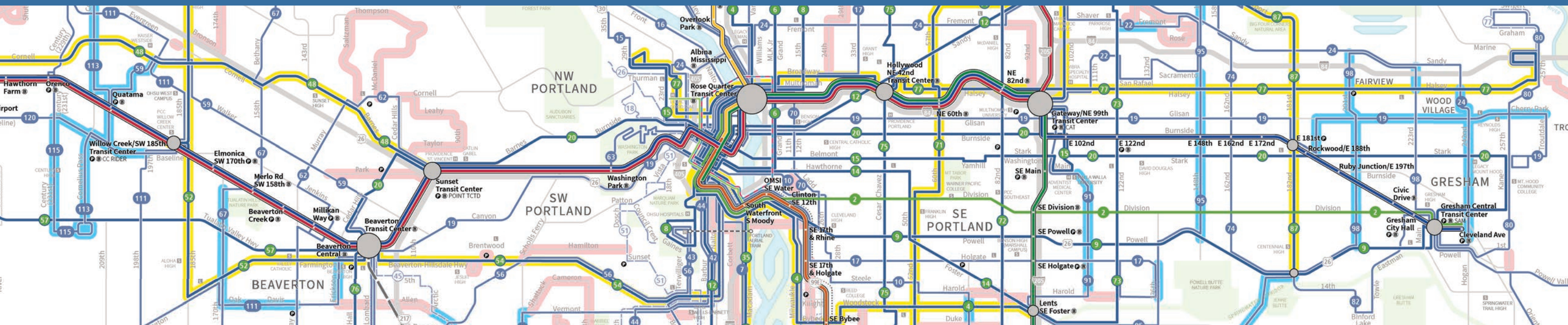
Service Concept Final Report

MAY 31, 2023

FORWARD TOGETHER

prepared by JARRETT WALKER + ASSOCIATES



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Anytime you see a symbol like A or B in this document, look for the same symbol in a nearby map or image.

1 Introduction

Introduction

What is Forward Together?

Forward Together is a comprehensive review of the design of TriMet's bus services: where should the buses go, and when? What should the structure of lines and schedules be? What goals should the agency be pursuing in its service design? The end result of this study is a "Service Concept" for how TriMet's network could look once its current operator shortage is resolved, responding to changes that have occurred in the region since 2020 and the onset of the COVID-19 pandemic.

This project began in late 2021 with an existing conditions analysis that aimed to offer a general assessment of the performance of the existing network at that time. The existing conditions phase also included an analysis conducted by Parametrix of major changes in demand emerging from the COVID-19 pandemic. This phase culminated in the completion of two documents: the "Transit Existing Conditions" report and "Market & Trends Technical Memo", both available on the TriMet website. A summary of the most important findings of these documents is included as the first chapter of this report.

Following the completion of these reports, TriMet initiated the initial phase of outreach for this project seeking input from the public on the agency's service priorities for the future. Taking into account this feedback, TriMet's staff and the consultant team collaborated with representatives from local jurisdictions, counties, and the Oregon Department of Transportation (ODOT) to create the first draft of a Service Concept. This draft demonstrated how the network could be redesigned to align more effectively with the public's priorities and accommodate shifts in demand.

In October 2022, we presented the first draft of this Service Concept to the public and the TriMet Board. It's purpose was to support a public conversation about how TriMet's network should look in the future. An outreach period was open throughout the month of October 2022, including an online survey completed by over 4,500 people, open houses attended by over 500 people, and outreach to partner jurisdictions. Based on this input, we revised the Service Concept into the plan that is presented and evaluated in this document.

What are the goals of the Service Concept?

In our survey of the public in early 2022, we asked what goals should guide our service expansion. We heard two big themes:

- Ridership. There is wide support for ridership as a goal of the service. Ridership leads directly to meeting other important goals such as reducing car trips and congestion, reducing pollution, reducing greenhouse gas emissions, and supporting dense and walkable redevelopment.
- Equity, especially the needs of low-income people. While equity means many things, in service planning it means pursuing the goal that marginalized groups have equal or better access to opportunity than the general public.

The Service Concept expresses these priorities:

- First, focus on ridership. Offer good service in areas with high ridership potential, which are generally places that are dense, walkable, and that provide streets where transit can run efficiently. Make these services so good that they are worth walking to. Maximize ridership by maximizing the odds that a person, looking up a trip that they need to make, will find that the travel time is reasonable. But a high-ridership network doesn't serve everyone. If we were pursuing only a ridership goal, we wouldn't go to many low-density places where there just aren't enough people for ridership to be a realistic goal.
- Second, focus on lower-income people and needs. Even where ridership potential is not that high, the Service Concept devotes service to providing access to all concentrations of low-income people and the destinations they need to reach.
- Do not devote as much service to areas that are low-density but also relatively high-income. This is a consequence of the first two priorities. If an area has low ridership potential but also relatively few low-income people or destinations, it can expect to see service reduced or eliminated under the Service Concept.

What is this report?

The purpose of this document is to compile a one-stop resource for all information on the Service Concept and outreach conducted during the Forward Together process. It is complemented by the "Transit Existing Conditions" report and the "Market & Trends Technical Memo" completed in Spring 2022, available on TriMet's website.

The Forward Together Final Report includes 4 main sections:

- The Revised Service Concept. This chapter provides a description of the key features and potential outcomes of the Service Concept after revision following the second public engagement process.
- Public Engagement. This chapter describes the public engagement process; how input was collected, and what it was used for.
- Next Steps. This chapter describes the role that Forward Together and the Service Concept will play in TriMet's service planning in the coming years.
- Appendices A-G. These sections provide a detailed explanation of the changes in each part of the network, as well as additional detail on the survey instruments, results, cost analysis, and a glossary.

The design of the Service Concept focuses on two main goals: growing ridership, and advancing transit equity.

Introduction

This document contains extensive information explaining and analyzing the Forward Together Service Concept and outreach processes. But what if I don't have time to review all that material? What are the most important things to know about Forward Together?

How would Forward Together change the network?

The Forward Together Service Concept would make changes to the bus network designed to attract ridership, and improve equity by making transit more useful for lower-income people and people of color. It would create several new Frequent Service bus lines running every 15 minutes on corridors like Cornell Rd. in Washington County, Woodstock and SE 60th Ave. in Portland, and Halsey and 181st/182nd in Gresham. It would also extend new services to places TriMet's network doesn't reach today; upgrade numerous routes to run every 30 minutes; and reduce or discontinue some services in low-ridership, affluent areas.

What about MAX and the Portland Streetcar?

The Service Concept is a plan for TriMet's bus service, and does not recommend changes to TriMet's MAX light rail system or the Portland Streetcar. The plan assumes the current rail system, along with near-term improvements like the extension of the Red Line.

How did we develop this plan?

TriMet began the process of reviewing its network in late 2021 by contracting with the consultant project team of Jarrett Walker + Associates and Parametrix. The plan was guided throughout by the results of a public process involving surveying and outreach to community-based organizations and partner government agencies in early 2022. This initial process provided the ridership and equity goals of the plan.

In mid-2022, TriMet, the consultant team and staff representing partner jurisdictions collaborated to design the Draft Service Concept. This Draft Concept was shared with the public and stakeholders in October 2022. Over 5,000 people provided input via an online survey on the plan. After the end of this second outreach period, the project team used the input received to refine the plan into the form described in this document, which we refer to simply as the "Service Concept", or else as the "Revised Service Concept" where it is relevant to explain a difference from the earlier draft version.

Who would this benefit?

Most people in the TriMet district who live within walking distance of transit would benefit from the Service Concept. In this report, we used several measures to gauge the impact of the changes. One of the most important is called "access analysis". This measures how many destinations a person could reach in 45 minutes using transit. About 75% of people in the service area would gain access to at least 1,000 more jobs with a 45 minute transit trip, and about 45% of people would gain access to at least 10,000 more jobs. In most measures we used, looking at access to jobs as well as other destinations, lower-income people and people of color would be able to reach more places with transit more quickly than all service area residents.

We also mapped how access would change in different places in the region. In most places, the network would become more useful, because we have made many routes more frequent, or created new services closer to where people live. Some places where the network would become a lot more useful include East Portland, Hillsboro and Beaverton, and along 82nd Drive in Clackamas County.

There are some areas where transit would become less useful with the Service Concept, because we have changed the frequency or design of routes. These are mostly in more affluent areas where ridership was low before the pandemic and has stayed low in the years since. Some places where the network would become less useful include along Laidlaw Rd. in Bethany; some areas of Southwest Portland; the West Hills; and in the central area of Irvington in NE Portland.

What happens next?

Beginning in 2023, TriMet will implement network changes included in Forward Together as past of its Annual Service Plan (ASP) process. The first set of proposals were released for public comment in January 2023 and scheduled for implementation later in the year.

The Service Concept is a plan for the entire network, but because of its current shortage of operators, TriMet can not implement it all today in 2023. Based on current financial projections, the full Service Concept could be implemented over the next four years; by 2027, the agency hopes to have the staff and resources to operate the level of service shown in the Concept. Between now and then, TriMet will draw on ideas from the Service Concept as it restores service reduced during the Covid-19 pandemic through the ASP process.

The first changes from the Forward Together Service Concept are scheduled for implementation in 2023, with additional elements of the plan rolled out in coming years as TriMet is able to restore more of the service reduced during the pandemic and operator shortage.

2 Summary of Existing Conditions and Market & Trends

This section provides a summary of some of the most important parts of the Transit Existing Conditions report and COVID Market & Trends memo, the first two documents developed for Forward Together in late 2021 and early 2022.

Forward Together is about the design of TriMet's services and schedules: where should the buses go, and when? What should the structure of lines and schedules be? What goals should the agency be pursuing in its service design? Our focus is on the bus network since it is the easiest to revise as needs change.

Prior to Forward Together, TriMet's most recent systemwide network planning project was the Service Enhancement Plan (SEP) process completed in 2018. Most of the work of developing the individual SEPs happened between 2011 and 2016. The SEPs generated ideas for future bus network structure based on extensive analysis and conversations with the community. The SEP ideas have been the source of many of the service improvements that have been made since then.

Dramatic shifts in ridership and travel demand have occurred since the beginning of the COVID-19 pandemic. The simplest view of the change is illustrated by **Figure 1**, showing the enormous drop in ridership and significant reduction in service early in the pandemic, the slow but steady return of ridership from .

The number of riders, the places they are going, and the outcomes the public desire from transit are all changing. For these reasons, TriMet needs to take a fresh look at the network.

Three Kinds of Change

The years since 2020 have seen abrupt and possibly permanent changes in the life and economy of our region, and have raised new questions about what TriMet's priorities should be. Looking forward, we must think about three dramatic changes that have affected TriMet and the communities it serves:

- Changes in Goals and Priorities
- Changes in Need and Demand
- Changes in Financial Resources

The Forward Together process centered on a public conversation about how the agency's network should change in the face of all these questions.

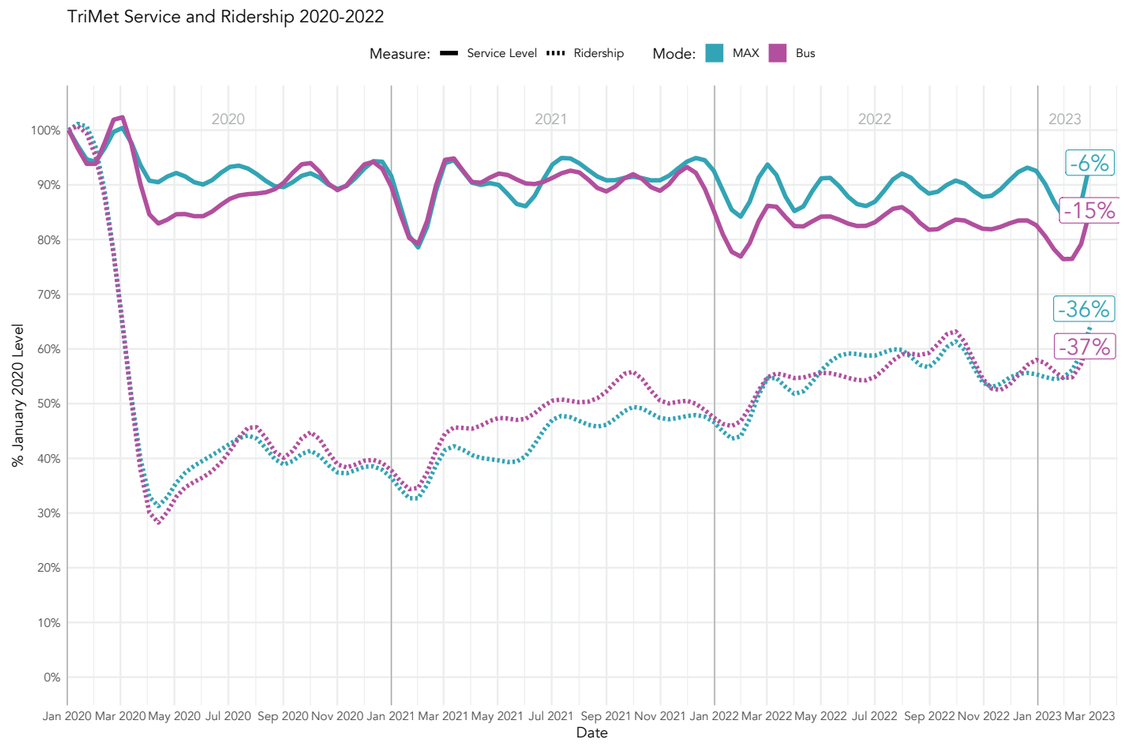


Figure 1: TriMet Service Level and Ridership, 2020-2023

NTD Complete Monthly Ridership (with adjustments and estimates), March 2023

Changes in Goals and Priorities

The foundation of this effort is the need to update our priorities. Transit plays a central role in many issues that people care about, including urban development, social equity, racial justice, traffic, safety, and climate change. Each of these issues suggests certain priorities for TriMet, but they sometimes push the agency in different directions. The Forward Together public process began with a survey focused on these priorities.

Changes in Need and Demand

COVID-19 caused a steep drop in transit ridership that has been returning gradually, but it also changed the shape of transit demand. Rush hour commuting is a much smaller share of our ridership than it was before. What is the future of rush hour demand, which was a significant part of our ridership before the pandemic? Should we prepare for a future in which some office workers no longer commute at rush hour every day? The Forward Together Service Concept reallocates resources towards places that have generated substantial ridership since 2020 (particularly places with more lower-income residents and commercial and employment areas oriented towards retail and service jobs), and away from routes where ridership declines have proven most lasting (especially service oriented towards the traditional downtown Portland rush hour commute).

Changes in Financial Resources

Unlike the SEPs, the Forward Together recommendations will be financially constrained. They will be designed to be financially possible for TriMet to implement in the next three years. This funding level is 9% above the pre-COVID service level, as it accounts for recent Federal assistance and new state funding flowing through HB 2017, the state transportation funding package approved in 2017. It is 32% above the level of service operated now in early 2022, a level that is held down by a shortage of staff. The revenue level assumed in Forward Together is not a statement about how much transit service the region needs or should have; it's merely a description of what, given the current funding sources, TriMet anticipates it can afford.

Changes in Demand

One of the biggest changes seen after the beginning of the pandemic is where people are riding transit.

Figure 2 shows the change in daily ridership by stop, compared to the network as a whole. Stops that lost more ridership than the network average are shown in shades of brown, while stops that retained more of their 2019 ridership are shown in green. Each stop is sized based on 2019 average daily weekday boarding.

Generally speaking, ridership fell off the most on the downtown-oriented commuter corridors, as many office workers shifted to remote working. These were some of TriMet's most important markets before the pandemic. Ridership fell off the least on corridors that serve employment that has always stayed in-person (particularly retail and service sector jobs), and that serve lower-income areas and areas with households with limited access to personal vehicles.

While pandemic-era restrictions are a thing of the past, the changes produced by the pandemic have proven more durable. As part of the existing conditions phase of this project, interviews were conducted with a number of major employers, including downtown office employers; few reported any near-term plans to return to the mandatory in-person work expectation that fueled the pre-pandemic downtown commute pattern.

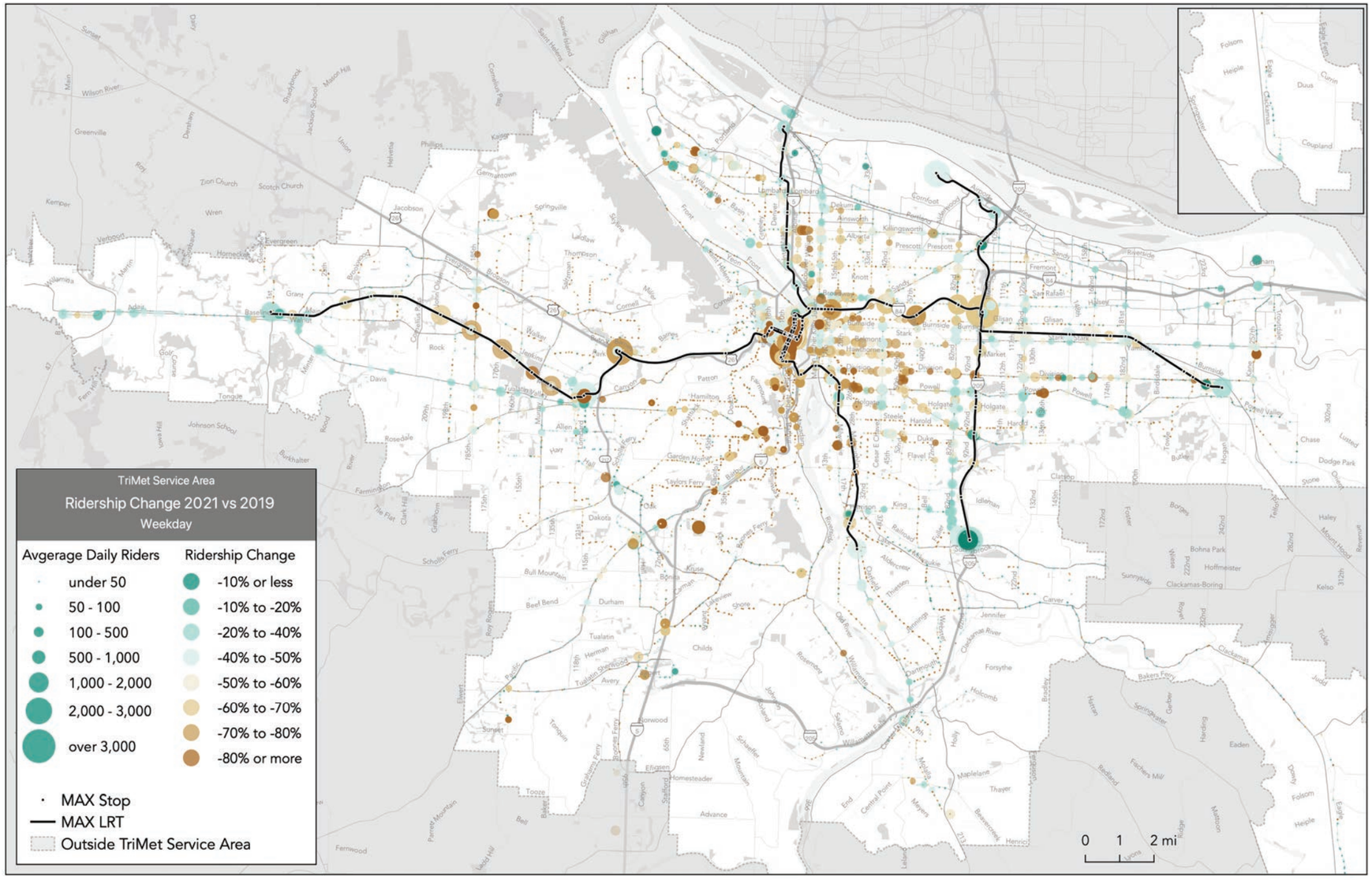


Figure 2: Change in Ridership by Stop, Fall 2019 and Fall 2021

From 2020 to 2021, ridership declined the *least* in equity areas and places with many retail and service-sector jobs.

Transit can serve many different goals. Individual people and communities value these goals differently. Some common goals for transit include reducing single-occupancy vehicle trips, providing an affordable transportation option for people without access to a car, generating high ridership, or offering a lifeline service to as many people as possible .

TriMet has adopted its own set of goals, which are laid out in its FY2022 - FY2027 Business Plan, shown in **Figure 3.** This document identifies internal and external objectives for the agency. This version of the document is currently out for public comment, but the customer-focused goals are similar to those in prior years.

These goals address a range of widely held values among the public, including environmental sustainability, economic opportunity, equitable distribution of public benefits, reducing congestion, and helping deliver the urban development outcomes of the Metro 2040 Growth Concept.

Some of these goals are only served if many people use transit. For example, transit can only mitigate congestion and reduce greenhouse gas emissions if many people ride the bus rather than drive. We call such goals **"ridership goals"** because they are achieved only when many people use transit rather than drive.

Goals related to economic opportunity and equitable mobility are also related to the ridership goal, because for the positive outcomes that affordable, useful public transportation can provide to be widespread in the community, many members of the community must actively use the service.

Other goals are served by the simple presence of transit. A bus route through a neighborhood provides residents insurance against isolation, regardless of whether or not they are able to drive, walk or cycle a long distance. A route may also fulfill political or social goals, for example by getting service close to every taxpayer or into every municipality. We call these types of goals **"coverage goals"** because they are achieved in large part by covering geographic areas with service and ensuring that transit is widely available, rather than by high ridership.

Customers

Goals							
	1	**Satisfied riders**	**2**	**Satisfied community stakeholders and employers**	**3**	**Supportive broader community**
Objectives	1A	Provide safe service	2A	Improve environmental sustainability and stewardship and reduce TriMet's carbon footprint	3A	Ensure strong support for transit and TriMet
	1B	Increase ridership	2B	Advance mobility for those with limited options	3B	Increase funding for regional mobility expansion
	1C	Improve customer experience, information, and services	2C	Support economic opportunity for all by expanding employee access to jobs and customer access to businesses and services		
	1D	Ensure equitable distribution of services and resources	2D	Help shape the future of cities and our region in line with Metro 2040 Growth Concept		
			2E	Ease congestion by providing attractive travel options during peak periods		

Figure 3: TriMet Customer-Oriented Goals from TriMet Business Plan FY2022-23

Ridership and Coverage

Ridership and coverage goals are both associated with a range of desirable outcomes, but they lead to opposing approaches to network design with a constrained budget. **Figure 4** is a simple illustration of how ridership and coverage goals conflict with one another, due to geometry and geography.

When transit is designed to achieve ridership, it tends to focus on providing high-frequency service to busy places. Transit designed to be widely available and achieve high coverage must spread those resources out to serve a wider area, so less service is available for high frequency in busy places.

In the fictional area at the top of **Figure 4**, the little dots indicate the presence of people and jobs. The lines indicate roads. Most of the activity is concentrated around a few roads.

A transit provider pursuing only a ridership goal would focus service on the streets where there are large numbers of people. Because service is concentrated onto fewer routes, frequency is high, and a bus is always coming soon. This would result in a network like the one at bottom-left, with all buses running on only two red routes running on the busiest corridors.

If the city were pursuing only a coverage goal, on the other hand, it would spread out services so that every street had a bus route, as in the network at bottom-right. In this example, only one or two buses serve each of the green routes, so waiting times for each route would be longer.

Transit Equity

TriMet is committed to equity across its operations. As the agency's 2022 Title VI Program Update reads:

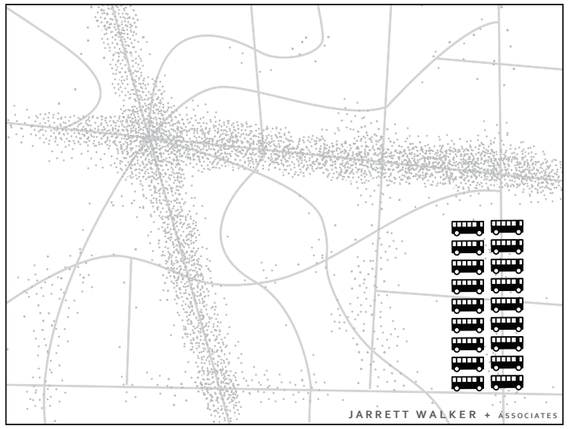
> *Continuing to invest in transit equitably and embracing an inclusive model where equity is a core business objective is critical to TriMet.*

For TriMet, transit equity has three defining elements:

> *Policies that promote the equitable distribution of burdens and benefits*
>
> *Promoting equal access to resources and services*
>
> *Engaging transit-dependent riders in meaningful planning and decision-making processes*

Transit equity goals are embedded within the ridership/coverage tradeoff. One of the challenges that all transit agencies face in planning more equitable service is in defining exactly what the service should be doing, and what more equitable outcomes it should be pursuing.

Should transit become ***more useful*** for disadvantaged populations, reducing the burden of travel time, and potentially cost of vehicle ownership for people of color and lower-income people, and expanding the range of opportunities it can connect them to? This is an equity goal that is embedded within the ridership goal, because it requires a useful service that can attract substantial ridership to ensure that the outcomes it can deliver are broadly felt throughout the community. TriMet's objective of "economic opportunity for all" is an example of an equity goal that requires a useful network capable of generating high ridership.



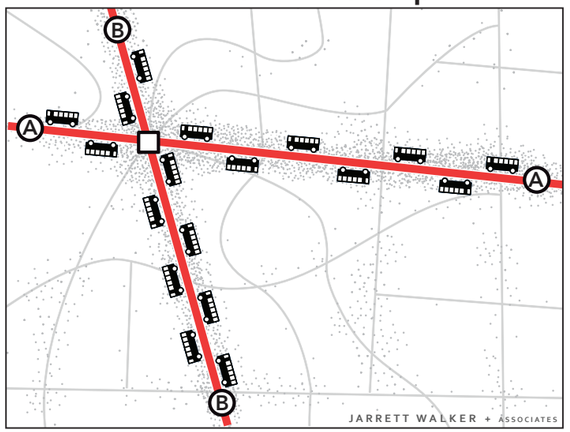
Imagine you are the transit planner for this fictional town.

The dots scattered around the map are people and jobs.

The 18 buses are the resources the town has to run transit.

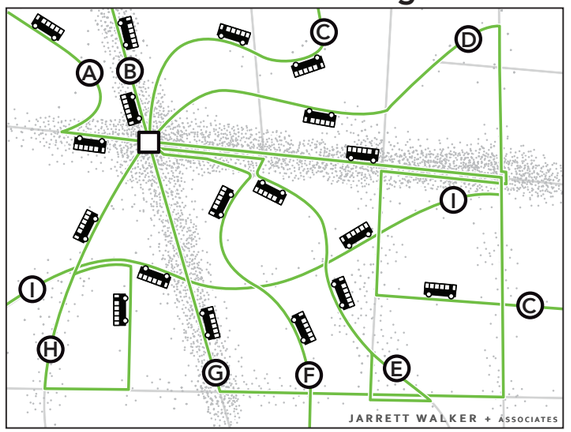
Before you can plan transit routes, you must first decide: What is the purpose of your transit system?

Maximum Ridership



All 18 buses are focused on the busiest area. Waits for service are short but walks to service are longer for people in less populated areas. Frequency and ridership are high, but some places have no service.

Maximum Coverage



The 18 buses are spread around so that there is a route on every street. Everyone lives near a stop, but every route is infrequent, so waits for service are long. Only a few people can bear to wait so long, so ridership is low.

Figure 4: Ridership and Coverage Goals

TriMet's Market

When TriMet considers the balance between ridership and coverage in its own network, it begins by looking at its market. Where are the people who could choose to use the service, if it met their needs?

One of the most important factors is density: how many people or destinations are near each potential bus stop. **Figure 5** is a map of the region where each dot represents 25 residents. Dots closer together mean higher density.

When planning for a ridership goal, these are the areas that higher frequency service would focus on, because they have more people who could choose to ride transit.

The colors on this map show how many jobs are within a mile-walk of each resident. Blue dots are residents who are close to lots of jobs; red dots represent residents who do not live close to jobs.

Places that have lots of dots (residents) and are shown in blue are places where more overall activity is present. These are likely to be the strongest transit markets, because they are the places where the most people are likely to be nearby who could choose to ride transit.

Density is one of the most important things TriMet must consider when designing service, but there are many other factors that shape the network. The full Transit Existing Conditions report provides a detailed overview of a variety of demographic and land use factors that can together influence transit's ridership potential.

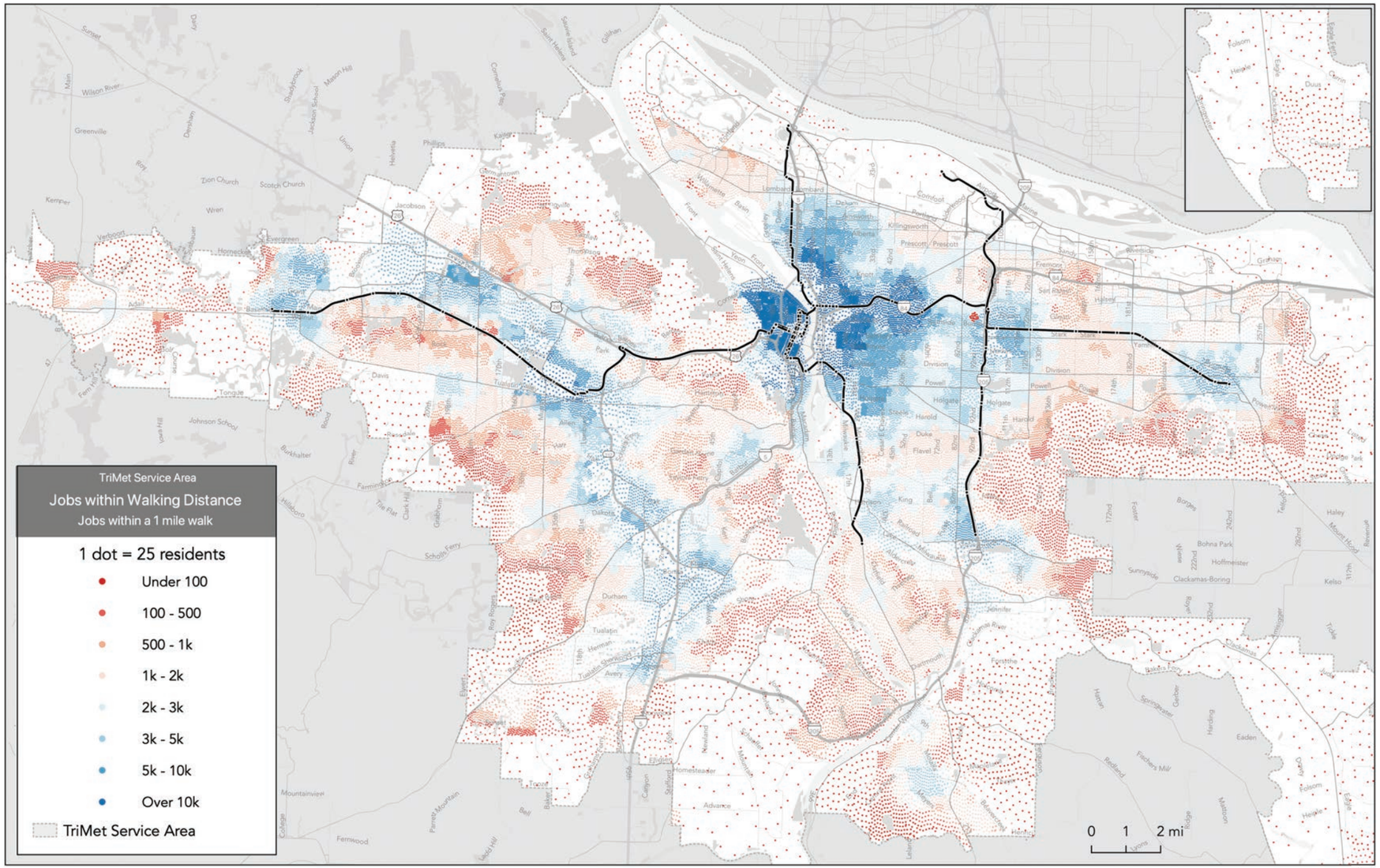


Figure 5: Proximity in the TriMet Service Area

ACS 5-Year Estimates, 2015-2019, LEHD LODES 7, 2018

TriMet's Equity Index

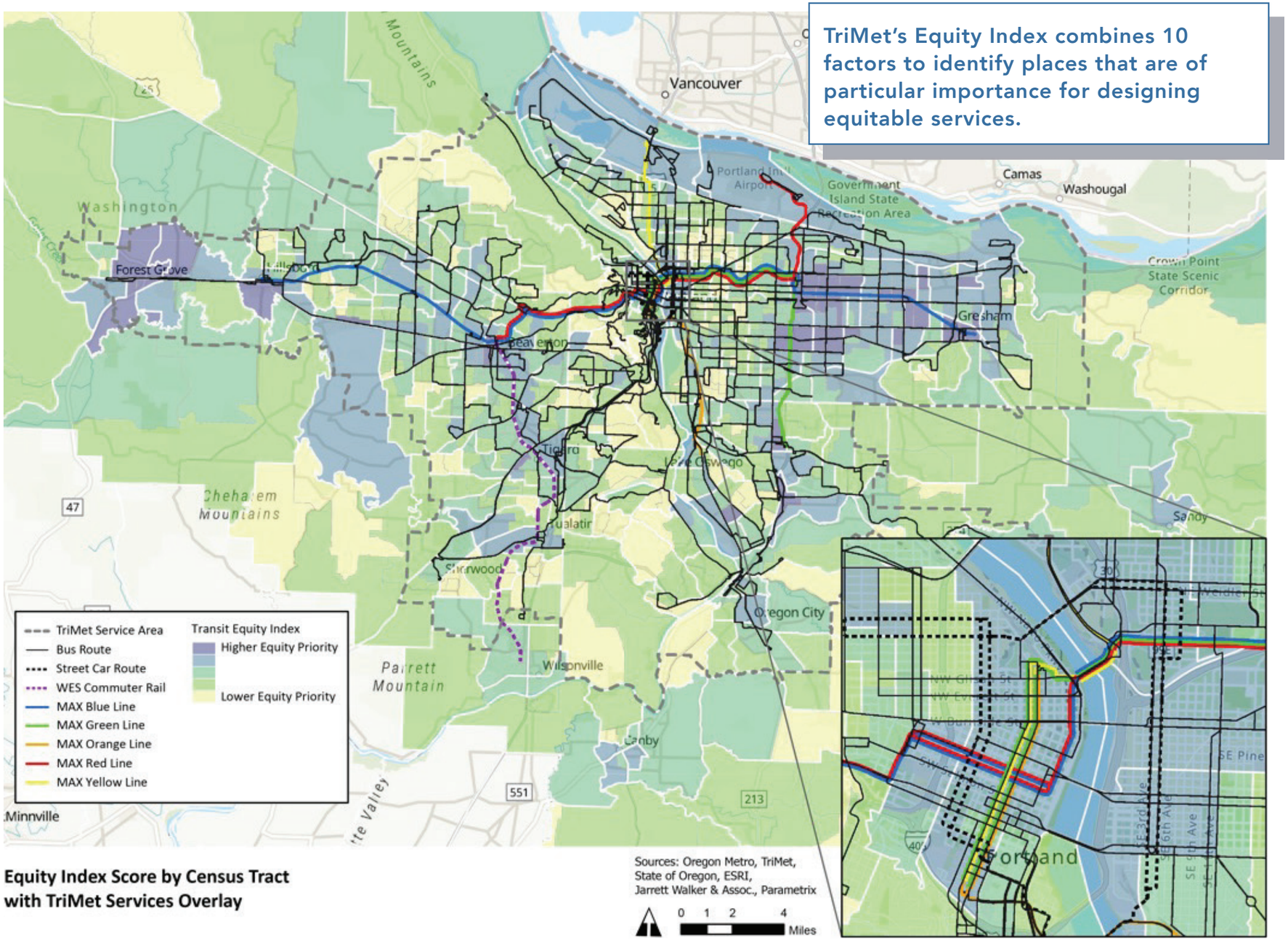
TriMet has developed a sophisticated 10-factor equity index that can serve as a helpful guide in planning for equity goals, but identifying areas of equity priority is just the beginning of this process. The full Transit Existing Conditions includes a detailed description of this index and other important factors for equity-focused service design. **Figure 6** maps the equity index, with areas with a greater higher equity priority based on the 10 factors highlighted in blue.

Transit equity goals are embedded within the ridership/coverage tradeoff. One of the challenges that all transit agencies face in planning more equitable service is in defining exactly what the service should be doing, and which more equitable outcomes it should be pursuing.

Should transit be designed to be ***more useful*** for disadvantaged populations, reducing the burden of travel time, and potentially cost of vehicle ownership for people of color and lower-income people, and expanding the range of opportunities it can connect them to? This is an equity goal that is embedded within the ridership goal, because it requires a useful service that can attract substantial ridership to ensure that the outcomes it can deliver are broadly felt throughout the community. TriMet's objective of "economic opportunity for all" is an example of an equity goal that requires a useful network capable of generating high ridership.

Should transit be ***widely available*** for members of disadvantaged communities, so that everyone that needs transit has access to it? This is a coverage goal, and service designed to achieve it will need to run in places that are unlikely to generate high ridership, to ensure that few people are left behind.

TriMet's Equity Index combines 10 factors to identify places that are of particular importance for designing equitable services.



Equity Index Score by Census Tract with TriMet Services Overlay

Figure 6: TriMet 10-Factor Equity Index

Access Analysis

One of the most important measures used to evaluate the Forward Together Service Concept is access analysis. When we talk about access, we are talking about where transit can take you: to work, to the grocery store, and all the other places people need to travel to in the course of everyday life. What sort of opportunities does the transit network enable you to access within 45 minutes?

The full Transit Existing Conditions Report describes access in much more detail, but **Figure 7** provides one of the most basic illustrations.

This map shows a dot for every 25 people in the TriMet service area. Those dots are shaded based on how many jobs they could reach on transit in 45 minutes. The darker dots are where residents can reach more jobs, both because they are close to job centers like downtown Portland, and because they are close to TriMet's most useful routes like MAX and the Frequent Service bus routes, which run every 15 minutes or better all day.

TriMet's network is most useful in Portland, and along the high-frequency MAX and bus services radiating out of downtown. With 45 minutes of travel time, few places west of the West Hills or east of I-205 can reach the regional job center, so access is generally lower away from the regional center. However, higher levels of access can be found along the MAX lines (along Burnside east of I-205 Ⓐ, or near Beaverton TC Ⓑ), and the Frequent Service lines serving southwest Portland (Lines 12Ⓒ, 54 and 56Ⓓ).

Later parts of this report use access analysis to evaluate the potential impacts of the Forward Together Service Concept. Where would the network become more or less useful? Whose access would be impacted, and by how much?

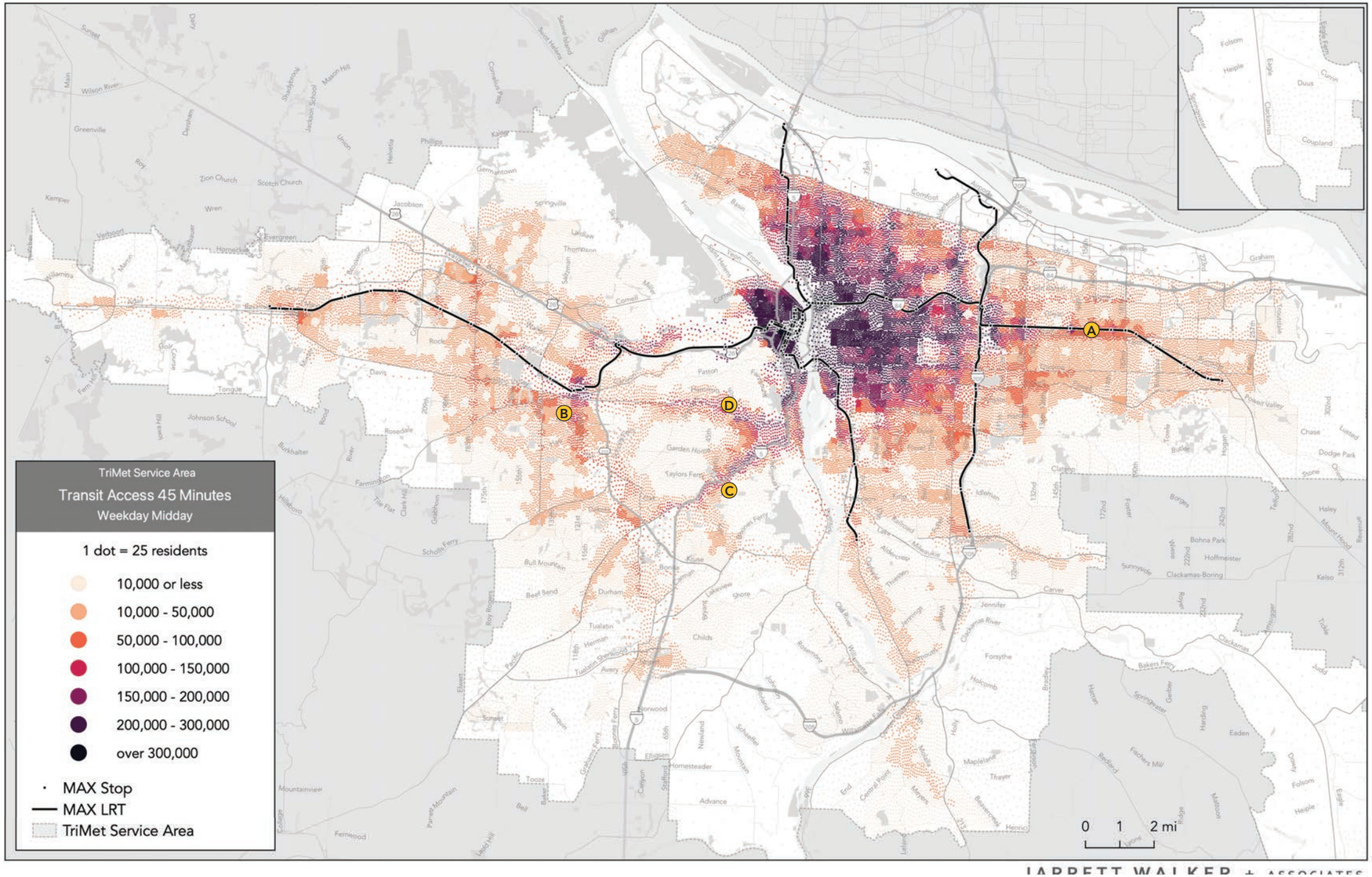


Figure 7: Job Access by Transit - 45 minutes at 12:00 p.m. on a weekday

This map shows the results of an access analysis. An access analysis measures how many jobs are reachable using transit from every part of the TriMet service area. More jobs are reachable in the darker-shaded areas.

COVID Travel Market and Trends

During the existing conditions phase of Forward Together in late 2021 and early 2022, the consultant team developed a technical memo that aimed to provide an account of the emerging changes in travel demand, based on the data and information available at that time. The Task 3: Trends in Transit and Mobility technical memo developed by the consultant team as part of Forward Together provides a detailed and comprehensive view of a range of trends in transportation that have emerged since the pandemic, and which are relevant to TriMet's future service planning.

This document includes a great deal of information sourced from review of relevant national transit and transportation statistics and research, coupled with analysis of local indicators and interviews with transportation managers for major local employers.

Figure 8 provides a high-level summary of each trend identified in the memo, as well as a set of potential actions TriMet could take in response. Not all of these actions fall within the network design-focused scope of the Forward Together project, but all of these trends were considered by the design team as it developed the Service Concept.

Trend	Potential Actions by TriMet
Peak commute demand has declined.	• Reschedule transit service so it is less focused on peak times and more spread through the day. • Eliminate duplicative downtown segments and reallocate service to grid connections serving all-day destinations. • Eliminate or reduce downtown peak express services.
Travel has declined less for less-educated and lower-income populations.	• Increase service for high demand areas and times. • Focus on areas with high equity demand, areas that offer services, and areas where people work in person.
Transit ridership has declined more than other modes.	• Expand transit access in areas not well served by fixed route transit and areas with equity populations. • Focus service on locations where demand for transit is strong now and will likely be strong in the coming years.
People are concerned about potential COVID-19 infection from riding transit.	• Continue with COVID-19 health and safety protocols. • Emphasize COVID-19 protocols in marketing
Transit ridership has declined since the mid-2010s.	• Make transit more useful by improving its ability to take people to the places they need to go. • Focus service on locations where demand for transit is strong now and will likely be strong in the coming years. • Expand transit access in areas not well served by fixed route transit and with equity populations. • Work with policymakers to regulate ride hailing services that compete with transit.
Transit agencies and municipalities implementing transit-priority infrastructure improvements.	• Continue implementing transit-priority improvements, such as with the Rose Lane program.
Lower-income populations are being displaced from the urban core to the urban fringes.	• Improve transit access in areas not well served by fixed route transit and with equity populations. • Improve multimodal facilities (sidewalks, crossings, bike lanes) that make it easier and safer to get to transit. • Continue to integrate anti-displacement strategies with transit improvements.
Rethinking security on transit and in other public places.	• Outreach to Black, Indigenous, and people of color (BIPOC) communities and groups. • Inclusive safety policies. • Training in anti-racism, cultural competency, mental health & de-escalation for TriMet personnel (Recommended from Reimagining Public Safety & Security on Transit) • Increased presence of TriMet personnel and unarmed safety presence (recommended from Reimagining Public Safety & Security on Transit). • Crisis intervention teams (recommended from Reimagining Public Safety & Security on Transit).
Increase in traffic fatalities.	• Invest in infrastructure to improve safety, such as illumination, traffic calming, and bike/ped facilities. • Work with local jurisdictions to encourage safe driving, particularly near transit stops and routes.
Increasing numbers of people experiencing homelessness in urban areas, as well as non-destination riders and homeless residents at/near transit stops.	• Consider findings from Portland State University research, expected to be completed summer 2022. • Social workers on transit vehicles or at transit stops. • Connect with social service providers.
Reduced fare revenue.	• Consider restructuring revenue sources to reduce dependence on fare revenue.
Driver shortage.	• Increase driver compensation.

Figure 8: Summary of Trends and Potential Actions by TriMet

3 The Revised Service Concept

What's in the plan?

Guide to the Service Concept

The Forward Together Service Concept includes changes to bus lines in all parts of TriMet's network. Many lines would see their frequency or routing change. There are a number of new lines, serving areas that TriMet doesn't reach today. And several services that TriMet operates today are not included in the Service Concept, and would be discontinued if TriMet were to implement everything in the plan.

This is a complex set of changes, so we have created a version of TriMet's current network map that shows as much of this information as possible, shown in **Figure 9**. This map shows the entire Forward Together Service Concept for TriMet's network. Highlighting is used to help identify different types of changes:

- Lines highlighted in yellow are new Frequent Service bus lines. These routes would run every 15 minutes, most of the day, similar to existing Frequent Service lines like 20-Burnside, 57-TV Highway/ Forest Grove, or 72-Killingsworth/82nd.
- Segments highlighted in blue are new service areas; places the Service Concept would offer transit service that TriMet doesn't go today.
- Segments highlighted in pink are places where service would be discontinued with the Service Concept.

Throughout this chapter and this report, we will use this map (in full or zoomed in) to explain different elements of the Service Concept. A full-size PDF of the map is also available at trimet.org/forward.

This version of TriMet's system map shows how the network would look if every change in the Forward Together Service Concept was implemented.

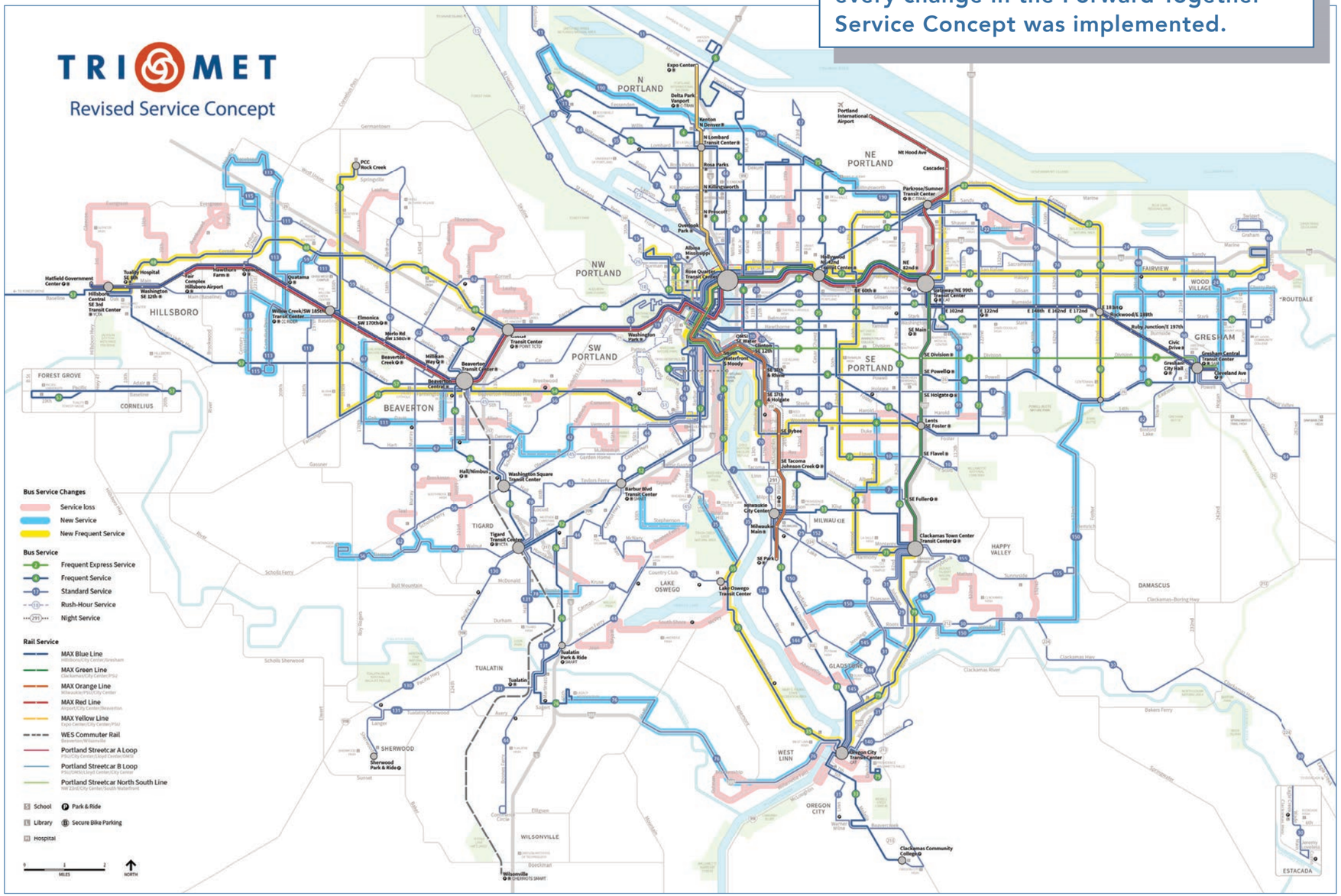


Figure 9: TriMet Service Concept Map

Big Ideas in the Service Concept

The Forward Together Service Concept includes changes throughout the network, but there are a few big ideas that impact every area.

