

Appendix C: Evaluation Process and Results

Evaluation process and results

The Network Now framework was developed to address changing market conditions and transit needs identified through public input. Metro Transit developed the framework through repeated rounds of service change proposal evaluations relative to the pre-pandemic and baseline transit networks of 2019 and 2023. Evaluation measures were designed to assess service based on the Network Now guiding principles, with the goal of improving the customer experience on transit across the Twin Cities region.

Evaluation metrics

Metro Transit organized evaluation metrics into two categories: service availability and usefulness. Each metric was also assessed for service equity impacts to ensure that service improvements benefit all, especially historically underserved communities. Information showing low-income populations and populations of color throughout the region are included. This evaluation also includes a Title VI analysis of the impact of planned Network Now service changes. The evaluation process is described in the following sections.

Availability

Service availability metrics describe the services available to residents and customers in the Network Now framework. Service is considered to be available if it is reachable within a five-minute walk or roll of a transit stop. Availability metrics reflect goals around the geographic distribution of transit service.

Availability is calculated for residents, demographic subgroups, and current customers, as well as for different service periods throughout the day and week.

Availability is also calculated for different frequency levels in a standard service window.

- 15-minute or better service, or frequent transit, the most useful category of service.
- Any service, including all above categories and service that may not currently meet Network Now standards.

Usefulness

Useful transit service is defined by its **ability to connect people to opportunities**. For this analysis, opportunities are measured in terms of access to jobs. In this region, jobs are often located near other desirable destinations like shopping and healthcare, so that access to jobs also means access to all the destinations individuals may need for daily needs. Usefulness metrics reflect goals of ridership, congestion and pollution mitigation, and reduced car dependence.

By quantifying the number of jobs reachable during weekday midday, weekday rush hour, Saturday midday, and

Sunday midday, differences in usefulness can be measured across service periods. If access to jobs is high across multiple time periods, the transit system more effectively connects customers to a wider range of opportunities even as the locations and schedules of those opportunities might evolve over time.

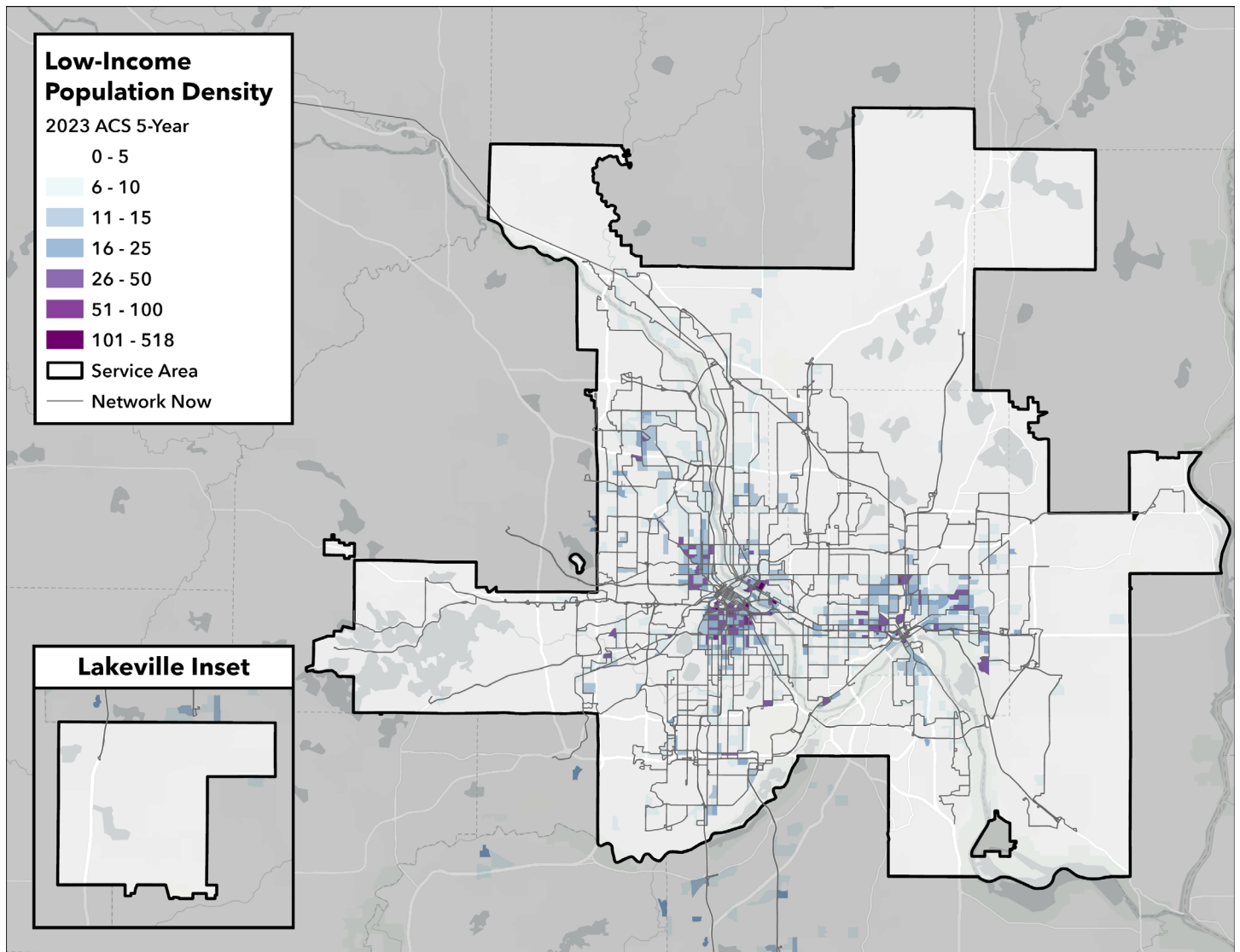
Title VI service equity analysis

The Federal Transit Administration requires transit providers to conduct a Service Equity Analysis (SEA) when making major service changes as defined by the agency’s Major Service Change Policy. The purpose of this analysis is to prevent discrimination based on race or income by identifying changes with potential for disparate impact or disproportionate burden on protected groups.

