



# Title VI Service Equity Analysis Report

September 2023 Service Changes

# Service Equity Analysis: September 2023

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# Service Equity Analysis: September 2023

## Executive Summary

This document summarizes the analysis of service changes between the May 2023 and September 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 26 bus route/patterns in the forthcoming September 2023 runboard. Of these changes, one service meets established thresholds for a major service change. The route listed below has proposed service adjustments that were greater than 25% of baseline service or services being eliminated.

<b>Service Reinstatement (one service)</b>	<b>GS – Golden / Boulder:</b> Reinstatement service on the GS (Golden / Boulder) with four trips in each direction.
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### Findings

Alterations to the proposed September 2023 service changes include reinstatement of the GS route between Federal Center Station and Downtown Boulder. This route serves a high concentration of low-income populations.

When considering the demographics within the service areas of this route with a major service change and as a proportion to the district overall, low-income equity populations received a greater increase in service (i.e., were more positively impacted) compared to non-low-income populations. Low-income areas had a +1.19% benefit above non-low-income areas. Minority areas received a lower increase in service (i.e., were less positively impacted) compared to non-minority populations.

Finally, a potential disparate impact was identified, but no potential disproportionate burden at the route and network level.

## Introduction

### Title VI and Environmental Justice

Equity is a core principle of RTD's functional mission to provide mass transit service within the Denver metropolitan area. 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.

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Title VI of the Civil Rights Act of 1964 prohibits discrimination based on 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 proposed to occur between the May 2023 and September 2023 runboards. Routes with major service changes include one major increase via 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 on 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 adding new routes/lines, eliminating existing routes/lines and changing 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.

### 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 underperforming services 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 to identify underperforming

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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.
2. **Disparate Impact Analysis:** 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 Analysis:** 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 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.

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## 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 2017 to 2021 and is reviewed at the census block group geographic level. Other data related to the analysis include 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 on district equity communities.

The equity analysis for the September 2023 runboard analyzed 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 the 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 the 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 the 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.

### Public Outreach Overview

Three public meetings were conducted May 15-16, 2023. 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 14 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.

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Table 1. Public meeting details

Date and Time   Location	Comment Themes	Number of Attendees
May 15 at 12 p.m.   Virtual	Clarification sought on the routing for GS. Inquired if Route GS would travel via Colfax or US 6.	6
May 15 at 5:30 p.m.   In Person	No attendee comments regarding the one major service change, Route GS	8
May 16 at 5:30 p.m.   Virtual	No attendee comments regarding the one major service change, Route GS	1
		<b>Total – 15</b>

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 303-299-2004 and by fax 303-299-2227.

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

Proposed service changes for the September 2023 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 network using 2017-2021 ACS five-year demographic data.

A comparative, proportional equity analysis was completed to individually review the routes/lines. 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). It was flagged for a finding of potential impact.

### 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, 26 bus routes will undergo service changes. Of these, five routes will see a total increase of **bus service by over 45 total weekday revenue service hours**. Changes to Route GS exceeded the major service change by being a reinstatement of previously suspended service; it accounts for 12 of the additional daily revenue service hours.

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Table 2. Summary of service changes by transit mode

Mode	Additional Daily Hours
All Rail	0
All Bus	43
Overall	43

## 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

No major reductions/eliminations.

### Major Service Change Increases

One bus route had major service changes, which included service increases of 25% or greater. This includes the reinstatement of service to Route GS, considered a major service change, and is therefore included in the review.

### Route- and Line-Level Analysis

Having identified the service changes that meet the definition of Major Service Change, the next step in the analysis is to look at each route or line individually to determine potential Disparate Impacts (DI) and 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 major service change route 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



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narrative analysis of each line follows, which includes further considerations of access to jobs, education, health care, food and social services for minority and low-income populations.