- **Expanding access to opportunity.** Two of Forward Together's most important goals are to build ridership and improve transit equity. These network changes strive to make the transit system more useful for reaching jobs and major destinations like college campuses, grocery stores and hospitals, particularly for people traveling from areas with low-income residents.
- **More Frequent Service.** TriMet's Frequent Service bus lines carry the majority of its bus riders, and make up its most useful group of routes. The Service Concept would extend these lines to reach more people and places, including important corridors like Cornell Rd. in Washington County, Woodstock Blvd. in Southeast Portland, NE Halsey in East Portland and Gresham, and 82nd Drive in Clackamas County.
- **New Eastside and Washington County grids.** Historically, TriMet's network in inner Portland has operated as a grid of east-west and north-south routes. This makes travel between anywhere within the grid easy with a single transfer. Consistent with recommendations in TriMet's Service Enhancement Plans completed in 2016, the Service Concept would establish a stronger grid of routes in Washington County and East Multnomah County.
- **Better regional links to job centers.** Some of the region's busiest employment areas are currently served by transit routes that run only every hour, or only during rush hour. The Service Concept seeks to improve access to jobs in areas like Marquam Hill, Airport Way, Troutdale Reynolds Industrial Park, Columbia Blvd., and the North Hillsboro Industrial District.
- **Expanded weekend service.** Since the onset of the COVID-19 pandemic, one of the most notable trends in TriMet's ridership has been the resilience of demand to travel to areas with many retail, service and industrial workers. At the same time, demand to travel during the traditional weekday "rush hours" has fallen the most and stayed low. Workers in retail, service and industrial sectors often work on one or both weekend days, and they need a transit network that is there for them on those days. The Service Concept would invest more in evening and weekend service, with all Standard Service bus lines running on both Saturday and Sunday, and many routes running later into the evenings than they do today.
- **New lines serving areas far from transit today.** The Service Concept also creates several new lines serving areas that are far from transit today. Because we cannot afford to serve every part of the region, we have prioritized the expansion of coverage in areas that address long-standing network gaps (like 148th Ave in Portland, or Cornelius Pass Rd in Washington County), or address new development just outside the current end of the network (like the Progress Ridge area in Washington County, or SE 172nd Ave in Happy Valley).
- **Reduced rush hour service.** Prior to the pandemic, TriMet devoted substantial resources to serving "peak" demand to travel during the morning and evening rush hours, particularly demand for commute trips into and out of downtown Portland. In 2020, downtown-oriented peak demand collapsed, and while more people are traveling to and working downtown today, the level of demand is not approaching the pre-pandemic conditions that required added rush hour capacity. The Service Concept is designed around the new shape of peak demand; most Frequent Service lines would run every 15 minutes, all day long, and many specialized peak express services (like the 60-series OHSU routes) are replaced by routes that run more regularly all day long. Resources that were previously allocated to providing peak capacity are used to deliver many of the benefits of the Service Concept, including the expanded frequent network, enhanced grids, new routes, and longer service on nights and weekends.

Frequent Network Expansion

TriMet's Frequent Network is the set of transit lines that run every 15-minutes or better most of the day, every day, including the MAX light rail system.

Most of TriMet's bus ridership happens on the Frequent Service bus network; in 2019, over 60% of average daily weekday bus boardings occurred on a Frequent Service bus line, and by 2021, this number was up to 67%. Today, more people ride each weekday on the Frequent Service bus lines than on all of TriMet's MAX lines combined. Frequent Service is one of TriMet's most important tools for offering reliable, convenient mobility to riders.

The Service Concept would extend Frequent Service to serve nine new corridors, highlighted in yellow on **Figure 10**. Every line on this map would run every 15 minutes or better, most of the day.

The new Frequent Service lines identified in the Service Concept include:

- Line 4-Fessenden/Woodstock.
- Line 35-Macadam.
- Line 48-Cornell.
- Line 52-185th/Farmington.
- Line 54-Beaverton-Hillsdale Hwy.
- Line 71-60th Ave.
- Line 77-Broadway/Halsey.
- Line 87-Airport Way.181st.
- Line 79-Clackamas/Oregon City

These corridors are strong candidates for Frequent Service for a number of reasons. Many feature areas where lots of people need to travel to work, shop, or access services, like the major employment areas along Airport Way in East Portland or Cornell Rd. in Beaverton and Hillsboro. Others serve important destinations, like the Portland Community College (PCC) Rock Creek campus at the north end of 185th in Bethany (Line 52-Farmington/185th). Other address areas where many people live, and particularly areas with high concentrations of people experiencing lower incomes, as with Line 79-Clackamas/Oregon City, or Line 77-Broadway/Halsey. All Frequent Service lines serve areas that combine at least some of these attributes, which is why they are all likely to generate high ridership in the future.

How many more people and jobs would be near Frequent Service?

The Frequent Service brand is well-known by riders as a sign that service will be reliable and easy to use. The Service Concept will put this level of convenience within reach of many more people.

Today, about 22% of people in the TriMet district live within a 1/4-mile walk of a Frequent Service line. With the Service Concept, that number would rise to over 29%, a 32% improvement over today. Similarly, the number of jobs near Frequent Service would rise from about 31% to 39%, a 26% improvement.

Figure 11 shows the number of people who are near Frequent Service in the middle of the day on weekdays with the baseline late-2021 network and with the final Forward Together Service Concept. Over 100,000 more residents would be within a 1/4-mile walk to Frequent Service.

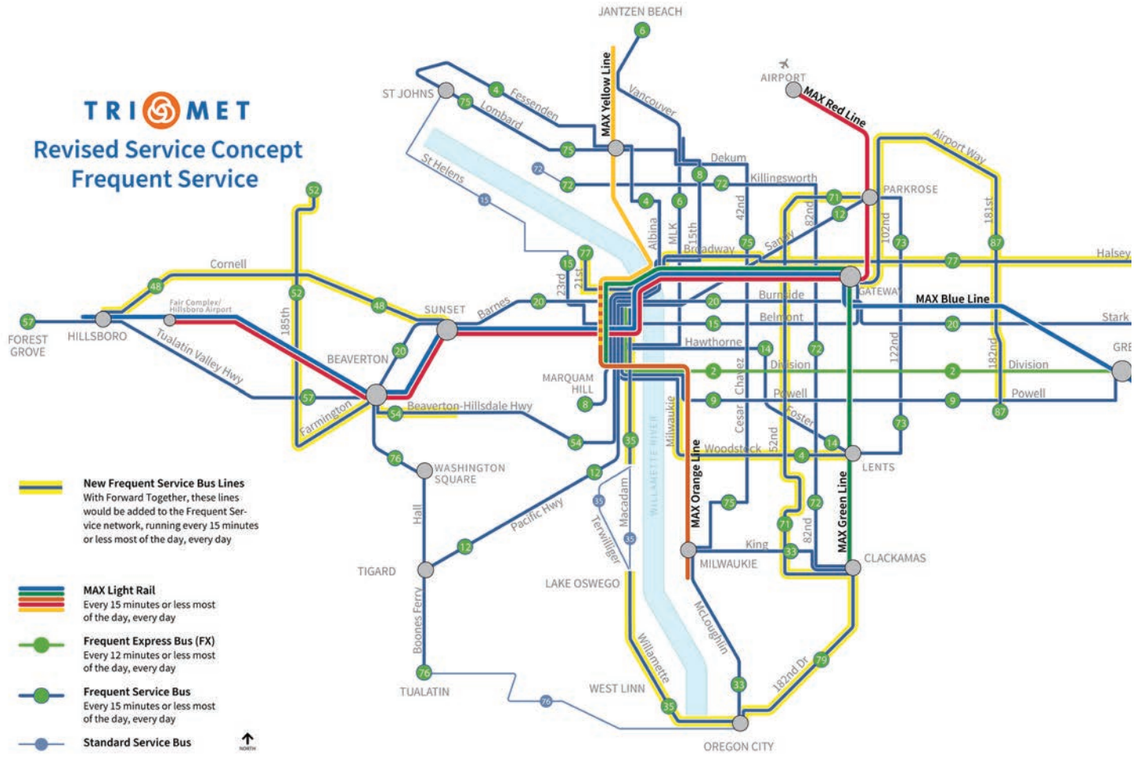


Figure 10: TriMet Service Concept - Frequent Network Map

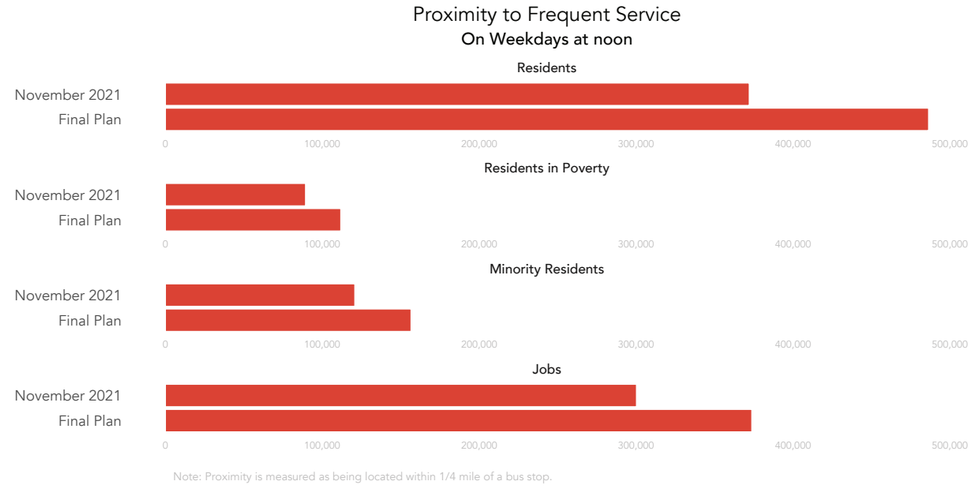


Figure 11: TriMet Service Concept - Proximity to Frequent Service (1/4 mile)

Enhanced Standard Service

The Service Concept expands the Frequent Network, but TriMet still cannot afford to offer 15 minute service on every route with its current level of funding. Because it is expensive, Frequent Service is available on routes that serve the most people, jobs, and key destinations.

The Service Concept also includes meaningful improvements in frequency for many other lines throughout the network.

Today, many routes serving middle and lower density residential areas run only every 45 or 60 minutes. Sometimes, this type of route is referred to as a "coverage" route, because its main purpose is to ensure that some level of service is available across a wide area; not to offer a highly useful service that many people are likely to ride.

When service operates this infrequently, it requires more planning to use effectively. Trips might not be available when you need them or when it is convenient, and if you miss your bus, the next one isn't coming soon. Because they are so inconvenient, very infrequent lines are rarely able to generate high ridership, as the waiting times required to use them will push many potential riders towards other travel options.

With the Service Concept, many more of TriMet's lines would run at least every 30 minutes compared to today.

Figure 12 shows the typical midday frequency of each route in the existing network and the Service Concept.

Red routes operate every 15 minutes, and are part of TriMet's Frequent Service bus network.

Purple, blue and light blue routes run every 20-61 minutes, and are part of TriMet's "Standard Service" category. These routes run all day long, including during the middle of the day between the rush hours.

One of the most notable differences with the Service Concept is that many more of the Standard Service lines would run at least every 30 minutes. Today, 14 Standard Service lines run at least every 30 minutes, and 23 run less often. With the Service Concept, 32 Standard Service lines would run every 30 minutes or more often, and just 15 would run every 31-60 minutes.

Two of the less frequent Standard Service lines in the Service Concept are actually extensions of the main 20-minute Line 44 (A). The line shown here as 44A LL is the portion of Line 44 that would run between Commerce Circle in Wilsonville and PCC Sylvania every 40 minutes. The line shown as 44B LL is the part of the route that would run between Tigard TC and PCC Sylvania every 40 minutes. Every 20 minutes, one of these branches would arrive and continue on towards downtown Portland.

In the existing network, there are 25 lines that run for a limited duration each day, mainly offering trips only during rush hour, with no service at all in the middle of the day. These lines are shown in yellow in **Figure 12.** In the Service Concept, most of these routes are upgraded to Standard Service. For example, Line 11 (B) serves the industrial areas of North Portland north of St. Johns. With the Service Concept, this route would operate every 60 minutes, all day from morning until evening.

In the Forward Together Service Concept, more routes would offer Frequent Service. Less-frequent Standard Service routes would also run more often, with most running every 20 or 30 minutes.

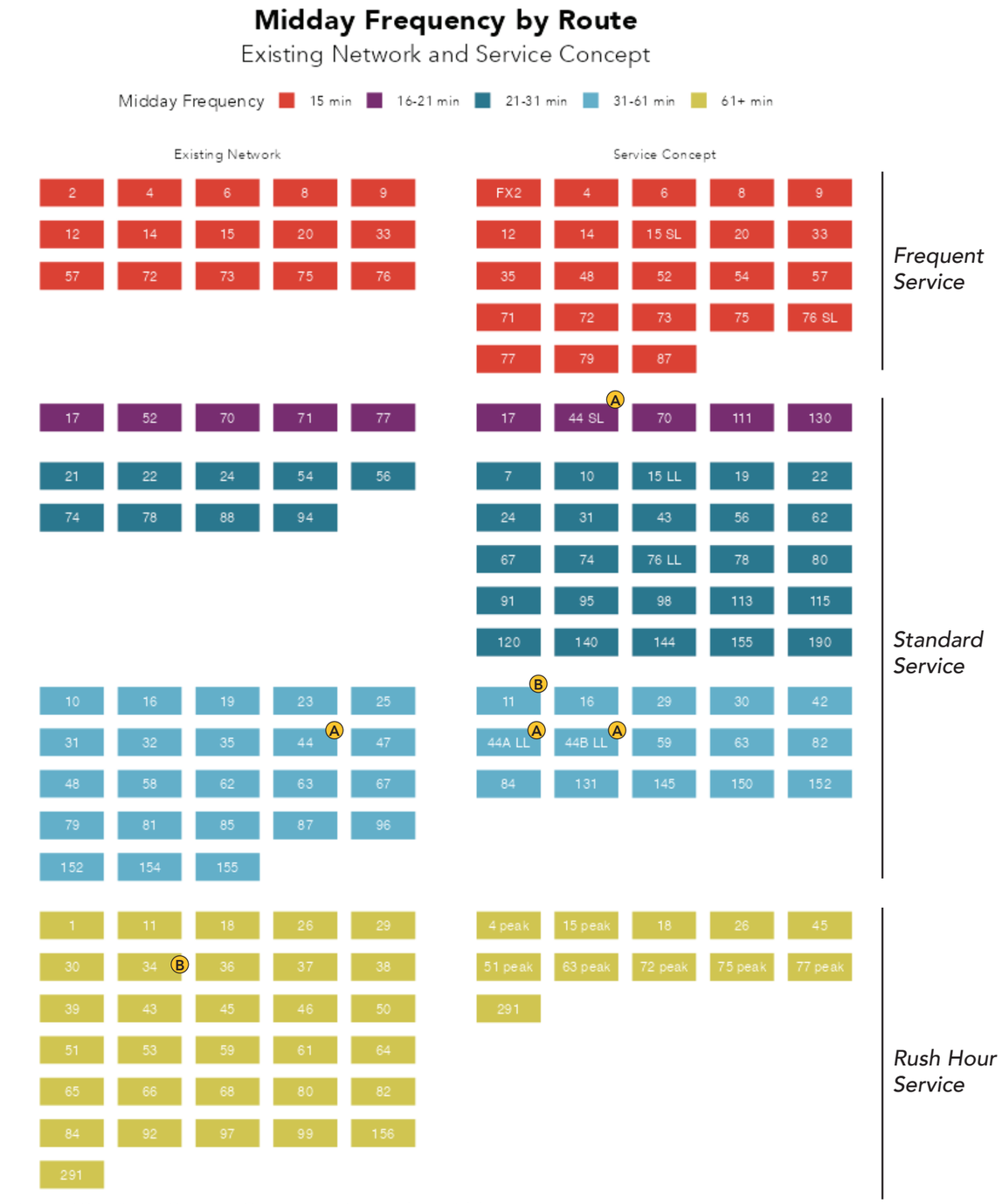


Figure 12: TriMet Service Concept - Routes by Midday Frequency

Coverage Expansion and Reduction

The twin goals of Forward Together are ridership and equity. In some cases, advancing these goals means extending the network to reach places it doesn't go today. These places fall into three main groups:

- Places that seem likely to generate high ridership. An example is Ⓐ Progress Ridge in Beaverton, which would be served with Line 56 in the Service Concept (and which doesn't have service at all today).
- Segments that can help serve as new links between other places that are not well-connected today. Line 150 along SE 172nd between Ⓑ Happy Valley and Beaverton is an example of this.
- Areas that need more service for reasons of equity, particularly areas with a high concentration of lower-income people and people of color, and lower-wage jobs that are far from transit today. The new Line 95 service along Ⓒ SE 148th in East Portland is an example of this, as is the new Line 190 service along Columbia Blvd. in North and Northeast Portland.

These are all reasons to expand coverage in particular places, but there are also reasons why the Service Concept reduces coverage in others. Because the goal of this plan is to increase ridership and advance transit equity, service would be reduced and in some cases discontinued entirely in places that do not serve either of those goals; generally, more affluent, lower density areas that generate less ridership. Examples include the 24th and 27th segments of existing Line 17 in Irvington and Concordia in Northeast Portland, and the Shattuck, Cameron and 45th segments of Line 1 in Southwest Portland.

How would coverage change?

Across the entire TriMet district, the number of people near transit service would increase slightly. With the baseline 2021 network, about 41% of people lived within a 1/4-mile walk to transit, and about 59% of people live beyond that distance. As **Figure 13** shows, overall coverage increases by about 4 percentage points; with the Forward Together network, about 45% of people would be near service, compared to 55% of people beyond a 1/4-mile walk. The Service Concept would produce a similar expansion for lower-income residents, people of color, and jobs.

With the Service Concept, more people would be near service, and for many people, the service closest to them would be running more frequently than today. The number of residents near Frequent Service would increase from 22% to 29%. The number of people whose best available service ran only every 60 minutes would decrease from 9% to 2%, with most of those people now near a route running more often.

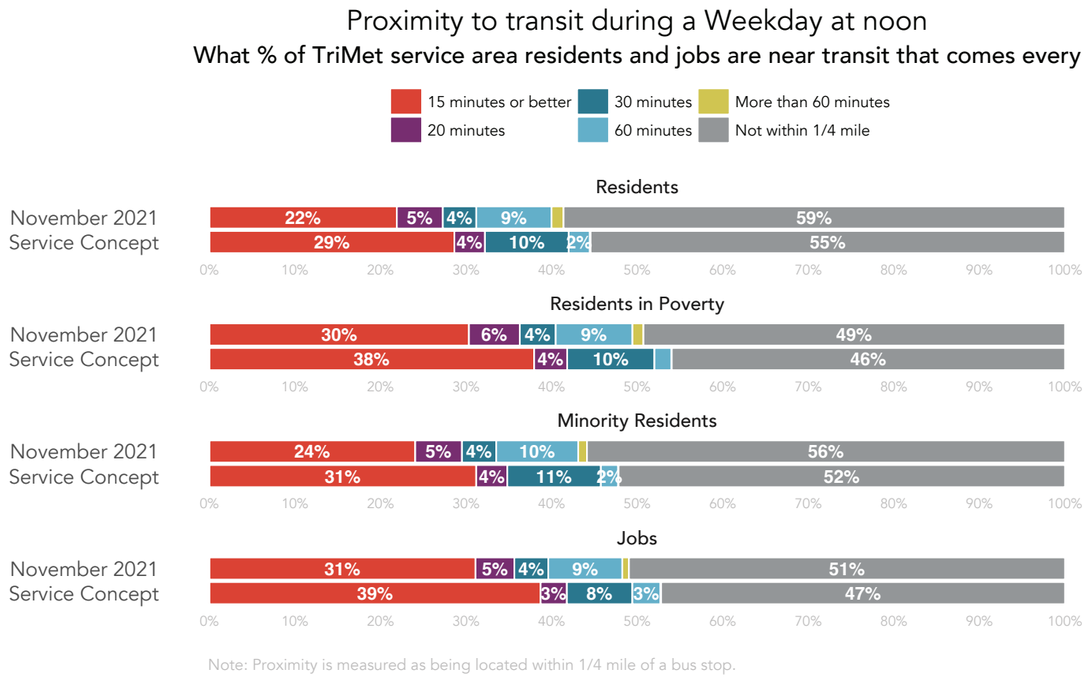
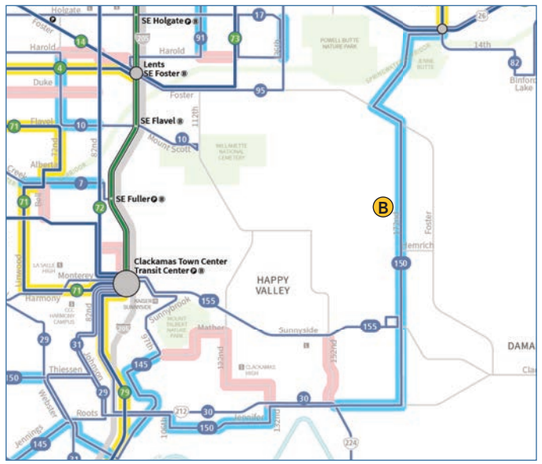


Figure 13: TriMet Service Concept - Proximity to Transit Service by Frequency (1/4 mile)



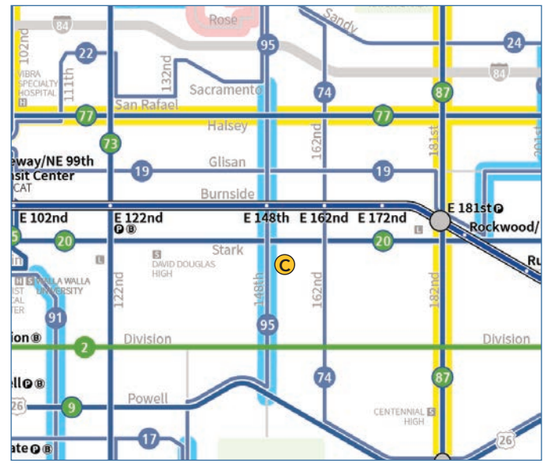


Figure 14: Three examples of coverage expansion. On the left, Line 56 is extended to serve the growing Progress Ridge area and Mountainside High School. In the middle, new Line 150 serves 172nd Ave in Happy Valley as a way of connecting Clackamas Town Center, Happy Valley and Gresham. On the right, new Line 95 runs along 148th Ave in East Portland, closing a longstanding gap in service in this area.

More Night and Weekend Service, Less Peak Service

One of the most significant changes in the Service Concept is a major investment in more service earlier in the morning, later in the evening, and on weekends. Since the onset of the COVID-19 pandemic, ridership has fallen during the traditional rush hour, as many of the office workers who drove pre-pandemic peak demand have shifted to at least some degree of remote work. Forward Together assumes that peak demand will not return at levels equivalent to the pre-pandemic normal; as a result, the Service Concept does not include peak overlay service on the most frequent lines.

At the same time, since the onset of the COVID-19 pandemic, one of the most notable trends in TriMet's ridership has been the resilience of demand to travel to areas with many retail, service and industrial businesses. Workers in retail, service and industrial sectors often work on one or both weekend days, and they need a transit network that is there for them on those days. By investing in service across a wider span of time, TriMet can make transit more useful for more riders, as well as advancing transit equity by orienting service towards the level of flexibility workers in the service, industrial and retail sectors demand.

The Service Concept invests more in evening and weekend service, with all Standard Service bus lines running on both Saturday and Sunday. The Concept also extends weekday hours on many routes; the nine new Frequent Service lines would run later, as would many of the lines that are upgraded from infrequent hourly service to service running every 30 minutes.

Figure 15 maps the areas near service at noon on Saturday with the existing network and the Service Concept. Everywhere highlighted in blue would now be within 1/2-mile of a service

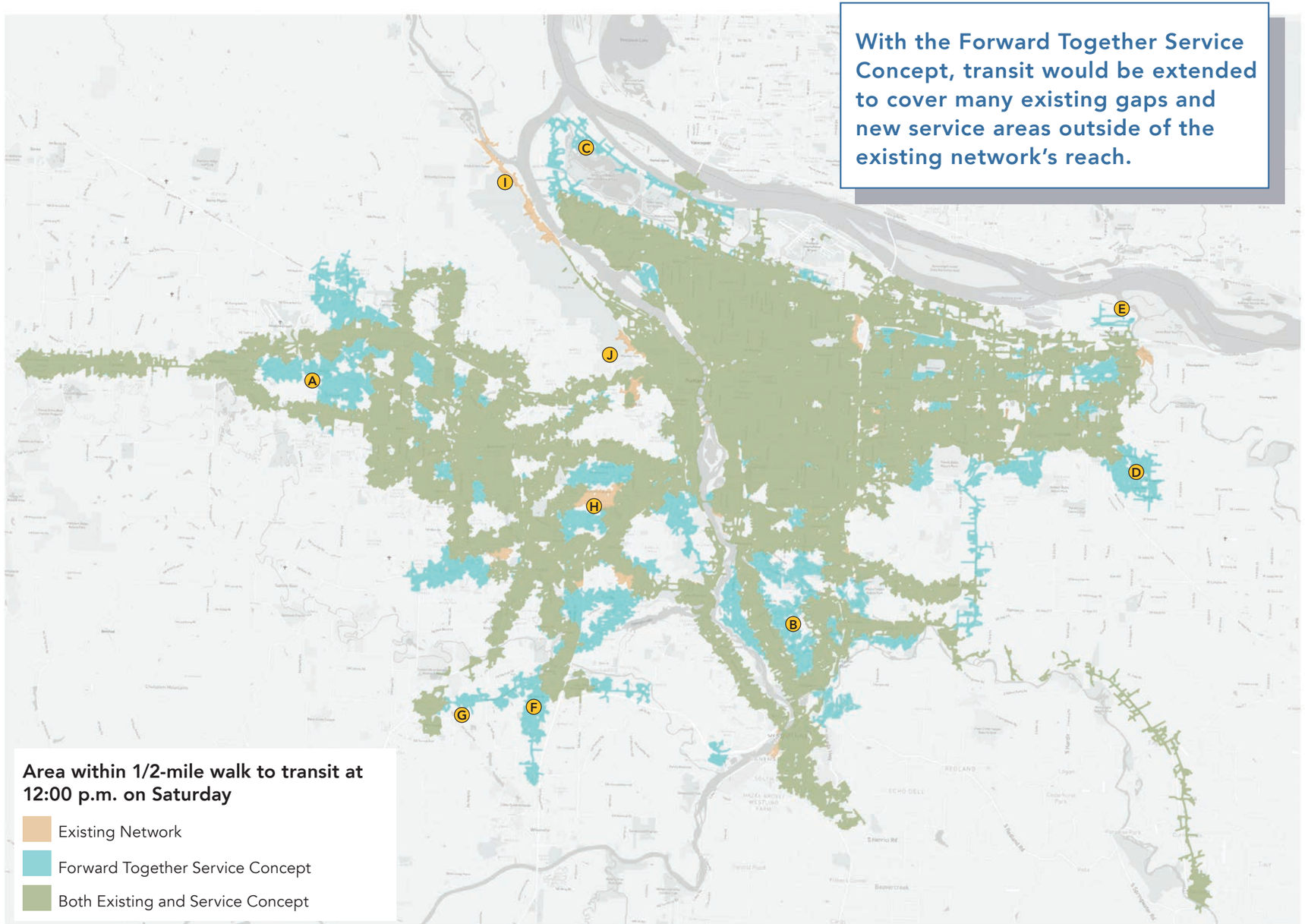


Figure 15: TriMet Service Concept - areas within 1/2-mile of service at noon on Saturdays

running on Saturdays, including large parts of Hillsboro (A), Clackamas County (B), industrial areas of North Portland (C), parts of Gresham (D) and Troutdale (E), as well as more of Tualatin (F) and Sherwood (G). A few segments (shown in tan) would lose weekend service, including along Garden Home (H), St. Helens Rd. north of the St. Johns Bridge (I), and parts of the West Hills (J) that would now have service timed with school schedules. Places shown in green are within a 1/2-mile walk to Saturday service with both networks.

What would the Service Concept do?

To understand how the Service Concept relates to its twin goals of building ridership and advancing transit equity demands a clear set of measurements that can help explain the potential impacts of changes to the transit network. For that, we need a suite of measurements that are focused on people and places, and how transit service can be relevant to them.

Planning in pursuit of a more equitable distribution of benefits and burdens also requires the capacity to measure those outcomes. In TransitCenter's 2021 *Equity in Practice* guidebook, two sets of equity measures are identified:

- Place/neighborhood-focused measures showing outcomes for defined areas of need.
- Person-focused measures showing outcomes for people of certain identities.

We break measurement of transit goals into two groups: measures of transit's potential usefulness, and measures of its availability. These measures are applied at the person-level, describing outcomes for people throughout the service area, and at the place-level, describing outcomes within particular areas, and using detailed maps to visualize how outcomes vary across the service area.

Measures of Availability

Some goals for transit require transit be widespread throughout the community, including goals related to providing service to every part of TriMet's district; to ensuring that a basic affordable mobility option is present in all parts of the community; or to ensuring that TriMet's *resources* are distributed equitably.

These goals are primarily measured by determining which people, jobs, or significant destinations are near service; when that service is available; and the quantity of service provided.

Coverage-focused availability measures

In a network design process, it is very common to evaluate the impacts of a given change on the "coverage" of the transit system. By coverage, we mean the number of people within a given distance of service - typically either 1/4-mile, or 1/2-mile. When service expands to new areas, the number of people covered increases. An important measure of the impact of a coverage-focused network alternative is how many more people it puts near service than other options.

Ridership-focused availability measures

Availability measures are also important to evaluate network plans oriented towards generating high ridership. Because Frequent Service bus lines tend to be the most useful routes, generating the most ridership (and carrying the majority of TriMet's bus passengers), measuring the number of people and jobs who have access to high-frequency service is one way to gauge the ridership potential of a particular set of network changes.

Equity-focused availability measures

Measures of availability can be applied to both place and person-focused equity analysis, focused on questions about the distribution of service resources across the service area, or within the equity area identified through TriMet's 10-factor index.

Finally, availability measures are fundamental for the service equity analyses transit agencies conduct as part of their compliance process with the Civil Rights Act of 1964. TriMet's Title VI policy for evaluating Disparate Impacts of major service changes on minority populations is an example of a common way availability measures are used in transit planning. When a major service change happens that produces a decrease in the amount of transit service, TriMet analyzes whether the percentage of minority population living within 1/4-mile of the affected line exceeds that of the service area as a whole. Because this report is about a Service Concept and not a specific service change, it does not include a Title VI analysis; TriMet will conduct Title VI analyses as it implements future changes that reflect ideas included in the concept.

Measures of Usefulness

Other goals for transit require service to be useful. Building ridership requires transit present a convenient, reliable travel option that lots of people will choose. Similarly, transit equity goals that seek to make service more useful for transportation-disadvantaged people require a service that can efficiently help them move around the region. Unlike measures of availability, which show how service is distributed, measures of usefulness look at whether that service is actually likely to take people where they need to go.

As the TransitCenter *Equity in Practice* guidebook notes, a "proximity analysis looks at who lives near transit, but this can be quite different from who benefits from transit".

To measure the performance of the existing network or proposed changes towards these goals, we need to use methods that focus on factors like waiting, speed, and travel time. Three of the most common ways to do this are *travel time analysis, access analysis*, and *ridership modeling*.

These are related methods that can be used to understand how a set of changes to a transit network could change its potential usefulness for riders. Each of them depends on a model of the network that can be used to develop trip plans, based on a different set of routes, running at different speeds and frequencies, over different spans of service.

Access Analysis

If travel time analysis is about questions like "will my trip be faster or slower?", access analysis is focused on questions like "where can I go on transit in a reasonable amount of time?". Where travel time analysis shows the impact on specific trips that the existing network makes possible, access analysis helps to understand the range of trips that would be possible with transit.

For customers, the decision to take transit revolves around one key question: where can it take me? If transit can't get you where you need to go in a reasonable amount of time, by the time you need to arrive, it is unlikely to be an option that you consider if you have other more convenient alternatives.

Access analysis is often used to address questions like these:

- How many jobs could the typical resident reach in 30, 45 or 60 minutes?
- What are the places in the region where transit is most useful to reach jobs? Where is it less useful?
- How many fewer jobs are reachable on Sundays than on weekdays?
- What percent of the region's residents are within a 30-minute transit trip of a grocery store?

- How many people have access to at least some baseline number of jobs or key destinations?
- How does transit usefulness for reaching jobs or destinations vary by race, ethnicity, income, or other demographic characteristics?

In access analysis, we aren't looking at specific trips, or existing travel patterns. We are analyzing how much stuff the transit network can take you to.

Equity Applications of Usefulness Measures

Because transit's core benefit is the mobility it can make possible, usefulness measures are important to understanding how those benefits are distributed throughout the community. All three of the types of measures of usefulness described here can be applied to equity analysis. For example, travel time analysis can be used to compare the travel times experienced by members of disadvantaged groups with those of people outside of those groups. Access analysis can be used to compare job access for people living in equity areas and non-equity areas. Ridership modeling can provide insights into who is likely to be using a particular service improvement or infrastructure project.

Figure 16 summarizes how availability and usefulness measures can be applied to ridership, coverage, and equity transit planning goals.

	Example Availability Measures *Where is transit service?*	Example Usefulness Measures *Where can you go on transit?*
Ridership Goals	• % of population near Frequent Service • % of jobs near Frequent Service • % of existing riders near Frequent Service	• Median number of jobs reachable by residents • % of residents within 30/45/60 minute trip of key destinations • Estimated number of daily/weekly/annual riders
Coverage Goals	• % of population and jobs near transit service	• % of population with access by transit to at least x number of jobs
Equity Goals	• % of disadvantaged people near Frequent Service and any service • Title VI Disparate Impact measures • Coverage and presence of transit service and Frequent Service in identified equity areas	• Median number of jobs reachable by disadvantaged populations • Demographic distribution of access • Job and destination access in identified equity areas, compared to other parts of the region

Figure 16: Transit Availability and Usefulness Measures

Transit Availability

In some of the previous sections of this document, we included reference to analysis of the number of people and jobs near the network, and near Frequent Service lines. These are all measures of availability, which help us understand how many people the Service Concept would reach with different levels of service compared to the existing network. This section provides a more comprehensive account of these outcomes.

Proximity to Transit Service & Frequent Transit Service

Figure 17 and **Figure 18** on this page show the percentage of people and jobs throughout the TriMet district that are within a 1/4-mile or 1/2-mile walk to a transit stop. Each color represents the share of people who are within walking distance to service running at different frequencies. Note that these results are based on walking distance to stops along the street network, not a straight-line "as the crow flies" distance.

For reference, 1/4-mile is a little less than the distance from Pioneer Square to Waterfront Park in downtown Portland, about a 5-6 minute walk based on Google Maps directions. 1/2-mile is about the distance from Pioneer Square to the center of PSU, about a 10-12 minute walk.

On each chart, the colored bars show the total share of people near service, while the grey bar shows the share of people who are outside of that distance. Today, about 62% of residents are within 1/2-mile of transit service; this would increase to about 64% with the Service Concept.

Total Network Coverage

The overall number of people near both Frequent Service and any service increases with the Service Concept, which expands the network to reach new places. While the concept also eliminates some currently served segments in lower-density, more affluent places, the number of people in the new service areas is greater.

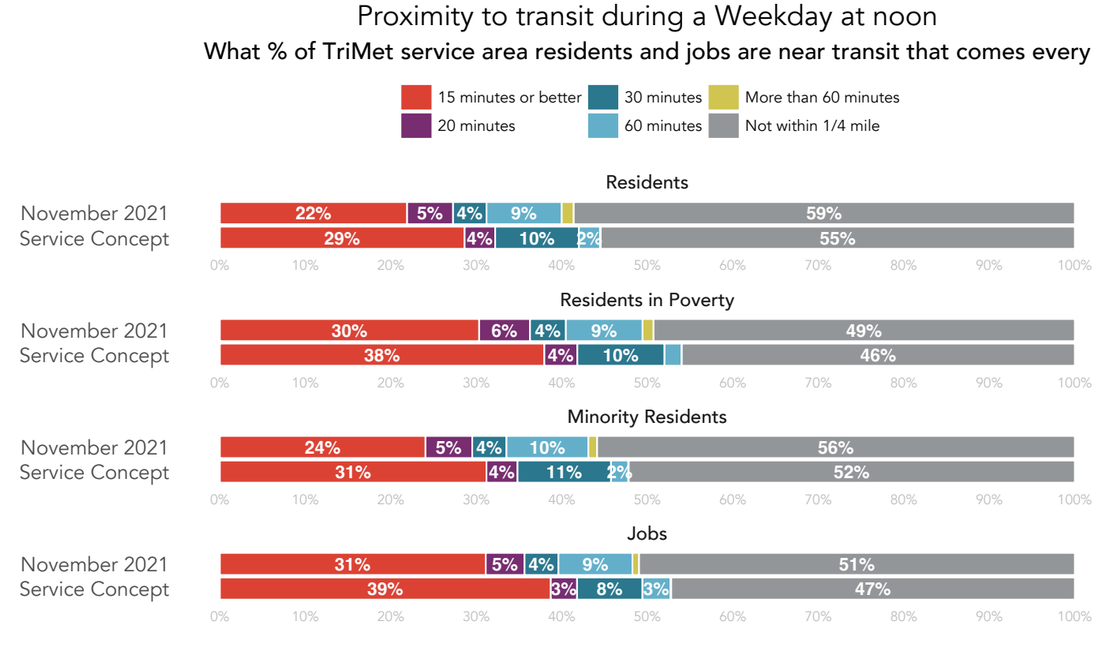
The expansion in service is consistent for all residents, including lower-income people and people of color. Today, about 74% of lower income people and 67% of people of color are within a 1/2-mile walk to transit; this would rise to about 77% and 71% respectively. For the purposes of this analysis, "Residents in Poverty" include all residents with household incomes of up to 150% of the federal poverty level.

Expanding coverage was not a specific goal of the Service Concept. The purpose of the Service Concept is to build ridership and advance transit equity; it expands the network in places that help achieve those objectives.

Frequent Service Coverage

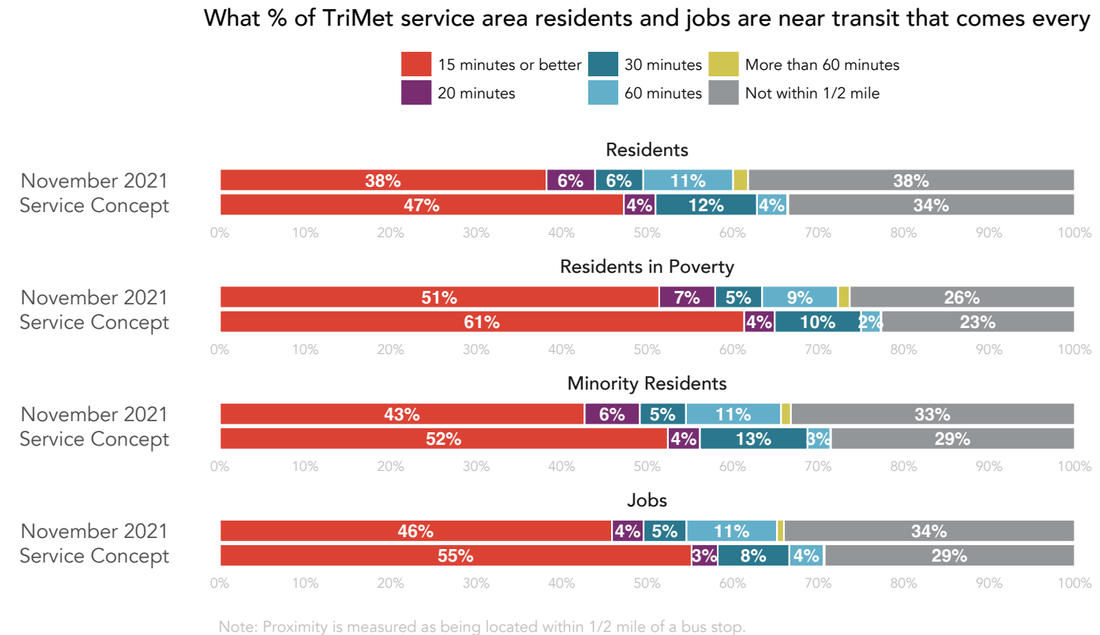
One of the most important measures to understand how the Service Concept could make the network useful is how the reach of TriMet's Frequent Service bus lines expands.

With eight new lines added to the frequent network, the number of people near this level of service increases substantially for each group of people analyzed. With the Service Concept, over 47% of residents would be within 1/2 mile of Frequent Service. The number of people of color, lower-income people and jobs near service would similarly expand.



Note: Proximity is measured as being located within 1/4 mile of a bus stop.

Figure 17: TriMet Service Concept - Proximity to Transit Service by Frequency (1/4 mile)



Note: Proximity is measured as being located within 1/2 mile of a bus stop.

Figure 18: TriMet Service Concept - Proximity to Transit Service by Frequency (1/2 mile)

Proximity to Evening Service

The Service Concept also expands the reach of the network during the evenings. **Figure 19** and **Figure 20** show the percent of service area residents near each level of service at 7:00 p.m. Because there are more Frequent Service lines which operate at 15-minute frequency until 8-9 p.m., the percentage of people near evening Frequent Service expands.

The share of residents without access to service during the evening shrinks with the Service Concept, by a bigger degree than at midday. With the existing network, about 61% of residents are further than 1/4-mile from service at 7:00 p.m.; by expanding the network, and converting some peak-only routes to all day (including Line 11, serving St. Johns and industrial areas of North Portland), the number of people without evening service access shrinks to 56%.

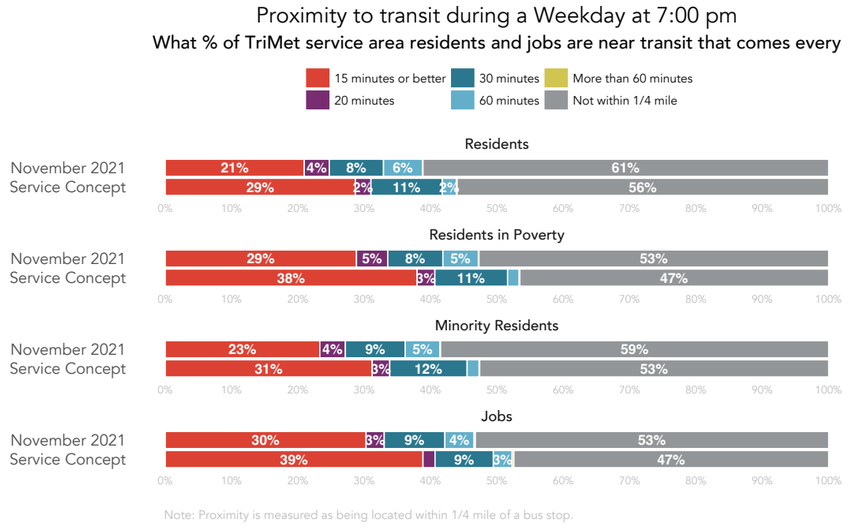


Figure 19: TriMet Service Concept - Proximity to Transit Service at 7:00 p.m. on Weekdays by Frequency (1/4 mile)

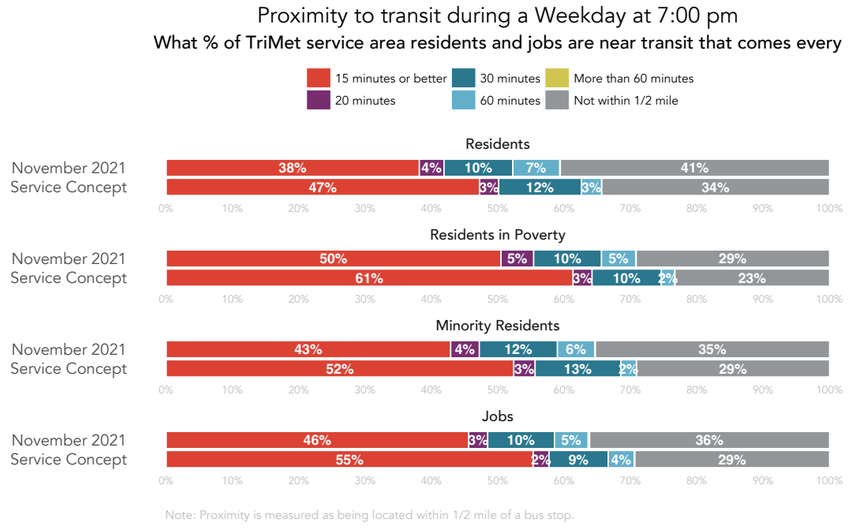


Figure 20: TriMet Service Concept - Proximity to Transit Service at 7:00 p.m. on Weekdays by Frequency (1/2 mile)

Proximity to Weekend Service

Similar to weekday and evening service, the overall availability of weekend service increases substantially, as does the availability of Frequent Service. **Figure 21** and **Figure 22** show the percent of service area residents near each level of service at 12:00 p.m. on a Saturday.

One of the most important differences between the existing network and the Service Concept is what level of service people have access to on weekends. Today, about 10% of service area residents are near weekend service that operates only at very low frequency (every 60 minutes or less). With the Service Concept, most buses running on Saturday will run at least every 30 minutes.

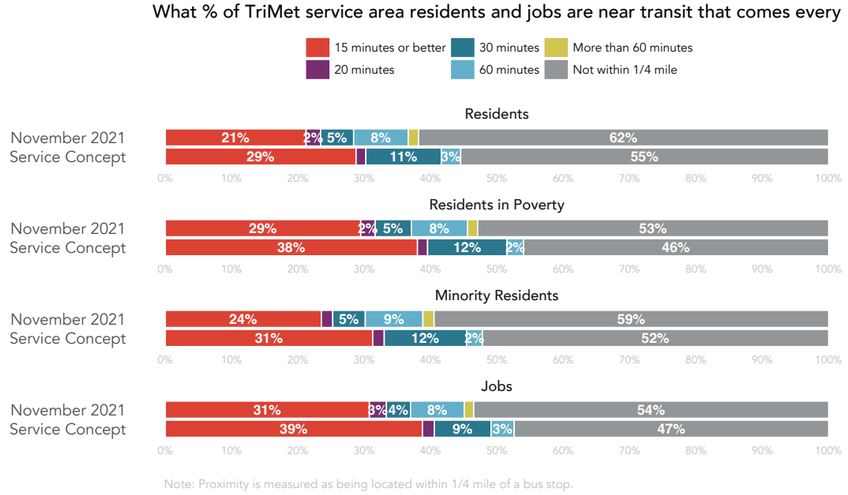


Figure 21: TriMet Service Concept - Proximity to Transit Service at 12:00 p.m. on Saturdays by Frequency (1/4 mile)

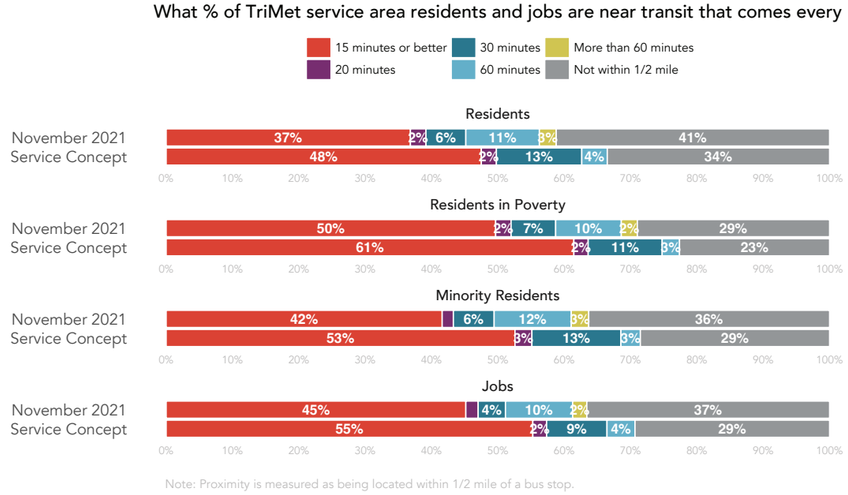


Figure 22: TriMet Service Concept - Proximity to Transit Service at 12:00 p.m. on Saturdays by Frequency (1/2 mile)

Where would coverage change?

With the Service Concept, the overall number of people near transit would increase, but some stops that are served today would no longer be served. **Figure 23** identifies the stops that would be outside of a 1/4-mile and 1/2-mile walk to service. The dark blue area on the map shows the parts of the service area that are within a 1/4-mile walk to a stop in the Service Concept; the yellow area shows places that are within a 1/2-mile walk.

Consistent with the goals of ridership and equity, the Service Concept removes service in some places where ridership is very low, mainly in more affluent areas.

Some of the most substantial service reductions are noted below, along with the number of riders at impacted stops in Spring 2022:

- Ⓐ Along Laidlaw Rd. in Bethany (31 daily riders).
- Ⓑ In Cedar Mill north of Beaverton (3 daily riders).
- Ⓒ Line 36-South Shore in Lake Oswego (6 daily riders).
- Ⓓ Line 46 serving north Hillsboro residential areas (34 daily riders).
- Ⓔ Line 17 stops just outside of 1/4-mile distance to NE 33rd (71 daily riders).
- Ⓕ Line 24 Rocky Butte segment along NE 92nd (22 daily riders).
- Ⓖ Line 43 stops along Taylor's Ferry Rd. (3 daily riders).
- Ⓗ Line 156 stops along Mather and 122nd (36 daily riders).
- Ⓘ Line 55 stops along Hamilton (6 daily riders)

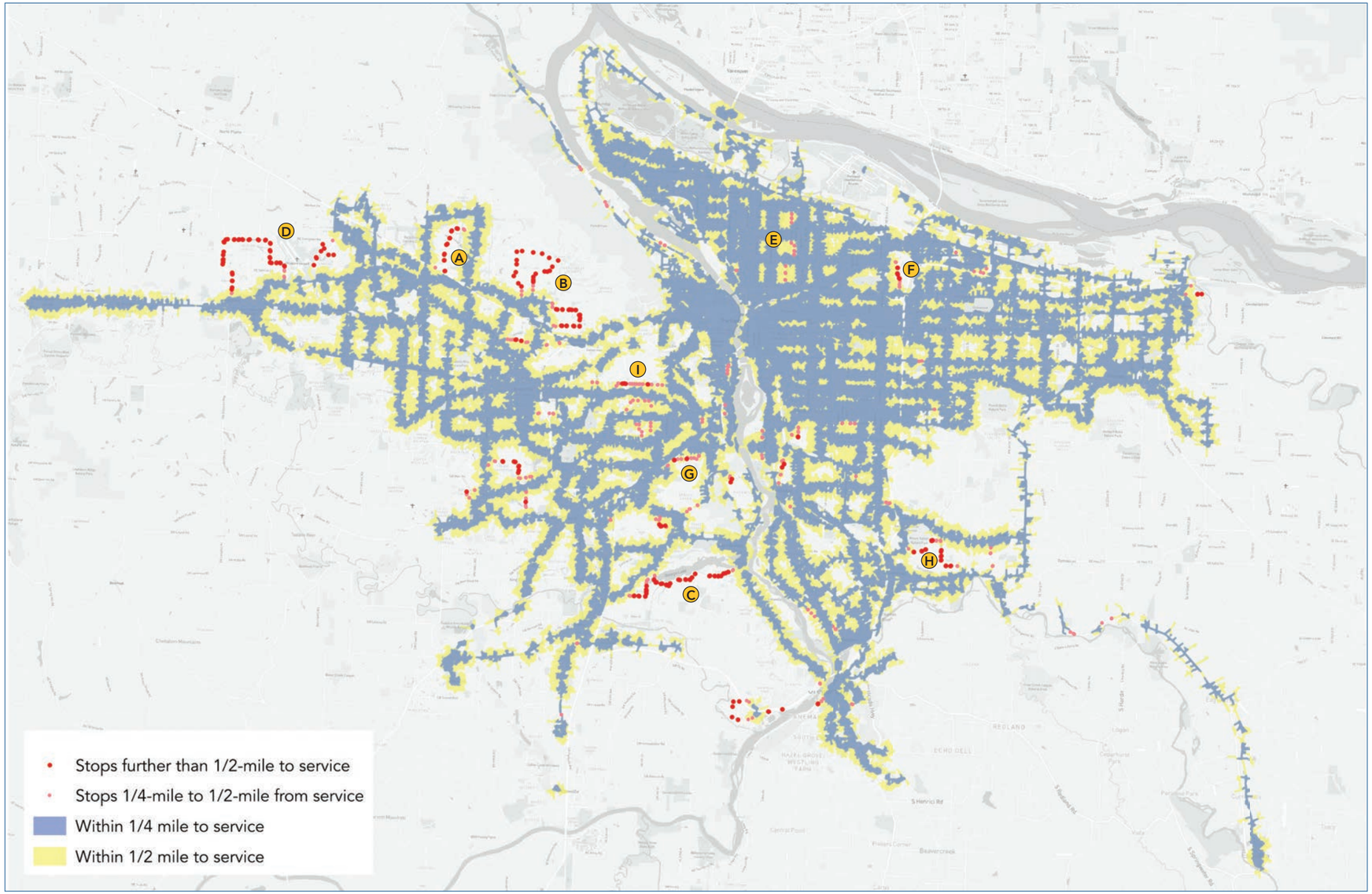


Figure 23: TriMet Service Concept Stop Proximity

The stops highlighted in red and pink make up a very small percentage of TriMet's overall ridership. With the Service Concept, about 520 average weekday boardings (in Spring 2022) would be outside of a 1/4-mile walk to the next closest service. This makes up about 0.35% of TriMet's total (bus + MAX) weekday ridership during this period, and about 0.55% of bus ridership. Just 135 weekday boardings happened at stops that would be more than 1/2-mile from service, about 0.09% of the total and 0.15% of the bus-only total.