Low-income populations

Low-income populations are defined as individuals with incomes below 185% of the federal poverty level. Low-income populations are shown in Figure 1. Service offered in the Network Now framework will work to well serve low-income communities.

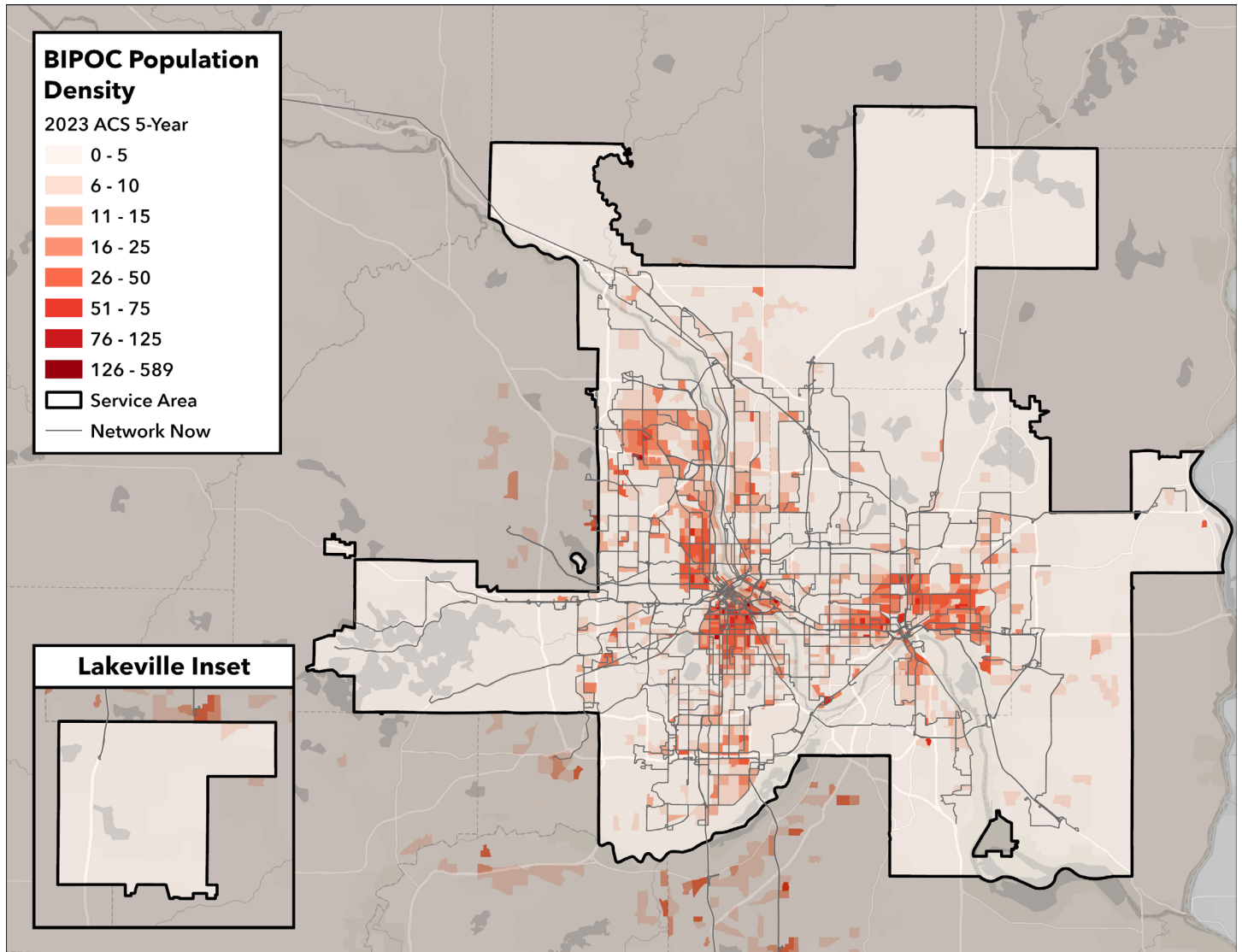
Figure 1. Low-income populations



People of color

People of color, sometimes referred to as Black, Indigenous, or People of Color (BIPOC) communities, are defined as individuals who self-identify with a race and/or ethnicity other than non-Hispanic white. Populations of people of color are shown in Figure 2. Service offered in the Network Now framework will work to serve communities of color well.

Figure 2. Populations of people of color



Results

Results for each evaluation category — availability and usefulness — are shown in the following sections. All results compare the framework to our baseline (December 2023) and pre-pandemic (December 2019) scenarios.

In general, the framework increases the availability of high-frequency service and the usefulness of service across all times of day and for all demographic groups relative to pre-pandemic and baseline services. The framework improves the availability of any transit service—including rush-hour only, weekday only or routes running less than once an hour—over the baseline service but not relative to pre-pandemic service levels. This reflects the preference in public feedback for more useful service (longer spans, reverse commutes, higher frequencies) over increased geographic distribution of low-frequency, one-way or rush-hour-only service.

Availability

Results of transit availability are organized first by day type and time of day, then population group, and finally time segment. All availability results are organized by service categories: 15-minute or better service, and “any” service, regardless of schedule.

Availability by time of day and demographic group

Regardless of race, income, or time-period, the Network Now Framework would increase the availability of most transit service to residents in the region beyond the baseline and pre-pandemic services. The Network Now Framework performs better across all metrics in making service available to people of color and low-income populations when compared to the baseline level of December 2023. The availability of service for all residents and each demographic sub-group improved compared to pre-pandemic service for all service frequencies except the “any” service level. Consistent with equity goals, people of color and low-income residents retained a higher share of pre-pandemic availability of “any” transit service (93% and 95% respectively) than the regional population as a whole (88%). Since 2019, demand has shifted away from rush-hour office commutes (included in the “any” service level) towards all-day, all-week trips (as exemplified by the high-frequency service level). Figure 3 through Figure 7 shows how much of the population has access to 15 minute or better service by time of day.