## Route GS - Boulder/Golden

*Proposal: Reinstate route pattern with four northbound trips at 7:02 a.m., 8:22 a.m., 3:37 p.m. and 4:39 p.m., between Federal Center Station and Downtown Boulder Station. It is also proposed to reinstate four southbound trips at 7:10 a.m., 8:19 a.m., 4:36 p.m. and 5:13 p.m., between Downtown Boulder Station and Federal Center Station.*

As shown in Table 5, a lower percentage of the district’s minority population stands to benefit from the proposed major service increase as compared to the non-minority population (1.07% vs. 0.44%, respectively). This difference exceeds (falls below) the 10% disparate impact threshold (0.96%). Therefore, a potential route-level disparate impact is found, requiring further examination (i.e., access to key public service destinations, community engagement, and network-level analysis). However, a higher percentage of the district’s low-income population stands to benefit from the proposed Major Service Increase as compared to the higher-income population (1.68% vs. 0.55%, respectively). This difference does not exceed (falls below) the 10% disparate impact threshold (0.50%). Thus, there is no disproportionate burden at the line-level.

Table 5. Route GS Disparate Impact and Disproportionate Burden Analysis

Regional Route GS - Golden / Boulder				
May 2023 to September 2023 Service Change Analysis				
	Non-Minority Population	Minority Population	Higher Income Population	Low-Income Population
<b>Route Service Area Impacted</b>	<b>20,528</b>	<b>4,947</b>	<b>14,175</b>	<b>7,216</b>
District Statistics	1,922,542	1,126,534	2,576,564	429,175
District Total Base Population	3,049,076		3,005,739	
% of District Not Impacted	98.93%	99.56%	99.45%	98.32%
<b>% District Impacted</b>	<b>1.07%</b>	<b>0.44%</b>	<b>0.55%</b>	<b>1.68%</b>
<b>Thresholds</b>	<b>Disparate Impact (DI)</b>		<b>Disproportionate Burden (DB)</b>	
DI & DB Thresholds Are 90% for service increases and 110% for service decreases % District Impacted Population	DI Threshold	Min Pop Impacted	DB Threshold	L-I Pop Impacted
	<b>0.96%</b>	<b>0.44%</b>	<b>0.50%</b>	<b>1.68%</b>

The reinstatement of Route GS would improve access to:

- About 34,856 jobs
  - 28% low-to-medium wage jobs, which is below the district average (45%)
  - 14% jobs held by minorities, which is at the district average (14%)
  - 15% jobs held by Hispanic/Latino workers, which is below the district average (18%)
- 179 retail/convenience stores
- 24 human and social services centers
- 12 senior housing and facilities
- 11 college, high school, middle school and elementary schools

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## Network Analysis

In accordance with RTD's 2022 Title VI Program Update, a network-level 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 and 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 43 weekday revenue hours.
- Of the over 25,000 people served by stops within the service area with major service changes, low-income populations represented a higher population share than district averages. Of this cumulative figure, over 12,000 would receive service improvements for equity populations.
- At the network 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 changes serves above-average low-income populations.

### **In the review of Route GS at the network 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 2023 to September 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 non-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 (14.3%) and minority population (36.9%).

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.

<sup>1</sup> Based on the existence of the route within the May 2023 network and the population within a quarter mile of bus stops or rail stations. 2017-2021 5-Year ACS estimates were used for population identification.

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There are 2,197 block groups defined as being wholly within or mostly within the district<sup>2</sup>. Using the 2017-2021 5-Year ACS Estimates, the 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 that set the thresholds for which block groups are classified as above average. While the percent minority figure of 36.9% was derived by using the base population of the service area (3.049 million) the low-income population percentage of 14.3% is derived from a slightly smaller population figure (3.005 million). This is due to the smaller population whose poverty status the Census Bureau can determine<sup>3</sup>. The thresholds summarized in Table 6 yielded 831 (38% of all) block groups above the district average for low-income population, and 830 (38%) block groups above the district average for minority populations.

Table 6. District averages; NTD 2018; ACS 2017-2021 5-Year estimates

Service Area (sq. mi.)	Total Block Groups	Total Population	Percent Minority	Total Population (assessed)	Percent Low-Income
2,342	2,197	3,049,076	36.9%	3,005,739	14.3%

The proposed major service change was examined in aggregate by transit mode to determine overall impacts on underlying populations. Table 7 summarizes the change in service for the block group population within one-quarter mile of bus stops with proposed major service changes proportionally compared to the 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. No major changes were proposed for rail services with the September 2023 runboard.