While the Service Concept would no longer serve some existing stops and segments, only about 0.35% of daily TriMet boardins occur at those stops.

Transit Usefulness

So far, this chapter has focused on measures of availability - where is service available, who is close to it, which places are closer and farther from service with the Service Concept, etc. These measures help us understand how the network would change with the Service Concept, but they don't help us gain a sense of how the concept would change where people can go with the network. For that, we need to turn to another set of measures of transit usefulness.

Mobility is the core service TriMet delivers to its customers. Where can transit take you? Which opportunities can you reach? Can it take you to the places you need to go, in a reasonable amount of time? To address these questions, we use an approach called "access analysis" to evaluate how the Service Concept would change the range of places reachable by transit. **Figure 24** below shows a simple illustration of this concept. For the person in the diagram, their access is the number of destinations within the area they can reach by transit in a fixed amount of time, like 30, 45 or 60 minutes.

The simplest way to talk about access is to ask "what can I reach from here" for a specific point. **Figure 25** compares the area reachable in 45 minutes using TriMet's existing network and the Service Concept. In this map, the purple area shows places that are reachable with both the concept and the existing network. The blue-shaded areas highlight places that would be newly reachable due to the changes in the Service Concept. Grey areas are reachable today, but would not be reachable with the concept. This type of map is called an "isochrone".

Isochrones help us to visualize how access would change in different points around the network. Division & 202nd is a location that would be served very differently with the Service Concept. While the FX would continue to offer fast and frequent east-west service along Division, a new Line 98 would serve 201st and 202nd, expanding the area reachable to the north Ⓐ. Line 87 along 181st/182nd would be upgraded to Frequent Service, expanding the isochrone to parts of Airport Way Ⓑ. And Line 80 would run more frequently and more directly along 257th, improving access into Troutdale and eastern Gresham Ⓒ.

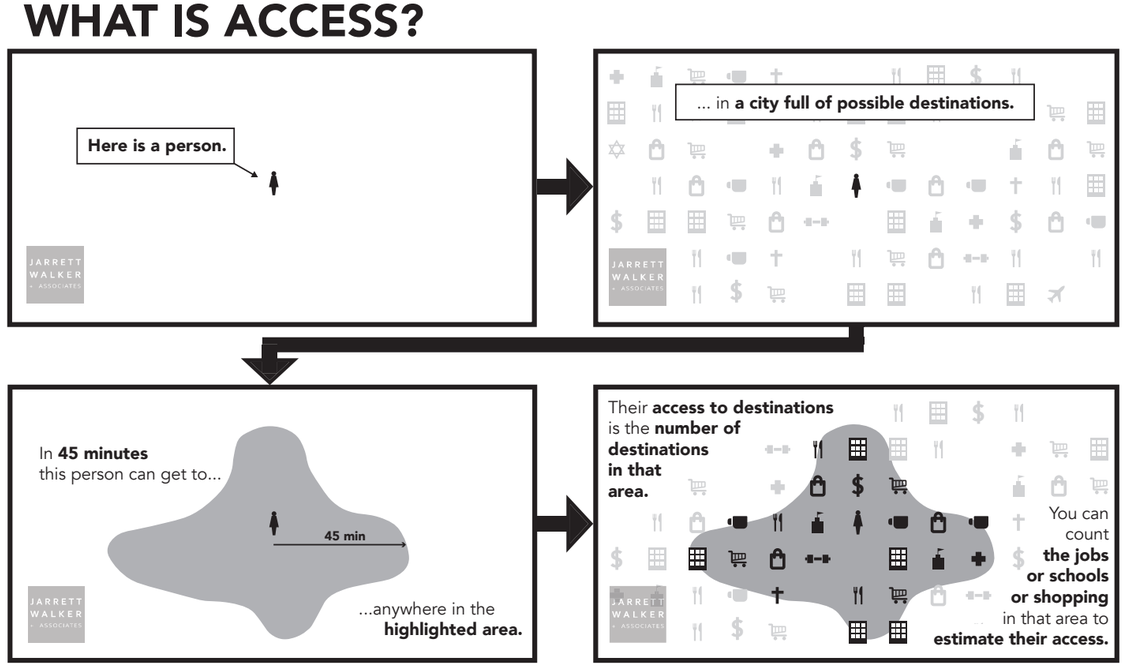


Figure 24: What is acccess?

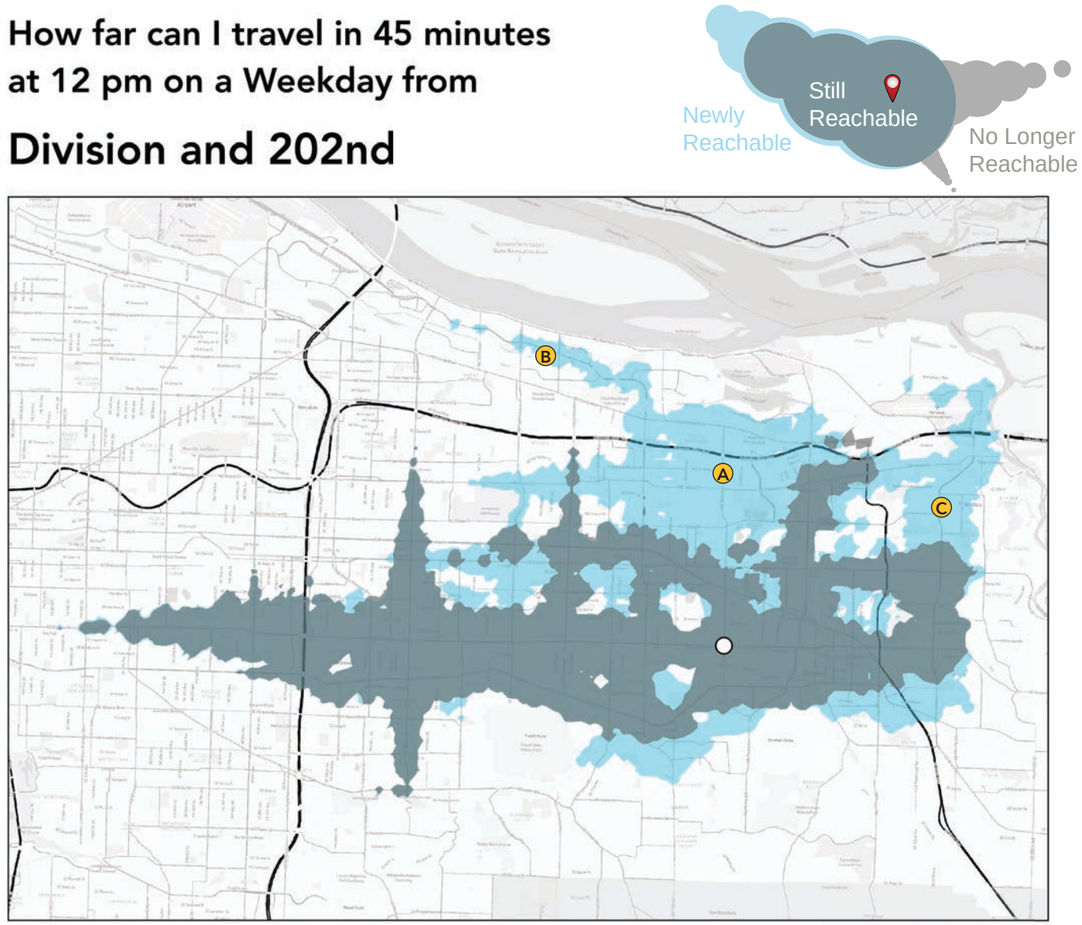


Figure 25: 45 minute travel time isochrone from Division & 202nd

Isochrones from Key Locations

Figure 26 and **Figure 27** show a pair of isochrones for two points on Portland's east side.

Cully and Prescott

From the intersection of Cully and Prescott, about 34% more jobs would be reachable with the Service Concept than with the existing network, and about 22% more residents. This location is served by Line 71, which would be upgraded to Frequent Service in the Service Concept, but most of the more dramatic improvements come through connections to other parts of the network.

While a small bright blue area is visible around both Line 71 (A) and 72 (B) (the result of a shorter waiting time for Line 71, and thus a quicker connection to Line 72), much larger areas become reachable further east, due to the improvements to service along Airport Way (C) (Line 87) and Sandy (Line 24). Bits of Columbia Blvd. (D) would now be within a 45 minute trip from this location using new Line 190, and a larger part of downtown Portland and NW Portland (E) would be reachable due to the upgraded frequent of Line 77. Together, these improvements are what produces the larger expansion in job access from this location.

Lents Town Center

Lents is an important transit node that becomes even better connected with the Service Concept. The most notable change in the isochrone shown in **Figure 27** is expanded access west (F) due to the new Frequent Service Line 4 along Woodstock. This puts much of Sellwood and Brooklyn within a 45 minute trip from Lents. Access also expands to the northeast (G) with the new Line 95 serving 148th, and to the south (H) along 82nd Dr with a connection to newly frequent Line 79.

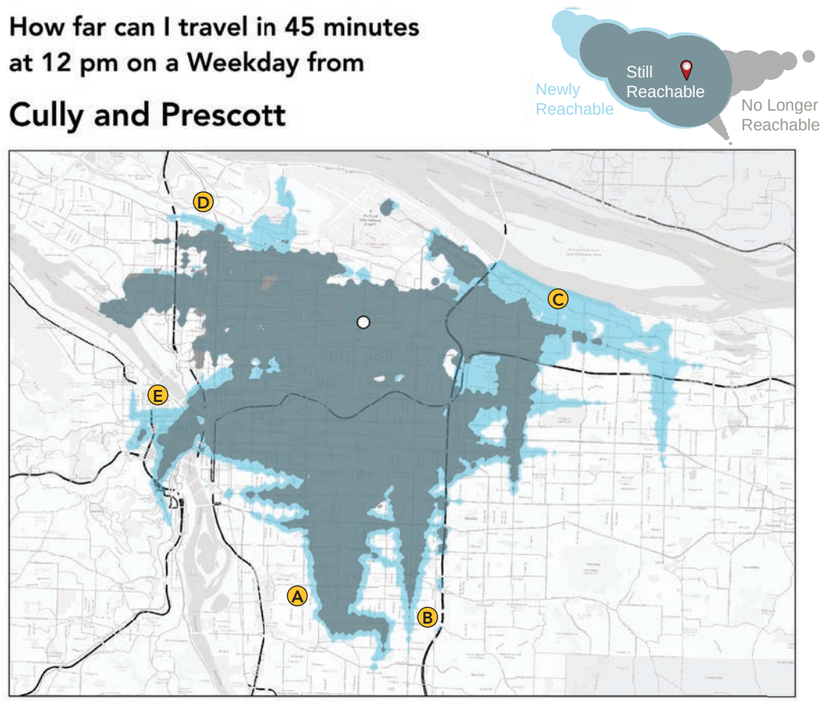


Figure 26: 45 minute travel time isochrone from Cully and Prescott

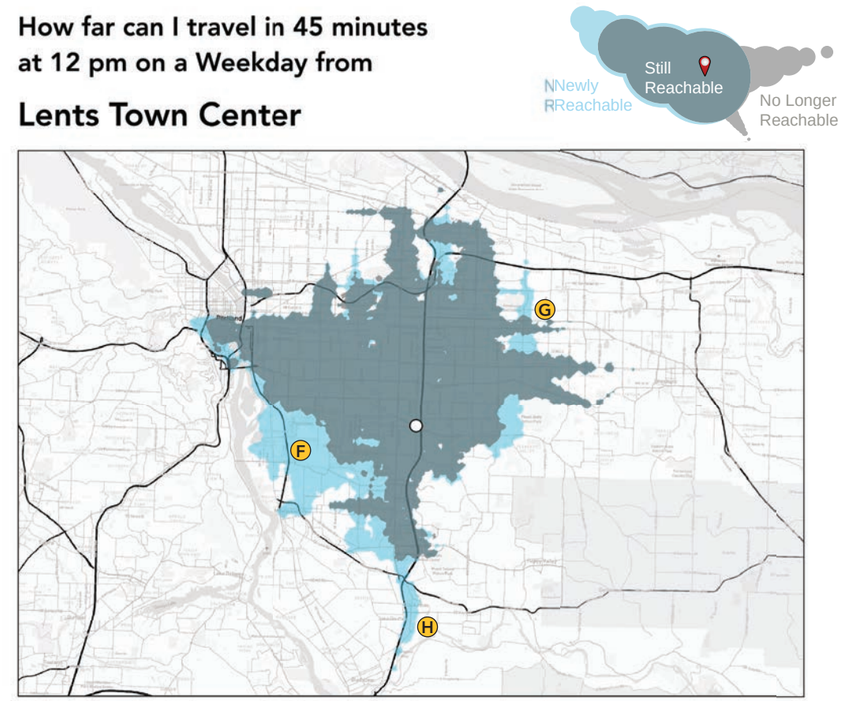


Figure 27: 45 minute travel time isochrone from Lents Town Center

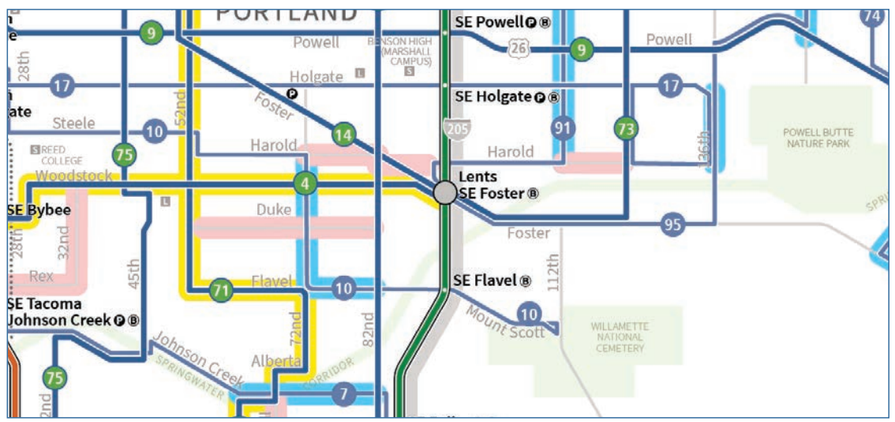


Figure 28: The Service Concept 's network near Lents.

Downtown Beaverton

Downtown Beaverton is another major connection point for the west side of the network. **Figure 29** shows compares isochrones from downtown Beaverton. Despite having good service with MAX and several Frequent Service lines today, a person starting a trip in downtown Beaverton would still be able to reach over 27% more jobs than with the existing network. From this location, we can see how the changes in this area help expand job access considerably.

Most importantly, in the Service Concept, Line 54 would now operate at high frequency all the way from Beaverton to downtown Portland. Even though Beaverton already has a fast connection to downtown Portland with the MAX Blue and Red lines, this would help improve job access by putting PSU and the south end of downtown Ⓐ in reach faster than with today's 30-minute Line 54 service.

Another notable change is visible along Cornell Rd. Ⓑ: Line 48 would be upgraded to Frequent Service. While Line 48 doesn't go to downtown Beaverton, the improved frequency would make it easier to use with a connection at Sunset TC. Similarly, Line 52 along Farmington and 185th would get a bit more frequent, improving travel times along those corridors and to PCC Rock Creek Ⓒ.

In the south, a long stretch along 72nd Ⓓ would become reachable with the realignment of Line 76. However, this comes as a trade-off; the part of Hall Blvd. in Durham Ⓔ that Line 76 uses today would no longer be reachable.

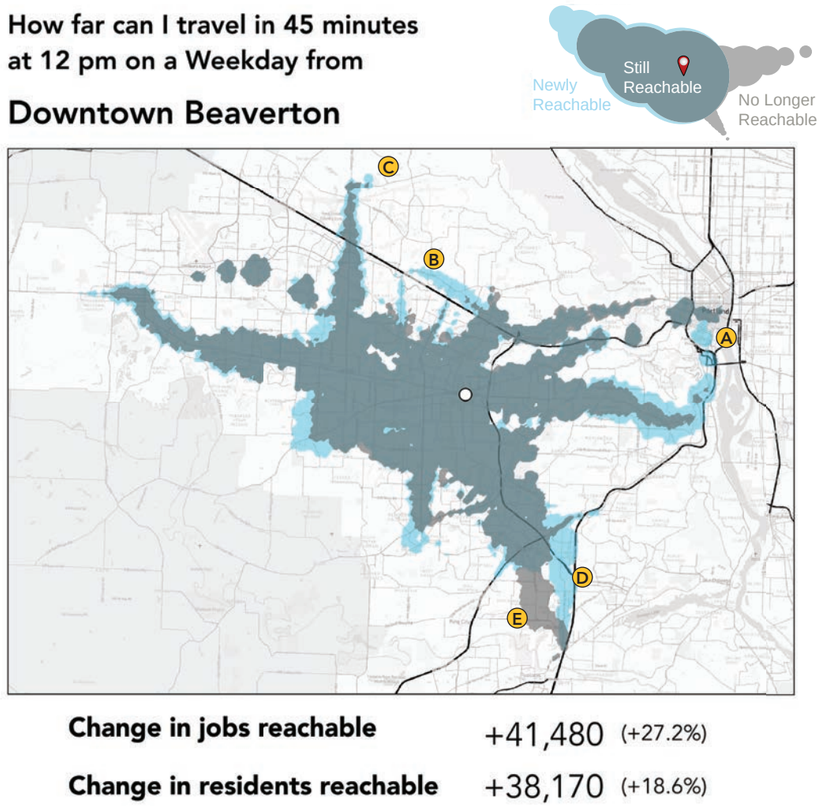


Figure 29: 45 minute travel time isochrone from downtown Beaverton

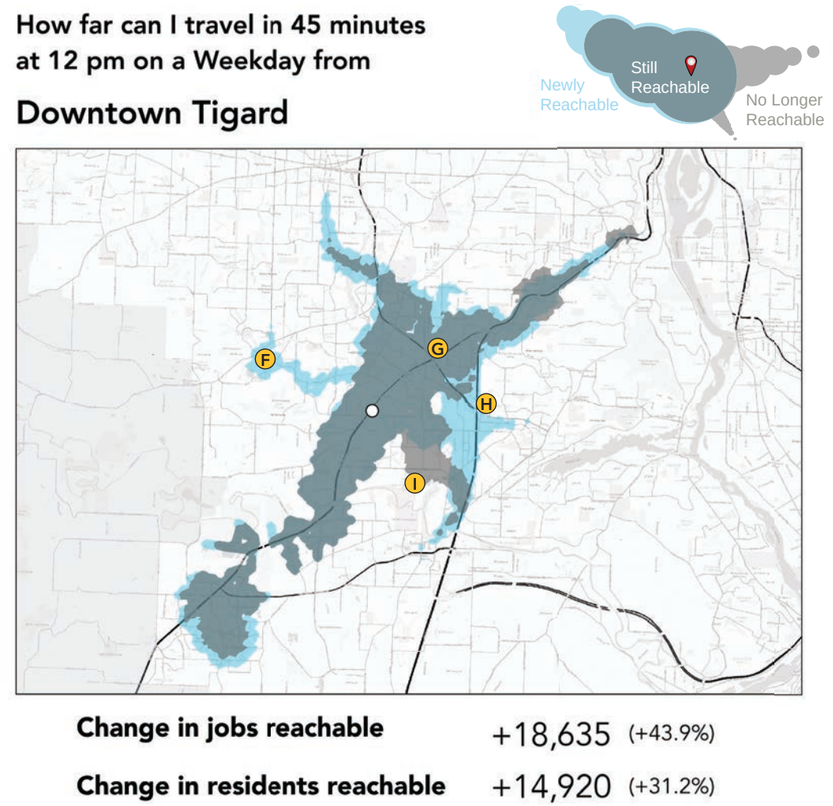


Figure 30: 45 minute travel time isochrone from downtown Tigard

Downtown Tigard

There are several changes to services in downtown Tigard that together help put nearly 20% more jobs and over 34% more residents within reach in 45 minutes. **Figure 30** shows isochrones from this location.

Line 62 along Murray and Scholls Ferry Rd. would be rerouted to end in downtown Tigard (rather than Washington Square as it does today). This would expand access all the way into central Beaverton along Murray Ⓕ.

Line 43 along Taylors Ferry Rd. would be upgraded to 30 minute service, and would be rerouted to end in downtown Tigard as well. This would put much more Southwest Portland Ⓖ within a 45 minute trip.

To the east, the Service Concept makes an important change in the network that is visible in the isochrone due to the rerouted Line 78. Today, Line 78 connects Lake Oswego to Tigard via County Club and Kerr, serving PCC Sylvania on the way. With the Service Concept, Line 78 would use Bonita, Kruse and Boones Ferry instead, expanding access to those streets Ⓗ. The biggest loss of access from downtown Tigard is to an area along Hall and Durham Ⓘ that would no longer be served by Line 76, and no longer be reachable with a 45 minute trip. This segment would now be served at lower frequency by new Line 131, as shown in **Figure 31.**

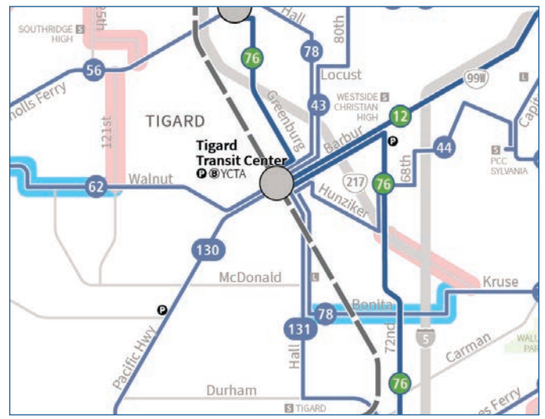


Figure 31: The Service Concept 's network near Tigard TC.

Evergreen Parkway and Amberglen

Figure 32 compares the existing network and Service Concept isochrones from Evergreen Parkway near Amberglen. This area would gain access to over 60% more jobs and 35% more residents with the Service Concept, due to its connectivity into the new grid of services operating in this part of the network.

Some areas where the grid would expand access to include:

- Line 48-Cornell and Line 52-185th/ Farmington, both upgraded to Frequent Service. More of Cornell Ⓐ is reachable east and west.
- New Line 111, connecting Evergreen south to Willow Creek MAX, and then continuing along 198th Ⓑ, Farmington, Oak and Erickson to end at downtown Beaverton. Line 111 makes the connection to MAX faster, expanding access near each MAX station Ⓒ.
- Line 111 also continues with Line 113 and 115 to the North Hillsboro industrial area. Much more of this important job center is reachable Ⓓ with the Service Concept.

This location helps provide a sense of the type of mobility improvements that a new grid in Washington County could help provide. From this location today, the isochrone mainly stretches east and west, with some connectivity north-south along 185th. Even though Aloha and TV Highway are nearby, the existing network's route structure puts these places out of reach from areas immediately to the north. With a grid of routes in place between TV Highway and Cornell, it would become much easier to travel in all directions, put particular to the south.

However, establishing a grid also means a major change from the existing network structure, which in this area is organized as a set of feeder routes that connect MAX stations to important destinations. The biggest difference in this part of Hillsboro is that Line 47 would be discontinued. Today, Line 47 provides a direct service from Hillsboro to PCC Rock Creek, via Main, Century, Evergreen and Laidlaw. The grey areas of this isochrone illustrate how the network structure change would impact where people could go from this point: the parts of Main Ⓔ and Laidlaw Ⓕ served by Line 47 are shown in grey, meaning they would no longer be reachable. Because there are so many more people and jobs in the areas the Service Concept would make travel faster to, overall access job and residential from this point increases substantially despite these segments no longer being within reach in 45 minutes.

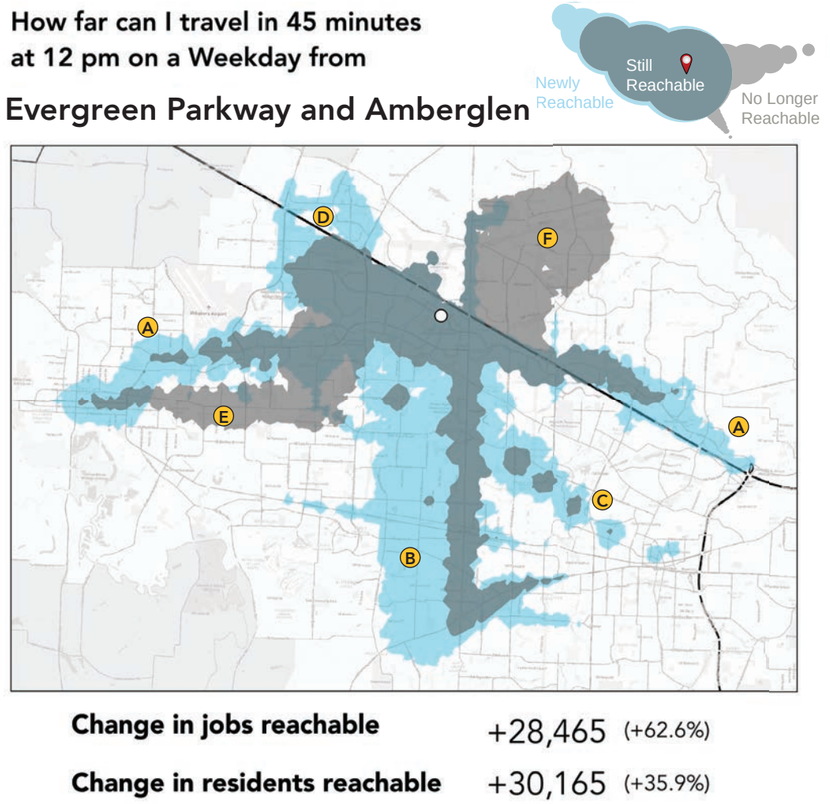


Figure 32: 45 minute travel time isochrone from Evergreen Parkway and Amberglen

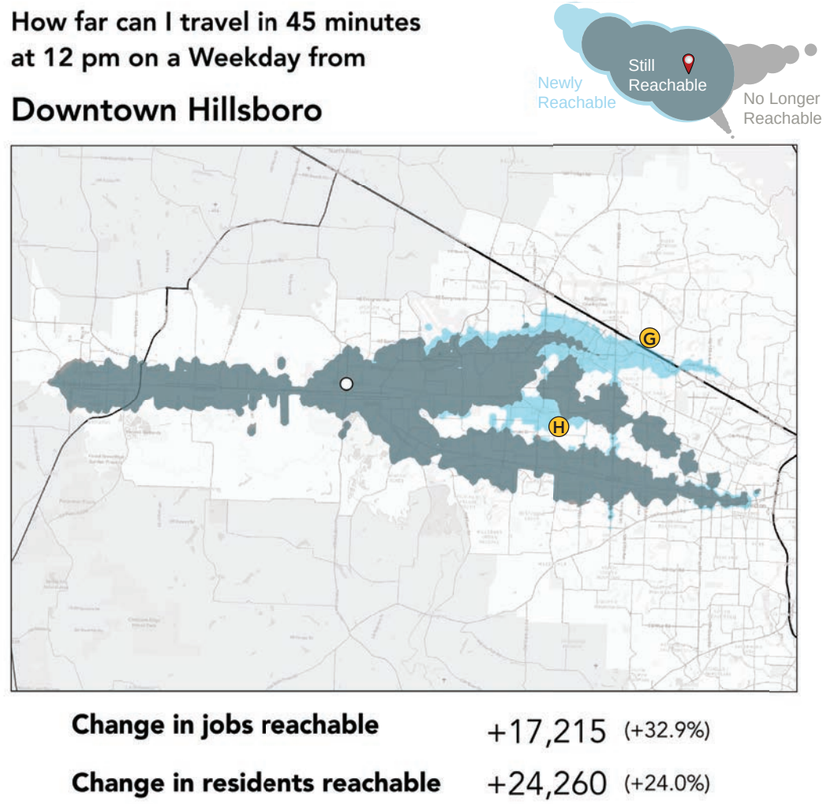


Figure 33: 45 minute travel time isochrone from downtown Hillsboro

Downtown Hillsboro

From downtown Hillsboro, the most notable changes are the upgrade of Line 48-Cornell to Frequent Service Ⓖ, and the new Line 120 that would follow Main and Baseline Ⓗ all the way east to Willow Creek station. The improvement to Cornell in particular adds a long third path east from Hillsboro, in addition to the good access already provided by Line 57 and the MAX Blue Line.

These improvements would put about 33% more jobs and about 24% more residents within a 45 minute transit trip from downtown Hillsboro.

Clackamas Community College

Clackamas Community College (CCC) is an important educational institution located in a challenging place: the southeast end of Oregon City. Providing good service to this destination means ending a route there, since the TriMet district boundary is just a short distance to the south. That's why the Service Concept continues to terminate Line 33 at CCC. **Figure 34** compares isochrones with the existing network and the Service Concept from CCC.

To make travel to the community college a bit more convenient, the Service Concept would streamline Line 33's path through Oregon City. Instead of serving residential areas along Linn as it does today, Line 33 would take the fastest route via Molalla; this helps make trips north from the college a little faster, visible in the added access along McLoughlin Blvd. Ⓐ . Linn Ave. would now be served by Line 31, a less frequent route, so some areas of western Oregon City fall out of the isochrone Ⓑ.

Access also expands to the north due to the improvements to some of the transit connections available at Oregon City Transit Center. Both Line 35 and Line 79 would run every 15 minutes, improving travel times north along Willamette into West Linn Ⓒ and northeast along 82nd Dr Ⓓ toward Clackamas Town Center. This puts about 12% more residents within a 45 minute trip to the community college campus.

Clackamas Town Center

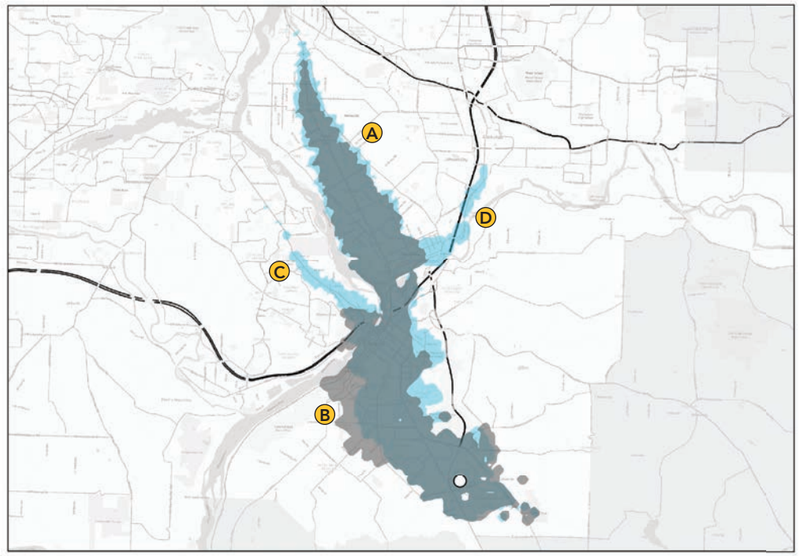
Clackamas Town Center is a major commercial, employment and transit hub for SE Portland and Clackamas County, bringing together multiple bus lines and MAX near a mall and numerous other nearby commercial employers. This is an important destinations, and the Service Concept includes several changes intended to make it easier to reach. **Figure 35** compares isochrones with the existing network and the Service Concept from Clackamas Town Center.

The first and most impactful change is that Line 79 along 82nd Dr would be upgraded to Frequent Service, running every 15 minutes. This would be the fastest way to travel between Oregon City and Clackamas Town Center, and the isochrone expands Ⓔ to cover all of 82nd Dr and much of Oregon City as a result. To the north, the Service Concept also upgrades Line 71 to Frequent Service, extending the reach of the isochrone Ⓕ.

The result of these changes is that nearly 30% more residents would be within a 45 minute trip to Clackamas Town Center, reducing travel times to this destination for people who need to work, shop or access services nearby.

How far can I travel in 45 minutes at 12 pm on a Weekday from

Clackamas Community College

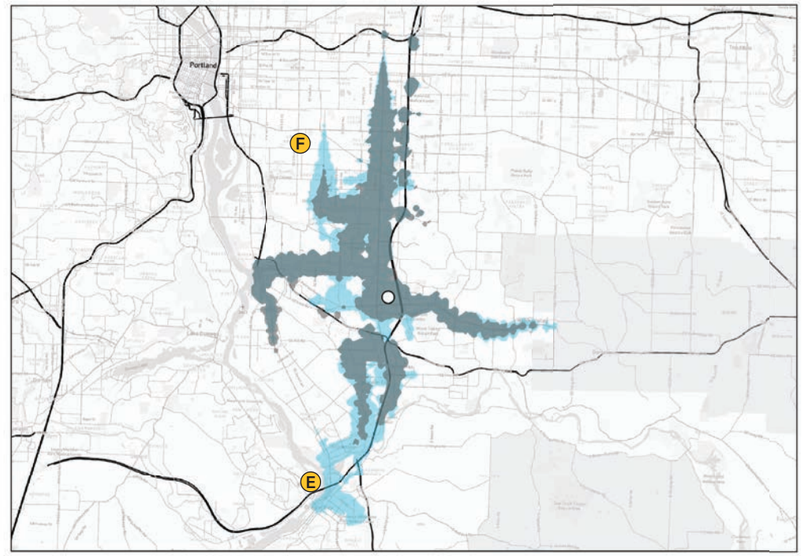


Change in jobs reachable	+3,370	(+21.8%)
Change in residents reachable	+4,175	(+12.3%)

Figure 34: 45 minute travel time isochrone from Clackamas Community College

How far can I travel in 45 minutes at 12 pm on a Weekday from

Clackamas Town Center



Change in jobs reachable	+9,140	(+23.2%)
Change in residents reachable	+22,435	(+29.5%)

Figure 35: 45 minute travel time isochrone from Clackamas Town Center

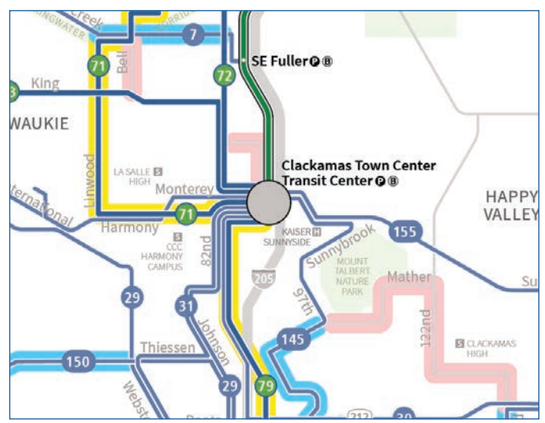


Figure 36: Service Concept network near Clackamas Town Center

The isochrones on this page show how access would change from some of the places we heard about most frequently in our second survey on the Draft Service Concept.

NE 27th & Alberta

NE 27th & Alberta is on Line 17 today, but in the Service Concept Line 17 would be realigned to run on NE 33rd. Previously, in the Draft Service Concept, 33rd was still served by Line 70 as it is today, but after receiving many comments about this change, we adjusted it to maintain downtown connectivity from this part of NE Portland. However, the segments of NE 24th and 27th in Irvington and Concordia that are served today by Line 17 would not be served in the Service Concept.

Figure 37 shows how access would look from along NE 27th with this change. Because of the longer walking time to Line 17, parts of the Central Eastside (A) and downtown fall out of walking distance, although most of the city center and PSU (B) would still be reachable.

Terwilliger & Palater

We also heard from many people in our second survey about the Draft Service Concept's proposal to remove lines 38 and 39 that today serve parts of SW Portland, including Lewis & Clark College. In response, we made an adjustment to Line 35 to improve service in this area. Line 35 would now split between Lake Oswego and Johns Landing, with every other trip either staying on Macadam or running along Terwilliger. With the Service Concept's suggesting to improve Line 35 to Frequent Service, this would put a bus to downtown running every 30 minutes at Terwilliger and Palater, just outside of the Lewis & Clark College campus near the law school building.

Figure 38 shows how the travel time isochrone from this location would change with the revised Service Concept. Note that to make a fair comparison, we have created this isochrone for 7 a.m. (when lines 38 and 39 are running today), rather than for 12 p.m. when neither service operates.

Access from this location would increase substantially, because Line 35 in this segment is a 30 minute service that runs all day, unlike the existing lines 38 and 39, which operate for only a limited period of the day at low frequencies. With the Service Concept's design, while no TriMet route would terminate within the Lewis & Clark campus, people nearby would enjoy a consistent, fast connection to downtown Portland and all the commercial activity along Macadam, running every day of the week with service from early morning to late night.

As a result, the number of jobs and residents reachable from this point increases dramatically. This is mainly because Line 35 would connect this neighborhood directly to Macadam (C) and into downtown Portland (D), but access would also extend south all the way to Oregon City (E). This design was established in response to many comments received from people concerned about transit access in this area; with Line 35 operating on Terwilliger, this part of Southwest Portland will gain a degree of consistent connectivity to the rest of the network that it has long lacked.

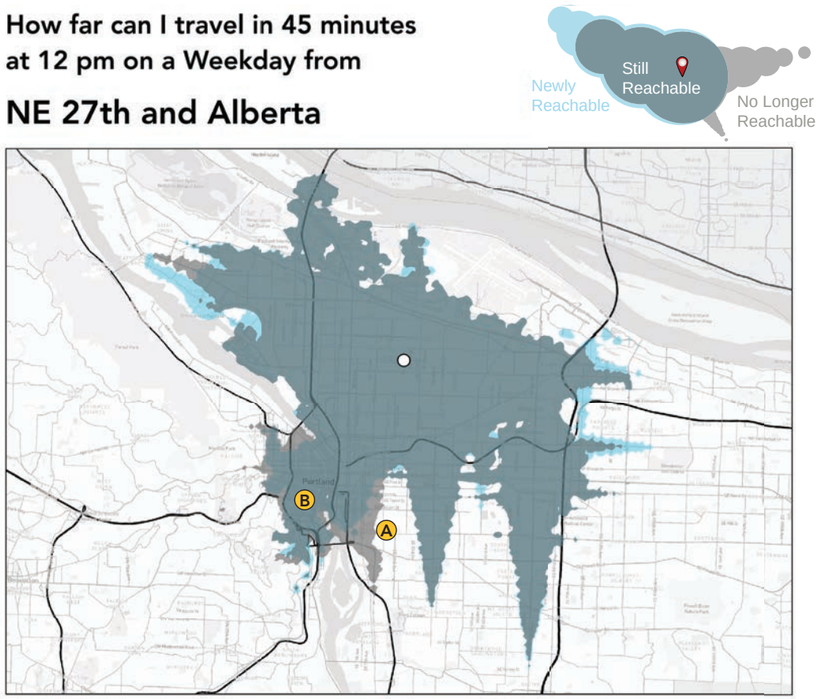


Figure 37: 45 minute travel time isochrone from NE 27th and Alberta

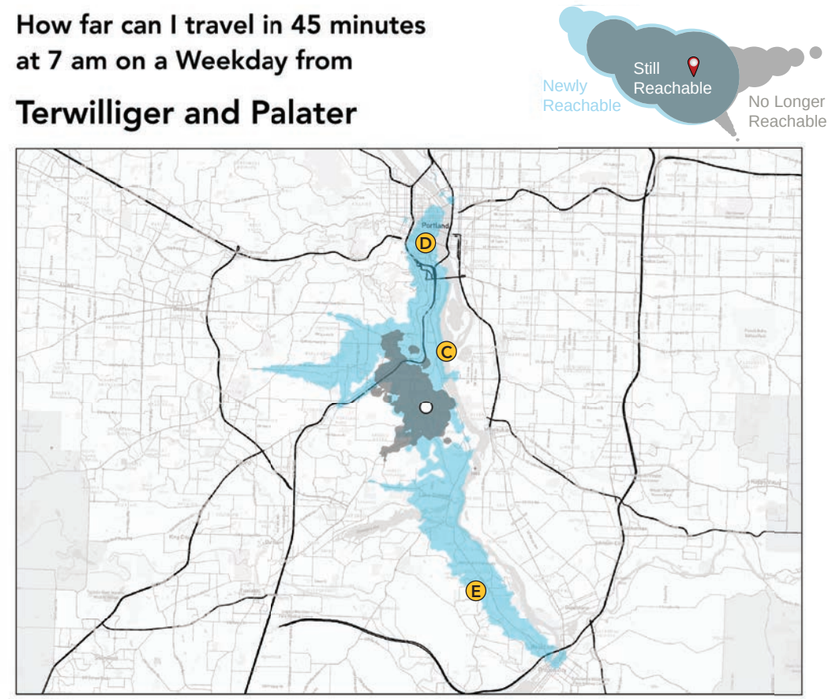


Figure 38: 45 minute travel time isochrone from Terwilliger and Palater

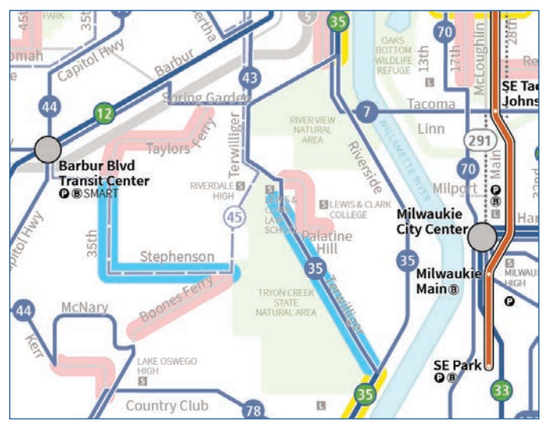


Figure 39: Service Concept network near Terwilliger and Palater

Access Analysis

Individual isochrones can tell us a lot about the impact of the Service Concept in particular places but we also need to understand how benefits and burdens are distributed across the entire service area. To do that, we sampled access with and without the Service Concept from the center points of a hexagonal grid at 400 meter intervals covering the entire TriMet district.

The map shown in **Figure 40** shows the result of this analysis. Each dot on this map shows 25 resident living nearby, based on 2019 ACS data. Green dots are located in places that could reach more jobs with the Service Concept; brown dots are people living in places where the changes in the Service Concept would put fewer jobs within reach.

Most places in the service area would gain access to jobs, particularly where new Frequent Service lines are created. This includes most of SE Portland, East Portland, North and Northeast Portland, Clackamas County east of the Willamette, Beaverton and Hillsboro.

A limited number of places would lose access compared to today. These are mainly in places where the Service Concept removes service, or redesigns it in a way that increases travel times to job centers. These include:

- Ⓐ In Irvington and Concordia in NE Portland, where Line 17 would be realigned to serve NE 33rd Ave.
- Ⓑ In Bethany, where Laidlaw Rd. would no longer be served.
- Ⓒ In Hillsboro, where as part of the creation of the grid, service along Baseline Rd. would no longer go directly to the North Hillsboro industrial area and Evergreen Pkwy.

On this map, green dots show residents would would be able to reach more jobs using transit with the Service Concept than with the existing network.

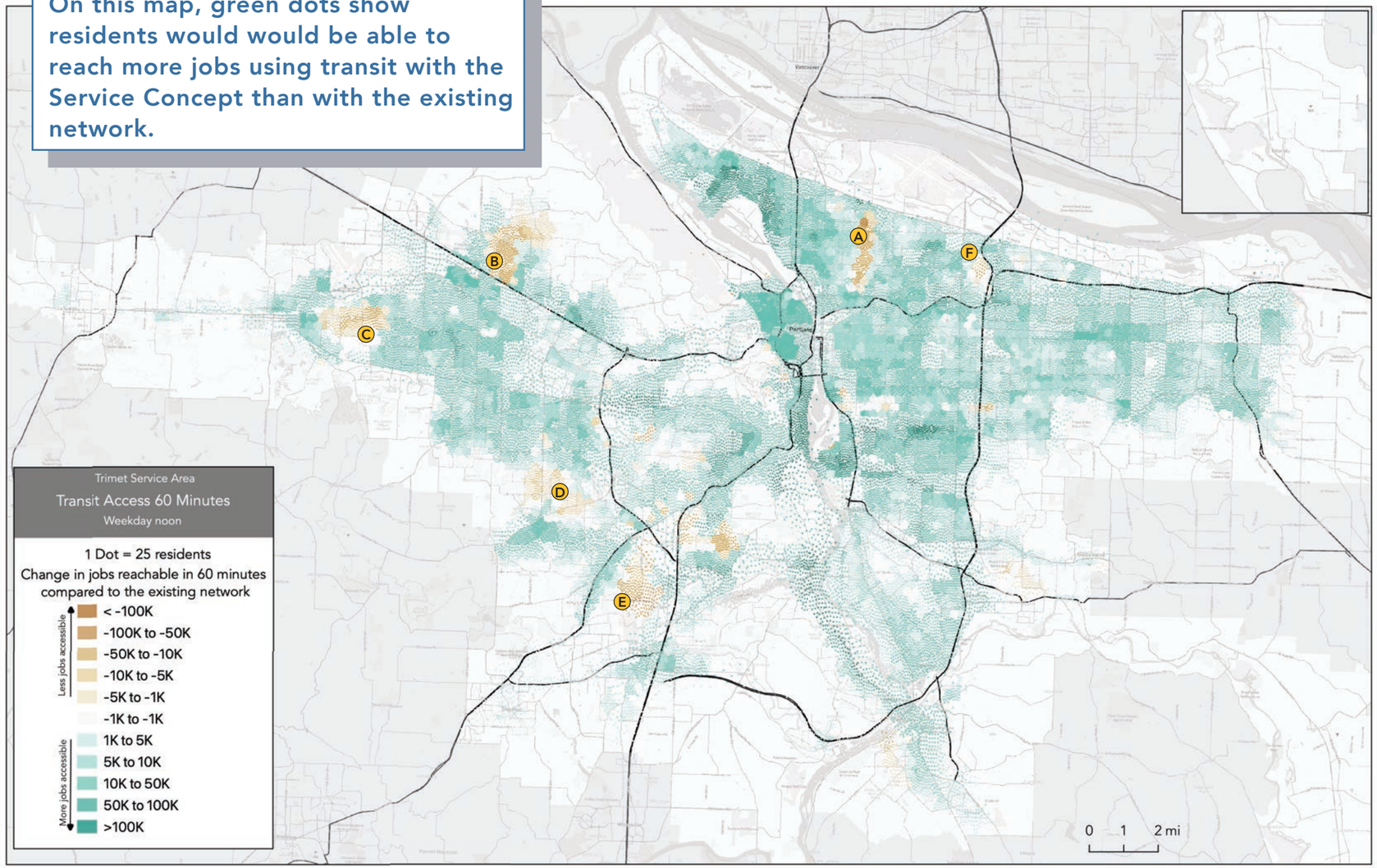


Figure 40: Change in Job Access in 45 minutes

- Ⓓ Along parts of Murray and Scholls Ferry Rd. currently served by Line 62, which would now go to Tigard and not Washington Square. Access increases further to the southeast where Line 56 would be extended to Progress Ridge and Mountainside High School.
- Ⓔ In Durham along Hall Blvd, where Frequent Service Line 76 would be realigned to use 72nd in order to better serve nearby jobs. Service along Hall would be provided by 30-minute lines 78 and 131.
- Ⓕ East of Rocky Butte in Portland, where Line 24 would be realigned and would no longer serve SE 92nd Ave.

Figure 41 on this page shows the same access analysis, for a longer travel time of 60 minutes. While the results of the analysis with the longer travel time budget are for the most part similar to those for 45 minutes, there are a few notable differences.

First, in contrast to the 45 minute analysis, we now observe a gain in access along Baseline Rd. in Hillsboro Ⓐ. While at 45 minutes, we saw a loss of access because of the disconnection of Baseline from major job centers along Evergreen Pkwy. to the north, with more travel time, job access is increased due to the connections available to new routes serving Century Blvd, Cornelius Pass Rd., as well as the MAX Blue Line and newly frequent Line 57 on 185th.

With 60 minutes of travel time, some of the areas with the largest gains in access include:

- Ⓑ Along Woodstock in SE Portland, served by the new extension of Frequent Service Line 4.
- Ⓒ Along Macadam in South Portland, where Line 35 is upgraded to Frequent Service.
- Ⓓ Along Cornell Rd., where Line 48 is upgraded to Frequent Service.
- Ⓔ Throughout East Portland, where new routes and improved frequent produce relatively consistent improvement in access between Foster and I-84.

The following pages provide some selected examples of how different changes to the network produce different changes in access.