Figure 3. Availability of 15-minute or better service, Saturday midday

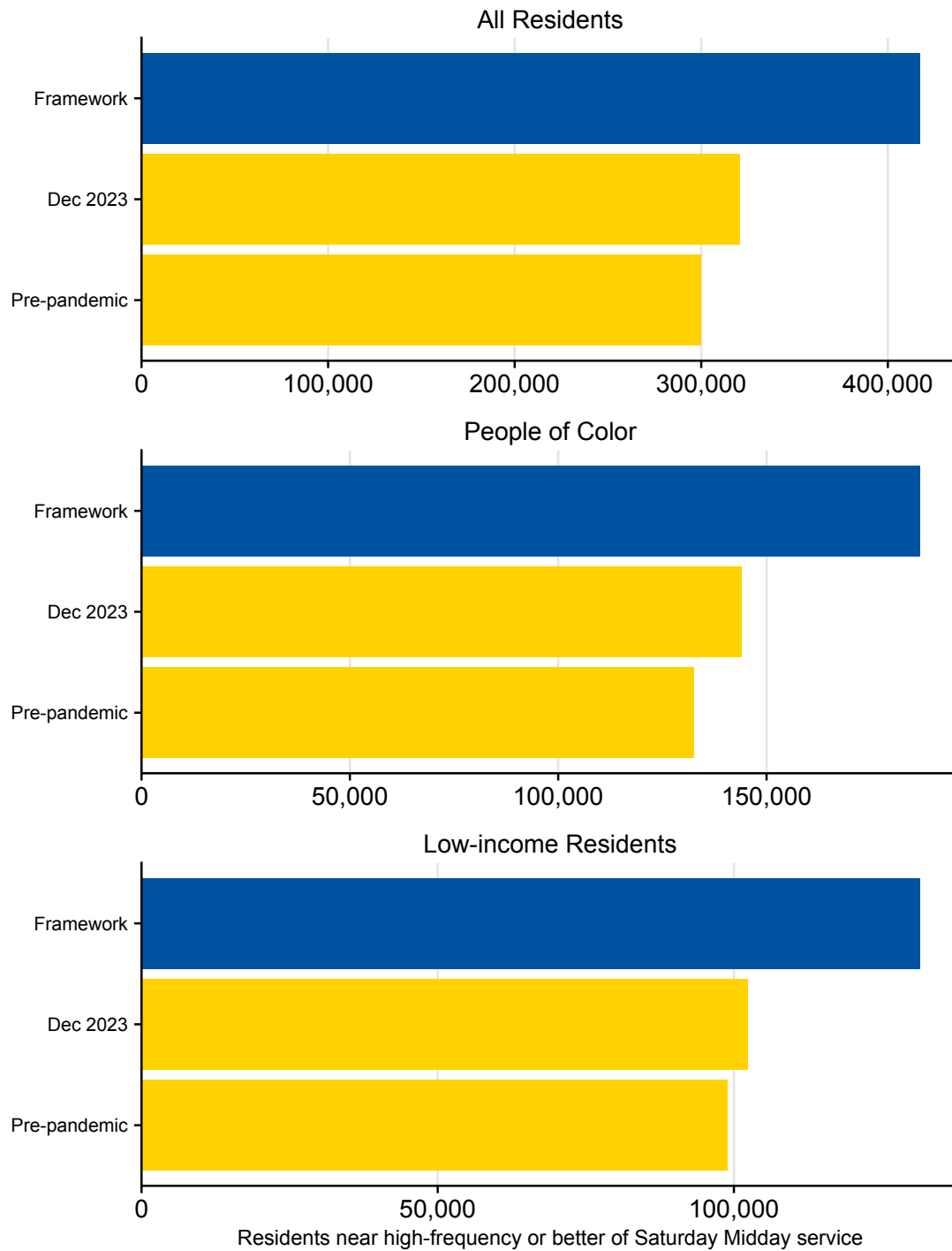


Figure 4. Availability of 15-minute or better service, Sunday midday