Table 7. Systemwide disparate impact and disproportionate burden equity analysis summary for all bus major service changes

Systemwide Disparate Impact and Disproportionate Impact Analysis: All Bus				
	Non-Minority Population	Minority Population	Non-low-income Population	Low-Income Population
<b>Route Service Area Impacted</b>	<b>20,528</b>	<b>4,947</b>	<b>14,175</b>	<b>7,216</b>
<b>District</b>	1,922,542	1,126,534	2,576,564	429,175
District Total	3,049,076		3,005,739	
% District Not Impacted	98.93%	99.56%	99.45%	98.32%
% District Impacted	1.07%	0.44%	0.55%	1.68%
<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>0.96%</b>	<b>0.44%</b>	<b>0.50%</b>	<b>1.68%</b>

<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 the total population and results in a different base population used to determine the low-income percent of the population.

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For system-level bus service changes, minority populations stand to benefit slightly less than non-minority populations (0.44% vs. 1.07%, respectively). The difference meets the Disparate Impact Threshold of 0.96%. Therefore, a system-level disparate impact finding is found with the proposed major service changes. Low-income populations stand to benefit more than non-low-income income populations (1.68% vs. 0.55% respectively), with low-income areas benefitting 1.19% more than non-low-income areas. Therefore, no system-level disproportionate burden is found with the proposed major service changes.

Figures 1 and 2 illustrate the locations of above-average low-income and minority block groups within the district and highlight the bus route with a major service change (orange). Route GS is currently suspended and is proposed to be reinstated with four trips in each direction/peak period.

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## Service and Service Area with Low-Income Population