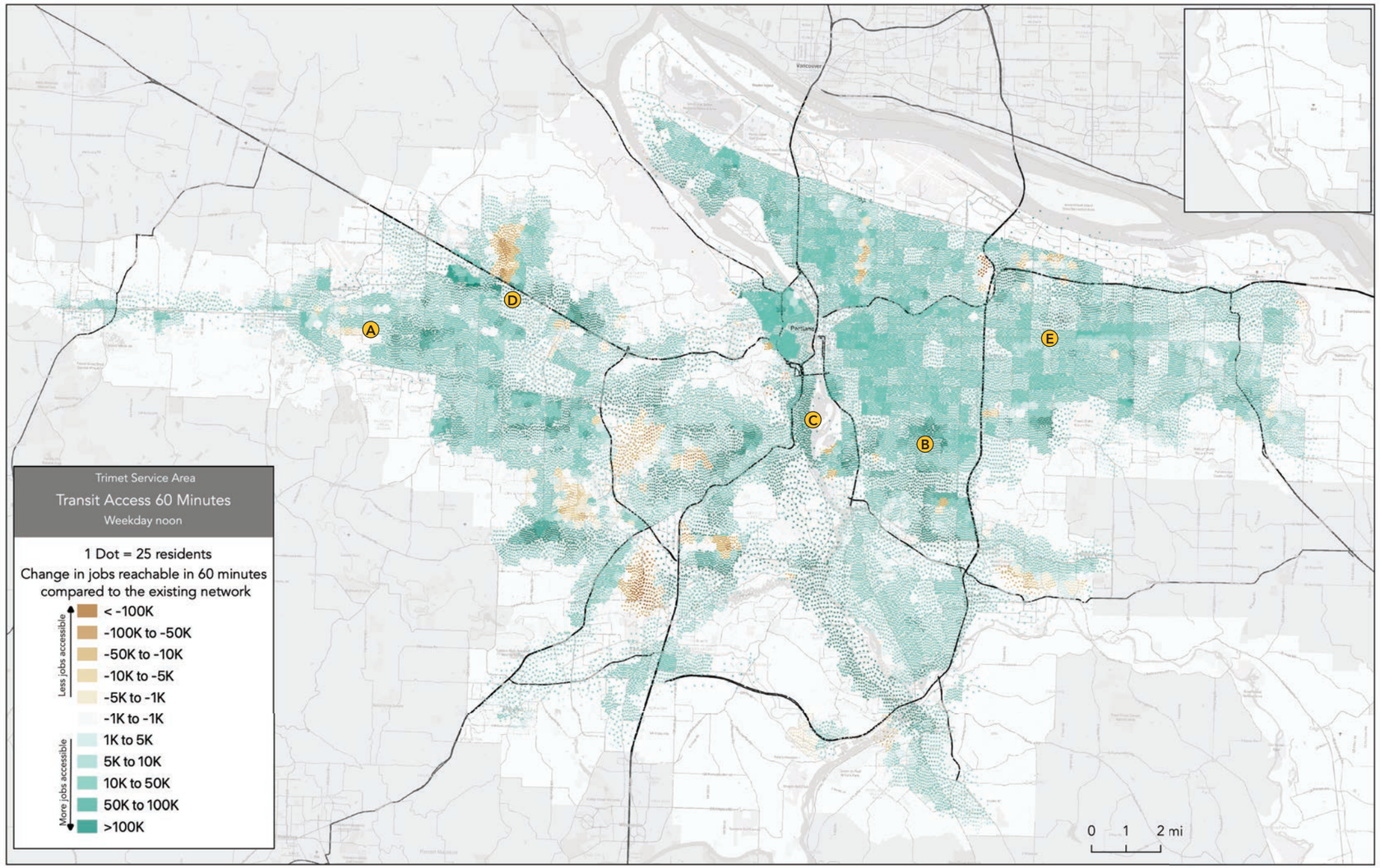


Figure 41: Change in Job Access in 60 minutes

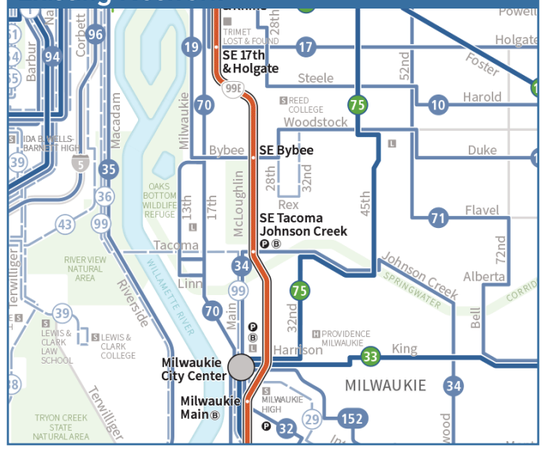
Example 1 - Sellwood

Today, the Sellwood neighborhood is served by three main routes- the MAX Orange Line along McLoughlin in the east; Line 19 on Bybee and Milwaukie; and Line 70, which is the main route through Sellwood south of Bybee. The problem is that Line 70 splits between 13th and 17th, which means that each of these streets are only served about every 40 minutes. Even though Sellwood has busy commercial areas along Bybee, 13th, 17th and Tacoma, none of them have Frequent Service. The lack of either a Frequent Service connection to the MAX Orange Line Bybee station or an all-day service along Tacoma to the Tacoma station also limits people in this neighborhood's ability to take advantage of the rail network.

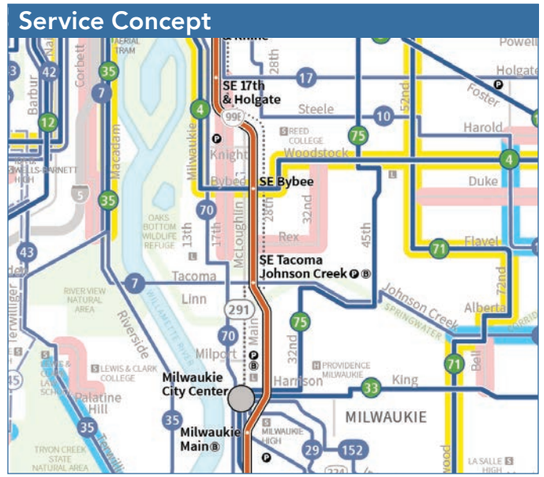
With the Service Concept, Line 70 service is consolidated onto a single pattern along 17th and Milwaukie. New Line 7 would serve Sellwood from the west via Macadam and the Sellwood Bridge. Frequent Service Line 4 would take over the existing Line 19's routing along Milwaukie and Bybee. As a result, everyone along Milwaukie and Bybee would have trip with a short wait to either MAX at Bybee or directly to downtown Portland. Everyone along Tacoma would have service every 30 minutes to MAX at the Tacoma station, or directly downtown. And everyone along Milwaukie and 17th would be near Line 70 service coming every 20 minutes.

As the access map at the bottom shows, this would produce an improvement in the number of jobs reachable from almost all parts of Sellwood, except for a small pocket along Sellwood Blvd. overlooking Oaks Bottom Ⓐ , which would be about 1/4-mile further from service than it is today.

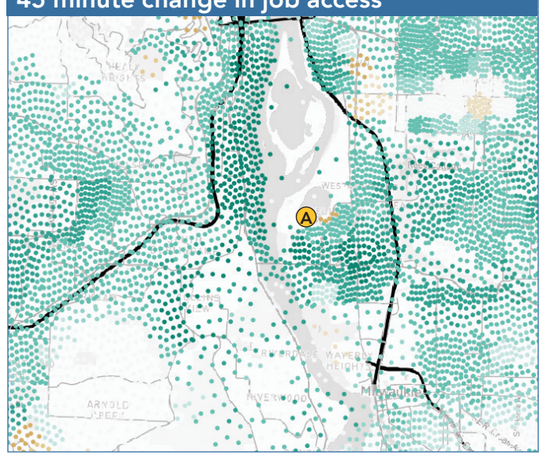
Existing Network



Service Concept



45 minute change in job access



Example 2 - East Portland

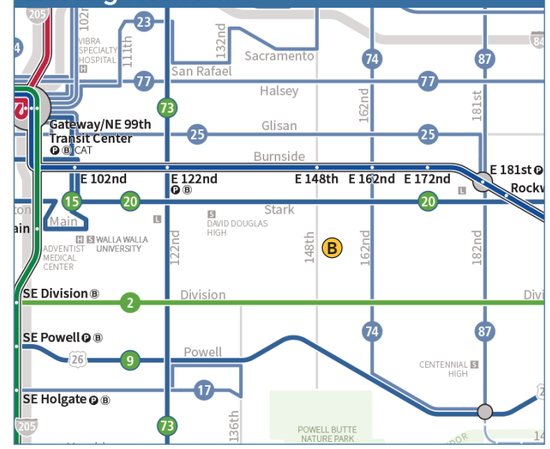
Parts of East Portland have recently experienced some important service improvements with the implementation of FX service along Division, and the Service Concept goes further towards filling network gaps and extending the frequent network to reach more of this part of the city.

Most importantly, it would establish two new Frequent Service lines: Line 77 along Halsey, and Line 87 along 181st/182. These improvements would reduce waiting times for trips on these routes, resulting in job access gains in all areas within walking distance.

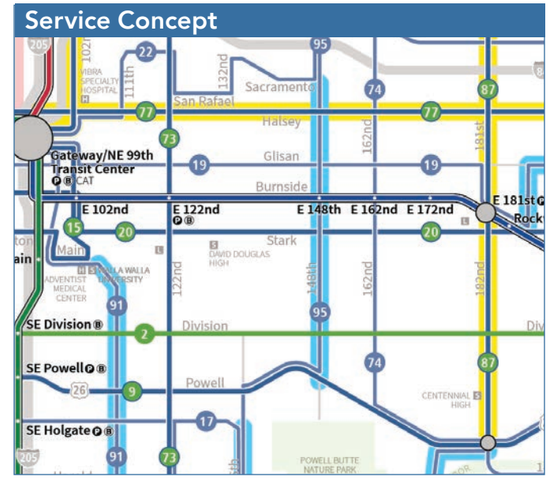
New Line 95 would finally fill the gap in service that has long existing along 148th Ⓑ, connecting central East Portland to Lents in the south. And new Line 91 would offer service up and down 112th.

As a result, on the access change map at the bottom to the right, nearly all of East Portland is green, indicating that more jobs would be reachable than with the existing network. Access gains would be greatest near Ⓒ 181st and Stark, where Line 87 would meet MAX, Line 20, and the newly extended Line 19-Glisan.

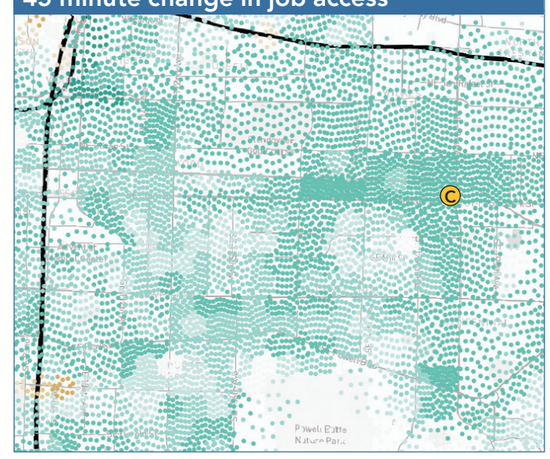
Existing Network



Service Concept



45 minute change in job access



Example 3 - South Beaverton

Today, South Beaverton is mainly served by three routes: Line 52 along Farmington and 185th; Line 88 along Allen, Murray and Hart; and Line 62 along Murray and Scholls. Line 52 and 88 to Beaverton TC, while Line 62 goes to Washington Square. Nothing continues further south, and nothing operates at Frequent Service.

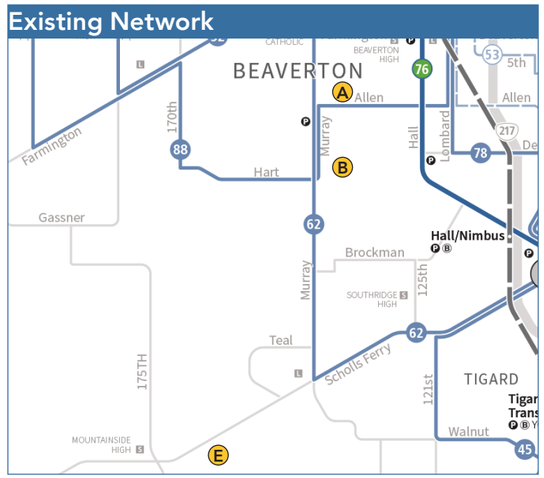
With the Service Concept, Line 52 would be upgraded to Frequent Service, running every 15 minutes every day. Line 62 would be extended to end in Tigard, rather than at Washington Square. And two new routes would be established; Line 111, serving 170th and Oak; and Line 67, serving 198th and Hart.

This structure would offer more continuous service along Allen (A) and Hart (B), establish a route along 170th north of Farmington Rd. for the first time, and improve connections to places to the south like Tigard or Bridgeport Village.

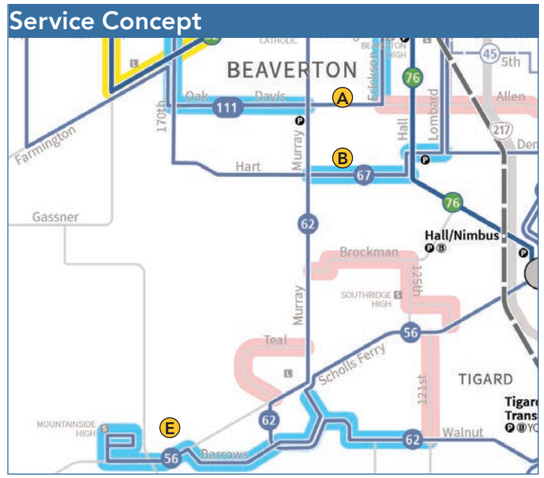
As a result, most of the area would gain access to more jobs, with the exception of some places north (C) and east (D) of the Murray / Scholls intersection where job access would decrease. These losses are the combination of two factors: first, some parts of Scholls Ferry would lose a direct connection to downtown Beaverton; second, some parts of Murray would lose a direct connection to Washington Square.

While this structure does produce some negative impacts, it also provides a way to serve Progress Ridge (E). Progress Ridge is a busy area with a mixture of commercial and residential land uses. In the Service Concept, it would be served by Line 56, continuing east to Washington Square and Marquam Hill, offering transit access in this area for the first time.

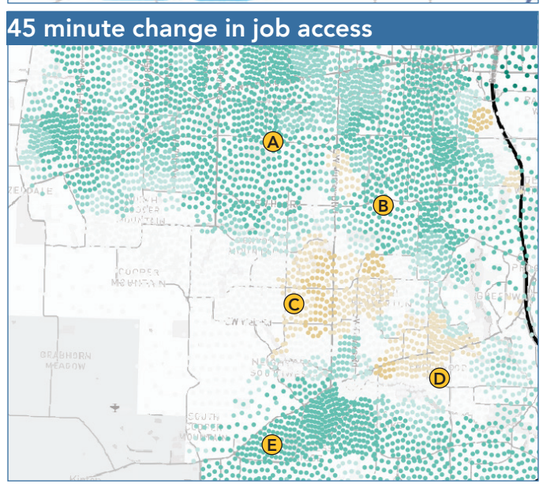
Existing Network



Service Concept



45 minute change in job access



Example 4 - Hillsboro

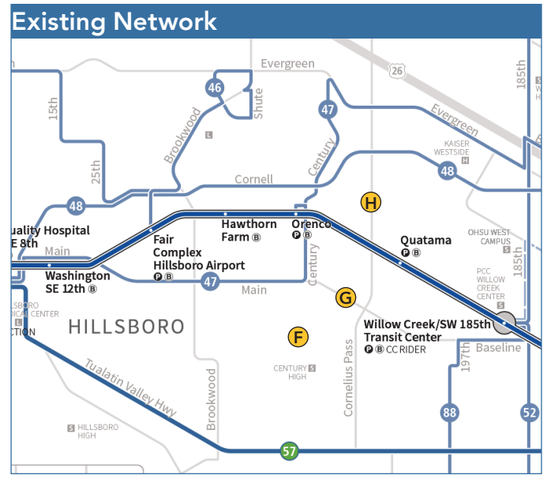
In Hillsboro, the Service Concept would begin to establish a more regular grid of services running east-west and north-south, enabling anywhere-to-anywhere movement within the grid with a single transfer. Today, no service operates on Century Blvd. south of Main (F); along Main east of Century (G); or along Cornelius Pass Rd. (H) at all. There is no continuous service along Evergreen from the east to industrial jobs in North Hillsboro, and many trips to places along Evergreen require riding MAX to Orenco or Fair Complex, and then transferring to lines that take riders back in the direction they came from.

The Service Concept aims to improve this by first upgrading Line 48 to Frequent Service, creating another high-frequency east-west line facilitating easy connections. New lines 113 and 115 would serve Century and Cornelius all the way from North Hillsboro to TV Highway, connecting to Line 57, the new Line 126 along Main/Baseline, MAX, and Line 48.

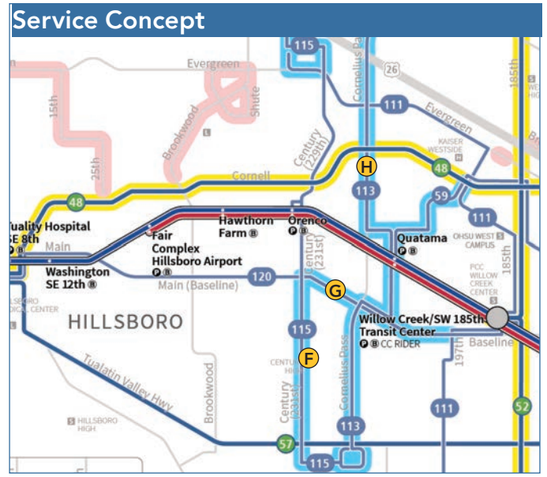
This would expand job access almost everywhere in this part of the network. Places along Cornell would have a faster trip east and west. People along TV Highway would be able to more easily travel north to jobs and opportunities in North Hillsboro or Tanasbourne. And people near Century and Cornelius would for the first time have service in walking distance.

Only one part of the access change map at the bottom right shows dots in brown, indicating a loss of access. That is the segment of existing Line 47 along Main (I), which provides a direct connection from downtown Hillsboro to Tanasbourne and PCC Rock Creek. This is a very useful service for the people who live in this segment, but by standardizing the network in this area into a grid, we are able to deliver enhanced access almost everywhere else nearby.

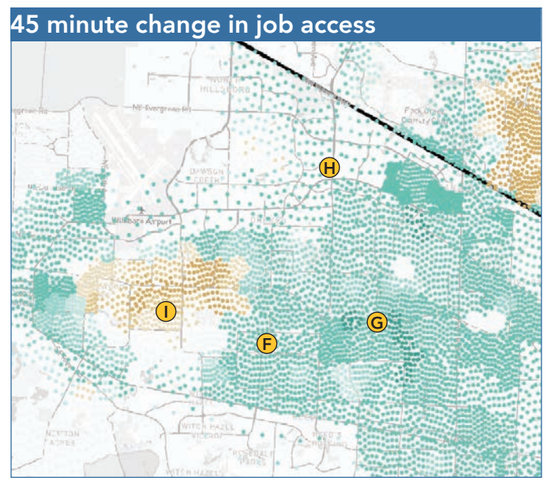
Existing Network



Service Concept



45 minute change in job access



Access Summary Statistics

The maps on the last few pages help show where access would change, and which places would be impacted. But how many people would gain or lose access, and how big would the impact be?

The two charts on this page summarize the percent of service area residents who would experience different levels of access change. Green bars count residents who would gain access; brown bars count residents who would lose access. The grey bar in between counts the proportion of residents who would see little change in access. Each segment that contains more than 2.5% of the region's population is labeled.

These are "person-based" measures, because they count how many people would experience different changes in access regardless of where they live.

The top chart shown in **Figure 42** displays the change in job access that would be experienced by each person in the service area. In other words, what is the difference between the number of jobs they could reach with the existing network and the Service Concept. The bottom chart in **Figure 43** reports the relative change from existing to concept (as a percentage of each person's access with the existing network).

The majority of people in TriMet's service area would see their access improve with the Service Concept. For the 45 minute travel time, about 75% of residents would gain access to at least 1000 more jobs than they could reach with today's network. About 45% would gain access to at least 10,000 more jobs in 45 minutes. In relative terms, about 55% of residents would see at least a 10% increase the number of jobs they could reach in 45 minutes, and about 40% of residents would experience at least a 25% gain in job access.

Change in Job Access by Demographic and Economic Characteristics

One of the most important goals of the Service Concept is to advance transit equity for lower-income people and people of color. One way to gauge the potential of the Service Concept to make progress on those goals is to compare the change in job access for those groups to the change for the general service area population. For this analysis, "lower-income people" refers to service area resident with household incomes below 150% of the federal poverty level.

For both 45 minute and 60 minute travel times, a greater proportion of lower-income people and people of color in the region benefit. For example, about 75% of people experiencing lower incomes could gain access to at least 5,000 more jobs than would be reachable with the existing network, compared to about 70% of people of color and 65% of all residents.

With the Service Concept, over 65% of residents, 70% people of color and 75% of people experiencing lower incomes would gain access to at least 5,000 more jobs by transit .

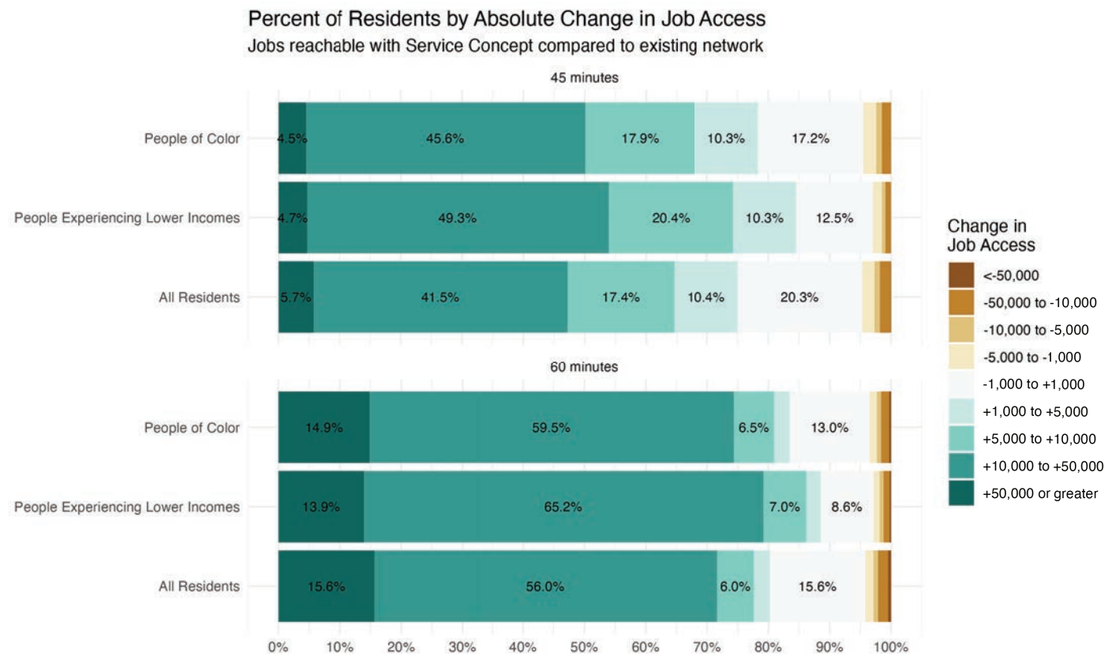


Figure 42: Percent of Residents by Absolute Change in Job Access

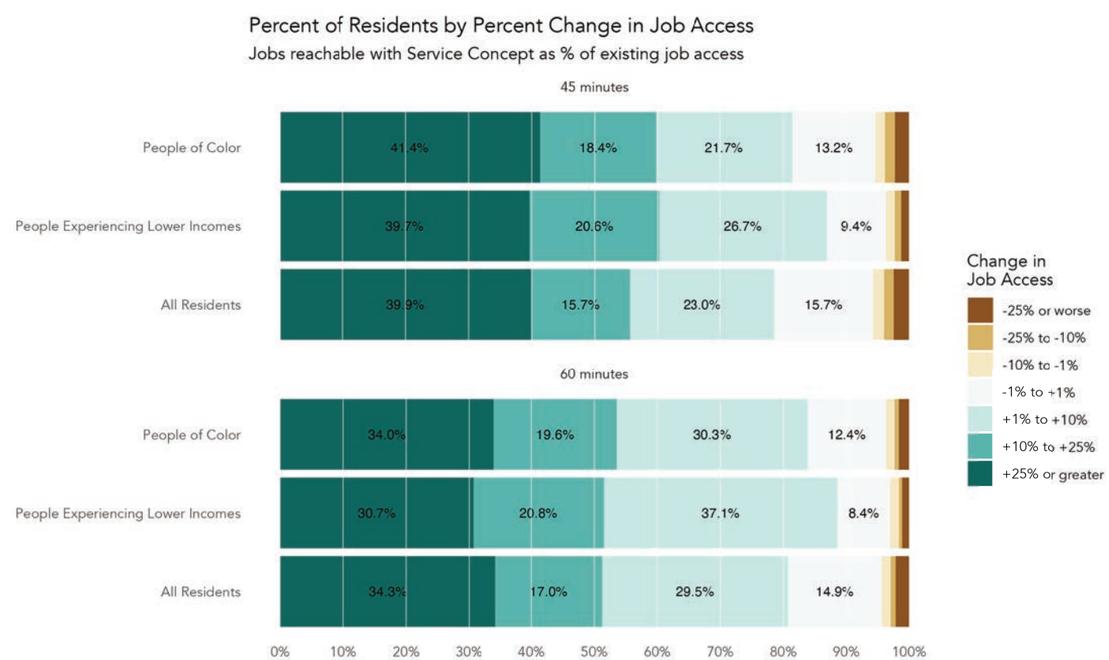


Figure 43: Percent of Residents by Relative Change in Job Access

Change in Median Jobs Reachable

One simple way to understand the potential impact of the Service Concept is its impact on the number of jobs reachable by the median service area resident. In this case, the median resident is the person who can reach more jobs than 50% of the population, and fewer jobs than the other 50% of the population. They are exactly in the middle of the range of how many jobs people can reach using transit.

Figure 44 shows the change in the number of jobs reachable in 30, 45 and 60 minutes by the median resident, person of color and lower-income person.

This is a p*erson-focused measure of usefulness* - it shows the median level of transit job access for residents across the entire service area.

Today, the median resident of the service area can reach about 32,700 jobs in 45 minutes. With the Service Concept, that number increases to about 48,800, a 49% improvement.

Median access for people of color and lower-income people is higher with the existing network (because these residents are more likely to live in areas that are relatively well-served by transit), and would continue to be higher with the Service Concept.

This may seem counter intuitive, given the fact that the highest access areas of central Portland tend to be heavily white, and many places in the region with a high concentration of lower-income people and people of color are in lower access areas.

The service area medians look as they do because of the impact of suburban areas where transit service is not present, or not very useful. These areas are more likely to be whiter and wealthier and lower the aggregate numbers, particularly for white residents and all residents. In TriMet's service area, People of color and lower-income people are more likely to live in places where transit is useful, but those places tend to be outside the center of the region where it is **most** useful.

Destination Type	Access by	30 minutes				45 minutes				60 minutes			
		Existing	Service Concept	Change	% change	Existing	Service Concept	Change	% change	Existing	Service Concept	Change	% change
All Jobs	All Residents	6,900	9,400	2,500	136%	32,700	48,800	16,100	149%	104,300	145,000	40,700	139%
	People of Color	8,000	10,600	2,600	133%	36,200	52,100	15,900	144%	114,300	152,400	38,100	133%
	Lower-Income People	10,300	13,100	2,800	127%	46,200	64,200	18,000	139%	185,100	226,300	41,200	122%

Figure 44: Change in Jobs Reachable by Median Service Area Resident

The median number of jobs reachable by lower-income residents would increase the most, but because this measure is higher today, the relative change is smaller. The median lower-income resident of the service area would gain access to about 18,000 more jobs in 45 minutes, about a 39% improvement compared to the existing network. This is a larger absolute gain in access that experiences by the median resident, but smaller relative to the existing network.

The gains in access are largest at the 45 minute travel time threshold, and smaller at 30 and 60 minute travel times. That is because with short 30 minute trips, only the most frequent services are really competitive with walking.

Change in Residents Reachable from Median Job

So far, this analysis has looked at access **to** jobs. Job access certainly means trips to work, but also potentially lots of other trips people could make from home to places where others work. But what about access to residents? How many residents are within reach of the median job? How does the Service Concept change this?

Figure 45 shows the number of residents reachable from the location of the median job in the service area. When we think about residential access this way, we are thinking about how many people at home are within 30, 45 or 60 minutes of where people work.

The Service Concept expands access from residents to jobs, and similarly from jobs to residents. Because jobs tend to be located more centrally, and because there are many more residents than employees, the absolute number of residents reachable from the median job is higher. But as with job access, residential access from jobs increases by about 49% in 45 minutes, and about 33-34% for shorter and longer trips.

Travel Time	Residents Reachable	Change	% change
30 minutes	18,000	-	-
	24,000	6,000	133%
45 minutes	75,400	-	-
	112,400	37,000	149%
60 minutes	213,500	-	-
	286,300	72,800	134%

Figure 45: Change in Residents Reachable from the Median Service Area Job

About Jobs Data

Job locations are not permanent, particularly in the post-pandemic period. The data used in this analysis comes from a resource produced by the US Census called Longitudinal Employer-Household Dynamics, which in its basic form (used here) is a database of how many people work in each census block or block group in the county. The data used in this analysis are for the year 2019, the most recent year available from the US Census at the time.

This analysis thus offers us a snapshot of the potential impact of the Service Concept on a job distribution that could change in the future. We already know that some degree of remote working for some types of workers has proven to be a durable change emerging from of the pandemic. At the same time, most workers in the retail, service, food and industrial sectors never worked from home. Ultimately, the Service Concept is designed around the demand patterns observed in 2021 and 2022 as the region emerged from the pandemic, but further analysis and monitoring should be conducted as elements of the plan are implemented and new data become available.

Access from TriMet Equity Areas

The person-based measures shown on the preceding page tell us about how many people, how many people of color and how many people experiencing poverty in the service area would be impacted positively or negatively by the Service Concept. However, they do not tell us about how the Service Concept would impact particular places of elevated important for lower-income people and people of color.

TriMet's 10-factor equity index identifies parts of the service area with a high concentration of people who are members of disadvantaged groups, including low-income people and people of color. **Figure 46** compares the number of jobs reachable by the median person living inside and outside of the equity areas. For people living inside the equity areas, the table splits equity areas inside and outside of the Central City.

In this analysis, the median resident of the equity areas is the person who can reach more jobs than 50% of the population of the equity areas, and fewer jobs than the other 50% of the population.

TriMet's Equity Index is an excellent tool for focusing attention on where disadvantaged people live, work and access services. As such, it provides a valuable guide for developing network plans designed to build a system that everyone can use to reach the places they need to go, by prioritizing the needs of the populations whose locations are identified by the index. In all design phases of this project, particular attention was paid to the equity areas to ensure that the resulting network design was likely to deliver improved transportation options for these places.

As the TransitCenter *Equity in Practice* manual lays out, place-based measures like these "show how the benefits and harms of transportation accrue to areas with many residents of color or residents with low incomes." TriMet's Equity Index is an essential tool in designing service plans oriented towards equity goals.

With the Service Concept, the number of jobs reachable increases in most parts of the network, and across the vast majority of the places identified through the equity index. The number of jobs reachable by the median resident living within the equity areas would increase by about 36%.

We also segment the equity areas into two groups: those in close-in parts of Portland, and those in other places. Central City equity areas are located in the part of the region with the greatest overall transit service level (downtown Portland, the Pearl District, the Central Eastside, and the Rose Quarter) which means that even network plans with a lot of improvements only result in small changes in job access outcomes. By contrast, many of the rest of the equity areas are in places that are not so advantageously located in today's network.

With the Service Concept, median job access in 45 minutes from Central City equity areas would increase by about 5%, mainly due to the handful of new Frequent Service lines ending near downtown (Line 77, 54, 35, etc). By contrast, access in the rest of the equity areas outside the Central City would increase by about 36% for 45 minute trips, and by about 26% for 60 minute trips.

With the Service Concept, the median resident of one of TriMet's Equity Areas would be able to reach about 36% more jobs in 45 minutes.

Travel Time	Network	All Equity Areas	Equity areas in Central City	Equity areas outside Central City
45 min	Existing Network	47,300	317,400	43,200
	Service Concept	64,800	332,600	58,900
	Change	*17,500*	*15,100*	*15,600*
	% Change	*137%*	*105%*	*136%*
60 min	Existing Network	183,300	437,500	160,600
	Service Concept	223,400	454,700	202,400
	Change	*40,100*	*17,200*	*41,800*
	% Change	*122%*	*104%*	*126%*

Figure 46: Change in Jobs Reachable by Median Resident of TriMet Equity Areas

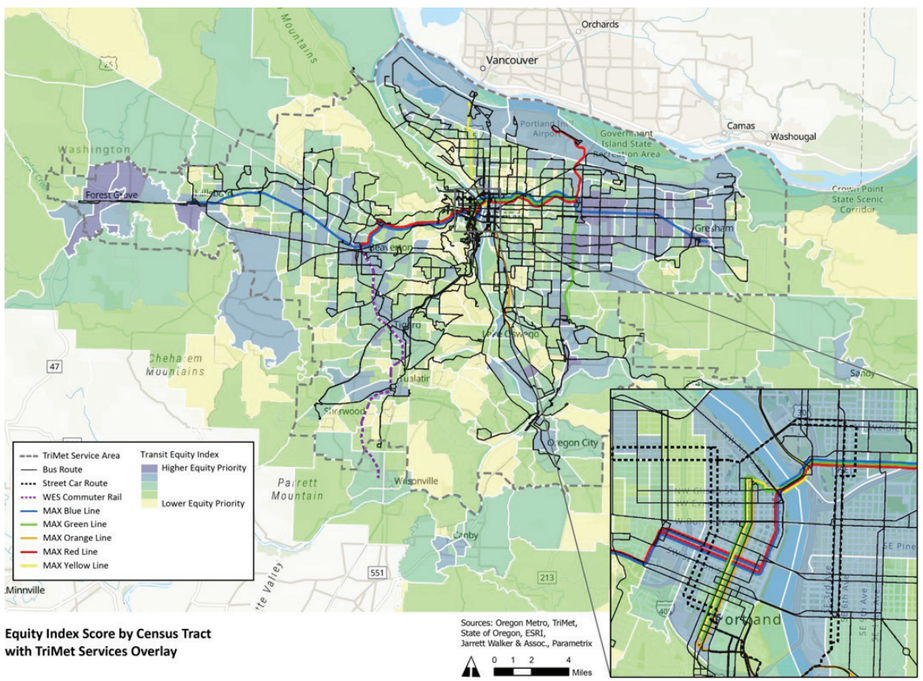


Figure 47: TriMet 10-Factor Equity Index. A larger version of this map is shown on page 12.

Access to Destinations

While job access is a useful general measure providing a sense of how much "stuff" is reachable from different places and by different people, it is also important to compare access to particular destinations that are important to large numbers of people. When we talk about access, we are also talking about what kinds of places and types of trips you are likely to find transit useful for. In addition to job access, we also evaluate the number of key destinations reachable from each part of the service area, focusing on three types:

- Health care (mainly hospitals, urgent care centers and other medical clinics).
- Higher education (colleges, universities, community colleges and professional training locations).
- Grocery stores, including major retailers like Wal-Mart and Target than also provide fresh produce and other groceries.

When we expand access to these destinations, we expand the range of potential opportunities for people to access the food options and medical care that helps sustain healthy lives, and the educational opportunities that have provide economic advancement.

Figure 48 maps the distribution of these destinations throughout the TriMet service area.

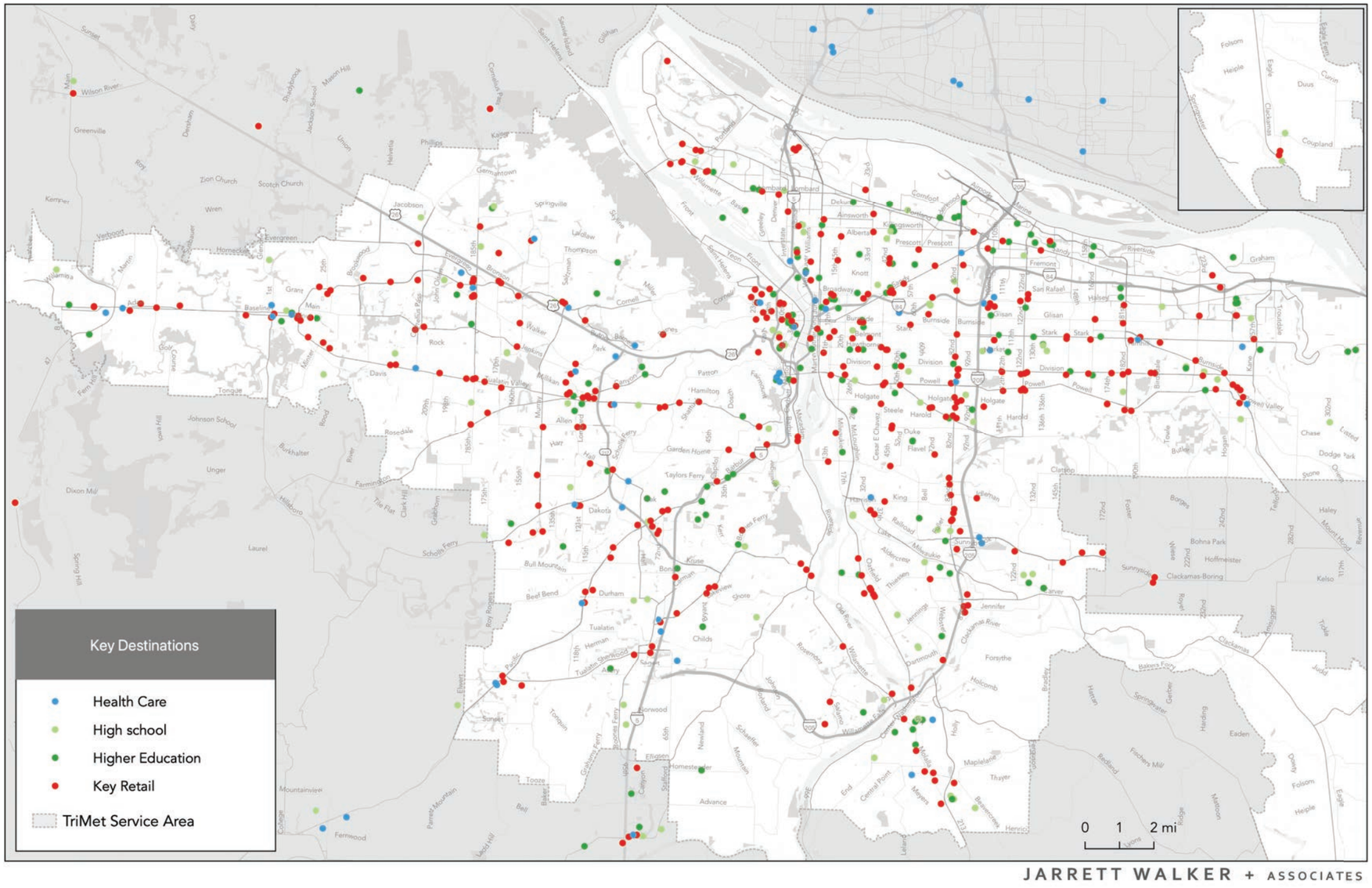


Figure 48: Key Destinations in the TriMet Service Area

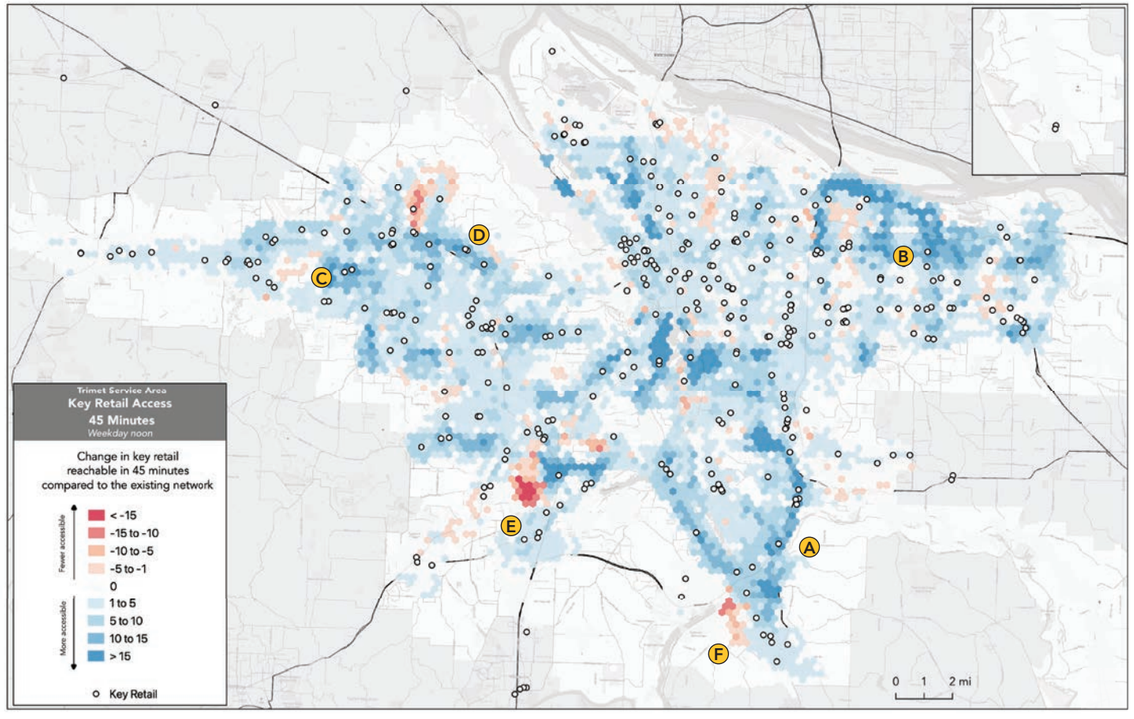


Figure 49: Access to Key Retail (Grocery) Destinations in 45 minutes

Figure 49 shows the results of our analysis of access to grocery destinations, described in the map title as "key retail". This maps shows areas in blue that would gain access to more grocery stores in 45 minutes than with the existing network; areas in pink and red would lose access to grocery stores.

Most areas of the network gain access to more grocery stores than are reachable with the existing network. For example, most residents along 82nd Dr (A) in Clackamas County would be able to reach at least 5 more grocery stores in 45 minutes than they could today, an outcome produced by faster travel times to both Oregon City and the 82nd Ave. corridor, each of which have multiple options for groceries. We see similar improvements in grocery access in northern Gresham (B) and in Hillsboro (C), where new grid routes and enhanced frequency improve access more generally.

A few areas lose access to grocery stores, most notably in places like Laidlaw Rd. in Bethany (D) where the Service Concept removes a route entirely, or in places like Durham (E) or the west side of Oregon City (F) that would be served by a less frequent route than today.

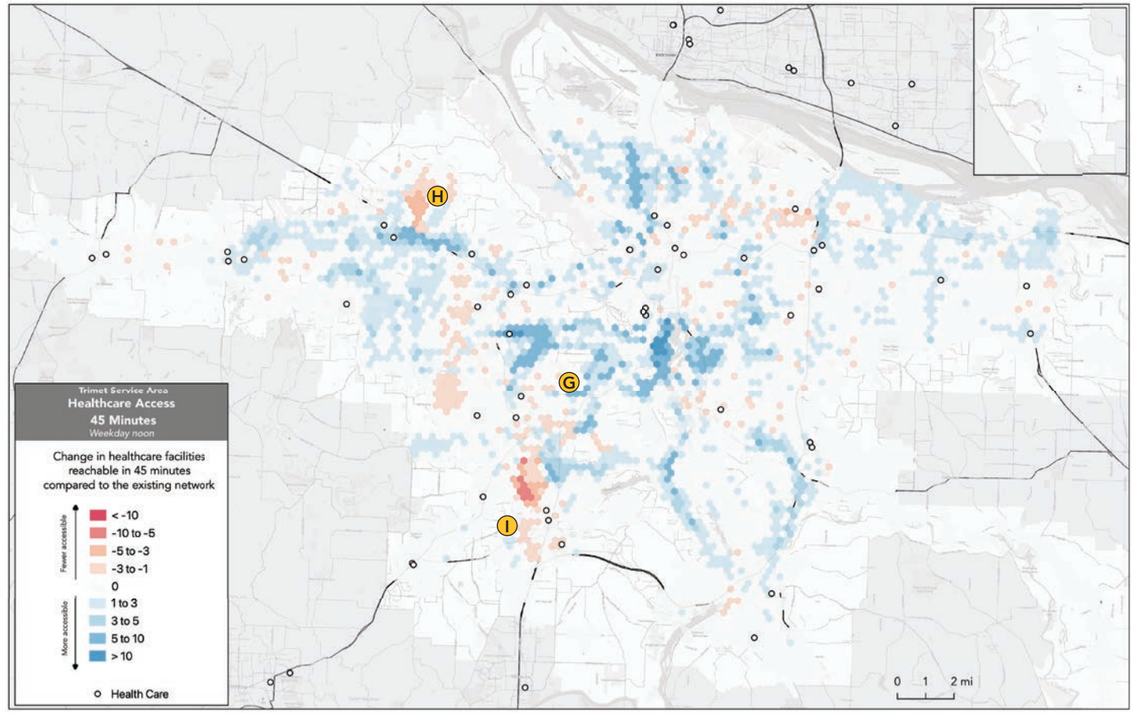


Figure 50: Access to Health Care Destinations in 45 minutes

Figure 50 shows the analysis of the change in the number of health care destinations accessible in 45 minutes. There are fewer health care destinations than grocery destinations, and most areas would only see the number reachable change by 1-3.

Health care access increases notably throughout Southwest Portland (G), due to the new all-day service to Marquam Hill via lines 43 and 56. These routes would connect with Frequent Service lines in Hillsdale and Burlingame, putting OHSU and the VA hospital within reach of many more people.

Health care access decreases the most in the same places where job and key retail access decreases - the limited number of areas where the Service Concept removes or substantially reduces service, including along Laidlaw Rd (existing Line 47) in Bethany (H) and along Hall Blvd (existing Line 76) Durham (I).

Figure 51 shows the change in the number of higher education destinations reachable in 45 minutes. Most areas would gain access to more higher education destinations. Some exceptions where fewer higher education destinations would be reachable include in Durham Ⓐ where Line 76 is moved away from the residential area, and along Line 78 Ⓑ in Lake Oswego (which would no longer serve PCC Sylvania).

Summary of Destination Access

Figure 52 summarizes the destination access analysis results for 30 minute, 45 minute and 60 minute trips. For each type of destination, this table shows the number reachable by the median resident of the TriMet service area with the existing network and the Service Concept.

With two exceptions, across all destination types, groups of people and times analyzed, the Service Concept would increase the number of destinations reachable. For example, in 45 minutes, the median resident of the service area would be able to reach about 4 more grocery stores, a 17% improvement.

The exceptions to this are the number of health care destinations reachable with short 30 minute trips, which doesn't change for any group, and the number of higher education destinations reachable with short 30 minute trips by lower-income people, which starts higher than the outcome for other residents and doesn't change.

With the Service Concept, most residents of the region would be able to reach 1-4 more grocery stores, heath care facilities, and higher education destinations by transit.

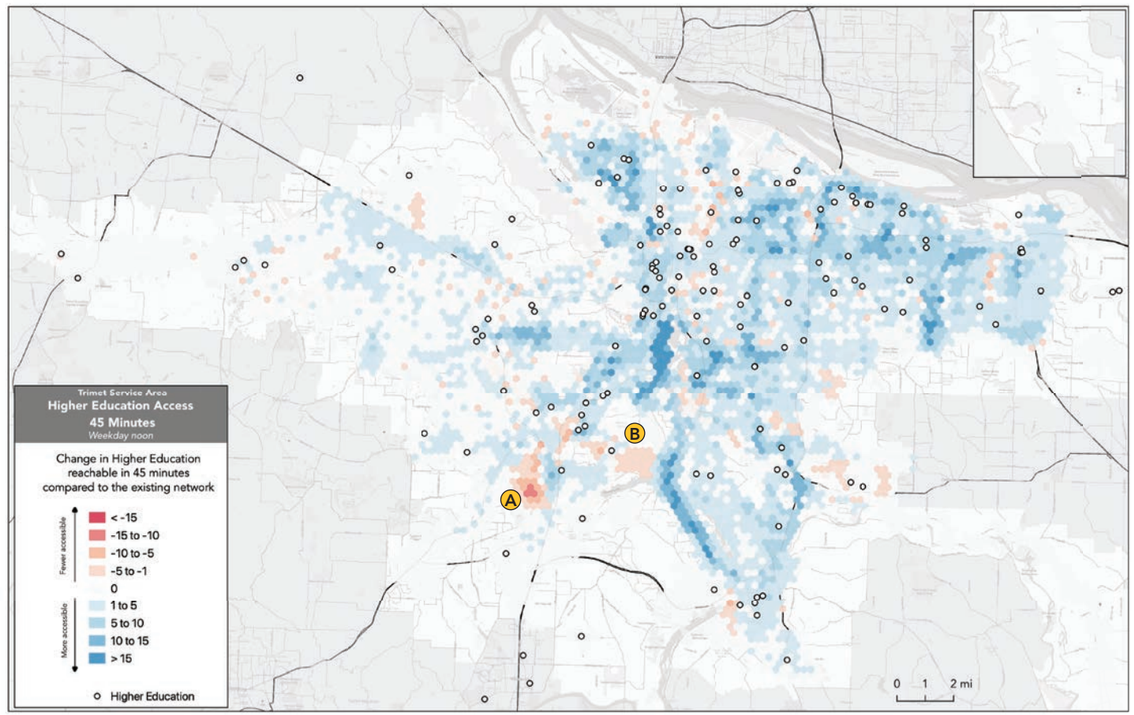


Figure 51: Access to Higher Education Destinations in 45 minutes

Destination Type	Access by	30 minutes				45 minutes				60 minutes			
		Existing	Service Concept	Change	% change	Existing	Service Concept	Change	% change	Existing	Service Concept	Change	% change
Grocery Stores	All Residents	8	9	1	13%	23	27	4	17%	45	51	6	13%
	People of Color	9	10	1	11%	24	29	5	21%	46	51	5	11%
	Lower-Income People	10	12	2	20%	29	33	4	14%	56	63	7	13%
Health Care	All Residents	1	1	0	0%	4	5	1	25%	10	12	2	20%
	People of Color	1	1	0	0%	4	5	1	25%	10	12	2	20%
	Lower-Income People	1	1	0	0%	4	5	1	25%	11	13	2	18%
Higher Education	All Residents	2	3	1	50%	8	11	3	38%	27	33	6	22%
	People of Color	2	3	1	50%	8	11	3	38%	27	32	5	19%
	Lower-Income People	3	3	0	0%	12	15	3	25%	37	44	7	19%

Figure 52: Number of Destinations Reachable by Median Service Area Resident

4 Public Engagement

The Role of Public Engagement in Forward Together

The Forward Together Service Concept is a goal-driven network plan, and these goals were identified and affirmed through two rounds of engagement with the public.

Overview of Engagement Efforts

In the first phase of public engagement in early 2022, TriMet asked members of the public to weigh in on what the agency's goals should be as it considers post-pandemic service changes. This engagement effort centered on an online survey, and also included additional outreach through community-based organizations.

The second phase of public engagement, in October 2022, asked people to respond to the Draft Service Concept. In this phase, specific information and maps about the proposed changes were shared, and TriMet requested both general and detailed feedback on the plan. Again, this outreach effort centered around an online survey, but also incorporated online and in-person open houses, outreach to community-based organizations and local government partners.