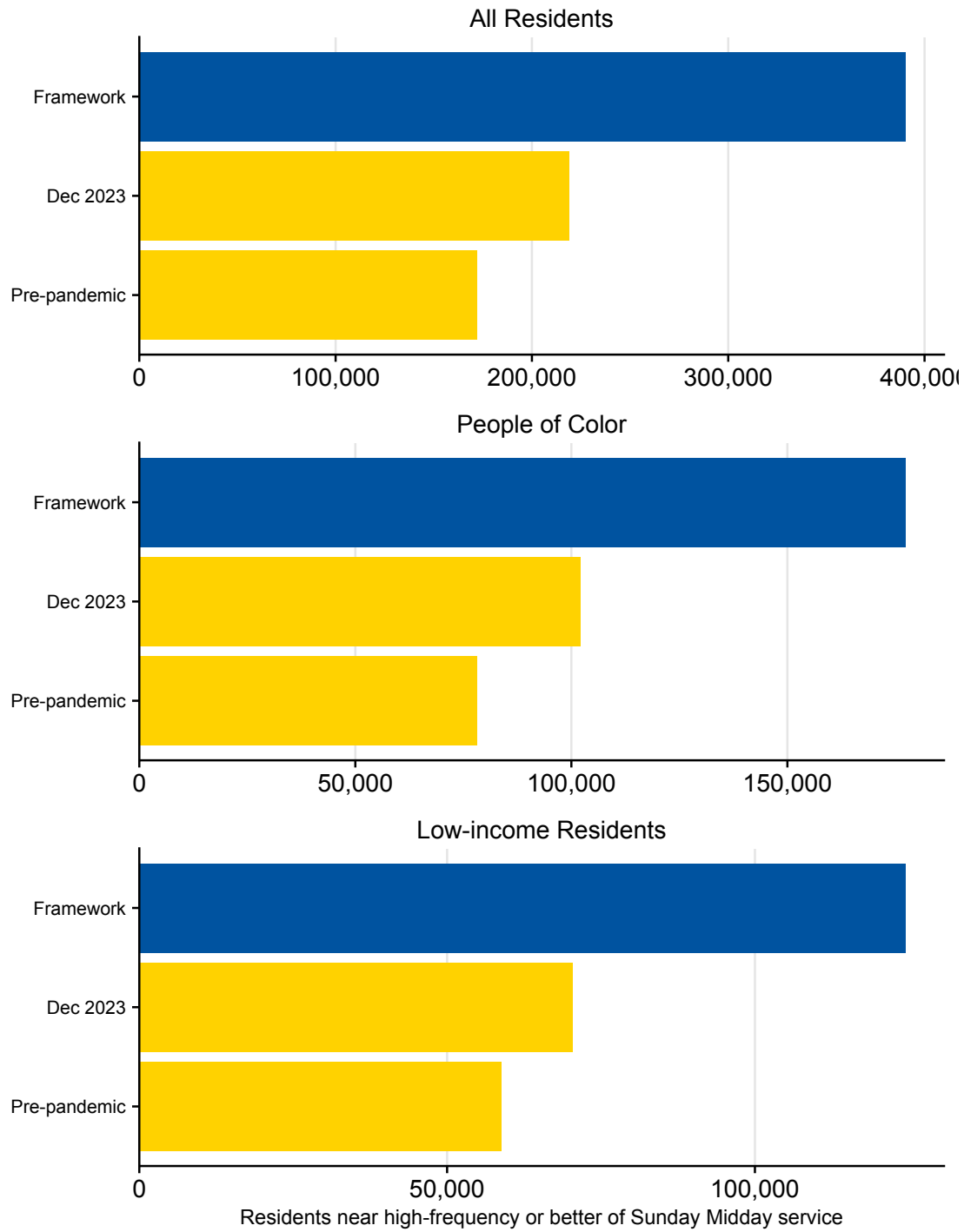


Figure 5. Availability of 15-minute or better service, weekday midday

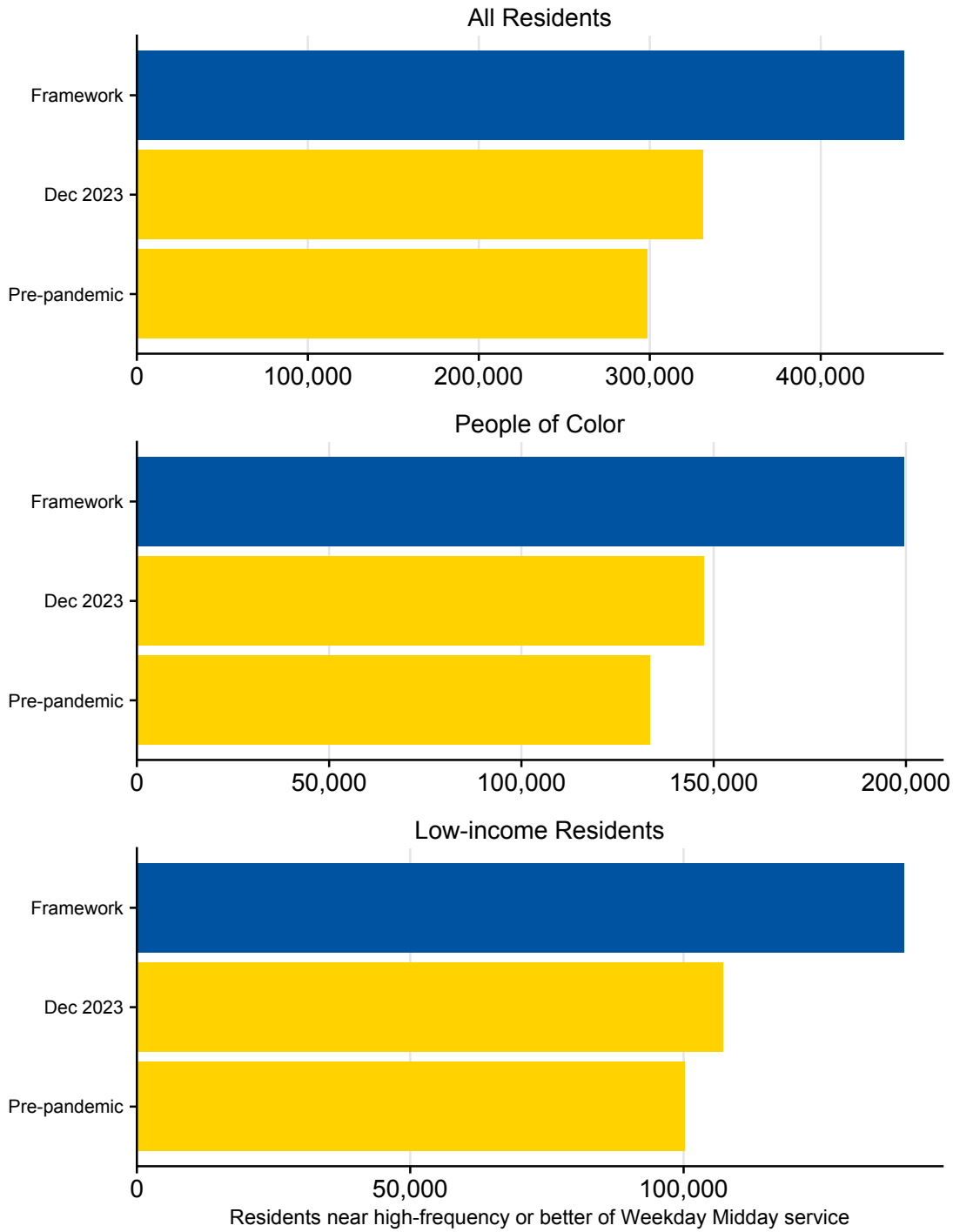