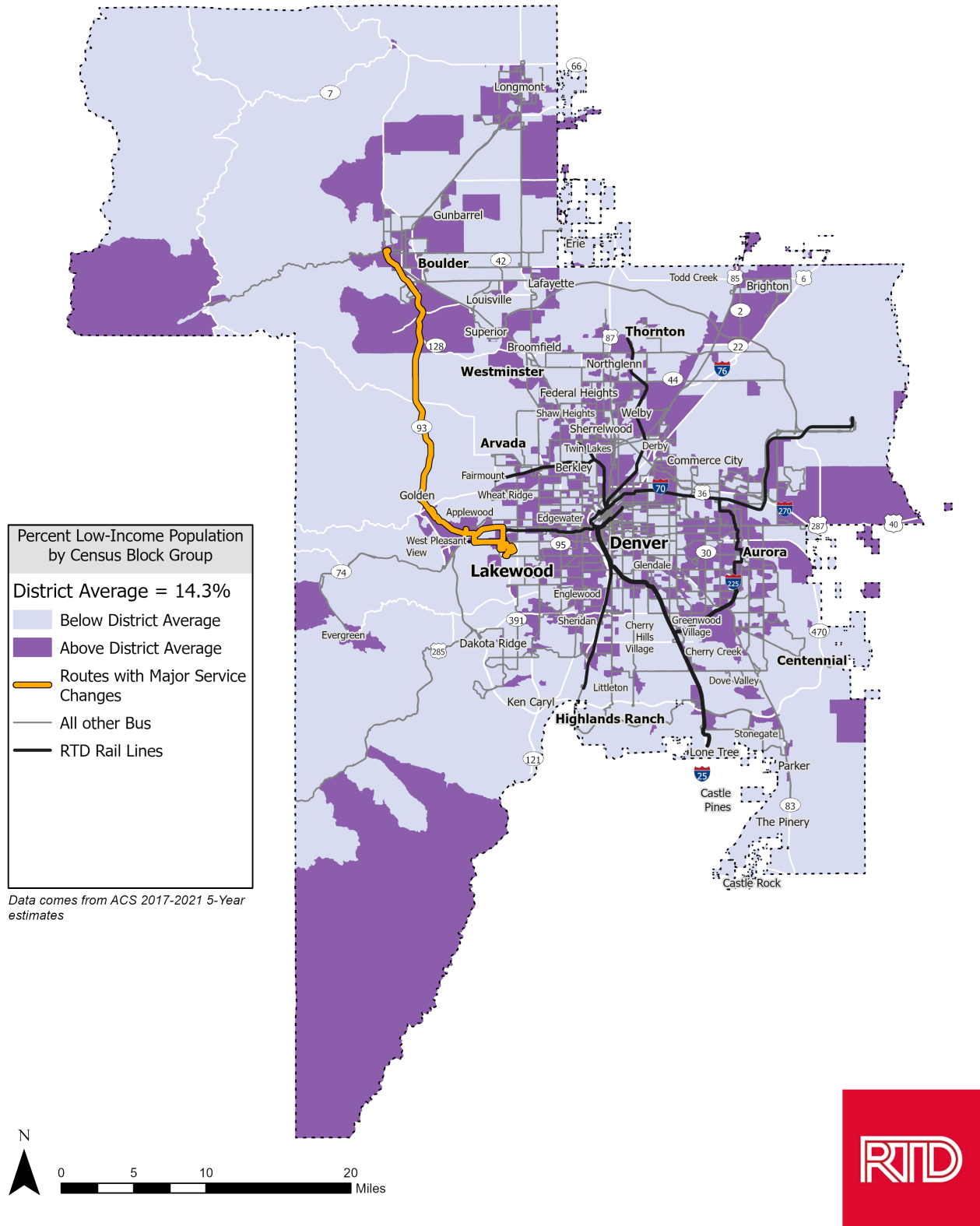


Figure 1. District block groups with above-average low-income population (purple); US Census Bureau 2017-2021 5-Year Estimates

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## Service and Service Area with Minority Population