Each survey instrument used during this process, as well as cross tabulations of their results, are reproduced in the appendices of this report:

- Appendix B: Survey I Instrument
- Appendix C: Survey I Cross tabulation
- Appendix D: Survey II Instrument
- Appendix E: Survey II Cross tabulation

How was input used?

The information TriMet learned from these efforts was essential to guide the development of the Service Concept. The first phase of outreach determined the importance of the ridership and equity goals that shaped the entire plan. The second phase provided the project team with detailed feedback on the plan, and a long list of potential issues and changes that were considered to developed the final, revised plan. These efforts produced service design ideas that the team could not have developed independently, and that contributed greatly to the final product of the study.

Survey 1: shaping the goals of Forward Together

The first step in Forward Together was the development of the Transit Existing Conditions report, but existing conditions do not provide direction on what the purpose of a transit plan should be. For that, we needed to ask the public what our objectives should be as we developed a new service plan.

Survey 1 asked three key questions about future service planning:

- How much do you think TriMet should focus on ridership versus geographic coverage?
- What should be the main purpose for geographic coverage?
- What should we prioritize as we restore service that was cut during the pandemic?

These three questions address planning choices TriMet must consider as it develops new service proposals. So we asked them right at the outset before any planning work was conducted, so that the entire process would be guided by a clear sense of the priorities expressed by community members.

Survey 1 Basics

Figure 53 provides a summary of the characteristics of the respondents to the first survey. In total, 5,674 people took the first survey. The survey included a number of optional questions collecting demographic and other information, described in this table. While respondents were not required to complete these questions, most did, and they do provide a sense of who completed the survey.

Overall, about 27% of survey responders said they had been frequent riders (over the 12 months from March 2021 to March 2022). A further 46% said that they had been occasional riders during this span.

Respondents were asked to share their zip code. Most responses came from Multnomah County zip codes, (66%), while 20% came from zip codes in Clackamas or Washington counties.

The largest response group by age was people ages 35-54, who made up 42% of responses. 25% each said they were under 35 or over 55.

89% of respondents provided their gender. 50% of respondents responded "female", while 35% responded "male" and 4% responded "non-binary". 11% of total responses did not provide an answer to this question.

About 84% of respondents shared their

Respondent Group	Number	Percentage
All Responses	5674	100%
By Ridership (past 12 months)		
Frequent	1519	27%
Occasional	2604	46%
Non-Rider	1301	23%
By County		
Clackamas	355	6%
Multnomah	3747	66%
Washington	821	14%
Other	147	3%
By Age		
< 35	1428	25%
35-54	2399	42%
55+	1421	25%
By Gender		
Female	2834	50%
Male	1984	35%
Non Binary	249	4%
By Race / Ethnicity		
White	3281	58%
POC	1487	26%
By Disability		
Disability - No	3870	68%
Disability - Yes	1121	20%
By Income		
200% FPL - above	3105	55%
200% FPL - below	1391	25%

Figure 53: Survey 1 summary of respondent characteristics. NOTE: respondent group percentages do not sum to 100% because not all respondents provided an answer for all demographic questions.

race or ethnicity. 58% of respondents chose "white", while 26% selected any other race.

About 88% of respondents answered a question on their disability status. 68% of respondents reported that they did not have a disability, while 26% responded that they did.

The survey also asked respondents to share their household income. About 80% of respondents answered this question. 55% of respondents reported an income of at least 200% of the federal poverty level ($26,500 for a four-person household), while 25% reported an income at or below 200% of that level.

How much do you think TriMet should focus on ridership versus geographic coverage?

Ridership or coverage is one of the most fundamental transit planning trade-offs. The full question in the survey was stated like this:

> *When it comes to planning bus service, increasing ridership means putting service where it is needed most, while increasing geographic coverage means ensuring everyone has at least some service nearby. How much do you think TriMet should focus on ridership versus geographic coverage?*

Simply put, every operating dollar TriMet spends running more service on its busiest lines is a dollar that can't be spent running service to outlying communities at the edges of the region, or filling in gaps in the existing network. The opposite is also true; when we invest in running more service in low-demand areas that are not likely to generate a lot of ridership, those resources are not available to offer more attractive frequencies or more capacity on the busiest lines.

The results of this question are shown in **Figure 55**. Only about 9% said that TriMet's network should be 100% oriented towards ridership or coverage. The largest group (44%) came down in the middle at 50/50 ridership/coverage. 28% said that the network should be about 75/25 focused on ridership over coverage, and about 13% said that the network should be about 75/25 focused on coverage over ridership.

What should be the main purpose for geographic coverage?

While "coverage" generally means running service in places that are less likely to generate high ridership, that are many reasons why you might want to do that, and some are likely to be more important to others to some people.

This question asked respondents to rank a list of possible reasons to operate coverage service. This question was important because it gives planners a guide to which places to focus on when designing coverage service, based on the degree of importance people assign to coverage in the first question.

- Meet the needs of seniors and people with disabilities
- Equity for people with low incomes (of any race)
- Equity for historically disadvantaged racial or ethnic groups (of any income level)
- Service to newly built neighborhoods
- Service to absolutely everyone in the service area
- Other

Figure 54 shows the result of this question, expressed in terms of the percentage of survey respondents who ranked each option as their first or second priority. Among these priorities, "equity for people with low incomes (of any race)" was the top response, with over 63% of respondents ranking first or second in their list. "Meet the needs of seniors and people with disabilities" came a close second.

The next two priorities, "equity for historically

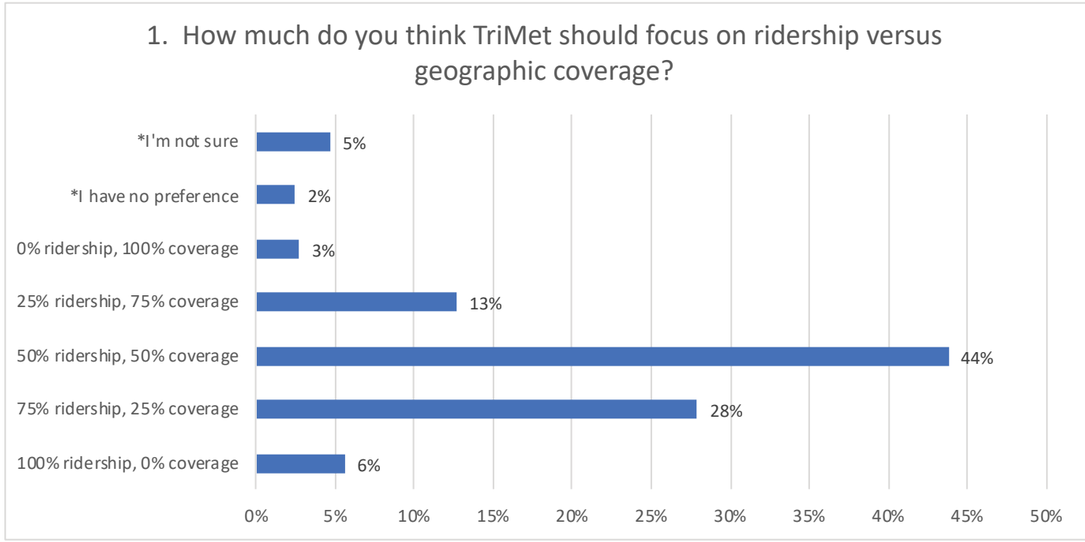


Figure 55: Survey 1: Ridership or Coverage

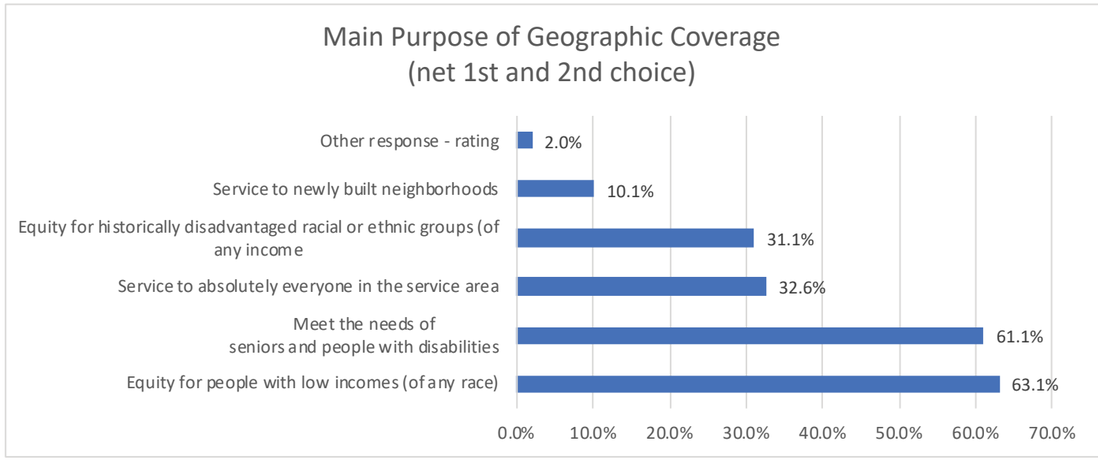


Figure 54: Survey 1: Purpose of coverage

disadvantaged racial and ethnic groups (of any income)" and "service to absolutely everyone in the service area" were ranked first or second by only about 31-33% of respondents. The bottom choice was "service to newly built neighborhoods"; only 10.1% of respondents choose that as their first or second priority.

The responses to question one underscored the importance of equity as a major goal for TriMet's service design when it comes to coverage services. Over 90% of respondents said that equity, defined in either demographic or economic terms, should be one of TriMet's top priorities for coverage. It also reinforced the importance the public places on TriMet as a mobility provider for seniors and people with disabilities.

What should we prioritize as we restore service that was cut during the pandemic?

Finally, the last question in survey 1 simply asked respondents to indicate what they thought TriMet should focus on as it brings back service. Respondents could rank the following priorities:

- Maximize ridership overall
- Reduce the growth of traffic congestion
- Improve service that especially benefits people with lower incomes
- Improve service that especially benefits historically disadvantaged racial or ethnic groups
- Improve service that especially benefits essential workers
- Improve service that especially benefits seniors and people with disabilities
- Other

Figure 56 shows the results for the third question. The top priority (based on the percent of respondents who ranked it first or second) was "maximize ridership overall", closely followed by "reduce the growth of traffic congestion". The third most common was "improve service that especially benefits people with lower incomes". All three of these options were ranked first or second by over 40% of respondents.

Key takeaways from Survey 1

The purpose of the first survey was to gain general input from the public on the overall goals that the Forward Together Service Concept should be designed to address. Based on the results described above, the following priorities were carried into the design phase of the process:

- The public's top priorities for service restoration (ridership and congestion reduction) both require the same thing: that TriMet quickly rebuild ridership lost during the pandemic. Transit's ability to reduce congestion depends on getting people out of cars and on to trains and buses. Thus, the first survey encouraged a strong ridership focus to the plan.
- The public also places a great degree of importance on equity, particularly in improving services for lower-income people. Thus, the plan should be designed to improve transit's usefulness and availability, particularly for lower-income people as well as for people of color.

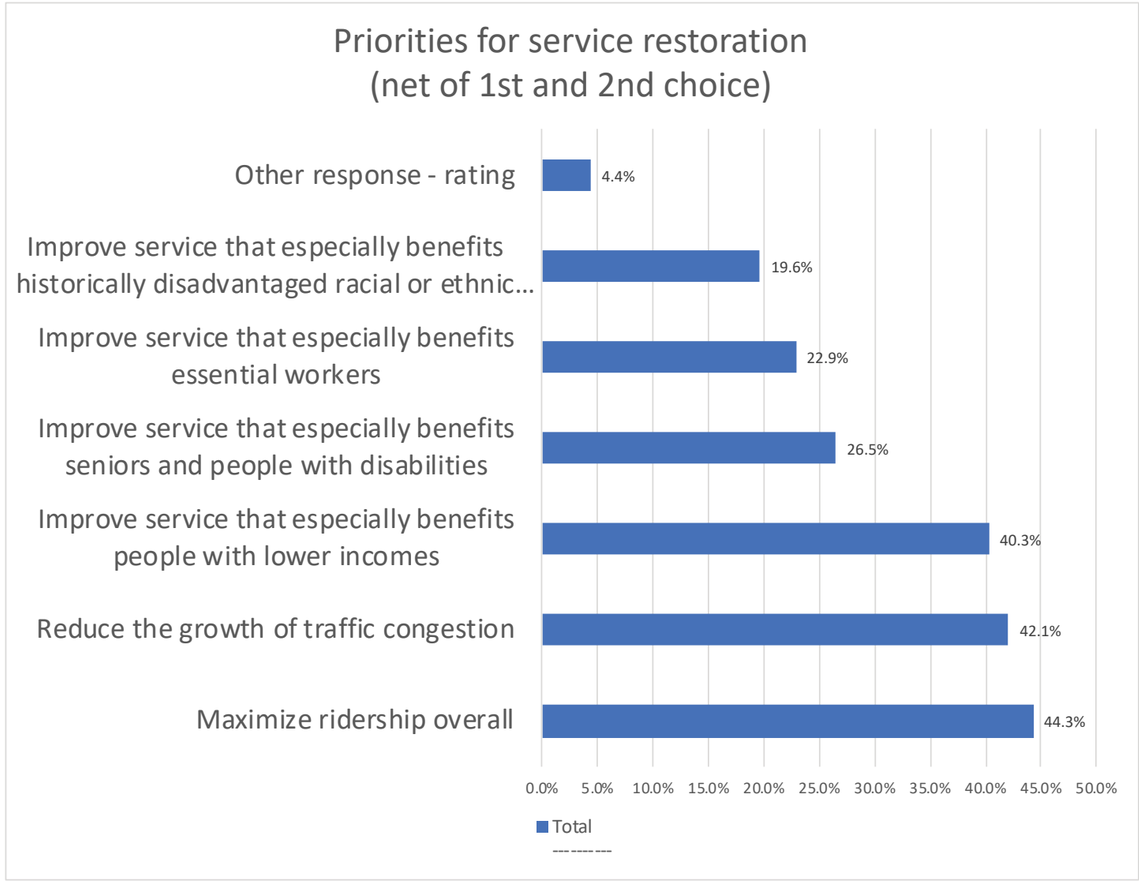


Figure 56: Survey 1: Top priorities for service restoration

Survey 2: Revising the Draft Service Concept

The second survey was conducted in October 2022. Rather than a set of general questions to guide the development of a plan as in Survey 1, Survey 2 asked people to look at the Service Concept, learn about, and share their reaction to its changes to the network.

The second survey asked two main questions about the Service Concept:

- Do you think that the service changes outlined in the Draft Service Concept over the next few years are the right way to improve TriMet's bus routes?
  - o Do you have any comments?
- The Draft Service Concept would reduce bus service in some low ridership, higher-income areas in order to expand service in under served communities. Looking at the map on trimet.org, did we do this too much, about right, or not enough?
- Would you like to provide feedback about changes that are being considered on specific bus routes? You can comment on up to five routes.
  - o For that bus route, how well does the proposed suggestion meet your needs?
  - o Why did you give that rating?

The first question is a general reaction to the entire plan; the second question enabled respondents to identify specific elements of the plan they wanted to share feedback about.

Respondent Group	Number	Pct of total
All Complete Responses	5493	100%
By Ridership (past 12 months)		
Frequent Rider (I ride almost every day)	1444	31%
Regular Rider (I ride several times a week)	1168	25%
Occasional Rider (I ride several times a month)	1067	23%
Infrequent Rider (I ride less than one a month)	652	14%
Non-Rider (I don't ride TriMet)	184	4%

Figure 57: Survey 2 summary of respondent characteristics. NOTE: respondent group percentages do not sum to 100% because not all respondents provided an answer for all demographic questions.

Respondent Group	Number	Pct of total
All Complete Responses	5493	100%
From IP addresses with over 100 responses	952	21%
Open ended comment mentioned 17, 38, 39 or 60s	1750	38%
From all other IPs	1131	25%
From 4 high volume IPs	619	13%
Mentioned 17, 38, 39, 60s OR originated from high-volume IP	2080	45%

Figure 58: Survey 2 - high-volume line and IP groups

Survey 2 Basics

The second survey was designed to be much quicker for respondents to complete, given that they were asked to respond to a complex network plan, rather than sharing answers to general questions about TriMet's overall goals and objectives. The second survey did not include an extensive demographic questionnaire like survey 1.

In total, 5493 people completed the survey (meaning that they provided answers to the questions about the Service Concept). The only other information the survey collected was about frequent of ridership, shown in **Figure 57** above. The largest group (31%) of respondents were frequent riders; only 4% of respondents said they were non-riders, and 79% said there rode at least a few times per month.

While TriMet received over 4,500 responses to survey 2, there were a few important trends in those responses. Most importantly, about 38% of responses included responses to the route question focused on just a few lines:

- 17-Broadway/Holgate.
- 38-Boones Ferry Rd.
- 39-Lewis & Clark.
- The 60s Marquam Hill expresses.

In the Draft Service Concept, all of these routes saw substantial changes from their existing design, so it is natural that people with a particular interest in them would want to comment.

We also found that 21% of responses originated from just 4 IP addresses, located within two institutions: Lewis & Clark College and OHSU. These responses' route comments also tended to focus heavily on lines 17, 38, 39 and the 60s.

Figure 58 summarizes these trends in the responses. All in all, about 45% of responses fell within one or both of these response groups: people who commented about the four routes mentioned above, or responses originating from the four high-volume IP addresses. These responses skewed heavily negative in their responses to both the entire plan and specific route changes. Other responses were more favorable to the Service Concept as a whole.

During Forward Together, TriMet recieved over 10,000 responses to the two surveys about the project.

Do you think the Service Concept is the right way to improve TriMet's bus routes?

The first question asked people for their general opinion on the Draft Service Concept. It was presented like this in the survey;

> *Do you think that the service changes outlined in the Draft Service Concept over the next few years are the right way to improve TriMet's bus routes?*

Across all respondents, about 51% disagreed or strongly disagreed that the Service Concept is the right way to improve service. About 31% agreed, as shown in **Figure 59**. While the raw results shown here skew negative towards the Service Concept, if we look more closely at the detailed input respondents share, we can identify several good reasons not to take this an indication that people or TriMet riders in general disagree with the question.

As mentioned on the last page, four lines received the most feedback: 17, 38, 39 and the 60s. Across the entire survey, apart from Line 17, lines that received many comments tended to be lines that few people actually ride. **Figure 61** plots the number of comments each route received on the x-axis, and the number of weekday riders that route had in Spring 2022 on the y-axis. Lines 38 and 39, with just a 100-200 riders per day, received over 500 comments each. But many of TriMet's busiest routes received few comments Line 72, TriMet's busiest bus line, received fewer than 50 comments, as did other key lines like 9, 20, and 75.

There is a distinct contrast in the reactions to the Service Concept from the 46% who mentioned one of those four lines, or commented from a Lewis & Clark or OHSU IP address. **Figure 60** compares the responses to question one between these two groups, with the 54% who didn't mention those lines or originate from the high-volume IPs at the top. These responses are more favorable: about 46% agreed or strongly disagreed that the Service Concept is the right way to improve

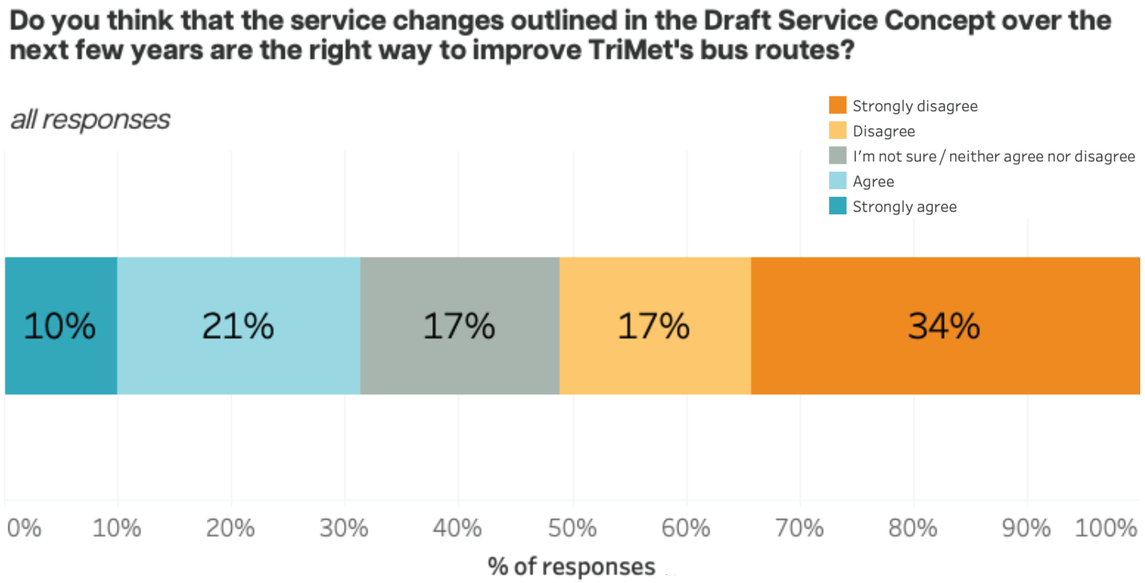
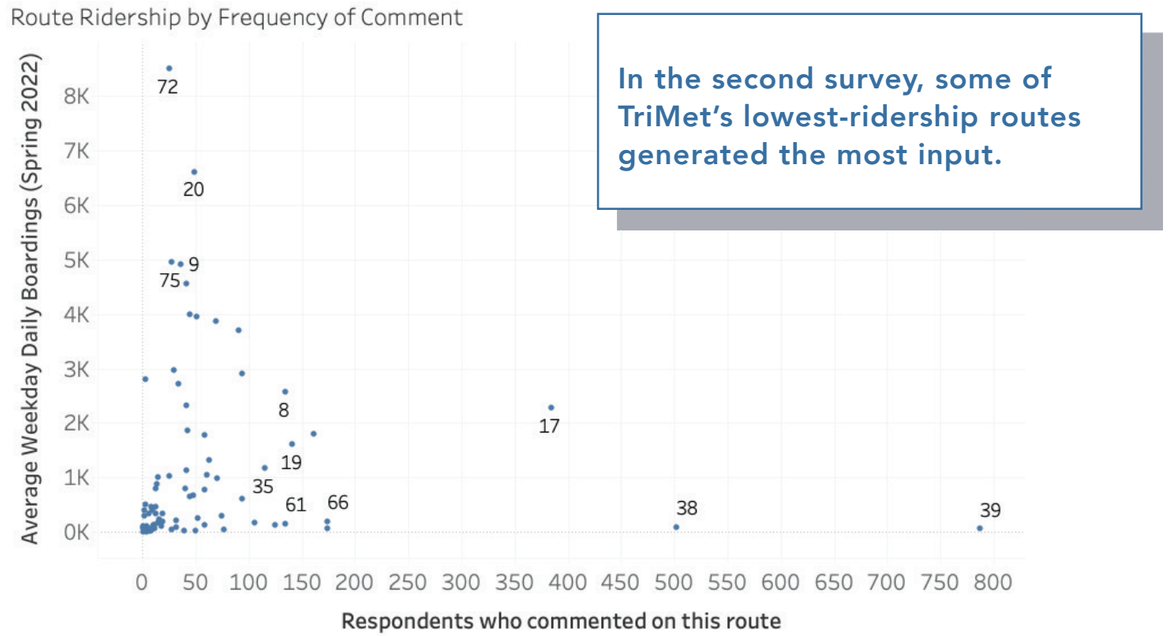


Figure 59: Survey 2: Do you think that the service changes outlined in the Draft Service Concept over the next few years are the right way to improve TriMet's bus routes?



In the second survey, some of TriMet's lowest-ridership routes generated the most input.

Figure 61: Survey 2: Number of route comments by number of weekday riders

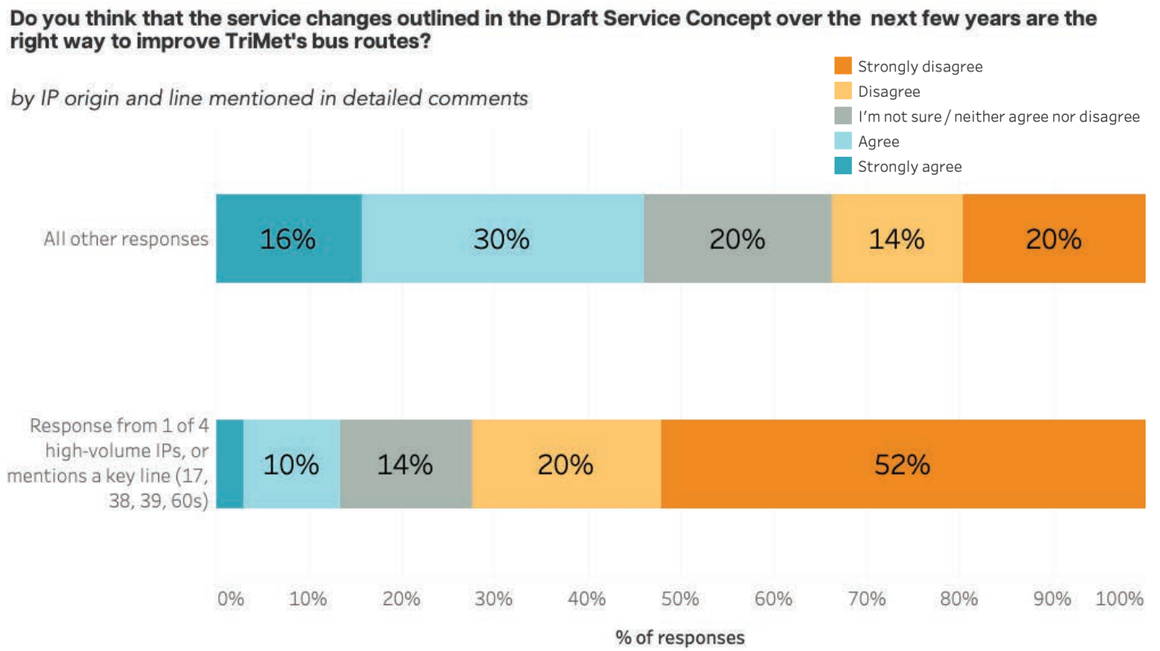


Figure 60: Survey 2: Do you think that the service changes outlined in the Draft Service Concept over the next few years are the right way to improve TriMet's bus routes? -- by IP origin or route comment

TriMet's service, compared to about 34% who disagreed or strongly disagreed.

What does this mean for how we interpret survey 2? First, there are issues that have been raised about lines 38, 39, 17 and the 60s that the revision of the Draft Concept had to address. As the bigger question about the entirety of the Service Concept, it is important to keep in mind that 46% of our survey respondents came from within institutions or focused on low-ridership routes primarily serving some of the most affluent parts of Portland. The goal framework of the Service Concept is about putting service into busier places and areas of equity concern, based on what most respondents to survey 1 told us TriMet's priorities should be going forward. Few people who took our survey mentioned important improvements like new service in busy places or areas of equity concern, like 148th Ave. in East Portland, or new Frequent Service on Cornell Rd. or 82nd Dr, but these are still critical services for achieving the plan's overall goals.

Reduction of service in low-ridership, higher-income areas - too much, too little, or about right?

The second general question about the Service Concept asked respondents to share their view of one of the most important changes from the Existing Network - the amount of service in low-ridership, higher-income communities. This question was presented like this in the survey:

> *The Draft Service Concept would reduce bus service in some low-ridership, higher-income areas in order to expand service in underserved communities. Looking at the map on trimet.org, did we do this too much, too little, or about right?*

The Draft Service Concept showed some notable reductions of service in these areas, particularly in Irvington and Southwest Portland where all or parts of lines 17, 38 and 39 were removed.

As **Figure 62** shows, a majority of survey respondents said that we reduced service to these areas too much in the Draft Concept. About 54% of respondents said "too much" while about 28% said the Draft Concept looked about right, or should reduce service even further.

The same trend discussed on the last page was present among responses to the second question. Respondents whose submissions originated from one of four high-volume IP addresses inside OHSU or Lewis & Clark College, or whose open-ended responses mentioned lines 17, 38, 39, or the 60-series express, where much more likely to respond "too much" to this question.

Lines 17, 38, 39, and the 60s are exactly the services this question was focusing on. Each of the segments of these routes that were removed in the Draft Concept carry relatively few riders, serve very affluent areas, or both.

Figure 63 compares the responses we recieved from people who mentioned these routes or submitted from these IP addresses to the rest of the survey population. Among other respondents, opinion was more split. About 42% said the Draft Concept looked "about right" or didn't reduce service enough from these areas, while about 38% said it reduced service too much. By contrast, over 73% of respondents from the other group said Draft Concept reduced service in these areas too much.

The revision of the Draft Concept directly addressed the results of this question. Some of its most notable changes involved adding more service along Terwilliger and Taylor's Ferry Rd in Southwest Portland, replacing the current pattern of limited peak-only lines with a new all-day branch of Frequent Service Line 35.

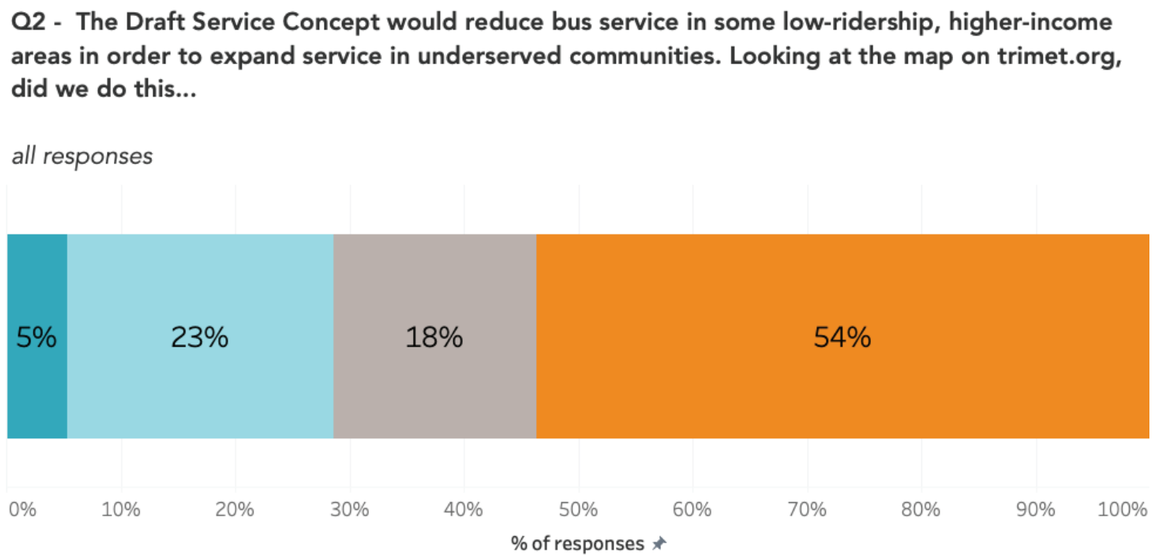


Figure 62: Survey 2: The Draft Service Concept would reduce bus service in some low-ridership, higher-income areas in order to expand service in underserved communities. Did we do this too much, too little, or about right?

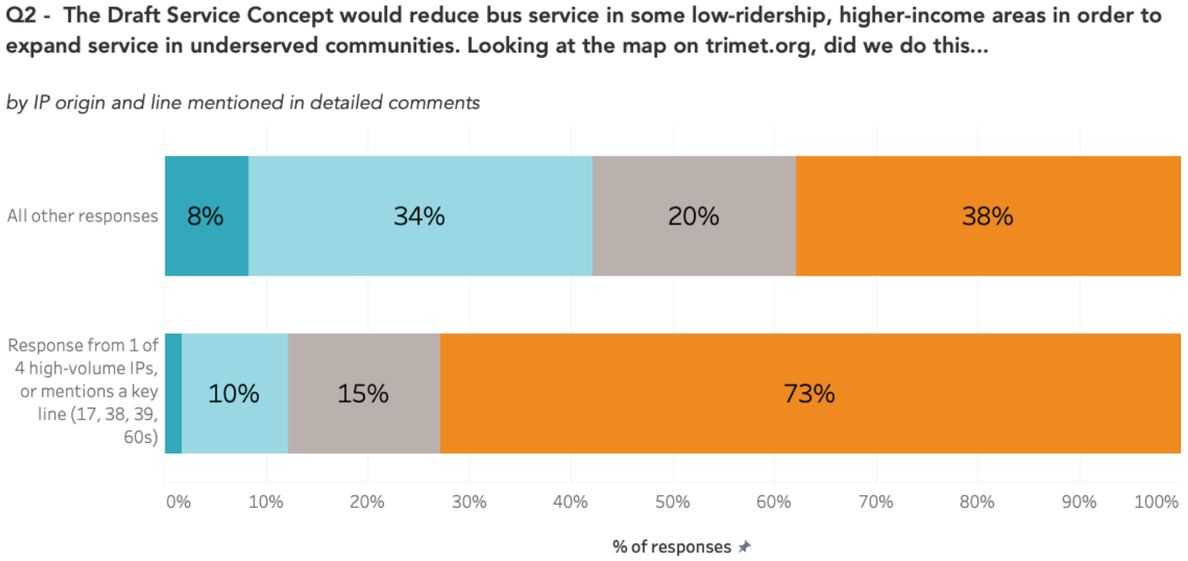


Figure 63: Survey 2: The Draft Service Concept would reduce bus service in some low-ridership, higher-income areas in order to expand service in underserved communities. Did we do this too much, too little, or about right? -- by IP origin or route comment

Route Comments

The survey also included the option to submit detailed comments on up to five routes. This part of the survey allowed respondents to select a route, rate the proposed suggestion for that route on a scale from "very poorly" to "very well", and provide an open-ended question.

Figure 64 shows the most commonly commented-on routes that garnered 50 or more comments. As previously mentioned, lines 17, 38, 39 and the 60s series were among the most frequently mentioned; feedback on these routes was predominately negative, and the revised Service Concept made several important changes to address the substance of these concerns.

Some of the other top routes in detailed comments included:

- Line 46-North Hillsboro; these were predominately focused on retaining service to Brookwood Library in Hillsboro.
- Line 70-NE 12th/NE 33rd Ave; these comments mostly focused on the Draft Service Concept's proposed changes to Line 70, with some of the most common concerns relating to pedestrian safety near Cleveland High School; whether Line 70 should use 13th or 17th Ave. in Sellwood; and generally about the longer and more circuitous routing between Sellwood and the Central Eastside in the draft Concept. The revised Concept made several important revisions to the Line 70 design based on these comments.
- Line 19-Woodstock/Glisan; these comments were split between positive comments related to more frequent service along Woodstock (provided by Line 4 in the Concept) or additional service from downtown to Sellwood along Tacoma (provided by Line 19 in the draft concept, but renumbered as Line 7 in the revision), and negative comments mainly focused on the elimination of the Eastmoreland deviation of Line 19.
- Line 8-Jackson Park/NE 15th; many of these comments related to broader concerns with the proposed design for Marquam Hill service, with a number of comments focused on the risk of capacity issues on Line 8 with the removal to the 60s expresses as suggested in the draft Concept.
- Line 35-Macadam/Greeley; comments on Line 35 were mainly positive reactions to the proposed upgrade of the line to Frequent Service.
- Line 77-Broadway/Halsey; comments on Line 77 were mainly positive reactions to the proposed upgrade of the line to Frequent Service.

We made changes to the Service Concept based on many of the comments and suggestions we received during the second outreach period. Multiple members of the project team reviewed all detailed open-ended comments, and suggestions from these comments were directly incorporated into the revised network design.

Q4,6,8,10,12 - For that bus route, how well does the proposed suggestion meet your needs?

rout..	RouteQ ID	Grand Total	Very poorly	Somewhat poorly	I'm not sure	Neither well nor poorly	Somewhat well	Very well
39	39-Lewis & Clark	783	695	24	6	2	17	39
38	38-Boones Ferry Rd	499	450	12	3	4	7	23
17	17-Holgate/Broadway	384	280	31	3	7	30	33
66	66-Marquam Hill/Hollywo..	173	133	16	2	3	5	14
46	46-North Hillsboro	171	135	15	2	5	5	9
70	70-12th/NE 33rd Ave	161	76	17	3	10	16	39
19	19-Woodstock/Glisan	139	41	17	9	6	17	49
8	8-Jackson Park/NE 15th	134	54	22	7	24	11	16
61	61-Marquam Hill/Beavert..	134	98	8	4	5	10	9
64	64-Marquam Hill/Tigard	125	98	11	6	2	4	4
35	35-Macadam/Greeley	113	18	11	1	10	30	43
68	68-Marquam Hill/Collins C..	104	79	10		4	3	8
77	77-Broadway/Halsey	94	8	8	3	3	14	58
47	47-Main/Evergreen	93	69	12	2	3	3	4
4	4-Fessenden	90	12	10	4	7	19	38
FX2	FX2-Division	79	19	14		10	10	26
43	43-Taylors Ferry Rd	77	40	9	7	2	6	13
96	96-Tualatin/I-5	73	59	4	1	2		7
94	94-Pacific Hwy/Sherwood	70	42	9		7	3	9
15	15-Belmont/NW 23rd	68	9	8	3	14	10	24
44	44-Capitol Hwy/Mocks Cr..	63	21	15	3	10	5	9
48	48-Cornell	60	15	7	2	3	9	24
71	71-60th Ave	58	12	5	1	5	5	30
56	56-Scholls Ferry Rd	58	12	4	4	3	11	24
1	1-Vermont	55	40	6	2	1	2	4
99	99-Macadam/McLoughlin	52	34	6	2	4	1	5
65	65-Marquam Hill/Barbur ..	50	41	4	1		2	2
6	6-Martin Luther King Jr Bl..	50	18	8	3	9	5	7

Figure 64: Survey 2: Route detailed comments by rating (routes recieving 50 or more comments).

Key Takeaways from Survey 2

Based on the second survey, we made a range of adjustments to the Service Concept designed to address the issues respondents mentioned most frequently. On the three routes with the most comments (17, 38 or 39), we restored part of them, or made other compensating improvements. We also made a variety of smaller adjustments in response to comments.

We did not change the basic structure of the plan from the Draft Service Concept. The new Frequent Service lines, improved weekend service, and expanded service to areas with more people experiencing lower incomes were all relatively unchanged from Draft to Revised Service Concept. Similarly, the Revised Concept kept the reduction in peak service compared to today, and while some service in Southwest Portland was restored, on balance there is still less coverage of low-demand, more affluent areas.

Figure 65 provides a summary of the changes made to the Draft Service Concept (which are reflected in the revised version described throughout this document).

Additionally, the Service Concept Summary by Area presented in Appendix A of this report provides a detailed description of the changes made in each area in the Revised Service Concept in response to input received in the second survey.

After the close of the second survey, the project team made numerous changes to the Service Concept based both on the general response to the plan, as well as specific route comments.

Draft Line	Description of Change
10-Harold	Reroute; would now serve Harold & 72nd Ave., not 52nd Ave. & Duke.
17-Holgate / Broadway	Alignment updated. Would now serve NE 33rd Ave.; new eastern turnaround via 136th, Harold, 122nd in SE Portland.
19 - Glisan / Johnson Creek	Inner / outer Glisan service combined with Line 58 - Canyon Rd. as single **Line 19 - Glisan / Canyon Rd.**
25 - Glisan / Rockwood	
22 - Parkrose	Line 22 and 23 combined into new **Line 22-Parkrose** serving Parkrose TC, Parkrose neighborhoods, Gateway TC.
23 - San Rafeal	
31 - Webster Rd.	Alignment updated to stay on Linn in Oregon City.
35 - Madacam	Alignment updated to serve SW Portland and Lewis & Clark College; between Lake Oswego and Johns Landing, service would split with every other bus traveling via a) Terwilliger and Taylors Ferry or b) Riverside Dr.
1 - Vermont	Renumbered **Line 42-Vermont**; Vermont loop discontinued. All-day service added.
44 - Capitol Hwy / Mocks Crest	New branch between PCC Sylvania and Tigard TC.
45 - Garden Home	Garden Home service reduced to school trips only (all-day service now provided by 42-Vermont).
58 - Canyon Rd.	Line 58 now combined with Line 19 and 25 as new **Line 19-Glisan / Canyon Rd.**
67 - Bethany / 158th	Alignment updated; would now use Hart & Lombard to approach Beaverton TC.
70 - 12th / NE 33rd Ave.	In SE Portland, routing updated to operate via 17th, Milwaukie, Powell, 21st, Ladd. In NE Portland, would no longer serve NE 33rd (now served by Line 17).
78 - Denney / Kerr	Alignment updated to use Denny & Lombard to approach Beaverton TC.
80 - Kane / Troutdale	Alignment updated to offer continuous service along 257th.
85 - Swan Island	Line 85 now combined with Line 7 as new **7-Tacoma / Swan Island.**
113 - Cornelius Pass	Terminus locations updated to allow for continuos loop service.
115 - Century	
150 - Mt. Scott	Alignment updated; would now serve SE 172nd to terminate at Highland Dr Wal-Mart as new **Line 150- Oatfield / 172nd.**
155 - Sunnyside	Would now terminate at 172nd & Sunnyside similar to existing Line 155.
190 - Columbia	Alignment updated; would now terminate in downtown St. Johns.

Figure 65: Summary of modifications made to Draft Service Concept

Appendix A: Summary by Area

The Forward Together Service Concept includes changes all over the network, including new Frequent Service bus lines, new routes serving new areas, and changes to current patterns of service. To navigate the Service Concept, we have created a guide by area that describes the changes in each part of the network, and the goal each change is meant to achieve.

Read the entire document to understand the changes throughout the full network, or use the table of contents on the right to navigate to the page containing the area you are most interested in learning more about.

About the maps

To explain the Service Concept, we have created a version of TriMet's system map showing the concept's routes. It is very important to pay attention to the colors used on this map (shown on the right), especially the dark blue lines with green badges that represent the network of Frequent Service bus lines.

We have added highlights to help show the changes in the Service Concept. Pink highlights show existing service that would be removed; blue highlights show service on new segments that aren't served today; and yellow highlights show new Frequent Service lines running every 15 minutes.

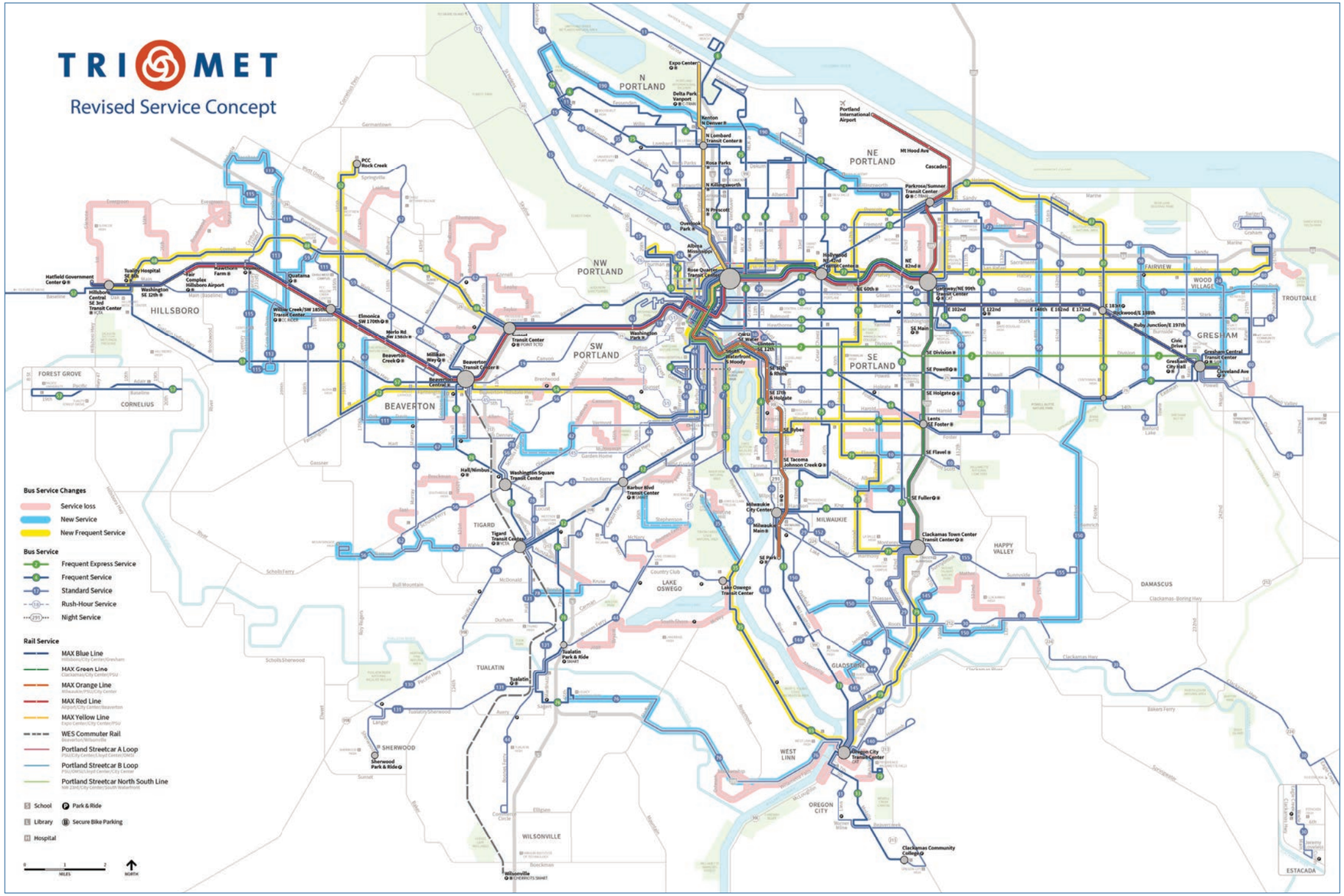


Figure 66: TriMet Service Concept Map

Bus Service Changes
Service loss
New Service
New Frequent Service

Bus Service
Frequent Express Service
Frequent Service
Standard Service
Rush-Hour Service
Night Service

North Portland

We want to improve connections between North Portland and Northwest Portland, so we're suggesting extending Line 15-NW 23rd Avenue, every 30 minutes, out St. Helens Road to St. Johns. For a trip into downtown the result is a longer ride than the current Line 16, but a shorter wait and service over longer hours. Line 16 – Front Avenue would no longer extend to St. Johns.

We know people need access to the many industrial and logistics jobs along Columbia Blvd, so we're proposing new Line 190-Columbia Blvd. The line would follow Columbia Blvd. all the way from St. Johns to NE 60th Avenue. In Kenton it would make a quick deviation into Argyle St. to serve the Kenton MAX station on the Yellow Line. East of 60th Avenue, the line shifts to Lombard, then continues through the Cully district along Killingsworth to end at Parkrose MAX station, where it makes connections to make routes serving East Portland.

All other North Portland service is unchanged.

In the Revised Service Concept, the only changes in this area were the extension of Line 190 to terminate in downtown St. Johns, rather than in Pier Park, and the renumbering of Line 85-Swan Island as Line 7, continuing south to Macadam and Tacoma.

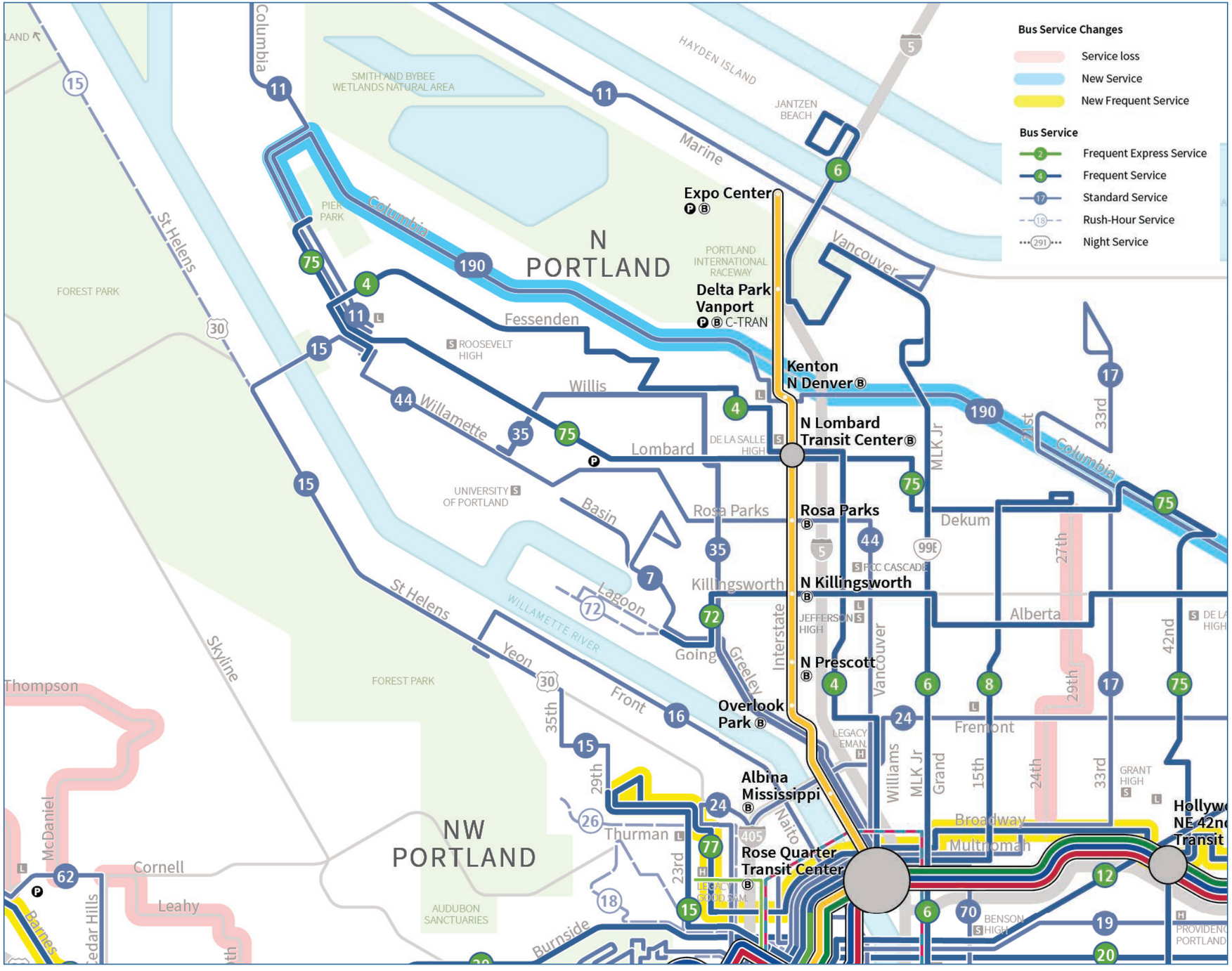


Figure 67: **Forward Together Revised Service Concept** - North Portland

Northwest Portland

We want to improve connections between North Portland and Northwest Portland, so we're suggesting **extending Line 15-Belmont/NW 23rd** out St. Helens Road to St. Johns, every 30 minutes. For a trip into downtown from St. Johns the result is a longer ride than the current Line 16, but a shorter wait and service over more hours of the day, plus direct access to the many destinations served by Line 15 in Northwest Portland. Line 16-Front Avenue would no longer extend to St. Johns, but would end at Kittredge St. & St. Helens Road. Sauvie Island would be served by occasional trips of Line 15 focused on school bell times for Lincoln HS.