Figure 6. Availability of 15-minute or better service, weekday night

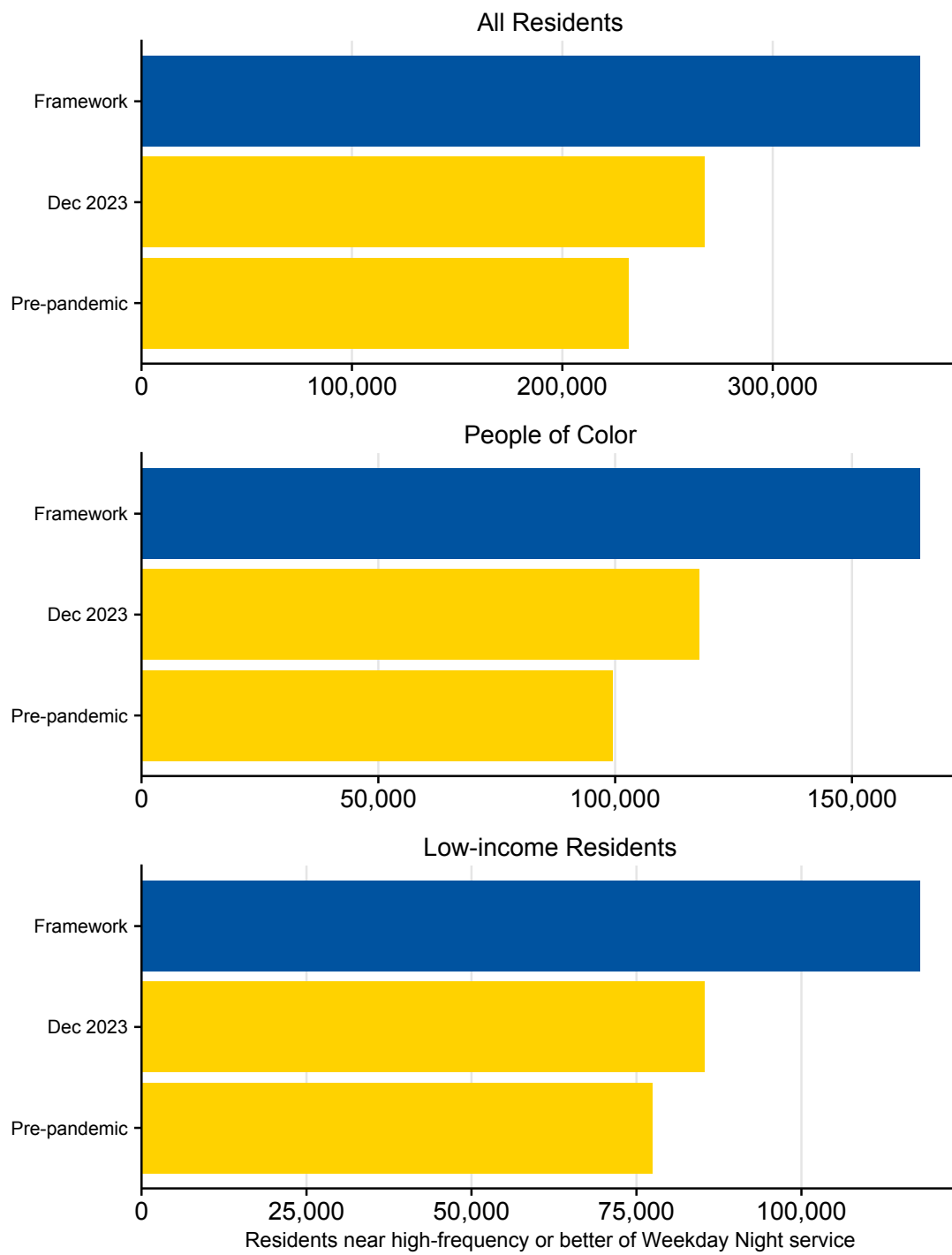
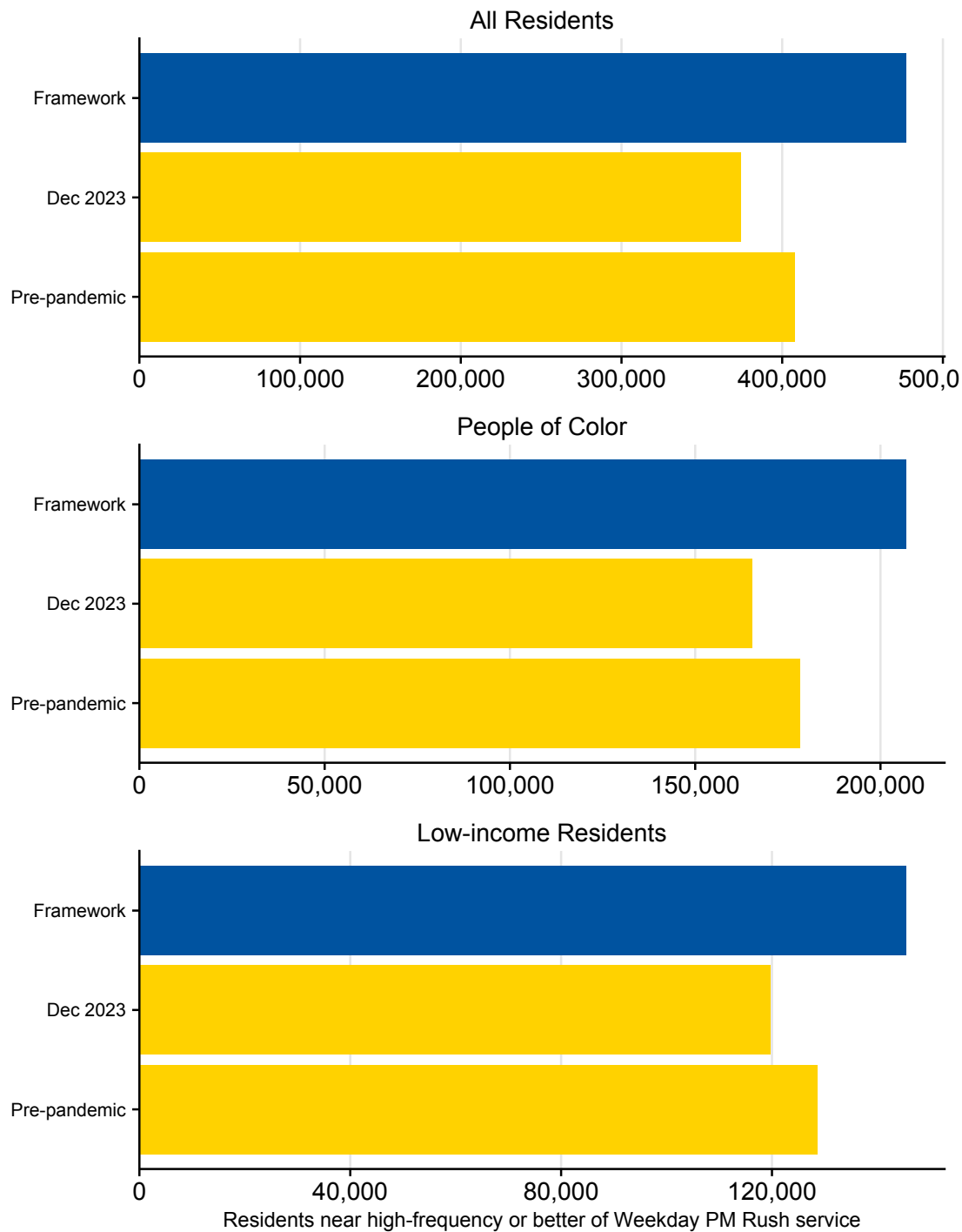