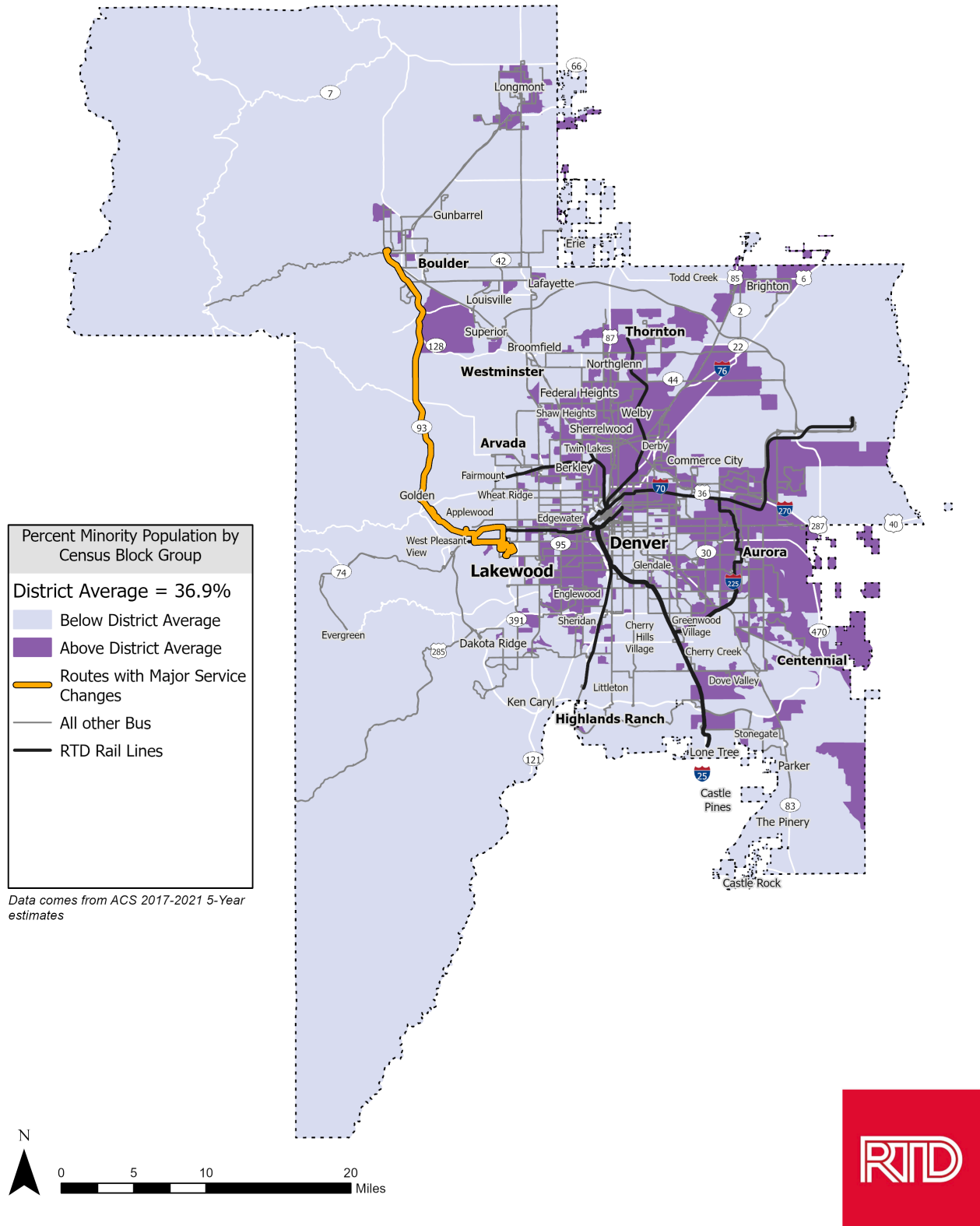


Figure 2. District block groups with above-average minority population (purple); US Census Bureau 2017-2021 5-Year Estimates

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The May 2023 to September 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 May 2023 bus network is colorized according to the percentage change in service hours. Route GS is shown in blue (100% service change). The network also includes Route 16 in teal, representing significant modifications to its alignment and accompanying service hours (33%). Other routes shown in green have changes below the major service change threshold. All other bus routes, shown in gray, are programmed to undergo minimal (e.g., schedule adjustments, minor realignments) or no service changes in September 2023.