Another big improvement for Northwest Portland is **Frequent Network service on Line 77-Broadway/Halsey**, which covers Everett and Glisan Streets and NW 21st Avenue.

Two lines with very low ridership are **Line 18-Hillside**, which serves the Kings Heights neighborhood, and **Line 26-Thurman**, which exists to serve Willamette Heights. Most riders on these routes are traveling to Lincoln High School at the school bell times, so these lines would be reduced to operate only at those times.

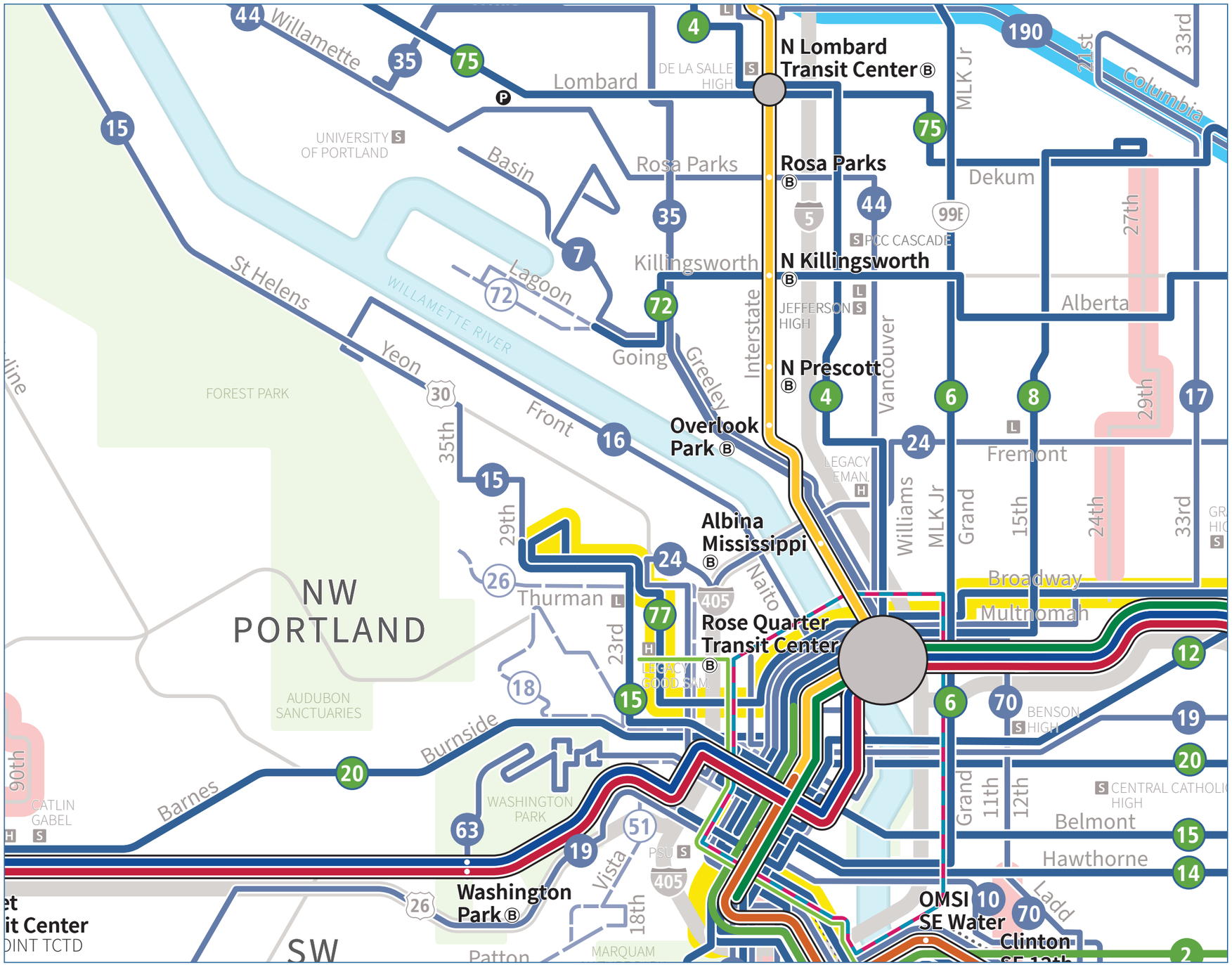


Figure 68: **Forward Together Revised Service Concept** - Northwest Portland

Inner Northeast Portland (West of 42nd Avenue)

NE Broadway-Weidler is a busy segment with a lot of new dense housing. We want to **increase Line 77-Broadway/Halsey to Frequent Service**, every 15 minutes, along its full length.

In the Draft Service Concept, another big change in this area was that we suggested removing Line 17-Holgate/Broadway north of downtown.

While we heard positive reactions to enhanced frequency on Line 77, many people who took our survey expressed concern about the loss of direct downtown service from this area. In the Revised Service Concept, we have **redesigned Line 17 to serve northeast 33rd**, replacing the current Line 70 (which would now terminate at Rose Quarter TC.

Service along Broadway and Weidler would get better. When we increase Line 77 to Frequent Service, it would provide service every 15 minutes, a shorter maximum wait than the 17 and 77 are providing now. The new Broadway-Weidler frequent service would also stay frequent all the way east to Hollywood and beyond.

Finally, Fremont St. would have faster access to the airport and Airport Way jobs if we change the route to go to Parkrose instead of Gateway, as we suggest.

Figure 69: **Forward Together Revised Service Concept** - Inner Northeast Portland

Revision: NE 33rd Ave. Service

During our October 2022 outreach period, we heard concerns from many people about our suggested changes to service along NE 24th, 27th and 28th Ave. In the Draft, we suggested removing Line 17 service from these very low-ridership areas, most of which are either in very affluent neighborhoods like Irvington and Grant Park, or within a short walk to service on NE 33rd. Many comments raised the issue that the Line 70 crosstown service on NE 33rd was less useful that Line 17 because it doesn't travel downtown.

In the Revised Service Concept, we have updated the network in this area. Now, Line 17 would serve NE Portland via NE 33rd, taking over this segment from Line 70. This would provide a direct service to downtown Portland running every 20 minutes, continuing SE Holgate.

Line 70 would be redesigned as well. With NE 33rd served by Line 17, Line 70 would now travel west from Lloyd Center to terminate at Rose Quarter TC.

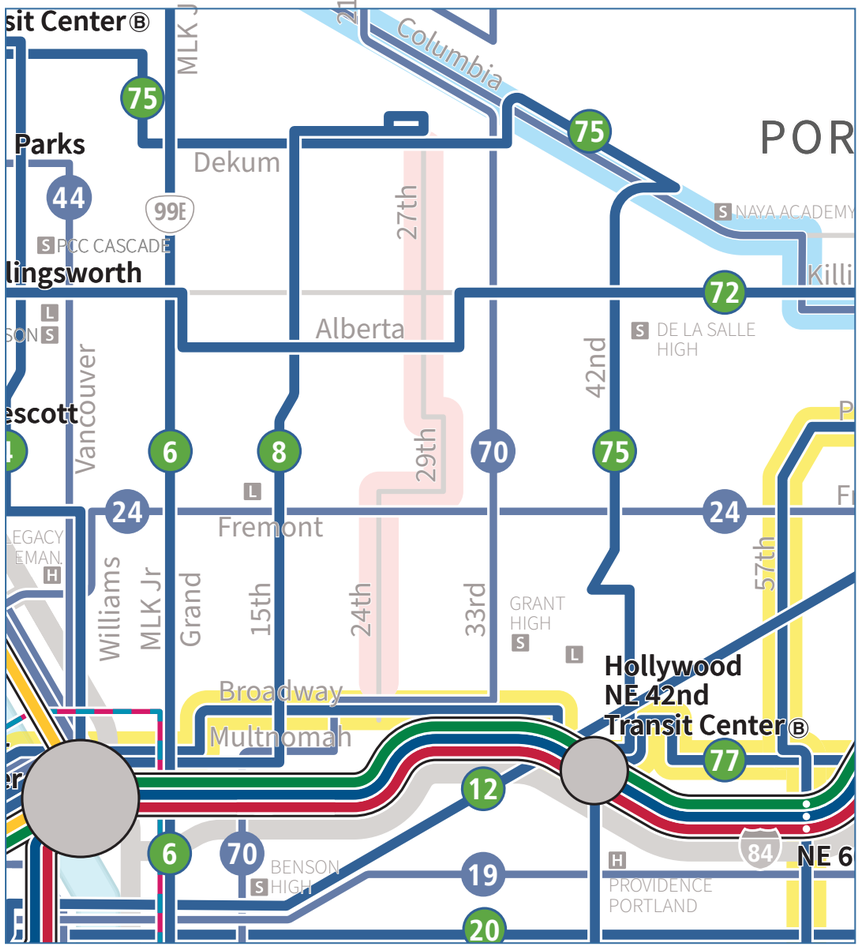


Figure 71: **Forward Together Draft Service Concept** - NE 33rd Ave

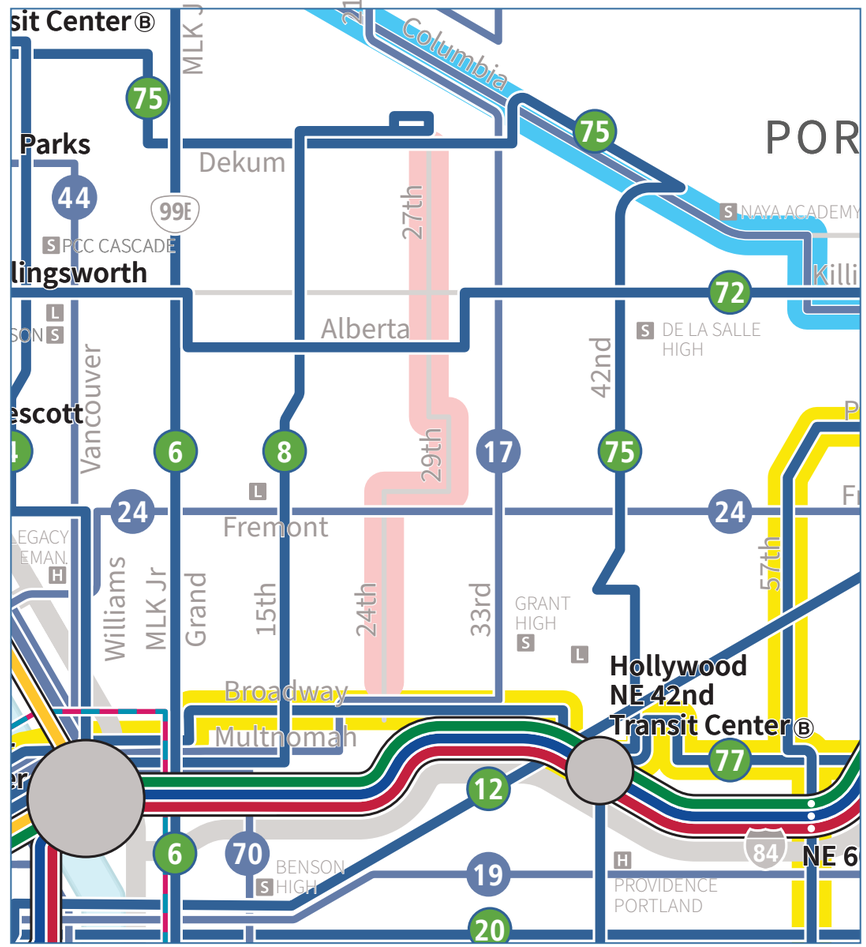


Figure 70: **Forward Together Revised Service Concept** - NE 33rd Ave

Mid-Northeast Portland (42nd Ave. to I-205)

We have heard many concerns from the Cully neighborhood, which has extensive low-income housing, about needing better access to jobs and opportunity. We also see many other opportunities to grow ridership in this part of NE Portland.

First of all, we want to bring more Frequent Service to this area. **Line 71-60th Avenue would be upgraded to Frequent Service**, providing better service southward out of this area.

New Line 190-Columbia Blvd. would provide new access to industrial jobs the whole length of Columbia Blvd, direct from the Cully neighborhood and Parkrose Station.

Finally **Line 24-Fremont** would be revised to go to Parkrose instead of Gateway, and then would continue as the Sandy Blvd. line all the way to Gresham. This removes service from the low-demand 92nd Avenue segment on the west side of Rocky Butte. It speeds up trips for people along Fremont going to the Airport and to all the jobs along Airport Way, although it makes trips longer if you're going to a destination near Gateway or Mall 205 (since these would now require a transfer to the MAX Red Line or Frequent Service Line 87 at Parkrose).

No major changes have been made to service in this area in the Revised Service Concept compared to the Draft Concept.

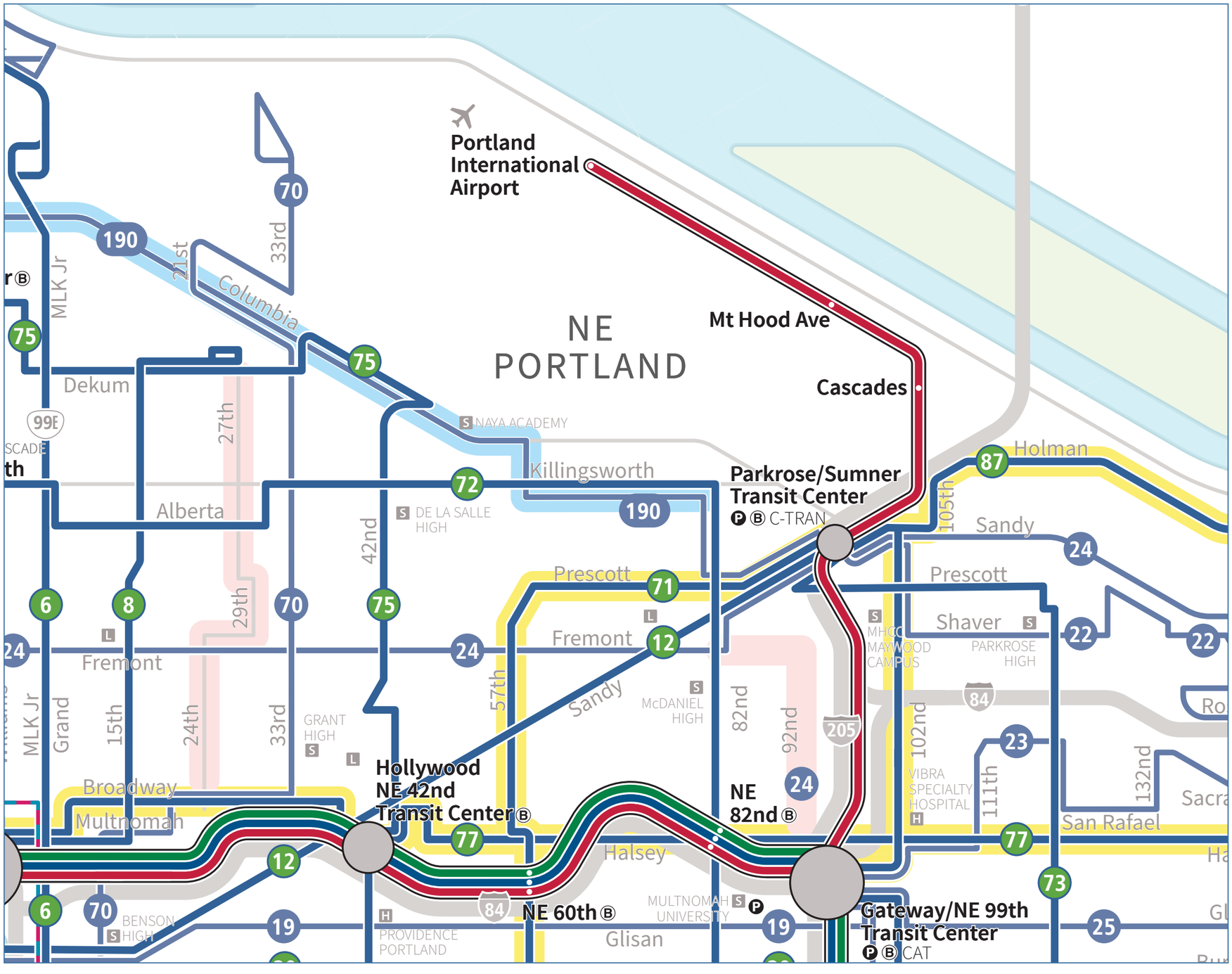


Figure 72: **Forward Together Revised Service Concept** - Mid Northeast Portland

Big Move: Better Connections through Parkrose

A major issue we're trying to address is that the lines in the Parkrose area don't connect to each other very well. This makes it hard for many people in NE Portland west of I-205 to get to the Airport and the many jobs along Airport Way, which are a growing transit market for us. It also makes it hard for people in the northern part of East Portland to reach the many destinations in NE Portland west of I-205.

That's why the Service Concept shows a major new focus on Parkrose: In addition to the lines that go there now, we're proposing to make three big moves:

- **Line 24-Fremont** would revised to go to Parkrose instead of Gateway. This route would continue as the current Line 21-Sandy Blvd/223rd, for a new continuous east-west route crossing all of NE Portland.
- **Line 87-Airport Way/181nd Ave.** This line covering Airport way east of I-205 now misses Parkrose Station by a few blocks, failing to connect to Lines 12-Barbur/Sandy and 71-60th Avenue. Airport Way is a major employment area that needs much better access, so we are increasing it to Frequent Service and revising it so that it serves both Parkrose and Gateway. This also puts Frequent Service along NE 102nd Ave. for the first time.
- **New Line 190-Columbia Blvd**. would also run the full length of Columbia Blvd, ending at Parkrose.

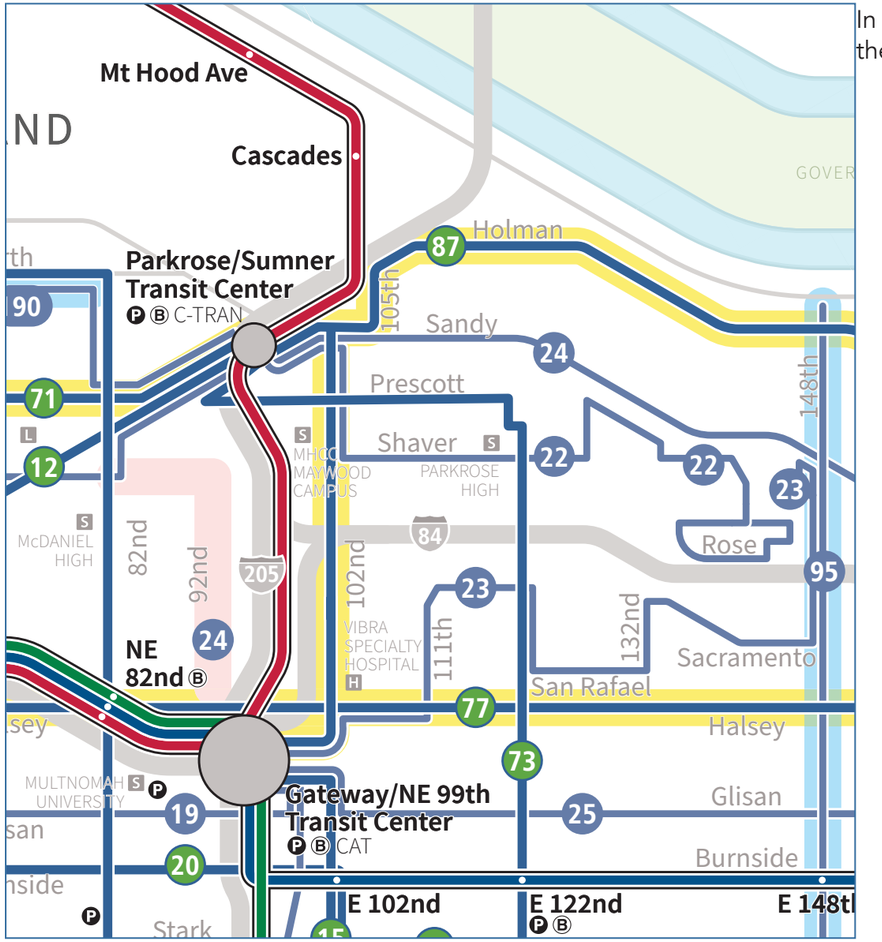


Figure 74: **Forward Together Draft Service Concept** - NE 33rd Ave

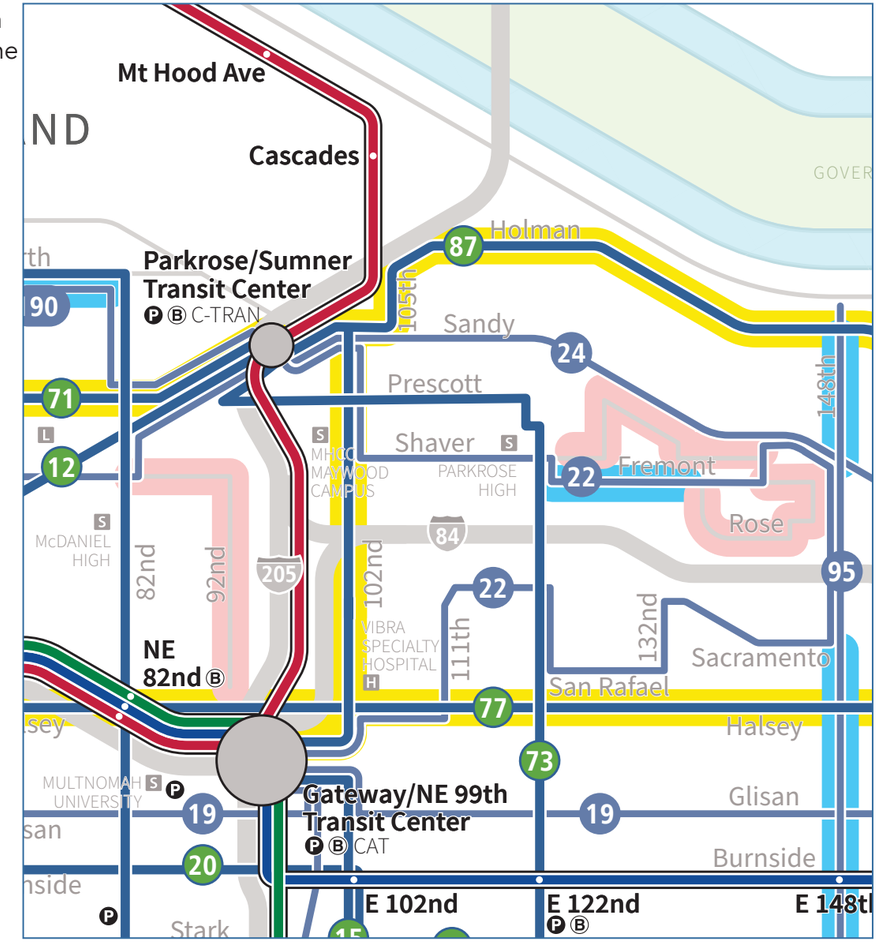


Figure 73: **Forward Together Revised Service Concept** - NE 33rd Ave

Revision: Parkrose Service

During our engagement on the Draft Service Concept, some respondents shared concerns about the loss of access to Gateway TC from some parts of Parkrose that have a direct connection today. In the Draft Service Concept, **Line 23-San Rafael** was shown serving Parkrose south of I-84, between Gateway TC and SE 148th & Sandy. **Line 22-Parkrose** was shown serving the north side of Parkrose along Shaver.

In the Revised Service Concept, so we have combined the service currently provided by Line 22 and 23 into a single **Line 22-Parkrose** so that all parts of Parkrose are connected to both Parkrose TC and Gateway TC, as well as the shops and other destinations in the larger Gateway area.

East Portland

The Service Concept makes a big investment in historically under served East Portland, an area of rapid growth and large concentrations of low-income and minority residents. Since the beginning of the pandemic, ridership on many bus lines service East Portland has fallen less and recovered faster than services in many other areas.

East Portland has long had strong east-west services. We have recently made major investments along Division, with the new FX line, and Powell, where Frequent Service was added a few years ago. But east-west service north of Burnside is more limited, and over much of East Portland there has been a lack of north-south service. We want to create more of a grid pattern, so that it's easy to make trips all around East Portland, not just east-west trips. We also want routes to be more frequent, because a grid pattern requires transfers and these need to be fast.

The Service Concept's changes in East Portland focus on expanding Frequent Service to reach more people, and on improving north-south access.

First, we want to introduce Frequent Service on the entire length of Halsey St. This upgraded **Line 77-Broadway/Halsey** would continue to run all the way from NW Portland to Troutdale, but now coming every 15 minutes all day with better evening and weekend service.

Second, we'd like to add Frequent Service along all of **Line 87-Airport Way/182nd** Avenue. This line is our service to the jobs, hotels, and commercial destinations along Airport Way east of I-205, a major destination especially for lower-income workers. This route would run every 15 minutes with much longer hours, and would serve both Gateway and Parkrose stations, also introducing new Frequent Service along NE 102nd Avenue.

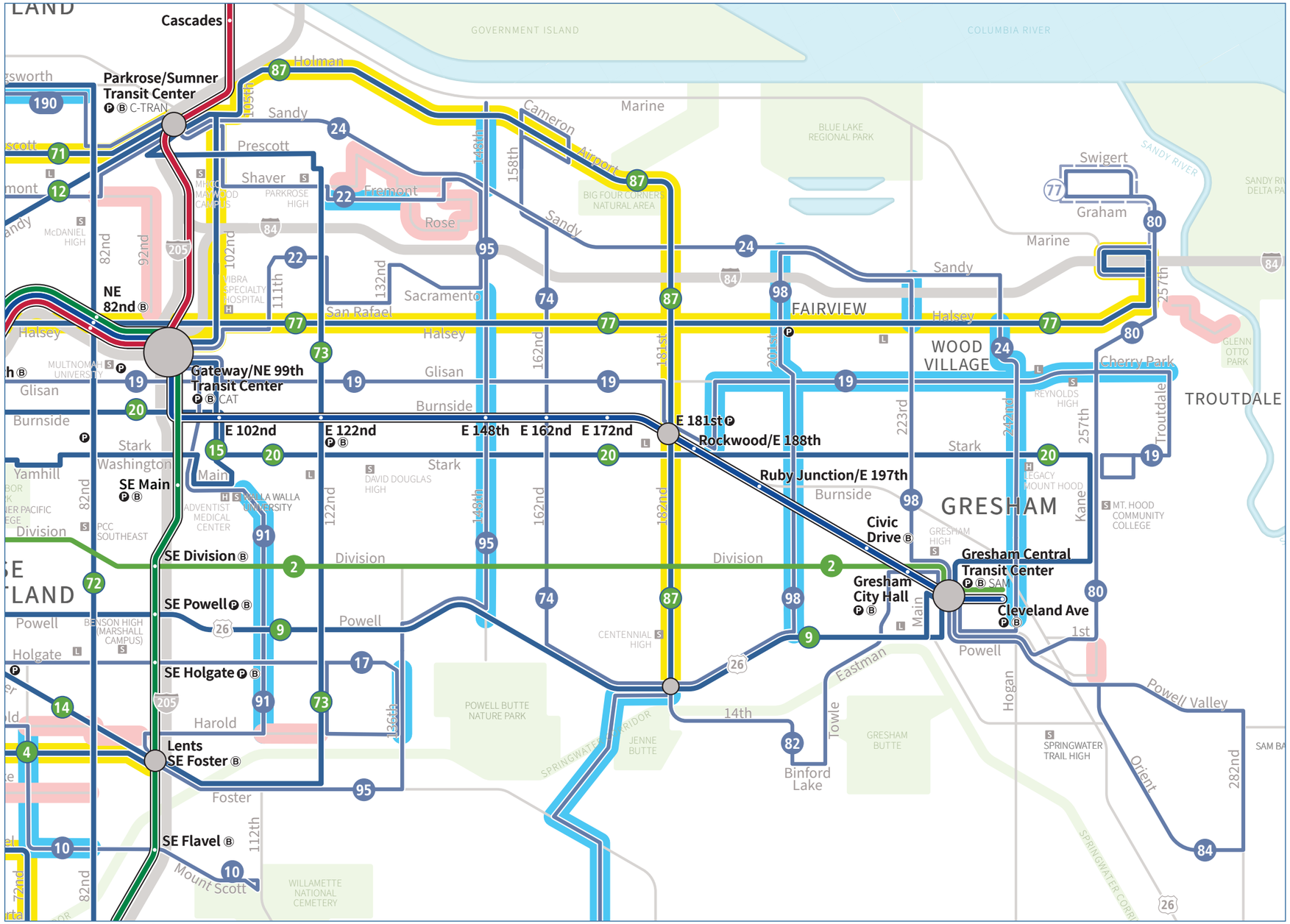


Figure 75: **Forward Together Revised Service Concept** - East Multnomah County

Third, we want everyone to be near north-south service, so we want to add new lines on **112th Avenue (Line 91)** and **148th Avenue (Line 95)**. We're suggesting more north-south service further east in Gresham and Troutdale as well. See the next page for more information.

Line 91-112th Ave. would replace the part of Line 10-Harold northeast of Lents. **Figure 76** and **Figure 77** above compare service near Lents today and with the Service Concept.

During the October 2022 outreach period, we heard concerns about loss of service along Harold east of SE 112th. In the Revised Service Concept, we have redesigned the Line 17 turnaround to serve Harold between 122nd and 136th. The eastern part of Lents would now have access to four routes - Line 17, 73, 91 and 95.

Areas near Parkrose, and along 122nd Avenue, would benefit from the new connections at Parkrose station, especially the new Columbia Blvd. line that extends west from there covering many industrial jobs. Outer Sandy Blvd. would get better service west into NE Portland because it would be combined with **Line 24-Fremont.** As mentioned previously, based on feedback received during the October 2022 outreach period, in the Revised Service Concept, so we have combined local service in this area **Line 22-Parkrose** so that all parts of Parkrose are connected to both Parkrose TC and Gateway TC.

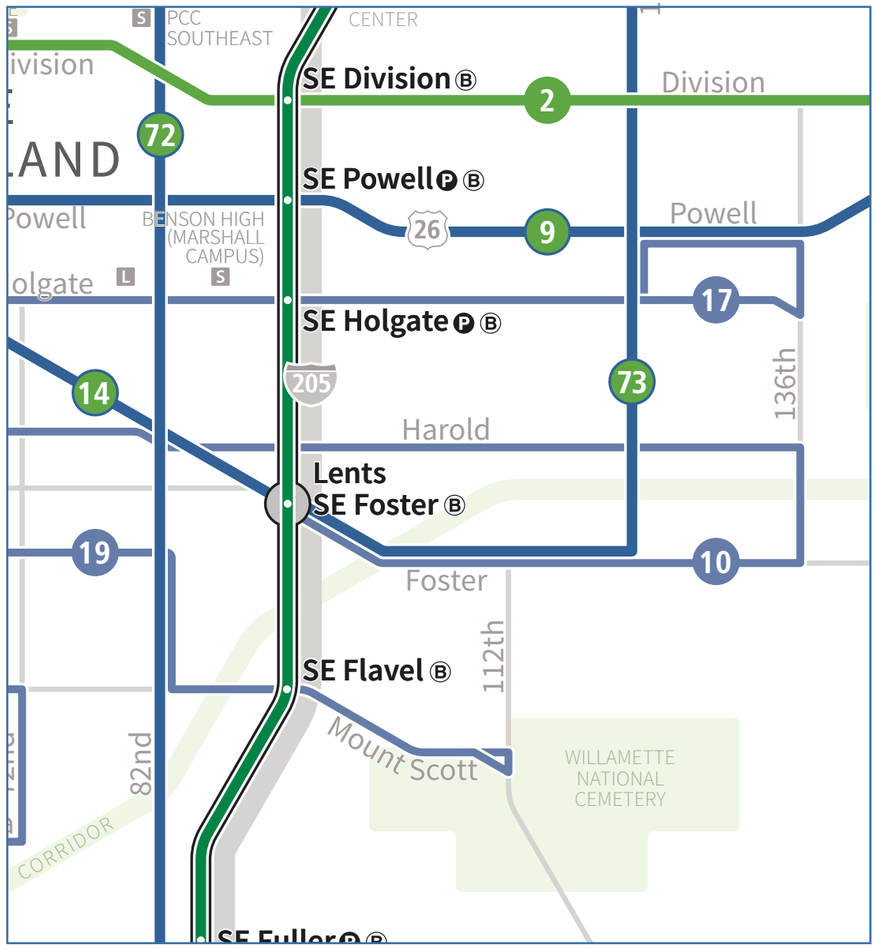


Figure 76: **Existing** service near Lents

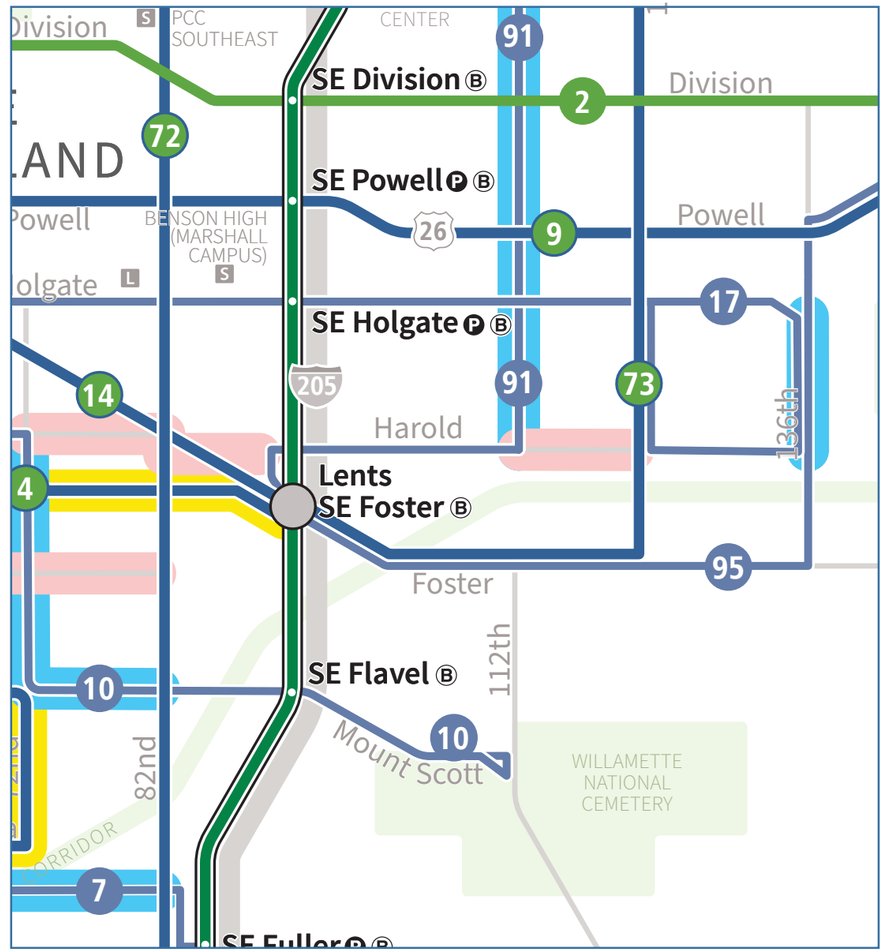


Figure 77: **Forward Together Revised Service Concept** service near Lents.

Gresham, Fairview, Wood Village, Troutdale

A More Complete and Frequent Grid

As in East Portland, we want to strengthen the grid pattern of routes in this area, so that it's easier to travel north south and easier to make connections. We also want to expand Frequent Service in this area. So we suggest these big improvements.

- Frequent Service (every 15 minutes) on **Line 77-Broadway/Halsey.**
- Frequent Service along **Line 87-Airport Way/181st Avenue**. Continuous north-south service on 181st/182nd, continuing into Airport Way, would make it much easier for residents of this area to reach Airport Way jobs and destinations.
- New north-south service on 201st and 242nd Avenues, in addition to the existing service on 223rd and 257th Avenues. To make this service simpler and more direct, we'd like the Sandy Blvd. line (now part of **Line 24**) to use 238th/242nd Avenues instead of 223rd. Then, we suggest introducing new half-hourly service on both 201st and 223rd (new **Line 98**).
- New service on Glisan St. east of Rockwood, with the **extension of Line 19-Glisan/Canyon Rd. to MHCC.**

You may have noticed the last bullet referred to service along Glisan east of Rockwood as Line 19. While today that segment is part of Line 25, one of the revisions we suggest in the Revised Service Concept is that Glisan be a single, continuous route from MHCC all the way to downtown Portland, continuing on to Beaverton via Canyon Rd. This continuous service would be called Line 19 - Glisan/Canyon Rd.

Service along Sandy would be extended west of Parkrose as **Line 24-Fremont**, to create a new continuous east-west line all the way from downtown Portland, across NE Portland to Troutdale.

Troutdale and Northeast Gresham

Finally, we suggest a redesign of the services in Troutdale. We are trying to address several issues here:

- The growth of jobs in the industrial area north of Troutdale Airport (Troutdale Reynolds Industrial Park) needs more service.
- The current structure, in which Lines 20 and 81 duplicate each other all the way from Gresham to MHCC, is very wasteful of service.

We want to provide higher frequencies between Gresham and Troutdale by providing a single line instead of two, so we suggest upgrading Line 80 and extending it to the Troutdale industrial area.

- Line 81 would be removed, replaced by pieces of Line 25 and Line 80 described below.
- **Line 19-Glisan/Canyon Rd.** would be extended east from Rockwood to Troutdale Rd., then south to MHCC. With the Revised Service Concept, Line 19 would offer continuous service from MHCC all along Glisan to downtown Portland, and then continue to Beaverton along Canyon Rd. replacing Line 58 and Line 25.
- **A more frequent Line 80** on 257th / Kane Dr. would no longer turn east through downtown Troutdale to its current end at Glenn Otto Park. Instead, it would continue north via Graham Rd. to replace Line 81 in serving the jobs around the 257th Ave. interchange and the industrial park north of Troutdale Airport, which has added many jobs due to a new Amazon facility. Line 80 would replace Line 81 as the main north-south line linking Gresham and Troutdale.

Southeast Gresham

Existing Line 82 in SE Gresham is an hourly bus whose only purpose is to serve the Fred Meyer at SE 3rd & Burnside. Everything else it does

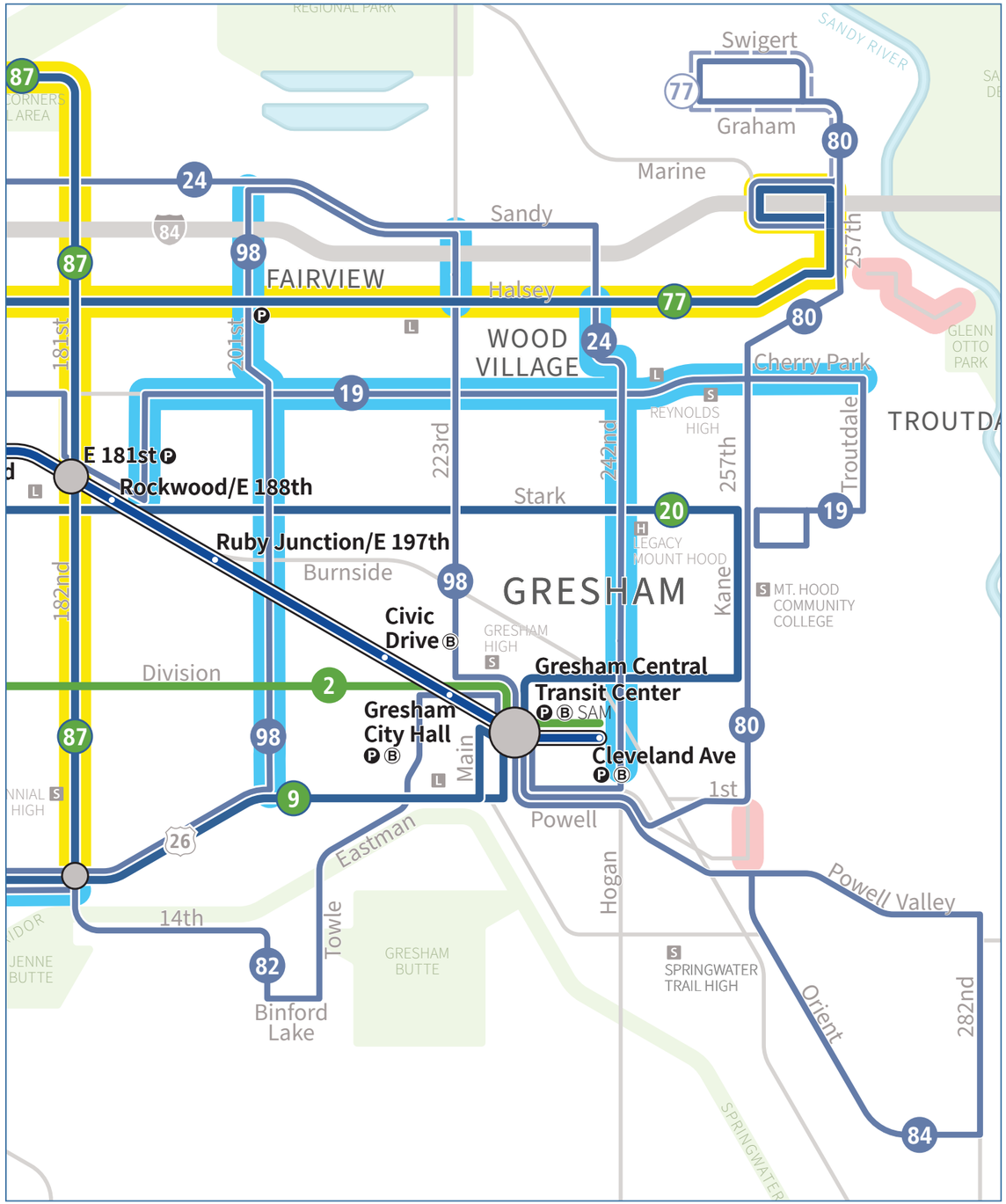


Figure 78: **Forward Together Revised Service Concept** - Gresham, Fairview, Wood Village, Troutdale

duplicates other routes. We suggest that Line 80 be revised so that it serves the Fred Meyer near SE 1st & Burnside Rd. instead of serving the intersection of Powell & Kane Rd. A big increase in frequency (every 30 minutes, with longer hours of service) would make this route worth walking to. Line 82 would remain unchanged in SW Gresham. Line 84-Powell Valley/Orient Dr. would be upgraded to run all day and on weekends.

Southeast Portland (west of I-205)

Expanding the Frequent Grid

Inner southeast Portland has seen a big service improvement with the new FX-Division line. Now, we also want to increase **Line 71-60th Avenue**, which runs along 60th and 52nd Avenues, to Frequent Service, making it easier to make connections between this line and all the east-west lines that it crosses. And we're suggesting a new Frequent Service line along SE Woodstock Blvd. and SE Milwaukie Avenue, as described below.

Woodstock, Harold, and Neighborhoods South of Woodstock

Woodstock Blvd. has a major business district and is rapidly growing with new apartments. Portland is planning for increased density all along Woodstock from Cesar Chavez Blvd. to Lents Town Center and the nearby MAX station. This gives us the basis for a Frequent Service line. We suggest revising the current **Line 19-Woodstock** so that it follows Woodstock all the way to Lents. Today, the route is on Woodstock only to 52nd Avenue, then turns off to the south to cover portions of Duke and Flavel Streets.

The line number would also change to 4-Woodstock, running through downtown and continuing north as Line 4-Fessenden.

How to serve Duke and Flavel Streets? We suggest a **modification of Line 10-Harold** (which would become 10-Steele) to shift service to areas of higher need. The route would be unchanged from downtown to 72nd & Harold, but instead of continuing east on Harold it would turn south on 72nd and east on Flavel to serve Flavel MAX station and Willamette Cemetery.

In the Draft Service Concept, we instead suggested Line 10 should use Duke between SE 52nd and SE 72nd. In the Revised Service Concept, we updated the routing to the version shown on this map based on input through the City of Portland's Lower SE Rising project, which is developing an area transit and land use plan for the Woodstock and Brentwood-Darlington neighborhoods.

In Eastmoreland, we suggest eliminating the very low-ridership deviation that some trips make southward to Rex St. Again, walking to the more frequent Woodstock line, on Woodstock or at 28th & Bybee, would be faster than waiting for an occasional deviation off the existing route, for trips out of this area.

Finally, for faster and more reliable service into downtown, we suggest shifting the Woodstock line (current Line 19, conceptual Line 4) from the Ross Island Bridge to the Tilikum Crossing.

Inner Southeast, Westmoreland and Sellwood: Making Line 70 Work

Like many people in Southeast Portland, we get very frustrated trying to cross the main Union Pacific rail line at SE 11th/12th Avenues, between Division and Powell, as the current Line 70-12th Ave/NE 33rd Ave. has to do. Because this crossing is so close to the rail yard, where trains are assembled and disassembled, long trains often move slowly or even stop blocking the street for long periods.

Long delays at this crossing make Line 70 very unreliable, which affects travel throughout inner SE and NE Portland. The problem appears to be getting worse as trains get longer.

We suggest a **major revision to Line 70 between Hawthorne Blvd. and Bybee Blvd.** to avoid this crossing. Southbound from 11th/12th & Hawthorne the line would proceed along Ladd, SE 21st (near Cleveland High School), west on Powell, and then south on Milwaukie and 17th through Brooklyn and Sellwood.

All Line 70 service would use 17th instead of 13th

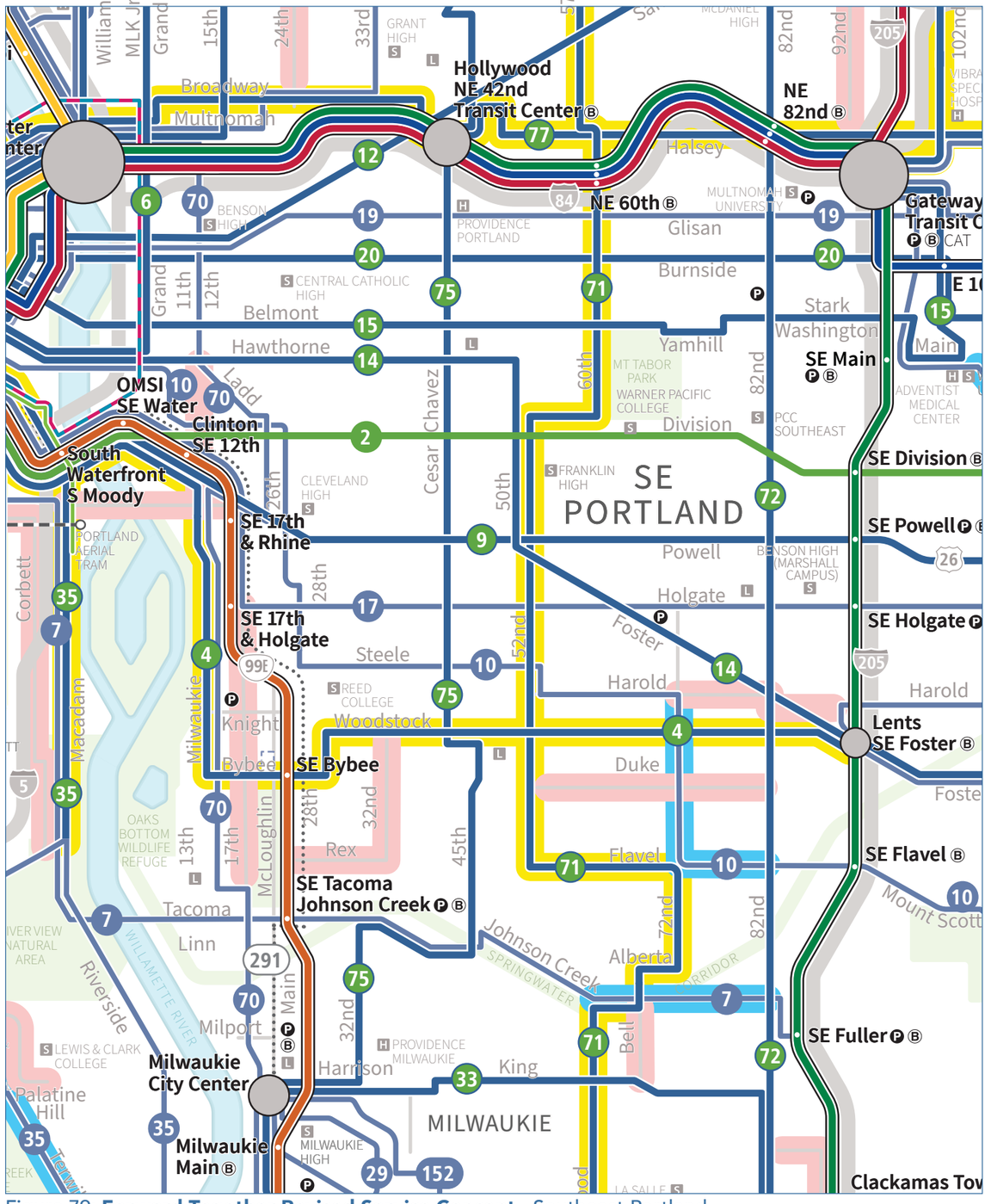


Figure 79: **Forward Together Revised Service Concept** - Southeast Portland

in Sellwood. The current Line 70 pattern, with 40 minute frequency on both 13th and 17th, just doesn't offer enough frequency to be very useful to this growing neighborhood. Using 17th brings service to the highest-density area of Sellwood.

Revision: Line 70

In the Draft Service Concept, we presented an alternate version of this idea that used Bybee, SE 26th and 28th, and Division to avoid the rail crossing. We adjusted the design after receiving feedback that it would make travel times from Sellwood the Central Eastside too long, as well as present a pedestrian safety issue in the SE 26th & Powell intersection near Cleveland High School. The maps on this page compare the existing, Draft and Revised versions of Line 70 in this area.

We know that eliminating Line 70's 13th Ave. (in Sellwood) and 17th Ave. (in Brooklyn) service has a lot of impacts, but almost all of this segment has other service nearby:

- North of Holgate, Line 17-Holgate and two MAX stations serve 17th Avenue.
- Between Holgate and Bybee, Milwaukie Avenue is nearby and would have new Frequent Service on the current Line 19-Woodstock, as well as the revised version of Line 70.
- In Sellwood, south of Bybee, most of this area is within walking distance of service on either Bybee Blvd, 17th Avenue, Tacoma St. (which would have new all-day service; see below) or MAX. A small area falls outside of a ¼ mile walk to service (East of 17th Avenue between Rex and Bidwell Streets) but it is currently only served by a bus every 40 minutes, which not many people are finding useful based on low ridership both before and after the pandemic.

Sellwood also gets a major improvement with the Service Concept's **Line 7-Johnson Creek/Swan Island**, which would run from downtown Portland along Macadam and then east along Tacoma St. into Johnson Creek Blvd, replacing Line 34-Linwood all the way to Clackamas Town Center. This service would be every 30 minutes all day, and replaces the much more occasional Line 99 service on Tacoma St.

In the Draft Service Concept, we imagined Tacoma service as an extension of Line 19-Glisan. However, in the Revised Service Concept, we have redesigned Line 19 to provide service along Glisan all the way from Mt. Hood Community College in Gresham to Beaverton (via Canyon Rd.), so the new Tacoma / Johnson Creek would instead by linked to Swan Island, renumbering the existing Line 85 as Line 7-Swan Island / Tacoma.