Figure 7. Availability of 15-minute or better service, PM peak



For the “any” level of service, access during rush hours decreases from pre-pandemic levels, but it increases at least moderately or stays the same for all other service windows. These changes can in part be attributed to decreases in rush-hour express service and align with public priorities.

In addition to maintaining service availability across the day and week, the framework improves the availability of 15-minute or better service over the pre-pandemic service. Noticeably, transit availability more than doubles for all populations on Sundays. High-frequency services support the broad array of trip purposes that have overtaken work commutes in the wake of the pandemic. The framework not only increases availability of high-frequency service in the region, but it creates more connections among high-frequency routes, improving the usefulness of service as shown below.

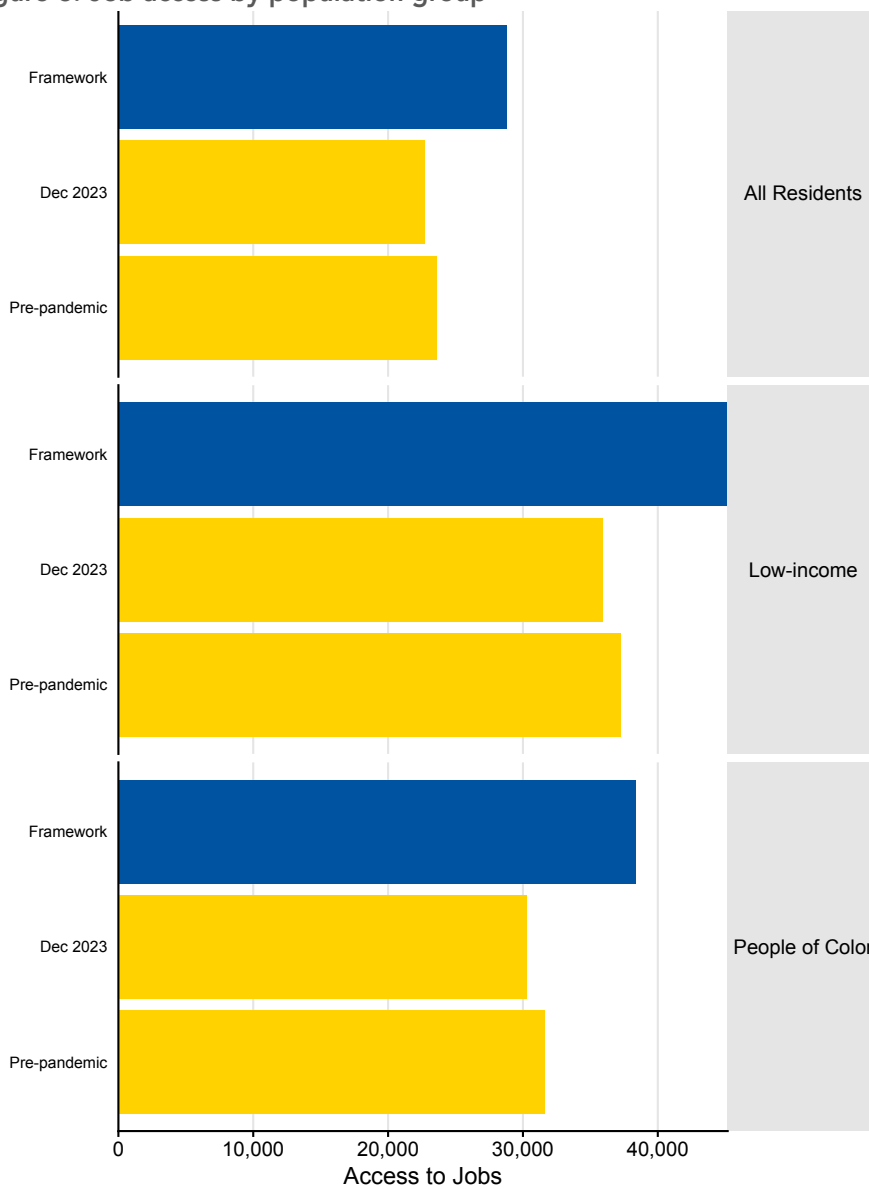
Usefulness

While availability describes how many people could reasonably use transit service, usefulness describes the ability of transit to connect people to opportunities. Usefulness was assessed as the average number of jobs available within approximately 45 minutes of travel time. Analyses are included for different demographic groups, times of day, and days of week. Each analysis compares the Network Now framework to baseline and pre-pandemic service.

Job access by population group

Usefulness was assessed for the general population, as well as for low-income populations, and people of color. The Network Now framework improves job access more for low-income populations and people of color than for the general population (Figure 8). These results highlight how strategic investments in core transit markets can create improvements in job access across the region. By providing access to many more jobs for these residents, the Network Now framework achieves its goal of providing access opportunity and reducing regional disparities.