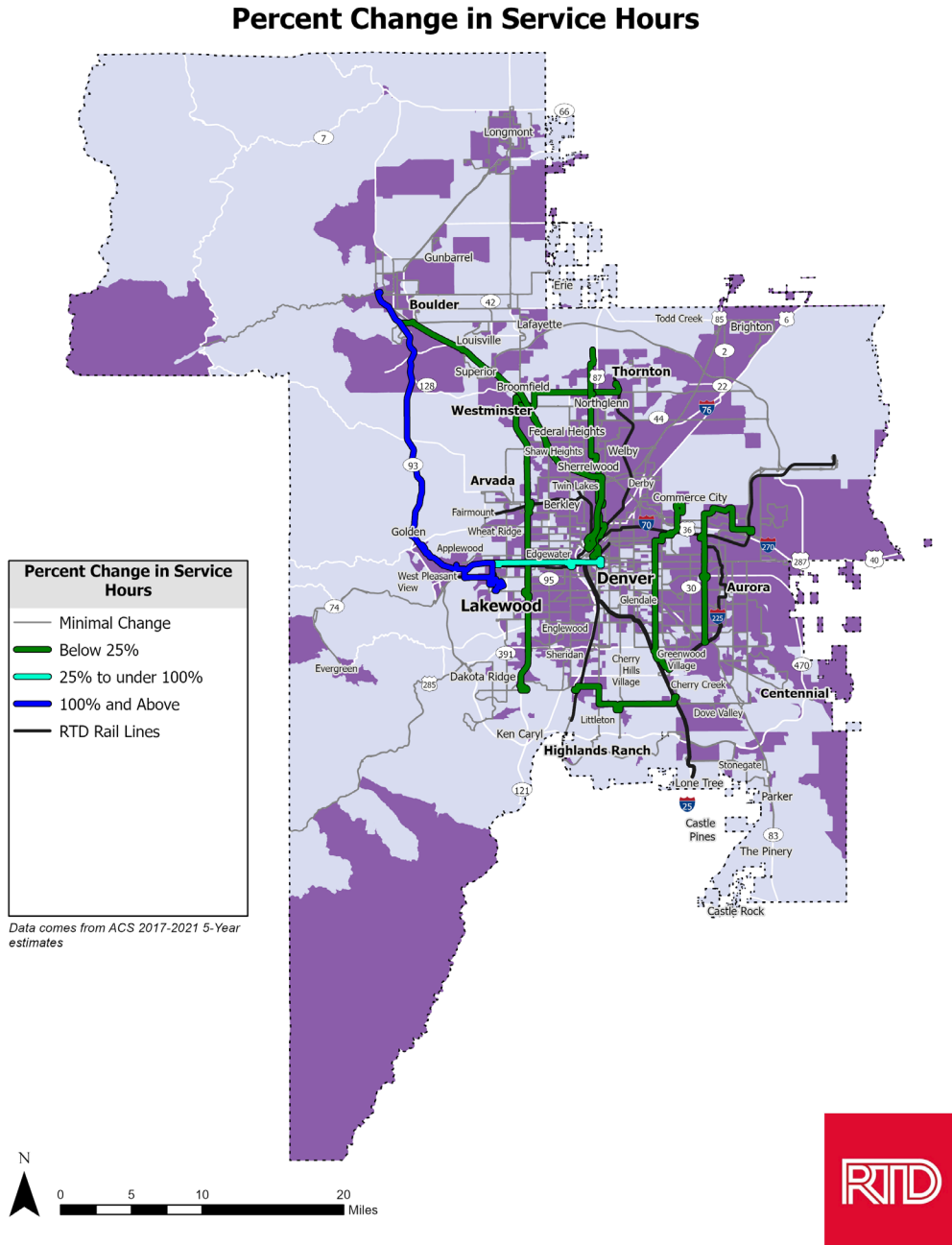


Figure 3. Depiction of route and segment changes by severity of change, January 2023 to May 2023

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## Summary of Findings

The network changes proposed between May 2023 and September 2023 include modifications to service that include schedule adjustments, changes to summer schedules and trip availability, additional trips and longer service spans. The major service change increase was entirely invested in bus service. No major rail service changes or service reductions were included.

### Route-level Findings:

- Of the 26 total services with proposed changes, one had a potential disparate impact finding.
- Route GS has a potential disparate impact finding due to minority populations receiving 0.52% less of a benefit than non-minority populations.

Table 8 summarizes major service changes by the 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 8. Summary of major service changes by change type and impact

Change Type	Number	Route	Potential DI?	Potential DB?	Service Change Pct
Service Reinstatement	GS	Boulder/Golden	Yes	No	100%

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

Given a potential disparate impact or disproportionate burden, RTD will evaluate whether an alternative 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 no alternatives would have a less disparate impact on minority riders or a disproportionate burden on low-income customers but would still accomplish the project or program goals.

Alterations to the initial proposed September 2023 service changes<sup>4</sup> include the reinstatement of Route GS, which serves low-income populations at a rate higher than the district average.

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

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



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## Systemwide-level Findings:

- Of the over 25,000 people with access to bus stops within the service area of the bus routes with a major service improvement (Route GS), low-income groups represented a higher share of the population than district averages, indicating targeted service increases to low-income 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, low-income populations received a greater increase in service (were positively impacted more) compared to higher income populations
- Low-income areas benefited +1.19% more compared to higher-income areas
- Minority populations received a slightly lower increase in service (were positively impacted less) compared to non-minority populations
- Minority areas benefited 0.52% less compared to non-minority areas meeting the Disparate Impact threshold, therefore a system-level disparate impact was found with the proposed change

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## Appendix A: Systemwide Service Changes

