continue to be served by the E Line, with transfers at I-25•Broadway Station to either the D or H Line required to continue to 18th•Stout

⁴ <https://www.rtd-denver.com/service-changes/january-2023>

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Station. These service changes signify the agency's commitment to ensure an equitable distribution of service improvements and to minimize impacts with the permanent discontinuance of these rail lines.

In addition to the systemwide-level findings below, RTD's on-going pandemic response, the substantial ridership decline, personnel impacts, resource allocation (human and capital) and recovery uncertainty serves as justification for maintaining the January 2023 service changes proposal.

Systemwide-level Findings:

- Of the more than 36,000 people with access to bus stops within the service area of the bus route with a major service improvement, minority and low-income groups represented a higher share of the population than district averages, indicating targeted services to equity populations
- When considering the demographics within the service areas of the bus route with a major service change and as a proportion to the District overall, both **minority and low-income populations received a greater increase in service (were positively impacted more) compared to non-equity populations**. Minority areas had +1.84% benefit above non-minority areas and low-income areas received +1.67% compared to higher-income areas
- Of the over 27,000 people with access to rail stations with major service decreases, low-income populations were impacted at a lower rate than the higher-income district average, whereas minority populations represented a higher share of the population than non-minority populations.

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Appendix A: Systemwide Service Changes

Table A-1

Change Type	Service Changes	
	Route	Description
<i>Modified</i>	11	Perform a running time analysis to improve on-time performance of the route.
	12	Split Route 12 into the former Routes 7 (see page 14) and 12, with the northern portion operating as Route 7 between 38th/Blake Station and Northglenn at 112th Station, and the southern portion continuing operating between Englewood Station and 38th/Blake Station as the Route 12. This proposal is aimed at improving on-time performance, by creating two shorter route alignments with separate operating schedules and greater opportunities for schedule recovery.
	15	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	15L	Schedule adjustments are proposed to coordinate the anticipated changes to the Route 15 operating schedule.
	21	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	24	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	30	Extend the weekday span of service. The route currently operates from 9 a.m. to 4:30 p.m. northbound, and 10 a.m. to 5:30 p.m. southbound. This extends service to cover from 5 a.m. to 9 p.m. both directions. Sunday, add southbound service over the alignment. Due to a previous configuration that is no longer in use, route 30 only runs northbound on Sundays from 8 a.m. to 5 p.m.
	42	Schedule adjustments to allow for better connections between services.
	44	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	76	Reroute route 76 in the area between I-70 and Olde Town Arvada Station to enhance operational safety. New northbound routing will be R – 52nd Ave, L – Vance St, C – 53rd Ave, to regular routing. New southbound routing will be C – Vance St, R – 52nd Ave, L – Wadsworth Blvd, to regular routing. This will add service to stops #21428 and 22763, without losing service to any current stops.
	83D/83L	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	88	Adjust the meet times at Colorado at 72nd Ave Station with the N Line for better connections, weekdays, Saturdays and Sundays.

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Change Type	Service Changes	
	Route	Description
	93L	Adjust the meet times at Colorado at 72nd Ave Station with the N Line for better connections, weekdays, Saturdays and Sundays.
	130	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed for weekday service.
	AT	Responding to frequent requests from Denver International Airport employees, schedule adjustments modify the schedule to leave DIA 2-5 minutes later. This change would accommodate DIA employees shift end times.
	228	Extend the northern portion of the route, from Kestrel Low Income Housing to Forest Park Drive/Arapahoe Ave as well as Diamond Circle/Aspen Ridge Drive (Sister Carmen Community Center/Walmart area), with both patterns operating at an hourly headway to both terminals. This would result in a weekday 30 min all-day headway between US36/Flatiron Station and 95th St/Baseline (6 a.m.-9 p.m.), Saturday and Sunday the route would operate hourly and serve the Diamond Circle/Aspen Ridge Drive (Sister Carmen Community Center/Walmart area) only.
	BOLT	Perform a running time analysis to improve on-time performance.
	D Line	Minor schedule adjustments to improve train sequencing through the central corridor, and on-time performance.
	E Line	Minor schedule adjustments to improve train sequencing through the central corridor, on-time performance, and connections with other rail line in the system.
	H Line	Sequencing adjustments to improve operational reliability.
	L Line	Minor schedule adjustments to improve train sequencing through the central downtown corridor, and on-time performance.
	R Line	Minor schedule adjustments to improve train sequencing with the E and H Lines, and on-time performance.
	W Line	Minor schedule adjustments to improve train sequencing, connections with the E Line, and on-time performance.
<i>Reductions</i>	120L	Remove the Adams County Government Center stop from the pattern/routing on Saturdays only, as the facility is closed on weekends.
<i>Discontinued</i>	C Line	Regular service on the C Line is discontinued.
	F Line	Regular service on the F Line is discontinued.

Service Equity Analysis: January 2023

Appendix B: Route Analysis Tables

Major Service Changes

BUS

Route 30 – South Federal

Expand the weekday hours of service to operate between 5 a.m. and 9 p.m. for both the north and southbound schedules. Proposal also includes adding a southbound schedule to Sundays to provide bi-directional service.

Route 30				
	Non-Minority Population	Minority Population	Higher Income Population	Low-Income Population
Route Service Area Impacted	11,050	25,173	23,323	12,548
District	1,949,880	1,069,337	2,475,594	498,433
District Total	3,019,217		2,974,027	
% of District Not Impacted	99.4%	97.6%	99.1%	97.5%
% District Impacted	0.57%	2.35%	0.94%	2.52%
Thresholds	Disparate Impact (DI)		Disproportionate Burden (DB)	
DI & DB Thresholds Are 90% Non-Equity % District Impacted Population	DI Threshold	Min Pop Impacted	DB Threshold	L-I Pop Impacted
	0.51%	2.35%	0.85%	2.52%

RAIL

C Line

Route C Union Station to Littleton-Mineral Station				
	Non-Minority Population	Minority Population	Higher Income Population	Low-Income Population
Route Service Area Impacted	6,898	2,518	7,575	1,841
District	1,949,880	1,069,337	2,475,594	498,433
District Total	3,019,217		2,974,027	
% of District Not Impacted	99.6%	99.8%	99.7%	99.6%
% District Impacted	0.35%	0.24%	0.31%	0.37%
Thresholds	Disparate Impact (DI)		Disproportionate Burden (DB)	
DI & DB Thresholds Are 110% Non-Equity % District Impacted Population	DI Threshold	Min Pop Impacted	DB Threshold	L-I Pop Impacted
	0.39%	0.24%	0.34%	0.37%

Service Equity Analysis: January 2023

F Line

Route F 18th & California Station to RidgeGate Parkway Station				
	Non-Minority Population	Minority Population	Higher Income Population	Low-Income Population
Route Service Area Impacted	12,393	4,940	13,774	3,559
District	1,949,880	1,069,337	2,475,594	498,433
District Total	3,019,217		2,974,027	
% of District Not Impacted	99.4%	99.5%	99.4%	99.3%
% District Impacted	0.64%	0.46%	0.56%	0.71%
Thresholds	Disparate Impact (DI)		Disproportionate Burden (DB)	
DI & DB Thresholds Are 110% Non-Equity % District Impacted Population	DI Threshold	Min Pop Impacted	DB Threshold	L-I Pop Impacted
	0.70%	0.46%	0.61%	0.71%