Figure 8. Job access by population group



Job access by time of day

Access to jobs by time of day and day type for each resident, on average, is shown in Figure 9. The Network Now framework increases access to jobs across all service windows over pre-pandemic and baseline levels of service. The increase in job access on Sunday is particularly notable.

Differences in weekday travel patterns are considered in the framework. Weekday travel is less concentrated in rush hours, especially the morning, than it was pre-pandemic. The framework provides access to more jobs and areas, recognizing many job types have hours outside standard office hours, and workers need access at more times of day and more days of the week relative to pre-pandemic service. The results highlight that Saturday and Sunday access to jobs do not lag far behind weekday midday and PM rush hours, supporting these changes in travel behavior.

Figure 9. Job access by time of day

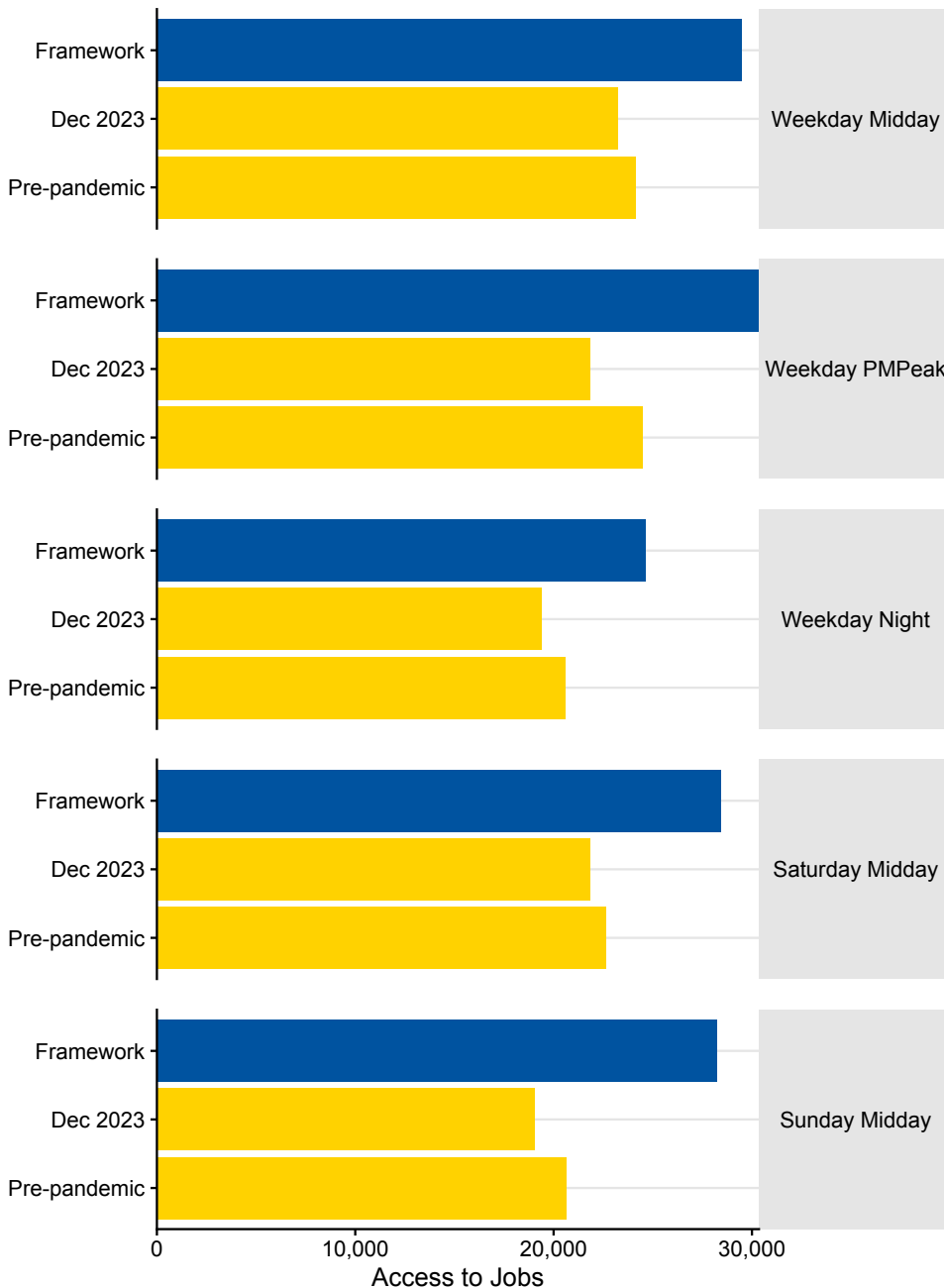
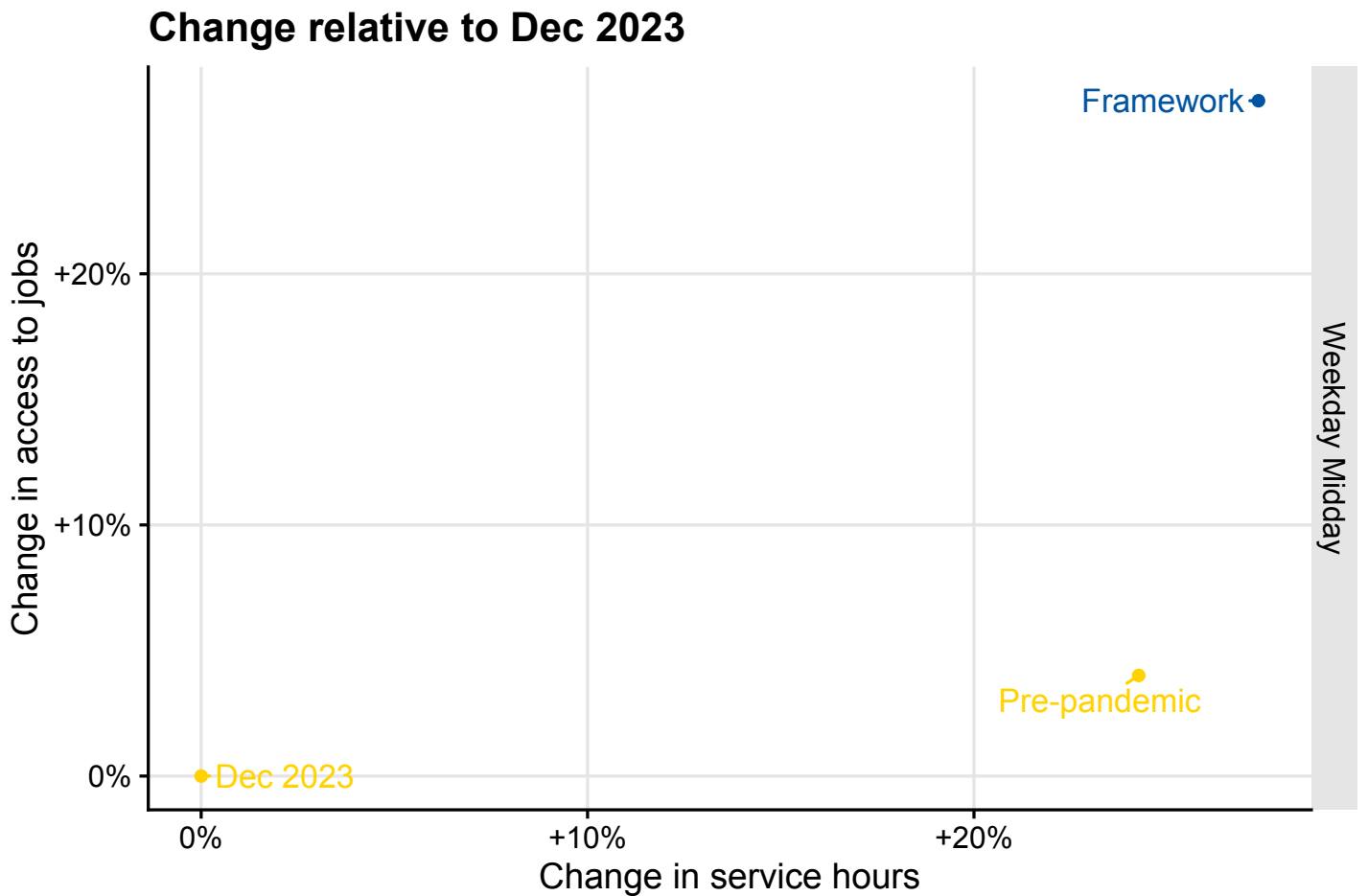