To sort all this out:

- Today's Line 19-Woodstock combined with Line 4-Fessenden. Why? To make the Woodstock line frequent we have to detach it from 19-Glisan and attach it to a frequent line coming from the north. The logical choice is Line 4-Fessenden, which would now be renamed Line 4-Fessenden/Woodstock.
- The new Line 19 is the 19-Glisan/Canyon Rd. described above, which doesn't serve SE Portland.
- The new Tacoma/Johnson Creek line would be Line 7, continuing to Swan Island.

Finally, for faster and more reliable service into downtown, we suggest shifting the Milwaukie Ave. route (now Line 4) from the Ross Island Bridge to the Tilikum Crossing.

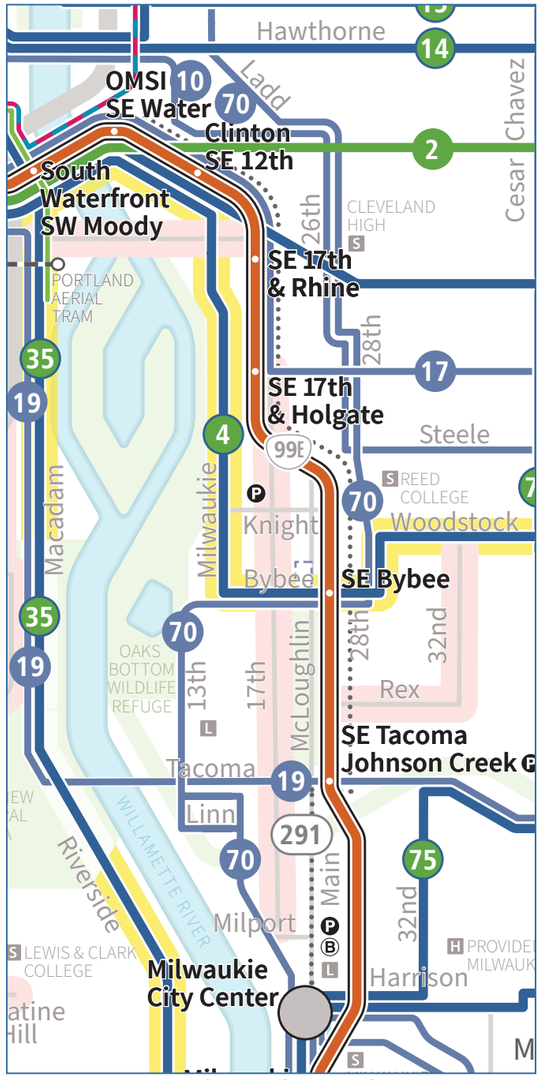


Figure 81: **Forward Together Draft Service Concept** - Line 70

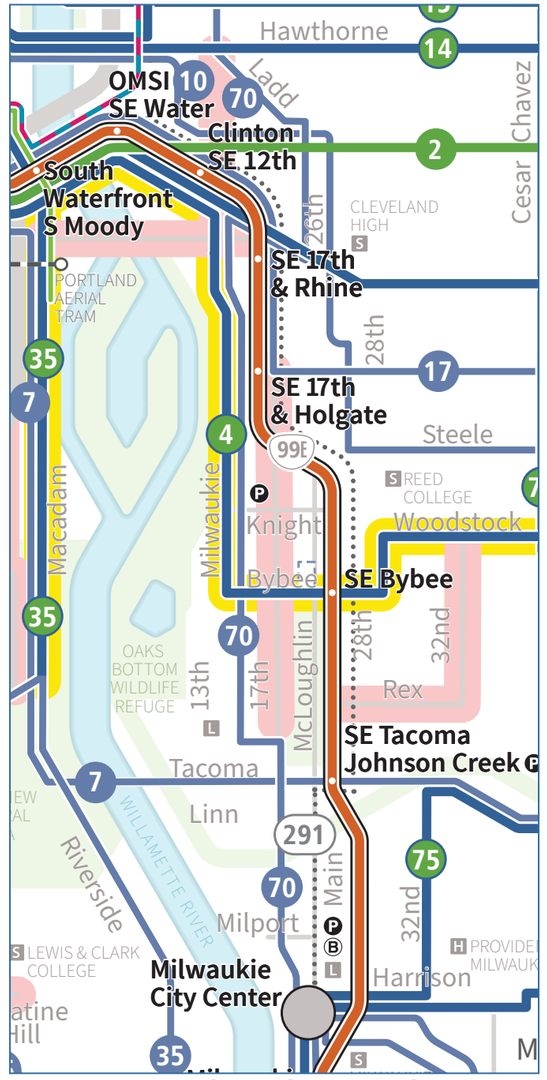


Figure 80: **Forward Together Revised Service Concept** - Line 70

Milwaukie

We want to extend the benefits of Portland's grid pattern of lines south into Milwaukie, and make more of them Frequent Service lines. Milwaukie already has Frequent Service lines on King Rd. (Line 33) and 32nd Avenue (Line 75). We want to add another Frequent north-south line by **upgrading Line 71 to Frequent Service.** We also want to create a new continuous east-west line, the 19-Johnson Creek, across the north edge of Milwaukie.

The main change in Milwaukie affects **Lines 34-Linwood and 71-60th Avenue.** To reduce duplication, we suggest that Line 71 replace Line 34 along Linwood Avenue and Harmony Road. This would further extend the Frequent Service grid into Milwaukie, making it easy to make connections to go in many directions. This would also bring Frequent Service to the Clackamas Community College campus on Harmony Road.

New Line 7-Swan Island / Tacoma would provide continuous east-west service across the north edge of Milwaukie, serving all of Johnson Creek Blvd. for the first time. This route would come from downtown Portland via Macadam, Tacoma, and Johnson Creek Blvd, ending at the Fuller Rd. MAX station. It would run every 30 minutes at most hours.

The Revised Service Concept includes no further changes in this area.

The changes drop service on two segments:

- Bell Ave. between Johnson Creek and King. This segment is almost all within ¼ mile of walk of Frequent Service on Linwood or King, or the new service on Johnson Creek Blvd.
- Main St., the frontage road along McLoughlin Blvd. north of downtown Milwaukie. Two stops here would be dropped. Both stops in this area are within ¼ mile walk of other service.

Finally, Line 99-McLoughlin/Macadam would be removed. Line 7-Swan Island / Tacoma would provide a link to Macadam Avenue from the Orange Line at Tacoma St. station.

Figure 82 and **Figure 87** compare service in Milwaukie with the Existing Network and Forward Together Service Concept.

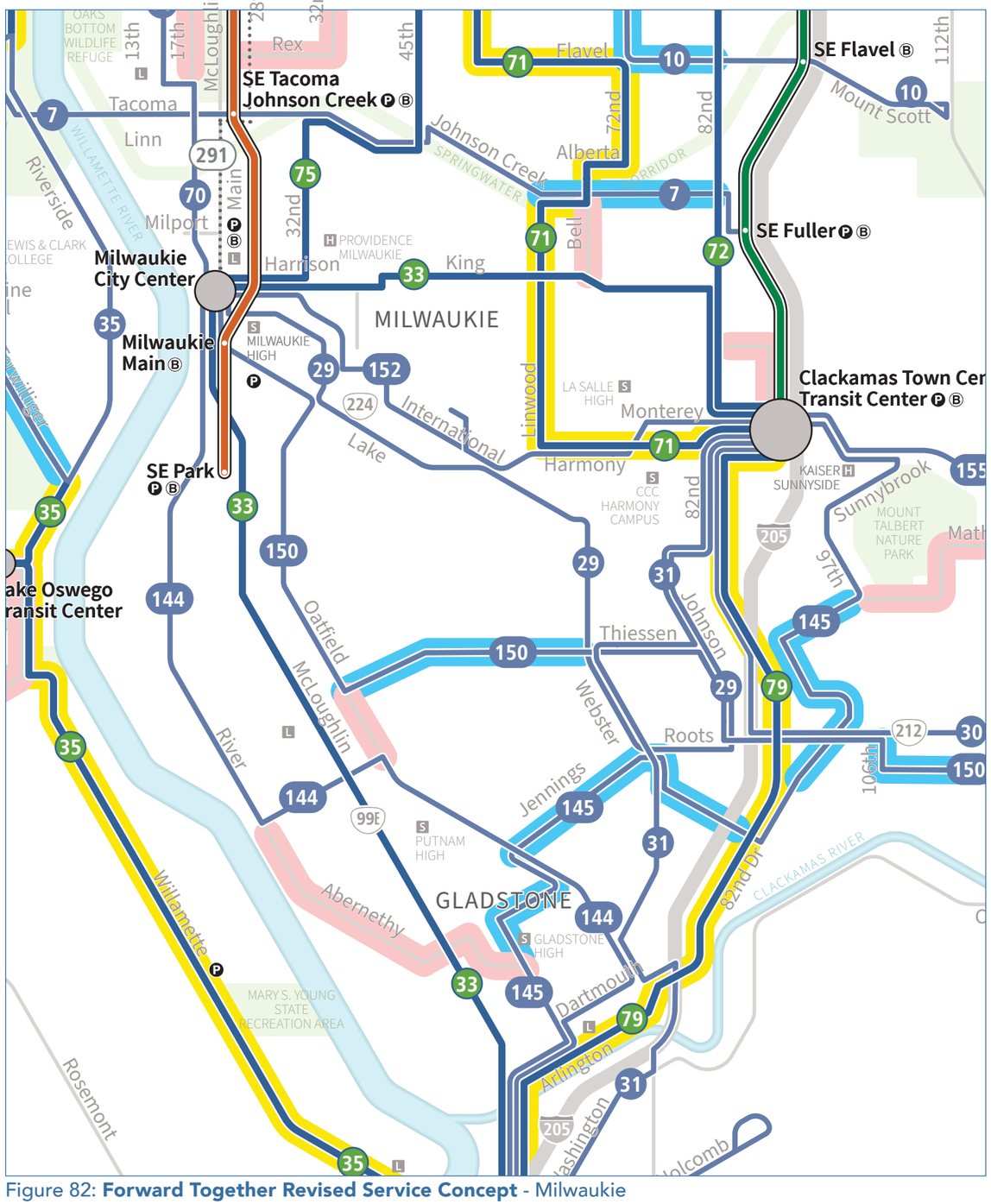


Figure 82: **Forward Together Revised Service Concept** - Milwaukie

Clackamas, Sunnyside, Happy Valley, Damascus, Mt Scott (East of I-205)

This growing area needs expanded coverage. We suggest:

- **A new hourly Line 150-Oatfield/ Thiessen/172nd** from Milwaukie through Happy Valley on Highway 212, and then continuing north via 172nd to end in Gresham at Powell Blvd. This is a change from the Draft Service Concept, which showed Line 150 ending at Lents MAX at its northern terminus. We have revised this based on input from City of Happy Valley staff and in recognition of the substantial new development occurring along 172nd and need to better connect Clackamas to East Portland and Gresham.
- **Line 156-Mather Rd. would be discontinued**. Line 150 described above would replace the highest-ridership parts of the generally low-ridership Line 156. We suggest removing the 152nd Drive and Mather Road segments, where ridership is very low.
- **Improved frequency on Line 155-Sunnyside.** We would also like to extend this route north along 172nd Avenue to the new residential areas north of Hemrick Road, although this would require an adjustment to the TriMet boundary.
- **New Line 145-Jennings** would provide new service through the east side of the Clackamas industrial area, covering Sunnybrook Road, Minuteman Way, Evelyn St., and Jennifer St. This provides new access to jobs that are not walkable to current service on 82nd Drive and Highway 212.

Finally, if new resources were available to address the impacts of future freeway tolling, we would use those funds to upgrade Line 79 to Frequent Service. Line 79 links Oregon City and Clackamas Town Center via 82nd Drive, serving an area of dense housing with many lower-income residents along the way. Even if no new funding were available, we would still upgrade Line 79 to run every 30 minutes (from its currently frequency of every 60 minutes).

Revision Notes

The network design for Happy Valley shown here was revised from the original version presented in the Draft Service Concept. In the original design, Line 150 was shown going over Mt. Scott via 122nd and Mount Scott Blvd, ending in Lents.

In the Revised Service Concept, Line 150 would instead travel along Highway 212 to SE 172nd, where it would turn north to serve 172nd all the way to a terminus at Powell and Highland. This revision was made based on input recieved from the public and City of Happy Valley staff, responding to the growing residential areas along 172nd that are far from any service in the existing network.

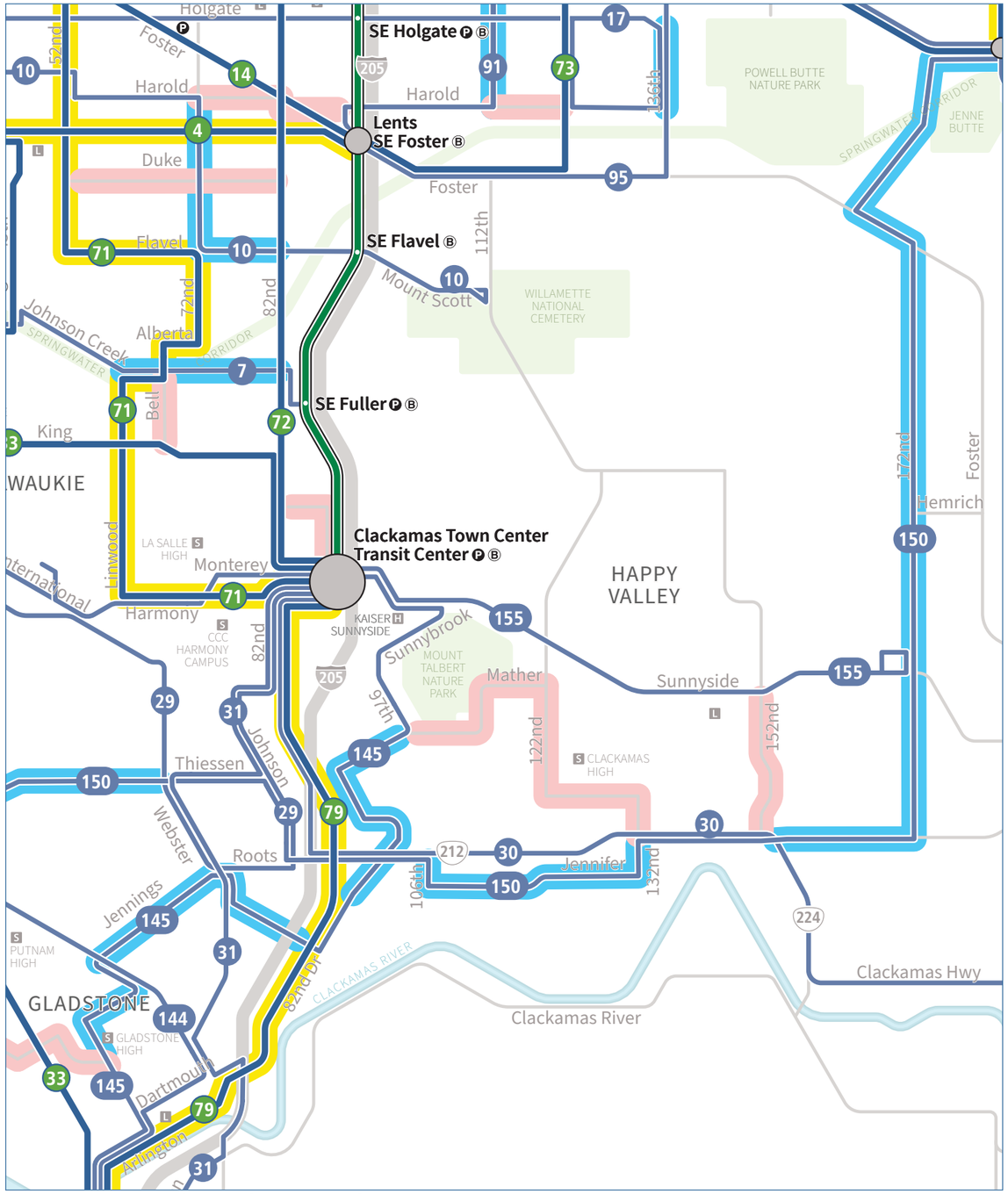


Figure 83: **Forward Together Revised Service Concept** - Happy Valley

Between Milwaukie and Oregon City

We are trying to make this structure more efficient and useful while adding needed service to lower-income areas.

Oregon City to Clackamas Town Center Every 15 Minutes

A big improvement in the Service Concept is that the direct service between Oregon City and Clackamas Town Center would be every 15 minutes. This would be created by two half-hourly routes – Line 31 and Line 79 -- that go by different paths. The schedules of these routes would be offset so that every 15 minutes there would be a bus from Oregon City to Clackamas Town Center and vice versa.

If additional resources were available from ODOT to address impacts created by tolling on the I-205 Abernathy Bridge, we would use those funds to provide Frequent Service on Line 79-82nd Dr, the most direct link between Oregon City and Clackamas Town Center. In the Service Concept, Line 79 would at a minimum run every 30 minutes, and every 15 minutes if we receive that funding.

We suggest Lines 31 and 79 cross over at the east end of Gladstone. Currently Line 79 comes down 82nd Drive from Clackamas Town Center and continues into Washington St. on Oregon City, while Line 31 stays north of the freeway, coming down Webster Road and continuing through Gladstone. We'd like them to cross over, so that 79 goes through Gladstone and 31 uses Washington St. There are two reasons for this. It offers more connection opportunities for local trips, and if ODOT assists us in funding Frequent Service on Line 79, that service should go through Gladstone where there is more demand.

Oak Grove, Jennings Lodge, Oatfield, Johnson City

We have a few ideas about how to make this structure more effective and also fill some gaps in our coverage.

We have long had separate River Rd. and Oatfield Rd. lines, 34 and 32 Right now, they are both just once an hour, not very useful. South of Roethe Rd., River Rd. is close to the Frequent Service on the 33-McLoughlin, while north of there, Oatfield Rd. gets very close to McLoughlin.

So it seems logical to create new line that covers the parts of River and Oatfield that are far from McLoughlin. **New Line 144-River/Oatfield** would extend from Milwaukie to Oregon City using River Road to Roethe Rd., then it would use Roethe Rd. to Oatfield Rd. and continue south on Oatfield Rd. though Gladstone to Oregon City. Line 34's Portland Avenue segment would be replaced by conceptual Line 145-Jennings below. As it happens, a different route, Line 150, would be able to cover Oatfield Rd. north of Thiessen, although this is so close to McLoughlin that it isn't necessary.

New Line 145-Jennings is an hourly route designed to fill several gaps where ridership potential is very low but there are some low-income needs. From Clackamas Town Center it would run through the east side of the Clackamas Industrial Area, then cover Strawberry Lane, Jennings Avenue, and Portland Road through Gladstone into Oregon City.

We want to fill the large gap in service along Thiessen Road between Oatfield and Webster Road. New Line 150-Mt Scott/Thiessen would extend from Milwaukie via Oatfield Rd., Thiessen Rd. and then out Highway 212 to Sunnyside, before turning north to run through Mt Scott and end finally at Lents MAX station.

Finally, the rush hour-only Line 99-McLoughlin/ Macadam would be removed. Line 33 to the Orange Line would be the main path to Portland from this area.

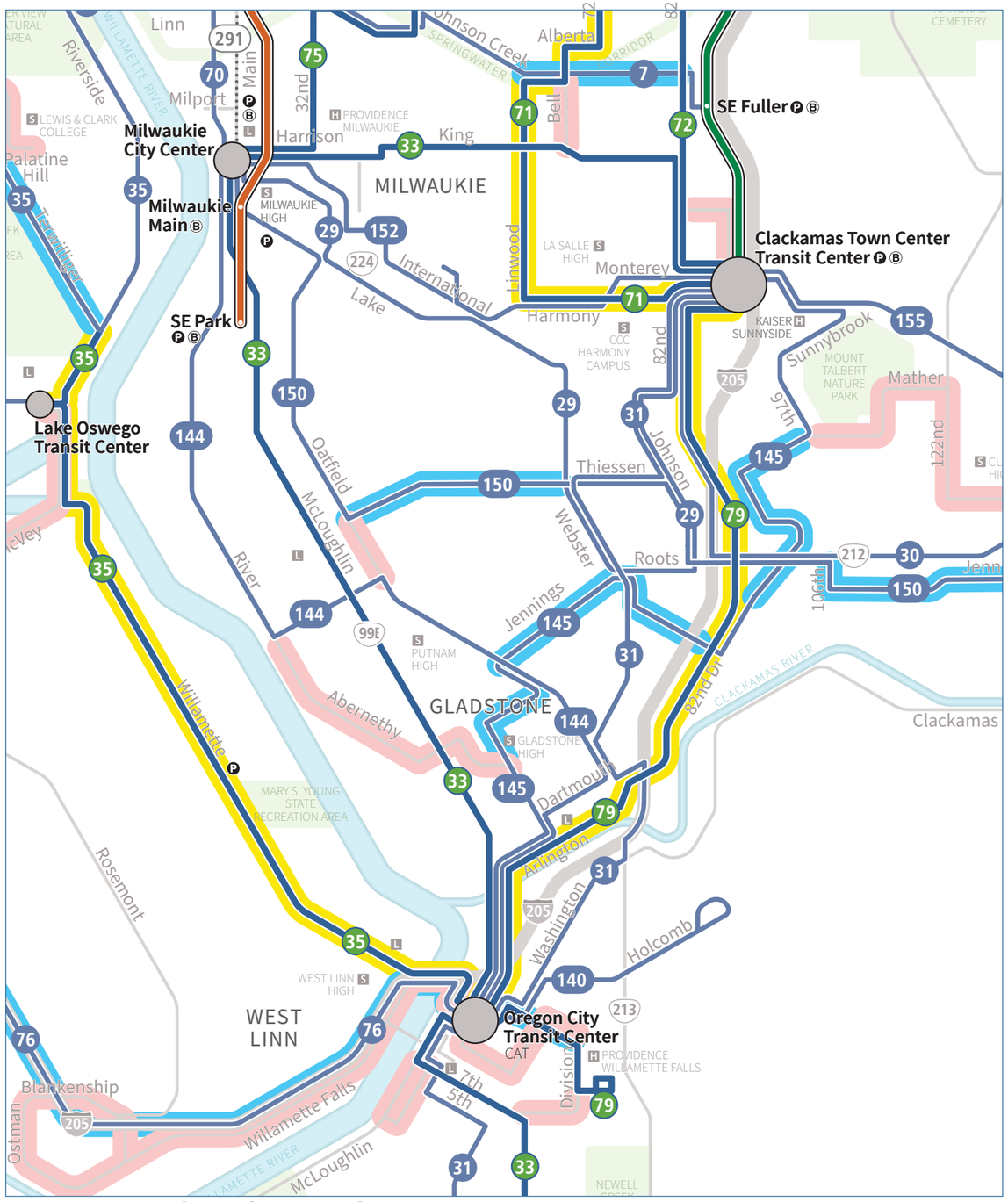


Figure 84: **Forward Together Revised Service Concept** - Milwaukie to Oregon City

Oregon City

Regional Connections from Oregon City

Improving regional connections from the Oregon City area is a high priority in the Service Concept. This area is heavily affected by proposed tolling of I-205, and we are seeking ODOT funding for additional services that would provide alternatives to driving on the freeway and address impacts related to tolling. For that reason, there are two versions of many of these proposals, one with new revenue to address the impacts of tolling, and one without.

We want to dramatically improve regional access from Oregon City. **Figure 85** shows how the Service Concept would connect Oregon City to other communities, with and without new funding to address impacts related to tolling on the Abernathy Bridge.

Oregon City Local Service and Access to Clackamas Community College

The Oregon City local network is very infrequent and circuitous. Willamette Falls Hospital has only an hourly bus route, **32-Oatfield**. The main frequent line, **33-McLoughlin/King Rd.**, gets to Clackamas Community College but takes a long time getting there because of the deviations made along the way.

We've sketched one idea for a network of more direct and frequent services. Because frequencies are so much higher, there's more emphasis on connections at Oregon City Transit Center rather than trying to connect every two points directly. Here are the key ideas.

Straighter, faster Frequent Line 33, and Half-hourly Line 31

Frequent Line 33 would be straighter, improving regional access to Clackamas Community College. Today, the bus climbs the bluff by going all the way south to 2nd Street and back. Instead, the line would use Singer Hill Rd. and 7th Street, a direct path. This change does eliminate service to the Tumwater Drive area and along the southern end of High St. It eliminates most operations through historic downtown Oregon City but most of this area is still within a short walk of a stop on 10th St., or the Oregon City Transit Center at 11th St. The maximum walk distance (from Main St. & 99E) is approximately 1900 ft., or just over 1/3-mile.

Further south, **Line 33-McLoughlin/King** would no longer serve Linn Avenue north of Holmes Lane, a low-ridership segment where the density and development plans do not support Frequent Service. Instead the line would stay on Highway 213, where there is more demand. However, it would make a deviation westward to run on Linn Avenue between Holmes Court and Warner-Milne Road, to serve key destinations including the City's Municipal Court building.

A half-hourly Line 31 would cover other parts of southern Oregon City, including 5th St., Linn Avenue, Beavercreek Road, and Meyers Rd. This route would go to Oregon City Transit Center and then continue toward Clackamas Town Center.

More Direct Hospital Service

Willamette Falls Hospital has only hourly service on a circuitous path. We would like to connect this hospital directly to Oregon City Transit Center in a straight line along 15th Street, replacing the many twists and turns of the current Line 32. Direct service from the hospital to southern parts of Oregon City would be removed. This trip would require a connection in at Oregon City Transit center Line 31 or Line 33 and Line 79.

We have sketched this segment as a continuation of Line 79, which would run from Clackamas Town Center to Oregon City via Gladstone. If we receive ODOT funding to address impacts related to tolling the Abernathy Bridge, Line 79 would be every 15 minutes. Otherwise it would be every 30 minutes.

Finally, **Line 99-McLoughlin/Macadam** would be removed. Frequent Service **Line 35-Macadam/ Greeley** is the path from Oregon City to Portland, including South Waterfront, from this area.

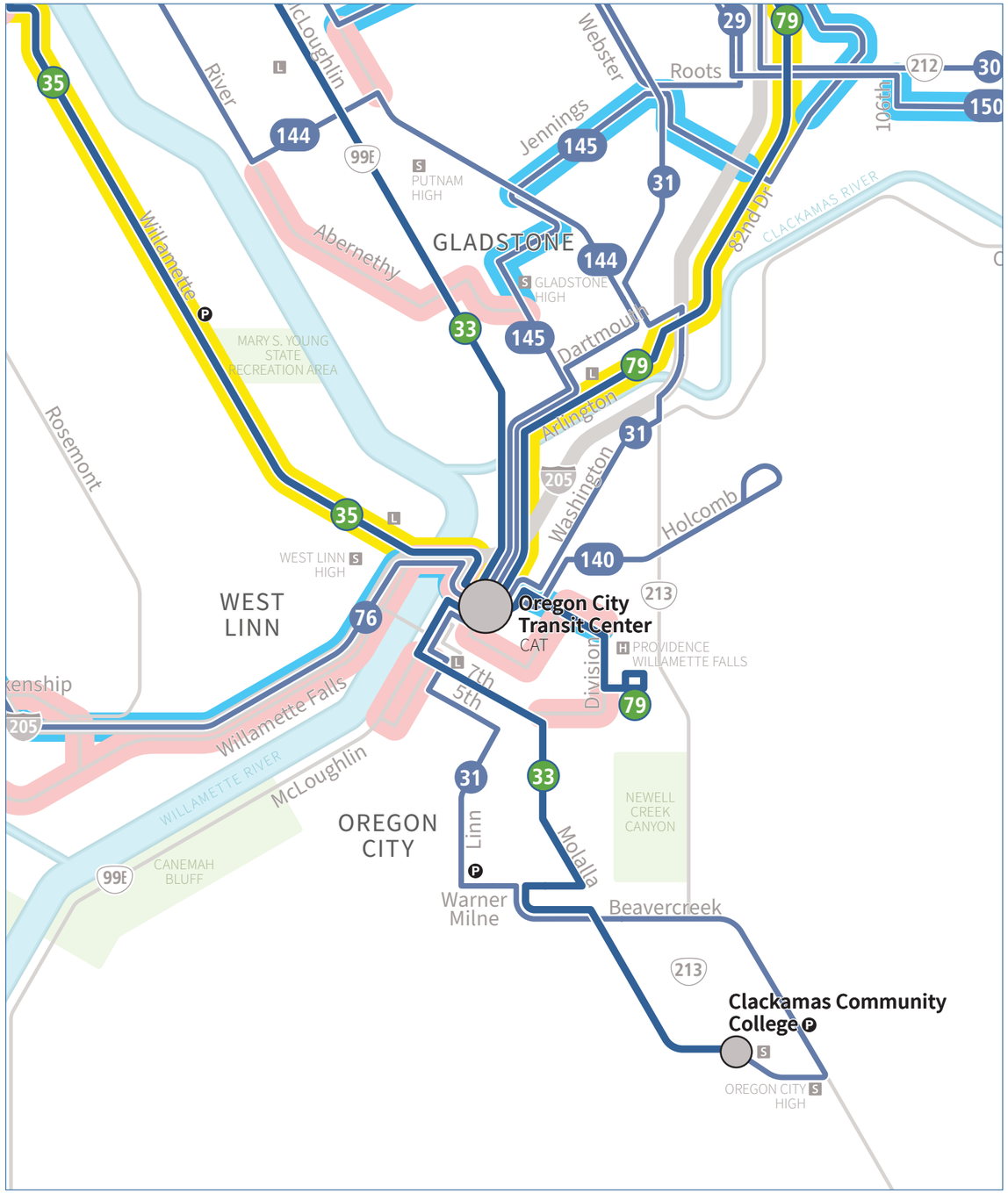


Figure 85: **Forward Together Revised Service Concept** - Oregon City

West Linn

With our budget constraints and the expectation that we focus on equity, we cannot provide service covering all the recently developed parts of West Linn. The Service Concept removes low-ridership service to the Willamette District but it does increase service along Highway 43 (Line 35). This would be Frequent Network service (every 15 minutes) if we receive additional funding to address the impact of tolling.

One change from the earlier Draft Service Concept is that we have suggested adding stops of the Line 76 segment along I-205 at the 10th Street exit. While infrastructure enabling this is not currently in place, we are seeking improvements to this interchange as part of the broader conversation around tolling in this part of the I-205 corridor.

Lake Oswego

The east end of Lake Oswego would benefit from our proposal to increase service along Highway 43 (**Line 35-Macadam/Greeley**), which links Lake Oswego to both Portland and Oregon City. This would be Frequent Network service (every 15 minutes) if we receive new funding related to address impacts of tolling the Abernathy Bridge.

We also suggest a significant service improvement for the Kruse Way area job centers, by shifting **Line 78** (Lake Oswego-Tigard-Beaverton) to run through this area.

Apart from this, with our budget constraints and the expectation that we focus on equity, we do not see how to invest in much service in Lake Oswego. Some of our lowest-ridership routes are in this area, which is not surprising given the very low density of most of the residential areas. Rush hour commuting has also declined, removing the main markets for the downtown express services that used to produce most of Lake Oswego's ridership.

For these reasons, we suggest:

- Discontinuing Line 36-South Shore
- Discontinuing Line 37-Lake Grove, which mostly duplicates Line 78 on Country Club Rd. and Line 38 along Boones Ferry Rd.
- Replacing Line 38 with an extension of Line 44-Capitol Hwy. This hourly service from downtown Portland would follow Capitol Hwy. to PCC Sylvania, then continue through Mountain Park and out Boones Ferry Rd. to Tualatin.
- Revising Line 78 to serve the Kruse Way area instead of PCC Sylvania. PCC would still have service to Mountain Park and western Lake Oswego via the extension of Line 44, but there would no longer be a direct connection between PCC Sylvania and downtown Lake Oswego or Tigard. Service along Lesser Road and Haines St. would also be removed. The nearest service for this area would be Frequent Service on Barbur Blvd. (Line 12) or at 72nd & Dartmouth (revised Frequent Line 76).

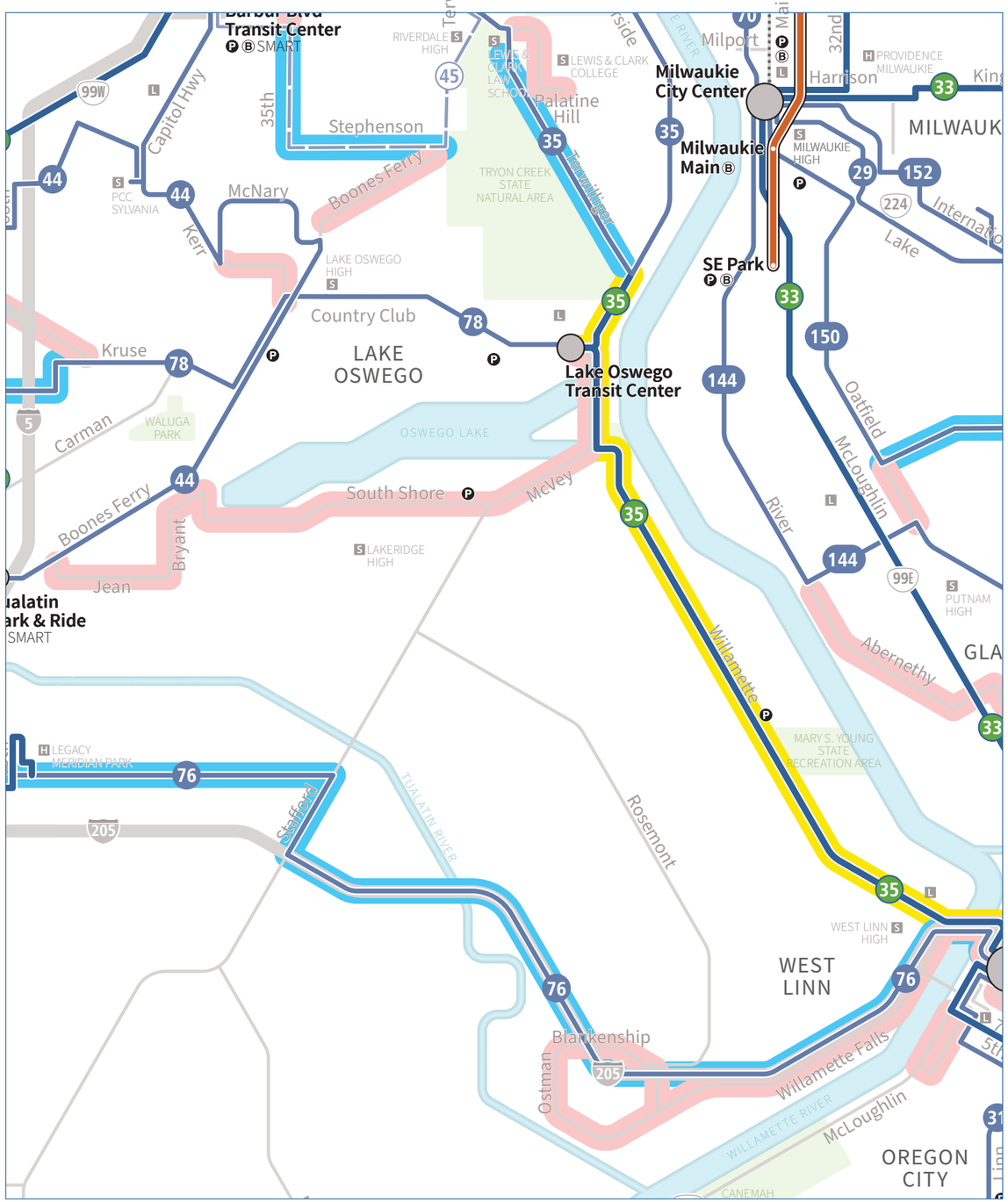


Figure 86: **Forward Together Revised Service Concept** - West Linn and Lake Oswego

Revision: Lake Oswego and Tigard

In our October 2022 public engagement period, we heard from many people about several important issues relating to this area:

- Maintaining service near Lewis & Clark College and nearby neighborhoods. The Draft Service Concept removed Line 38 and 39.
- Maintaining a connection between Tigard and PCC Sylvania. The Draft Service Concept shifted Line 78 to Kruse Way and Bonita.

We made two modifications in response to these issues.

In the Revised concept, in order to maintain service in Southwest Portland near Lewis & Clark College, Line 35 would split between Riverside and Terwilliger / Taylors Ferry, with each branch served by every other trip. This would provide a more-frequent, more consistent service in this area than is currently available on Line 38 and 39. There is more information on this change available in the South and Southwest Portland sections later in this document.

To maintain the connection to PCC Sylvania from Tigard and the west side, we have updated Line 44 to add a second branch to Tigard TC. Now, Line 44 would travel between downtown Portland the PCC Sylvania every 20 minutes (3 trips per hour) and then branch. One branch would continue to Tigard TC every 60 minutes (1 trip per hour). The other branch would continue down Kerry, McNary and Boones Ferry through Tualtin, ultimately ending at Commerce Circle in Wilsonville with 1 trip per hour. The third trip each hour would end at PCC Sylvania.

This new Line 44 branch would also enable us to maintain service along 65th, Haines, and Lesser Rd.

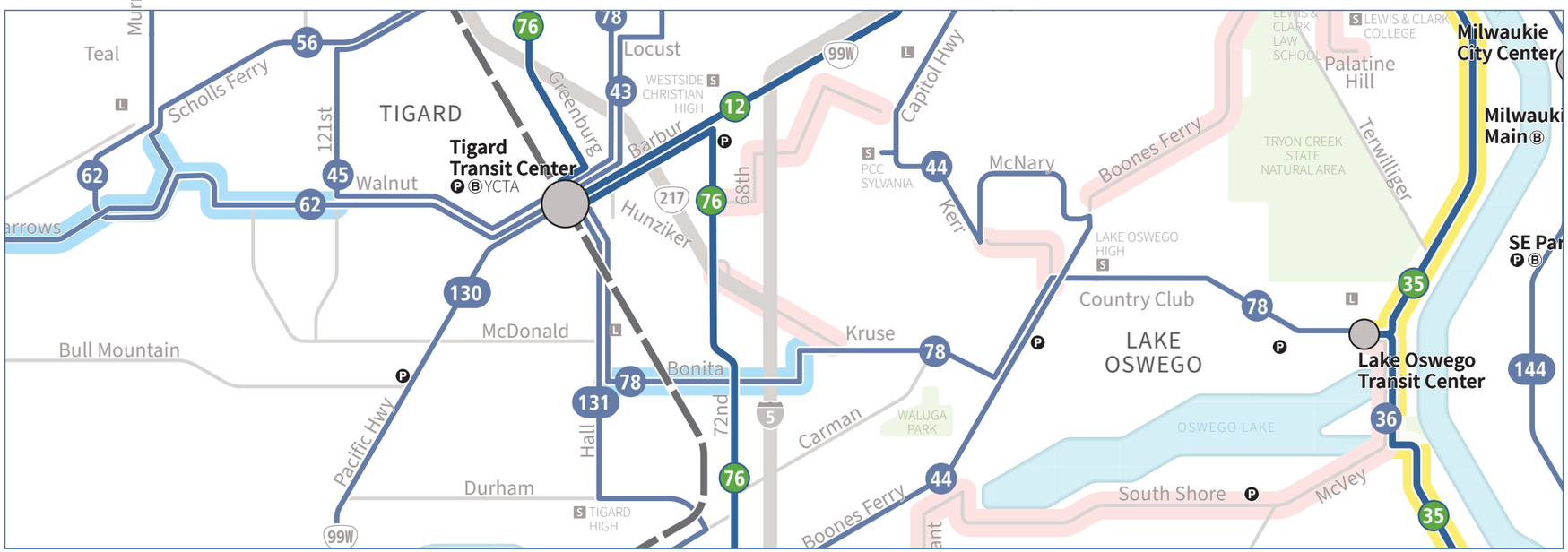


Figure 87: **Forward Together Draft Service Concept** - Lake Oswego

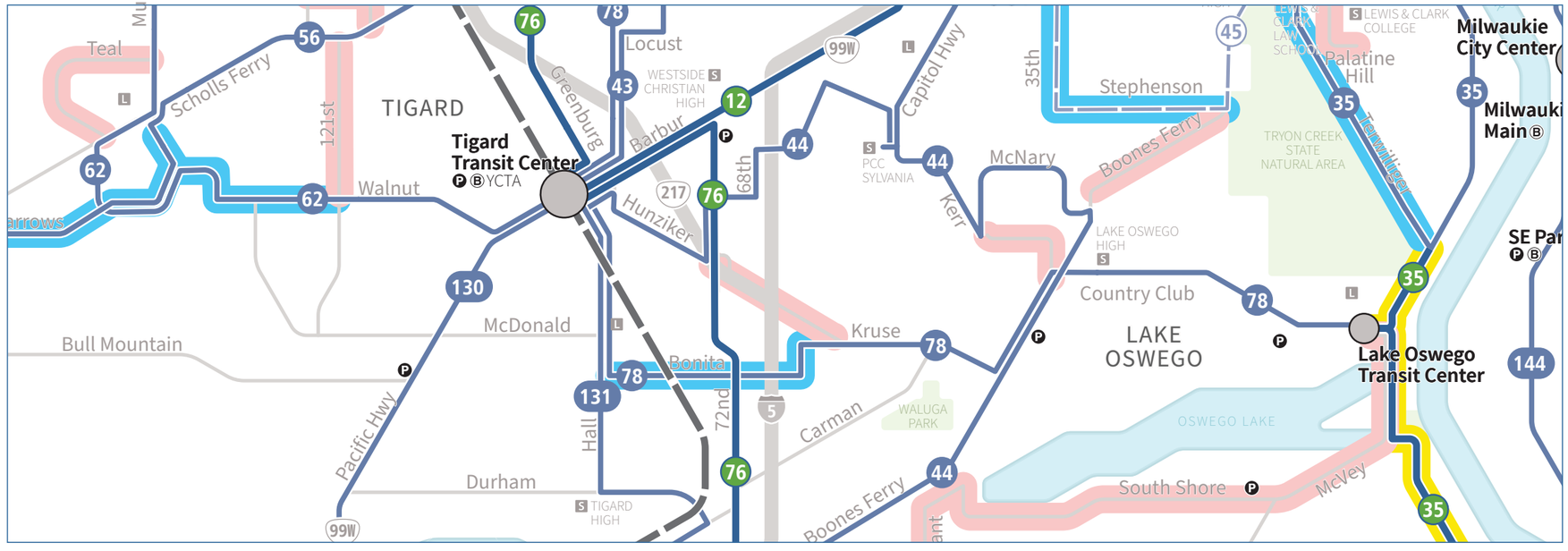


Figure 88: **Forward Together Revised Service Concept** - Lake Oswego

Tualatin

Tualatin would benefit from the extension of **Line 76** to Oregon City, which we want to do if we receive new funding to address impacts related to I-205 Abernathy Bridge tolling. This would open up access to Tualatin jobs from the east side of Clackamas County.

To help people connect with this service, we want to increase Tualatin-Sherwood (**new Line 131**) service to every 60 minutes all day.

The downside? We don't see how we can keep Line 96-Tualatin/I-5, the express service from Tualatin to downtown Portland. We are not seeing the return of the peak commute demand that would support this service, and as Line 96 riders know, traffic conditions on I-5 mean that we can't run this service reliably.

For trips from Tualatin to Portland during the peak, the fast route would be WES to Tigard and then Frequent Line 12-Barbur to downtown. Another option is to take WES to Beaverton and the MAX Blue and Red lines to downtown.

Outside of rush hour there is already no direct Tualatin-Portland service. Under the Service Concept the hourly Line 44-Capitol Hwy. would connect Tualatin and Portland via Boones Ferry, Mountain Park, PCC Sylvania, and Capitol Hwy, though of course that's a long ride. A faster path would be to take Frequent Line 76 to Frequent Line 12-Barbur.

The removal of Line 96 would reduce most Park-and-Ride demand at Tualatin P&R, and it would begin to function more as a transit center for all-day services.

Sherwood and King City

Sherwood would get improved service to Tualatin, every 60 minutes all day and weekends, with connections to the new Tualatin-Oregon City service, on the new Line 131.

However, we cannot justify keeping Line 94-Pacific Hwy./Sherwood, the direct Portland service from Sherwood and King City. This service duplicates Line 12-Barbur all the way from Tigard to Portland, which is a major waste of resources.

Why not just extend Line 12 out to Sherwood? Line 12 used to do this, but as traffic has gotten worse we've found such a long line hard to operate reliably. Remember too that Line 12 continues beyond downtown Portland along Sandy Blvd. to Parkrose. We do that to use the downtown transit mall efficiently, and because it's very hard to find places to terminate buses downtown. Line 12, from Tigard to Parkrose, is really as long as it can be if we're to maintain reliability on this important Frequent Service line.

For this reason, we suggest operating a separate 30-minute route just linking Sherwood and Tigard along Pacific Highway, Line 130. It would be necessary to transfer at Tigard to continue into Portland, and of course you can also make connections there to many other destinations.

Southeast Tigard and Durham

We don't like moving Frequent Service lines, but the big investment we made in Frequent Service on **Line 76-Hall /Greenburg** is not really paying off along Hall Blvd. south of downtown Tigard. There isn't enough demand here to support such frequent service.

Meanwhile, 72nd Avenue is a major concentration of jobs. So we wonder if we should move Line 76 over to 72nd Avenue. This would help make the best possible use of the Oregon City extension of Line 76, which would connect even more people into the jobs in this area.

The revised design of **Line 78** would come into Tigard from the east along Bonita Road and turn north on Hall Blvd. into downtown, providing 30-minute service along this segment of what is now the 76. This would provide useful new service to the Kruse Way and Lake Oswego. In addition, we suggest a new hourly local route from Tigard to Tualatin, **Line 131**, serving Hall Blvd. south of Bonita Road.

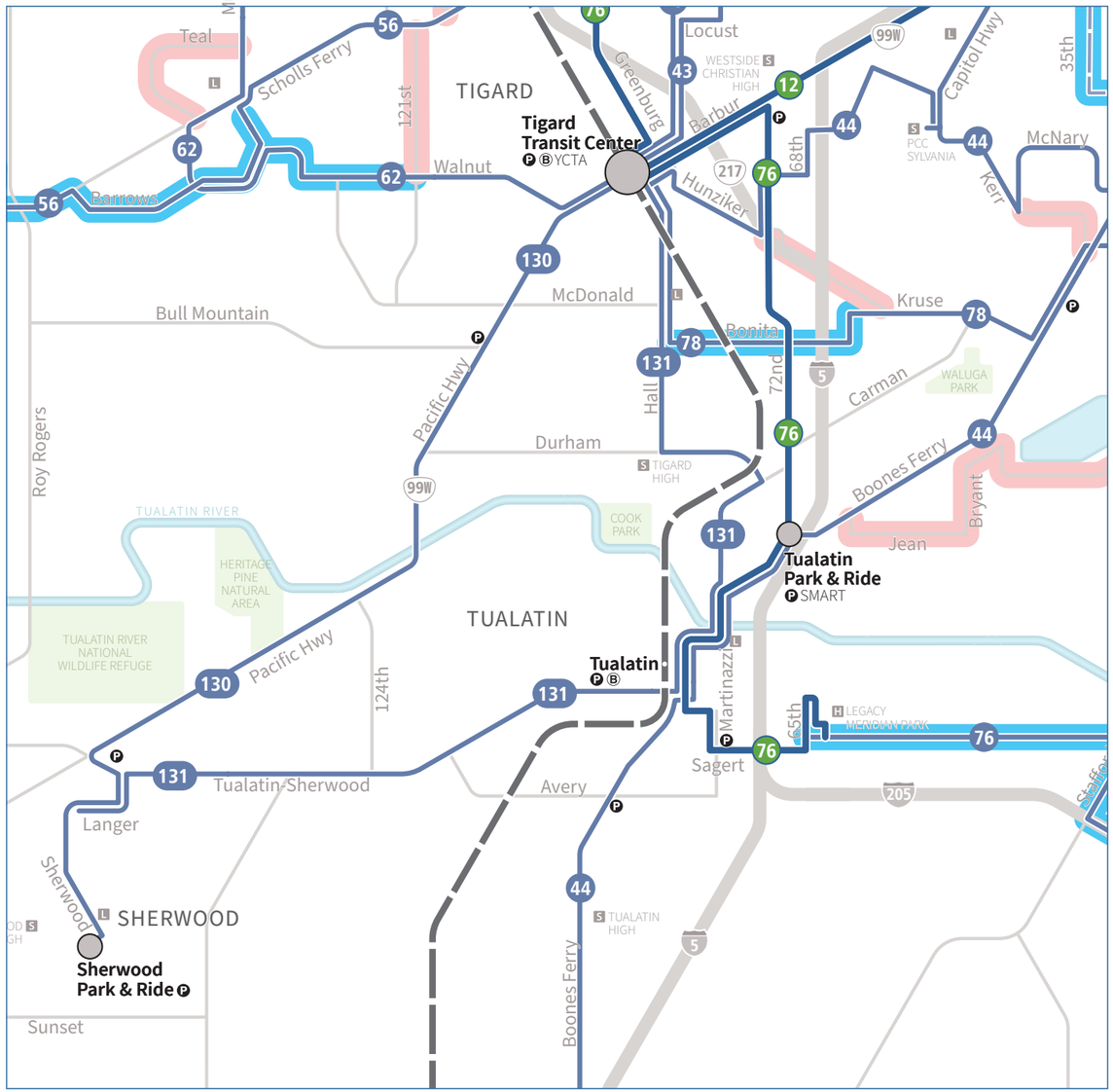


Figure 89: **Forward Together Revised Service Concept** - Tualatin, Sherwood, King City, Tigard

West Tigard and Beaverton

The rapid growth along Scholls Ferry Road has built a strong demand for good service in this segment, so we are proposing to extend **Line 56-Scholls Ferry Rd**. all the way out to Moutainside High School, serving the Progress Ridge business district on Barrows Road on the way. (Note that under the new design Line 56 goes to Hillsdale and Marquam Hill medical destinations but not to downtown Portland. A quick transfer to Frequent Service Line 54 at Hillsdale would be required. See the Marquam Hill section on page 18).

Line 62-Murray Blvd. now covers Scholls Ferry Rd. east of Murray. Since Line 56 would now cover this segment, we are thinking of sending Line 62 east along Walnut St. to downtown Tigard instead. This would be especially useful for people commuting south and east, to Tualatin or Kruse Way, connections that are available in downtown Tigard.

Line 92, the South Beaverton Express, would be removed. Rush hour demand is now so low that we can't support these expensive express trips from South Beaverton.

We made several changes to service in this area between the Draft and Revised concepts, described in detail on the following page.