Change Type	Service Changes	
	Route	Description
<b>Modified Adjustments (8)</b>	16	In accordance with the RTD Board-approved System Optimization Plan (SOP), split the route into Routes 16 and 17: new 16 would operate between 16th/Lincoln and Oak Station, and new 17 would operate between Oak Station, Federal Station, and 10th/Washington in Golden.
	66	It is proposed to adjust the trip times to better serve shift times at Colorado Center for the Blind while also removing unproductive trips. Select very early/late trips will be eliminated.
	105	As outlined in the RTD Board-approved System Optimization Plan (SOP), this proposal truncates the southern portion of the route at Southmoor Station. This proposal also improves Sunday midday service to 15-minute frequency based on increased ridership which currently exceeds Saturday ridership levels.
	120E/W	It is proposed to reroute all Route 120 trips into Wagon Road Park-n-Ride, weekdays, Saturdays, and Sundays/Holidays, to allow for improved network connections and transit network access for the equity community.
	121	As outlined in the RTD Board-approved System Optimization Plan (SOP), implement 15-minute Saturday service south of Peoria Station, with every other trip continuing to the 40th Airport Station. Perform running time analysis aimed at improving on-time performance.
	GS	Per the System Optimization Plan, it is proposed to reinstate four northbound trips at 7:02 a.m., 8:22 a.m., 3:37 p.m. and 4:39 p.m., between Federal Center Station and Downtown Boulder Station. It is also proposed to reinstate four southbound trips at 7:10 a.m., 8:19 a.m., 4:36 p.m. and 5:13 p.m., between Downtown Boulder Station and Federal Center Station.
	E	Adjustments to E Line scheduled times to better coordinate with W Line operations. Minor schedule adjustments to trips from Evans Station to Denver Union Station between 3 a.m. and 12 p.m. for a few select trips for all service days.
	W	A running time analysis aimed at improving on-time performance on the W line is proposed.
<b>Seasonal Adjustments (12)</b>	11	Reinstatement of school trippers.
	20	Reinstatement of school trippers.
	24	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed. Additionally, reinstatement of school trippers.
	30	Reinstatement of school trippers, as well as the removal of stop #13700 in response to the move of the Denver Human Services office and to promote better stop spacing.
	51	Reinstatement of school trippers.
	65	In accordance with the RTD Board-approved System Optimization Plan (SOP), extend spans to improve service availability. Weekday service from 5 a.m. to

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Change Type	Service Changes	
	Route	Description
		midnight and weekend service from 5 a.m. to 11 p.m. Reinstate seasonal school tripper service.
	73	As outlined in the RTD Board-approved System Optimization Plan (SOP), streamline the southern portion of the route to serve Belleview Station via Union Boulevard. Perform running time analysis and reinstate seasonal school tripper service. Service frequency improvements in the SOP will be added when workforce resources allow.
	225	Seasonal adjustment; returning weekday service frequency for fall/winter.
	DASH	Seasonal adjustment; returning weekday service frequency for fall/winter.
	JUMP	Seasonal adjustment; returning weekday service frequency for fall/winter.
	SKIP	Seasonal adjustment; returning weekday service frequency for fall/winter.
	NB	Seasonal adjustment; extend trips to Eldora Ski Resort to allow for service to the resort in winter.
<b><i>On-Time Performance Adjustment (6 Services)</i></b>	8	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	19	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	21	Schedule adjustments resulting from running time analysis, aimed at improving on-time performance are proposed.
	76	Schedule adjustments aimed at improving on-time performance are proposed.
	FF1	Schedule adjustments aimed at improving on-time performance are proposed.
	P	Schedule adjustments aimed at improving on-time performance are proposed.



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

# Service Equity Analysis: September 2023

## Route GS – Golden / Boulder

Reinstatement of service between Federal Center Station and Downtown Boulder Station

	Employment	Total POI	Social Services	Senior Housing & Facilities	Elementary Schools	Middle Schools	High Schools	Colleges	Retail (Includes Grocery)	Convenience Stores												
<b>New Access</b>	<p>Creates access to an estimated <b>34,856 jobs</b></p> <table border="1"> <caption>Job Access Comparison</caption> <thead> <tr> <th>Category</th> <th>Route GS (%)</th> <th>District (%)</th> </tr> </thead> <tbody> <tr> <td>Low/Medium Wage Jobs*</td> <td>28%</td> <td>45%</td> </tr> <tr> <td>Jobs Held by Workers of Color*</td> <td>14%</td> <td>14%</td> </tr> <tr> <td>Jobs Held by Hispanic/Latino Workers*</td> <td>15%</td> <td>18%</td> </tr> </tbody> </table> <p>Legend: ■ Route GS ■ District</p>	Category	Route GS (%)	District (%)	Low/Medium Wage Jobs*	28%	45%	Jobs Held by Workers of Color*	14%	14%	Jobs Held by Hispanic/Latino Workers*	15%	18%	<b>229</b>	24	12	3	3	2	6	163	16
Category	Route GS (%)	District (%)																				
Low/Medium Wage Jobs*	28%	45%																				
Jobs Held by Workers of Color*	14%	14%																				
Jobs Held by Hispanic/Latino Workers*	15%	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.