Figure 10 shows the change in access to jobs per resident of the region, on average, per in-service hour added for walk-up fixed-route service during the midday on weekdays. The framework offers a nearly 27% increase in access to jobs per resident on average, substantially higher than the 4% increase if the pre-pandemic network was restored, compared to baseline levels. The Network Now framework offers a higher return on investment to jobs accessible to residents on average, for each in service hour added. Network Now includes improvements that are adapting to the changing travel demand and travel patterns of residents to offer the most efficient use of resources.

Figure 10. Change in weekday midday access to jobs per resident, relative to baseline service



Title VI Service Equity Analysis results

Metro Transit reviewed the proposed changes in Network Now to make sure the investments are made in an equitable way. This review followed Metro Transit’s Title VI policy which compares the amount of transit service available to residents in an average week (measured in trips) before and after service changes. Proposed service changes are considered based on how they would affect all residents living near transit, regardless of whether residents use transit. Service changes for BIPOC residents are compared to service changes for white residents to determine whether changes will disparately impact BIPOC populations. In order to avoid a disparate impact result, BIPOC residents must receive at least 90% of the benefits (transit service increases) experienced by white residents. Similarly, service changes for low-income residents are compared to service changes for non-low-income residents to determine whether changes will disproportionately burden low-income residents. This comparison uses the same 90% threshold.

Table 1 shows there is possibility for disparate impact (but not disproportionate burden) when using the percent change in weekly trips. However, when looking at the absolute change in weekly trips, that chance is removed. The analysis shows that there is no potential for disparate impact or disproportionate burden when reviewing the absolute change in weekly trips. The full SEA report is available on Metro Transit’s website.

Table 1. Title VI Service Equity Analysis results

	Percent increase in weekly trips	Absolute increase in weekly trips
Total population change	36.9%	397
BIPOC population change	34.1%	394
White population change	38.7%	399
Low-income population change	35.7%	445
Non-low income population change	37.2%	371
Disparate impact ratio	0.88	0.99
Disproportionate burden ratio	0.96	1.20

Evaluation summary

The Network Now evaluation process was designed to measure how well the Network Now framework succeeds in addressing the five Network Now principles when compared to baseline and pre-pandemic service. This evaluation was completed using ridership, accessibility, and demographic data. Key findings of the individual criteria are summarized as follows:

- **Availability:** The Network Now framework expands the availability of any service (including rush-hour, one-way, weekday only or routes with trips less than hourly) over December 2023, but not to the level of pre-pandemic service. Instead of matching pre-pandemic availability of any service, the framework provides a large increase in the availability of high-frequency transit service compared to both the baseline and pre-pandemic networks, with particular improvements for people of color and low-income residents. The availability of high-frequency transit expands most dramatically on weekend and non-rush-hours, reflecting Metro Transit’s goal to expand the reach of all-day, all-purpose transit service.
- **Usefulness:** The Network Now framework delivers significant improvements in job access for residents across the Twin Cities region, and even more significant improvements for low-income residents and people of color. Access expands across all time periods relative to both the baseline and pre-pandemic service. The improvements in usefulness match the changes in trip-making patterns and align with public priorities for transit.

Title VI analysis: Metro Transit has conducted a Title VI analysis to determine if service changes planned in the Network Now framework show evidence of a potential disparate impact or disproportionate burden. The results show that there is no potential for this impact based on the absolute change in added trips with the Network Now changes.