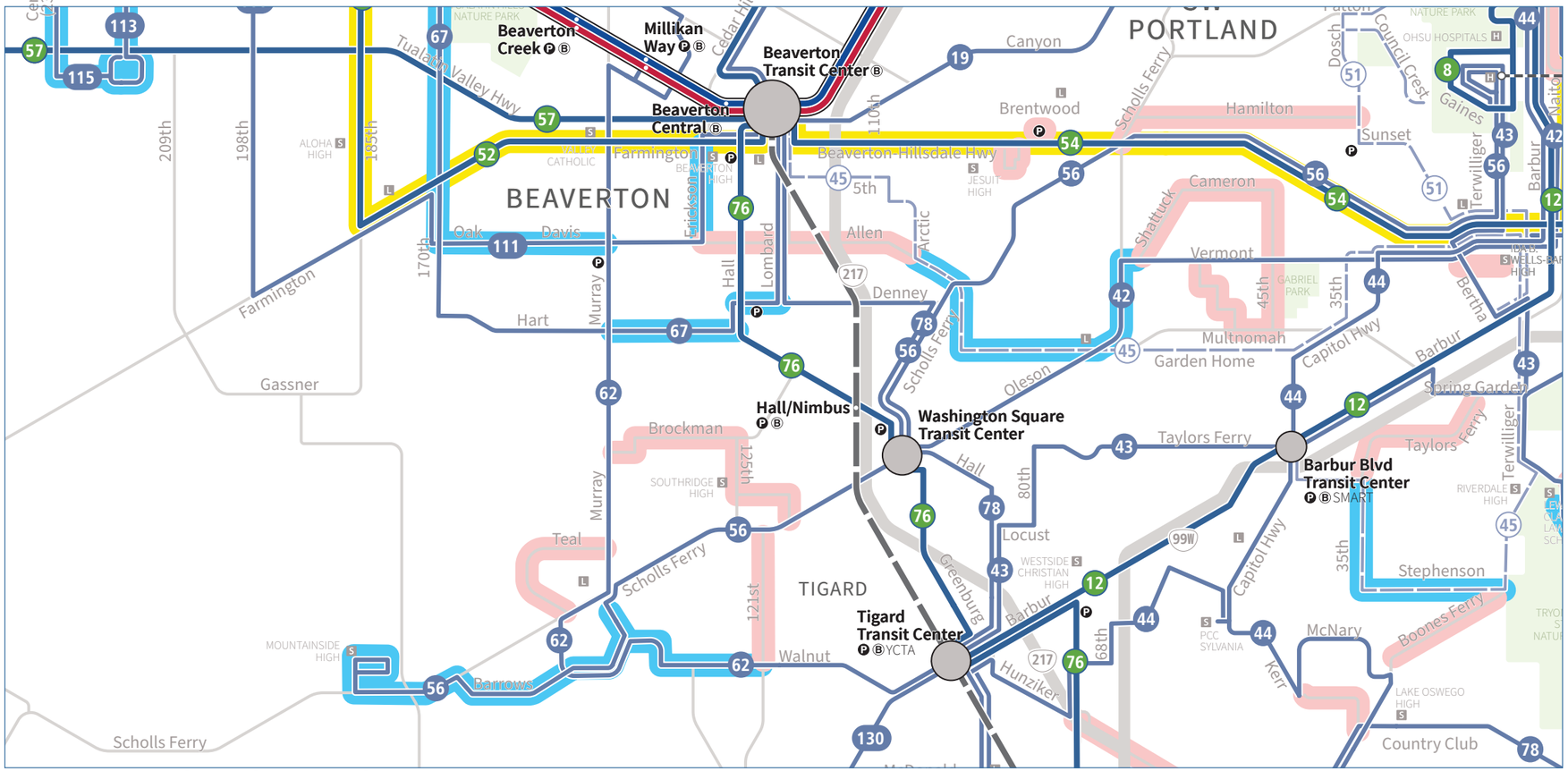


Figure 90: **Forward Together Revised Service Concept** - West Tigard and South Beaverton

Revision: South Beaverton

In the Draft Service Concept, we suggested retaining **Line 45-Garden Home** in its current form. Based on feedback received from the public and local jurisdiction partners, in the Revised Concept, we suggest a revision of service in this area:

- Line 45 would be realigned to end in Beaverton, serving jobs along Arctic and 5th along the way. Service would be available during rush hours and school commute times.
- New **Line 42-Vermont** would replace Line 45 as the all-day route between Washington Square and downtown Portland. Line 42 would also provide all-day, everyday service to Southwest Community Center, something not previously available. Line 42 would replace the existing Line 1.

We have also made adjustments in South Beaverton to maintain service on Denney and Lombard. Now, Line 67 would stay on Hart from 170th to Hall, and then continue up Lombard to its endpoint at Beaverton TC. Line 111 would now serve Allen and Erickson, and with 5th and Arctic served by Line 45, Line 78 is reverted to its existing routing via Denney and Lombard.

Washington Square

From the standpoint of Washington Square, the major changes are the new service to Progress Ridge (**Line 56-Scholls Ferry Rd.**), the new service to Oregon City via the extension of **Line 76-Hall/Greenburg,** and the new all-day **Line 42-Vermont** connecting to downtown Portland.

Direct service to downtown Portland would be reduced. **Line 56-Scholls Ferry Rd.**, currently the main link to downtown from Washington Square, would go to Marquam Hill instead, to increase access to the major regional destination of OHSU and nearby medical institutions. A connection would be required to Line 54-Beaverton-Hillsdale Hwy. in Hillsdale to reach downtown. Washington Square would continue to have direct hourly service to downtown via Line 42-Vermont. (Line 45-Garden Home would be realigned to end in Beaverton). For a more detailed explanation of changes related to access to Marquam Hill, OHSU and the VA, see page 18.

Line 43-Taylors Ferry Rd., extending east along Taylors Ferry Rd., would be increased to every 30 minute service. It and would be revised to end at Marquam Hill (see SW Portland section). The western terminus would change to Tigard.

South Portland (Macadam Ave, Corbett Ave)

With the continued growth of South Waterfront, Macadam Ave. is an increasingly busy street for us. If we receive new funding to address the impacts of I-205 tolling, we propose to use some of these resources to upgrade **Line 35-Macadam / Greeley** to Frequent Service. Our suggested new **Line 7-Johnson Creek Blvd. / Swan Island** would run along this segment every 30 minutes and then turn east over the Sellwood Bridge to serve Tacoma St. and Johnson Creek Blvd. This would provide improved access to the southern eastside from South Waterfront and also replace a link now provided by Line 99, which would be removed.

Corbett Avenue and Taylors Ferry Road have long been served by hourly Line 43. We suggest deleting the Taylors Ferry segment through Riverview Cemetery so that Line 43 can go to Marquam Hill instead (see Marquam Hill section beginning page 18). We also suggest removing service on Corbett Avenue, almost all of which is within a short walk of service on either Barbur or Macadam.

Southwest Portland

Low Demand Areas

SW Portland includes many large areas of very low density and high incomes. These areas are not a priority for service given their low ridership potential and the need to focus on equity. In the Draft Service Concept, we suggested reducing service on **Lines 1-Vermont, 51-Council Crest, and 55-Hamilton** to just the trips that are busy during the school rush hour.

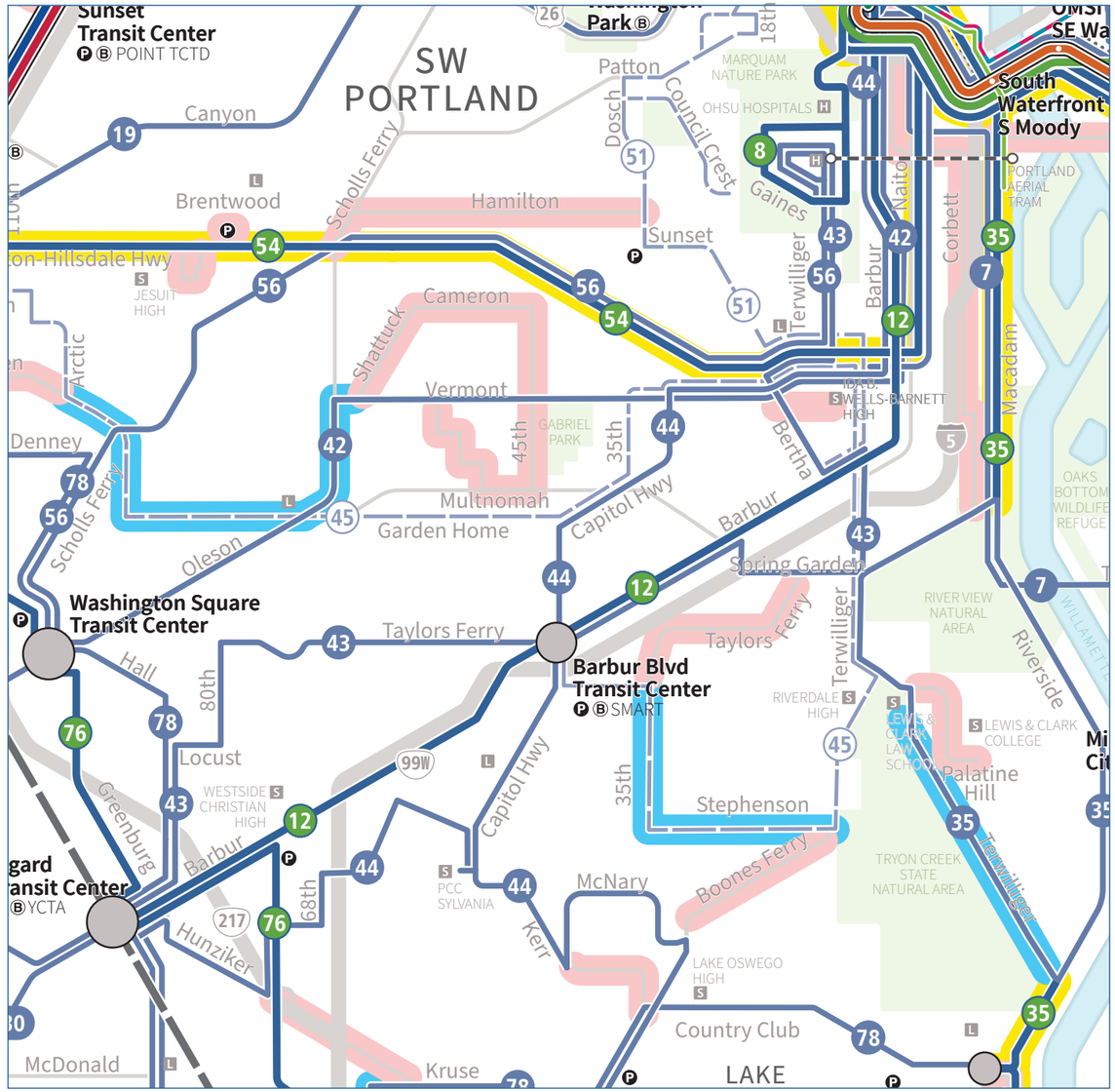
Based on comments we received in the October 2022 outreach process, we made some changes in this area. Many comments focused on the importance of access to Southwest Community Center, so we upgraded Line 1-Vermont to all-day 30-minute service, and redesigned it to end at Washington Square. In this process, we renamed it Line 42-Vermont, so that it has a number similar to other nearby routes.

With Line 42 now serving Washington Square and SWCC, we needed to create a unique role for Line 45-Garden Home. Because many comment asked us to restore service on Denney Rd. in Beaverton, we shifted Line 78 to serve Denney, and then redesign Line 45 to end in Beaverton, serving 5th and Arctic along the way. Now, we suggest that Line 45 be focused on rush hour and school bell times, while the new Line 42 will be the main all-day service in this area.

Frequent Upgrades

SW Portland also has many major corridors that have mixed to low incomes and high ridership potential. We already offer Frequent Service (every 15 minutes all day) on Barbur (Line 12) and on Beaverton-Hillsdale Highway (Lines 54/56) as far as Raleigh Hills. We want to expand **Line 54-Beaverton Hillsdale Hwy**. so that it's frequent all the way to Beaverton, providing better access to the medical and commercial destinations along Beaverton's segment of the highway. We also want to increase Capitol Hwy. service (**Line 44**) to every 20 minutes; at some point in the future, we hope to be able to make this a Frequent Service line as well.

In the October 2022 public engagement period, we heard from many people about the importance of maintaining service along Taylors Ferry Rd, near Lewis & Clark College, and along Boones Ferry Rd. to help students reach Wells High School.



Revisions: South and Southwest Portland

The Revised Service Concept makes several adjustments to the Draft to address these concerns.

First, in order to retain service near Lewis & Clark College and along Taylors Ferry, we suggest splitting **Line 35-Macadam / Greeley** into two branches between the north end of Lake Oswego and south end of Johns Landing. In this structure, every other trip of Line 35 would serve Terwilliger and the portion of Taylor's Ferry between Terwilliger and Macadam.

If we are able to upgrade Line 35 to Frequent Service, this would provide 30 minute service through this area including to the regional recreation destination of Tryon Creek Station Park. This would be a much higher level of service, available across a longer range of hours, than is currently available on existing Line 38 or 39.

Second, in order to maintain the connection between Ida B. Wells High School and neighborhoods south of I-5, we suggest extending **Line 45-Garden Home** south along Terwilliger, Stephenson and 35th.

As described earlier in this document, in the Revised Service Concept, Line 45 becomes a peak-only service originating at Beaverton TC, while new **Line 42-Vermont** becomes the main all-day service through Vermont Hills, continuing to Washington Square.

In this arrangement, Line 45's schedule would be designed to make it easy to use to travel to Wells HS at bell times in the mornings and evenings. This would also put students in the residential areas along 35th and Stephenson near a bus to the high school for the first time.

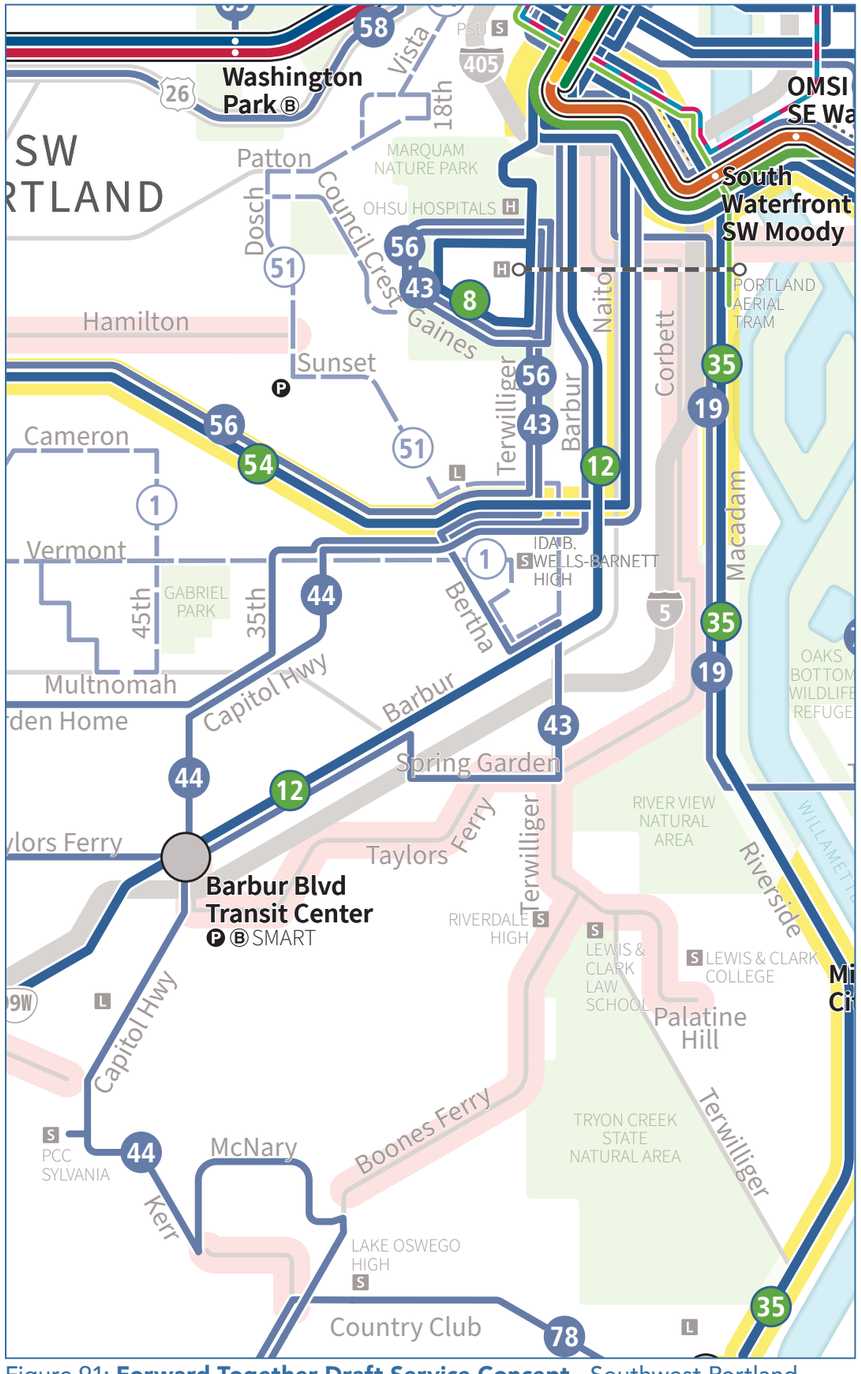


Figure 91: **Forward Together Draft Service Concept** - Southwest Portland

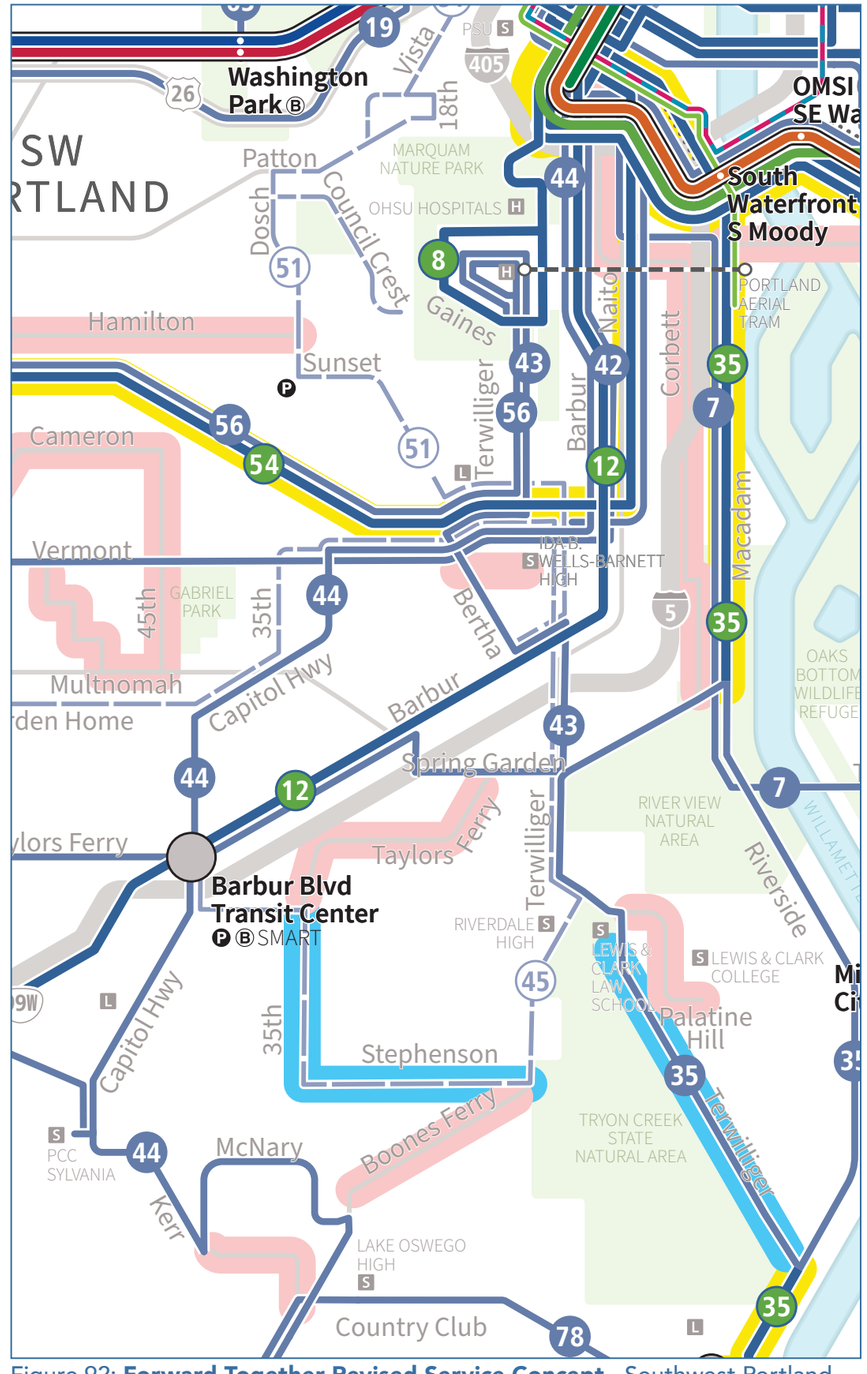


Figure 92: **Forward Together Revised Service Concept** - Southwest Portland

Marquam Hill & Lines 43 & 56

Marquam Hill's OHSU and VA facilities are an enormous concentration of jobs and other medical trips, awkwardly located on twisting hilly roads. The hill has Frequent Service on Line 8-Jackson Park from downtown.

For years TriMet has operated a series of rush hour express services to Marquam Hill, all numbered in the 60s, from various parts of the city. With the decline in rush hour commuting, we need to find a service pattern that we can sustain all day, and that efficiently provides access from all sides of the city. We believe that the Marquam Hill expresses are not the right way to provide that pattern.

As we focus more on service patterns that we can run all the time, and that work for people traveling at all times of day, we need to look at each of these services in light of whether the trips they provide can already be made on the all-day network.

- Line 61 from Beaverton is identical to Line 54 from Beaverton to Hillsdale, but then turns north to Marquam Hill. A frequent service from Hillsdale to Marquam Hill would make it possible to make this trip with one connection at Hillsdale between two Frequent lines. See below for how we suggest making this new link work.
- Lines 64 and 65 come in along Barbur Blvd. and then turn north on Terwillger to go to Marquam Hill. For these trips, there are two options. Frequent Line 12-Barbur is reasonably fast to SW Sheridan St, where a short walk across Duniway Park would take you to the Frequent Line 8 stop to go to the hill. However, we also want to provide an option to connect at Burlingame to go north to Marquam Hill.
- Line 66 from Hollywood entirely serves places that have Frequent Service into downtown, with a frequent connection to Line 8 to go to Marquam Hill.
- Line 68, the shuttle from Collins Circle, was designed to provide a fast connection from Westside MAX to Marquam Hill, bypassing

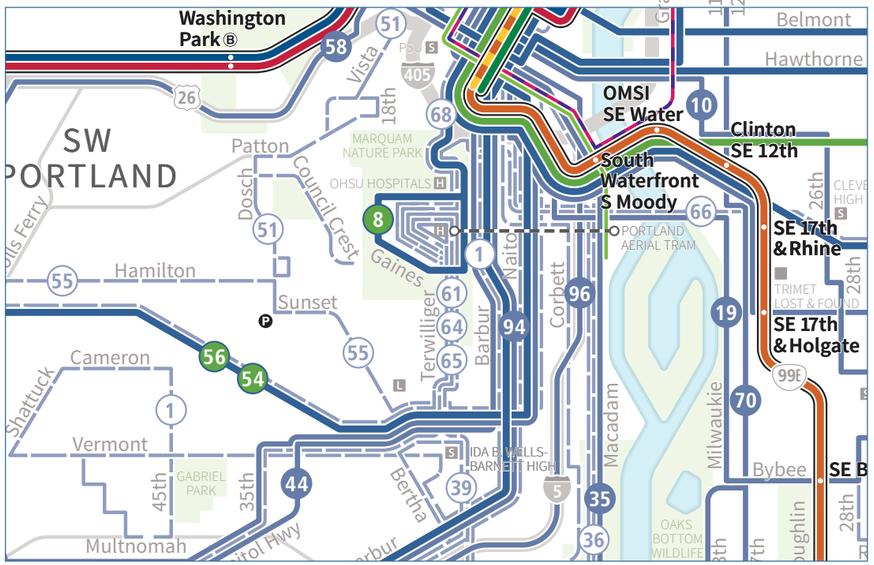


Figure 93: TriMet **Existing** Marquam Hill Services

the mall. Since then, however, the closure of Kings Hill station has made MAX faster into downtown, so the travel time benefit is less.

So the only thing we really need is frequent service from Hillsdale to Marquam Hill, so that people coming from the southwest can reach the hill all day without having to go all the way downtown to transfer to Line 8.

We looked at extending Line 8 to Hillsdale, but we don't see an easy way to turn buses around there.

We also looked at Line 56-Scholls Ferry Rd. When we upgrade Line 54-Beaverton Hillsdale to 15-minute Frequent Service, the half-hourly Line 56 buses become a duplication, all the way from Raleigh Hills to downtown.

So we are suggesting that maybe **Line 56** should turn north on Terwilliger and go to Marquam Hill instead of downtown. Passengers along Beaverton Hillsdale going downtown would just take the Frequent Line 54 instead. Passengers from the Scholls Ferry segment of Line 56 would need to transfer at Hillsdale to one of the frequent buses (54, 44, or 45) going into downtown.

That gives us 30-minute frequency from Hillsdale to Marquam Hill, but we'd really like 15. So we're suggesting that Line **43-Taylors Ferry Rd**. be

Figure 94: **Forward Together Revised Service Concept** - Marquam Hill Services

upgraded to run every 30 minutes and revised so that instead of going into Portland on Corbett Ave, it would go generally north along Terwilliger, but deviating via Bertha Blvd. and Capitol Hwy., to go through Hillsdale, and end at Marquam Hill.

Figure 94 illustrates the suggested structure for OHSU services in the Service Concept.

This Marquam Hill pattern of services (Lines 43 and 56 from the southwest via Hillsdale) gives us service every 15 minutes from the main Hillsdale stops to OHSU and the VA on Marquam Hill, at all times of day, not just rush hour. Passengers coming in on Barbur could change every 30 minutes to the 43 at Burlingame. This structure provides a reasonable range of connections to Marquam Hill from the southwest, using a pattern that we can afford to run all the time, not just at rush hour.

Finally, a further note on Line 43: This line is currently a rush hour service. It used to run all day but the ridership has historically been very low, even before the pandemic. We suggest increasing Line 43's frequency to every 30 minutes all day but to do that we need to revise it so that it focuses on enough places of high demand.

That's why we suggest skipping the section of Taylor's Ferry from 35th Avenue to 12th Avenue.

Instead, the line would use Barbur from Capitol Highway to 19th Avenue, and then run via 19th, Spring Garden, Taylors Ferry, Terwilliger to Burlingame. Then it would proceed up Bertha Blvd. and Capitol Highway, serving the main Hillsdale stops, and then continue up Terwilliger to end at Marquam Hill.

This revision of Line 43 does several useful things:

- Provides direct service to Marquam Hill from a relatively low-income and densely developing stretch of Barbur, between 19th Avenue and Capitol Highway.
- Continues to serve the South Burlingame business district.
- Connects South Burlingame to its nearest grocery stores: Safeway at 19th & Barbur and Fred Meyer at Burlingame.

On the deleted segment along Huber St. and Taylors Ferry, note that Barbur station has a pedestrian bridge to Huber St., and it is also possible to walk from the Frequent Line 12-Barbur at 26th Way. We know that this would not be the solution for everyone.

What did we hear?

We received many comments that asked us to restore the existing structure of the 60s Marquam Hill expresses. In designing the pattern of services shown in the Service Concept, we were focused on making Marquam Hill easier to access for *everyone*, not just 9-to-5 workers.

Because the 60s expresses run only at rush hour, on weekdays, they are not relevant to a great portion of the Hill's visitors and workers, who need to arrive at all times of the day. The Hill workers for whom rush hour services are most relevant are also more likely to be office and administrative workers, the same workers for whom working from home has persisted the longest, and is most likely to continue in some form in the future.

Ultimately, with the Service Concept's twin goals to build ridership and improve equity, we cannot afford to offer a separate set of services that are useful for only a portion of the many people who need to travel to Marquam Hill. We believe that making Marquam Hill easily reachable all day long from the southwest part of the region is an important step in building ridership and enhancing access to this critical destination for people whose travel patterns do not neatly align with the traditional rush hour. For these reasons, we continue to suggest these changes to Marquam Hill services.

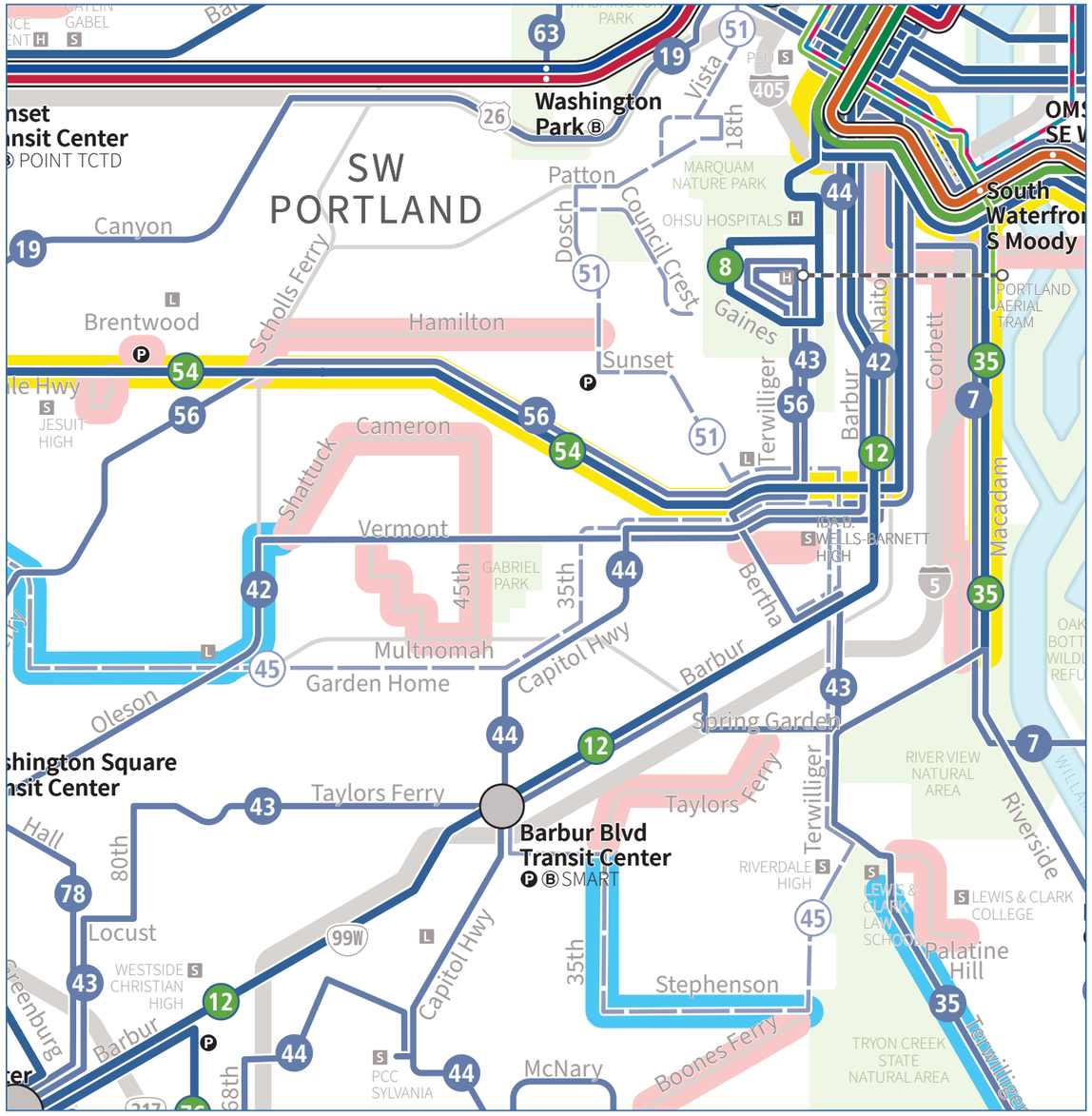


Figure 95: **Forward Together Revised Service Concept** - Marquam Hill

Beaverton and Hillsboro

In the Service Enhancement Plan process eight years ago, it became clear that most of Beaverton and Hillsboro will need a continuous grid of reasonably frequent services – exactly what we are proposing for East Portland. Most parts of the valley need north-south service to reach the nearest MAX station, but also east-west service to complete many local trips. TriMet already has the example of Frequent Line 57-TV Hwy., which is one of the most productive lines in the network.

We've identified two other lines in the area that clearly have an urgent need for Frequent Service:

- **52-Farmington/185th** would give us a frequent north-south route that's easy to transfer to from many east-west routes. It is the primary service for PCC Rock Creek and also serve Tanasbourne and high-demand parts of Aloha.
- **48-Cornell**. This straight and simple line, following Cornell from Sunset Transit Center to Hillsboro, has seen tremendous development, including both residential and employment growth. This would be the second east-west Frequent Network line in the valley, along with TV Hwy. The line has been made more direct through Cedar Mill via Barnes to also serve key retail and food destinations.

The rest of the Service Concept's Washington County grid would run every 30 minutes, though we hope we can afford 15-minute service on then in the future. Describing the north-south lines from east to west:

- **Line 62-Murray** would use Cedar Hills Blvd. and Cornell through Cedar Mill and makes a new connection to Tigard via Progress Ridge to the south.
- **Line 67-Bethany/158th** would be extended south of Elmonica station along 170th Ave, crossing the Frequent lines on TV Highway (57) and Farmington (52) and serving a key unserved part of Aloha. Then it would turn east on Oak St, Davis Rd, and Allen Avenue to provide service into downtown Beaverton, replacing a portion of current Line 88.

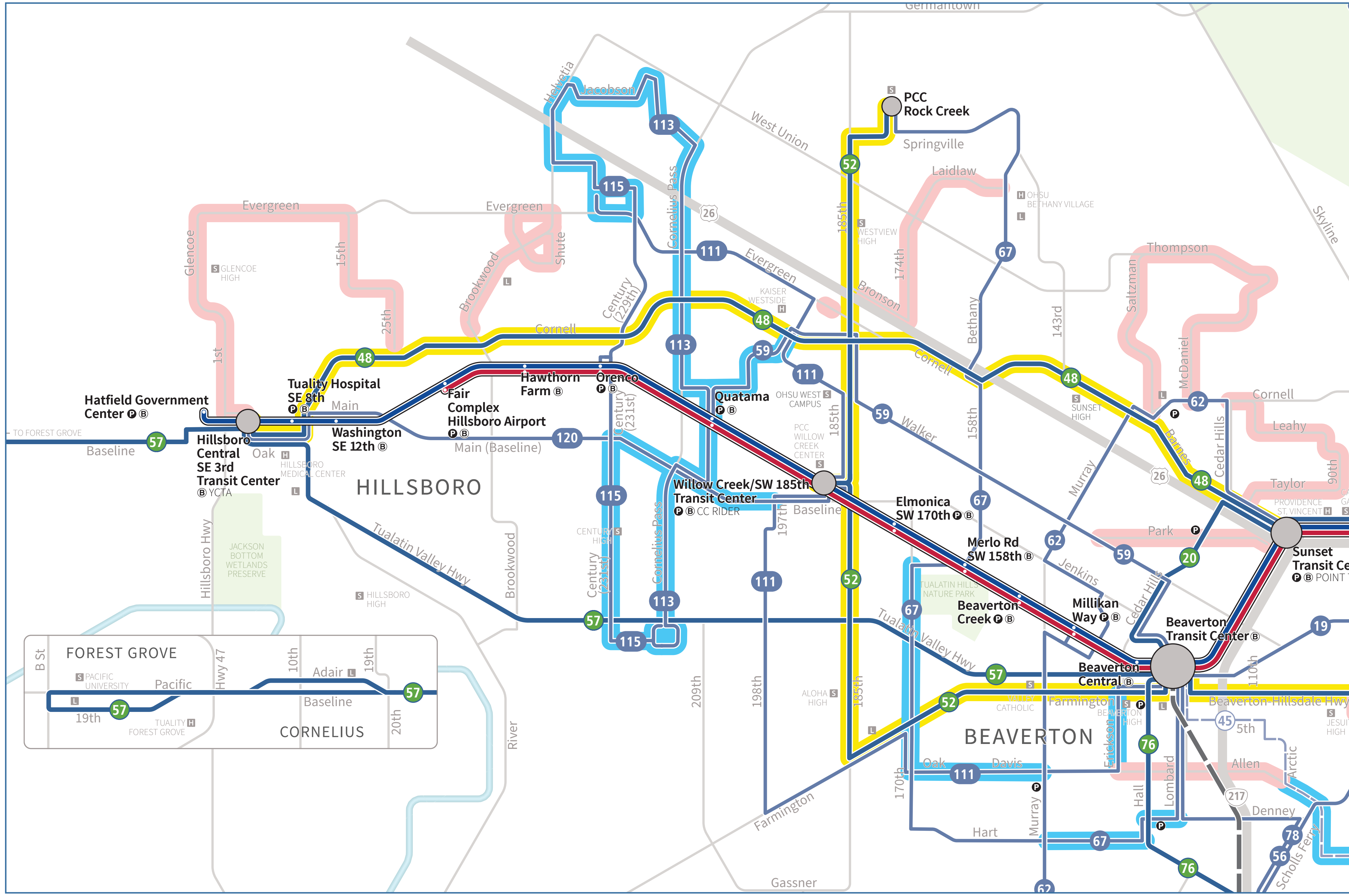


Figure 96: **Forward Together Revised Service Concept** - Beaverton and Hillsboro

- **Line 52-Farmington/185th** is unchanged but would become a Frequent Service route.
- **New Line 111-Hart/198th/Evergreen** would replace and extend today's Line 88, and be upgraded to every 20 minutes. As a north-south route, it would serve the Evergreen Parkway jobs area and connect it to MAX at Willow Creek station. (Currently, Evergreen Parkway's only MAX connection is at Orenco, which is out of direction for everyone going to and from the east.) Then, the route would cover 198th Avenue through Aloha to Farmington Rd. Finally it would turn east, covering portions of Hart Rd. and Allen Ave. into downtown Beaverton. (The path into Beaverton isn't meant to be especially direct, but is covering several neighborhoods that need good service. If you were on 198th and wanted to go to downtown Beaverton, you would take this bus to MAX at Willow Creek instead.) We think this could be one of the most successful new north-south routes in Washington County.

We looked hard at creating a new north-south line generally along John Olsen Ave, 206th Ave, and 209th Ave. In the end we decided that we couldn't justify it given our limited budget. Running more frequent service along 198th Ave. and Cornelius Pass Road appears to be the best way to provide good connections to this area, at least for now.

- **New Line 113-Cornelius Pass.** A new half-hourly route would cover Cornelius Pass Rd. from Reeds Crossing (south of TV Highway) up to Liberty High School and the industrial area north of US 26. (Between Baseline and the MAX Line, the route deviates eastward to 206th to serve Quatama MAX station.) From the North Hillsboro industrial area service would continue back south along Brookwood to Evergreen, then continue south as Line 115 below.
- **New 115-Century Blvd**. This new line would generally follow Century Blvd. from Evergreen Parkway south to Reeds Crossing.

Finally, two improved east-west lines are suggested, in addition to the Frequent Service on 48-Cornell and 57-TV Hwy.

- **Line 59-Walker.** We suggest revising this line so that it goes to Beaverton Transit Center instead of Sunset Transit Center. The route would stay on Walker east to Cedar Hills Blvd. (instead of turning north at Park Way) and thus would get to far more jobs and destinations, although it increased travel time to downtown Portland. At the west, end, we suggest sending the line to Quatama station instead of Willow Creek. This would provide some useful service within Amberglen. We would like to run this route more frequently but for now we are hoping to restore 60-minute all day service.
- **New Line 120-Baseline**. This new half-hourly line would connect Hillsboro and Willow Creek along Baseline Road and Main St., forming a new east-west element in the grid.

With these lines, the basic grid structure that we need would be in place. It won't all be as frequent as we would like, but it would dramatically improve people's ability to travel all over greater Beaverton and Hillsboro.

Inevitably there are some downsides. We have to remove service to a few low-ridership segments:

- Line 46 in the area north of downtown Hillsboro. The Intel Jones Farm employment site is not large enough to support this route by itself. Residential areas or northern Hillsboro are extremely difficult to serve with fixed route service because of the disconnected street pattern and mostly low density.
- 174th Avenue and Laidlaw Rd. in Bethany. This low-ridership segment of the 47 is entirely single family homes without apartments, and it lacks the density or local street connectivity to support very useful service. A major frequency increase on 185th Avenue is suggested, which would make service there more worth walking to. Bethany Blvd. service would not become more frequent but would be extended south to Aloha and Beaverton, expanding its usefulness.
- Line 50-Cedar Mill. We cannot see a case for maintaining this very low-ridership route, which mostly serves a low density residential area. Frequent service on Line 20-Burnside and 30-minute service on Cedar Hills Blvd. (Line 62) would both be worth walking to from parts of this area.

Revision: Brookwood Library

In our October 2022 outreach period, we heard a lot about the need to maintain service to Hillsboro's Brookwood Library, located east of Brookwood Pkwy. between Cornell and Evergreen.

Today, Brookwood Library is served by Line 46-North Hillsboro, which serves residential areas of north Hillsboro, continuing to the Fair Complex MAX station and then up Brookwood Pkwy.

This is not a high ridership segment; pre-pandemic, there were a total of about 200 boardings per weekday on Line 46, with just 22 on the Brookwood segment, and just a single boarding at the stop serving the library itself.

In the Draft Service Concept, we suggested reorienting service in north Hillsboro to offer more frequent connections from MAX to the major employment areas located between Brookwood and Cornelius Pass Rd. This involved creating two new 30-minute routes, Line 113 and 115, while removing Line 46 entirely.

Many comments in the outreach period focused on the need to maintain service to Brookwood Library. The Revised Service Concept has identified two options to serve this destination if and when changes are implemented in the future.

The first option is to shift Washington County's North Hillsboro Link service to Brookwood Parkway. North Hillsboro Link is a deviated fixed route that connects Orenco Station to the North Hillsboro industrial area. With the Revised Service Concept's new Lines 113 and 115, we are suggesting reaching all destinations on the Link service with more frequent bus service available for a long span of service on more days of the week. The Link service would now be duplicative of these other routes, so shifting to Brookwood Pkwy. would enable it to refocus on a new, unique market. TriMet and Washington County staff have begun a conversation around this option.

If changes to the Link are not possible, the other option would simply be to extend new Line 111 along Brookwood to terminate at the Fair Complex MAX station.

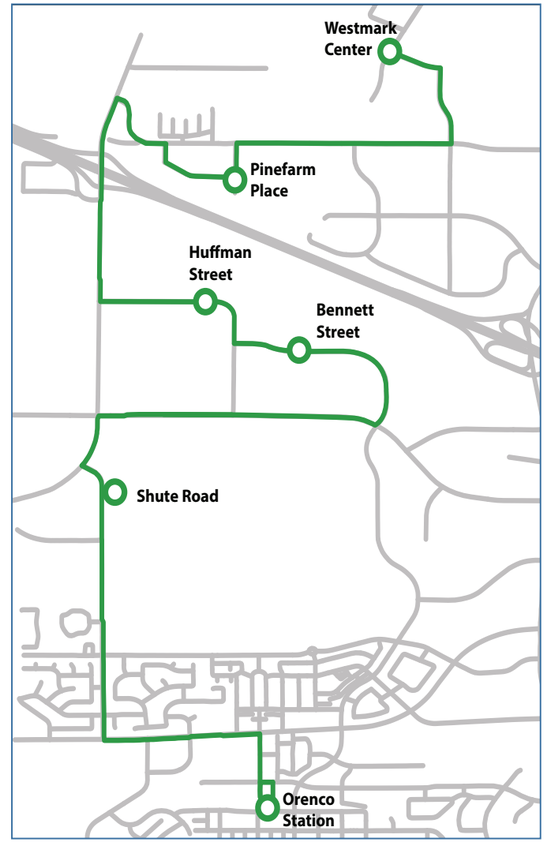


Figure 97: North Hillsboro Link

Appendix B: Survey 1 Instrument

TRIMET FORWARD TOGETHER

Weigh in on the survey below and share your thoughts by March 31.

The COVID-19 pandemic has changed the way people travel, and we may never go back to the way things were before, so we're evaluating our plans to move forward together.

We're taking a deep look at our existing bus service and whether it is best serving our community. We're exploring things like:

- Where are buses running now and where should they run?
- Are riders traveling more between suburbs rather than in and out of Downtown Portland?
- Should we put more buses where people ride the most or should we spread out the buses to serve more neighborhoods?

* 1. When it comes to planning bus service, increasing *ridership* means putting service where it is needed most, while increasing *geographic coverage* means ensuring everyone has at least some service nearby. How much do you think TriMet should focus on *ridership* versus *geographic coverage*?

- ◯ 100% Ridership / 0% Coverage
- ◯ 75% Ridership / 25% Coverage
- ◯ 50% Ridership / 50% Coverage
- ◯ 25% Ridership / 75% Coverage
- ◯ 100% Coverage / 0% Ridership
- ◯ I have no preference
- ◯ I'm not sure

2. What should be the main purpose for *geographic coverage*? (Please rank the choices below, with 1 being your first choice and 6 being your last choice.)

- Meet the needs of seniors and people with disabilities
- Equity for people with low incomes (of any race)
- Equity for historically disadvantaged racial or ethnic groups (of any income level)
- Service to newly built neighborhoods
- Service to absolutely everyone in the service area
- Other

Optional: Other (specify)

3. What should we prioritize as we *restore service* that was cut during the pandemic? (Please rank the choices below, with 1 being your first choice and 7 being your last choice.)

Maximize ridership overall

Reduce the growth of traffic congestion

Improve service that especially benefits people with lower incomes

Improve service that especially benefits historically disadvantaged racial or ethnic groups

Improve service that especially benefits essential workers

Improve service that especially benefits seniors and people with disabilities

Other

Optional: Other (specify)

TRIMET FORWARD TOGETHER

About you

The following questions help us ensure that all voices are represented in our research and decision-making. Answers you provide are anonymous.

* 4. How often have you been riding TriMet in the last 12 months? This includes trips on buses, MAX, WES and LIFT paratransit.

- ◯ Non-rider (I didn't ride TriMet)
- ◯ Infrequent rider (I rode less than once a month)
- ◯ Occasional rider (I rode several times a month)
- ◯ Regular rider (I rode several times a week)
- ◯ Frequent rider (I rode almost every day)
- ◯ I'm not sure

5. What is your home zip code?

* 6. What is your age?

- ◯ Under 18
- ◯ 18-24
- ◯ 25-34
- ◯ 35-44
- ◯ 45-54
- ◯ 55-64
- ◯ 65 or more
- ◯ I prefer not to say

* 7. What gender do you identify with?

- ◯ Female
- ◯ Male
- ◯ Non-binary
- ◯ I prefer not to say
- ◯ Self-identify (specify):

* 8. Do you live with a disability?

- ◯ Yes
- ◯ No
- ◯ I prefer not to say

* 9. What is your race or ethnicity? (Check all that apply.)

- ☐ African American/Black
- ☐ American Indian or Alaskan Native
- ☐ Asian/Asian American
- ☐ Hispanic/Latino
- ☐ Pacific Islander
- ☐ White
- ☐ Multi-racial or bi-racial
- ☐ I prefer not to say
- ☐ Other (specify):

* 10. Including yourself, how many people live in your household?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8
- ◯ 9
- ◯ 10 or more
- ◯ I prefer not to say

* 11. What was your total annual household income before taxes in 2021?

- ◯ Less than $10,000
- ◯ $10,000 to just under $20,000
- ◯ $20,000 to just under $30,000
- ◯ $30,000 to just under $40,000
- ◯ $40,000 to just under $50,000
- ◯ $50,000 to just under $60,000
- ◯ $60,000 to just under $70,000
- ◯ $70,000 to just under $80,000
- ◯ $80,000 to just under $90,000
- ◯ $90,000 to just under $100,000
- ◯ $100,000 to just under $125,000
- ◯ $125,000 to just under $150,000
- ◯ Over $150,000
- ◯ I prefer not to say

Thank you for your time!

Your feedback will help us plan future service and make transit better.

Appendix C: Survey 1 Crosstabs

1. How much do you think TriMet should focus on ridership versus geographic coverage? Version 1

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5674	1519	2604	1301	355	3747	821	147
	100%	100%	100%	100%	100%	100%	100%	100%
100% ridership, 0% coverage	319	106	110	78	24	213	31	8
	6%	7%	4%	6%	7%	6%	4%	5%
		C		C	G	G		
75% ridership, 25% coverage	1585	418	732	391	85	1138	199	37
	28%	28%	28%	30%	24%	30%	24%	25%
						EG		
50% ridership, 50% coverage	2485	676	1197	511	160	1565	410	64
	44%	45%	46%	39%	45%	42%	50%	44%
		D	D				F	
25% ridership, 75% coverage	721	181	368	148	50	473	101	23
	13%	12%	14%	11%	14%	13%	12%	16%
			BD					
0% ridership, 100% coverage	156	42	60	42	14	87	30	3
	3%	3%	2%	3%	4%	2%	4%	2%
I have no preference	141	33	45	53	8	98	16	4
	2%	2%	2%	4%	2%	3%	2%	3%
				BC				
I'm not sure	267	63	92	78	14	173	34	8
	5%	4%	4%	6%	4%	5%	4%	5%
				BC				

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q1

1. How much do you think TriMet should focus on ridership versus geographic coverage? Version 2
* Removed from total: No preference/not sure

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5266	1423	2467	1170	333	3476	771	135
	100%	100%	100%	100%	100%	100%	100%	100%
100% ridership, 0% coverage	319	106	110	78	24	213	31	8
	6%	7%	4%	7%	7%	6%	4%	6%
		C		C	G	G		
75% ridership, 25% coverage	1585	418	732	391	85	1138	199	37
	30%	29%	30%	33%	26%	33%	26%	27%
				BC		EG		
50% ridership, 50% coverage	2485	676	1197	511	160	1565	410	64
	47%	48%	49%	44%	48%	45%	53%	47%
			D				F	
25% ridership, 75% coverage	721	181	368	148	50	473	101	23
	14%	13%	15%	13%	15%	14%	13%	17%
0% ridership, 100% coverage	156	42	60	42	14	87	30	3
	3%	3%	2%	4%	4%	3%	4%	2%
*I have no preference	141	33	45	53	8	98	16	4
*I'm not sure	267	63	92	78	14	173	34	8

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q2a

2a. Main purpose of geographic coverage: Meet the needs of seniors and people with disabilities

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5562	1496	2571	1269	351	3688	808	146
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	3363	906	1518	794	229	2210	480	89
==========	60%	61%	59%	63%	65%	60%	59%	61%
				C	F			
1 (First choice)	1698	447	774	398	110	1095	238	47
	31%	30%	30%	31%	31%	30%	29%	32%
2	1665	459	744	396	119	1115	242	42
	30%	31%	29%	31%	34%	30%	30%	29%
3	1395	340	694	317	76	947	197	35
	25%	23%	27%	25%	22%	26%	24%	24%
			B					
4	555	174	248	111	36	373	84	15
	10%	12%	10%	9%	10%	10%	10%	10%
		D						
5	189	57	90	34	8	117	40	7
	3%	4%	4%	3%	2%	3%	5%	5%
							EF	
6 (Last choice)	60	19	21	13	2	41	7	-
	1%	1%	1%	1%	1%	1%	1%	
Mean	2.3	2.3	2.3	2.2	2.2	2.3	2.3	2.3
		D						

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q2b

2b. Main purpose of geographic coverage: Equity for people with low incomes (of any race)

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5542	1494	2569	1256	352	3679	802	144
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	3473	902	1668	759	221	2333	473	83
==========	63%	60%	65%	60%	63%	63%	59%	58%
			BD			G		
1 (First choice)	1578	406	767	339	92	1059	216	37
	28%	27%	30%	27%	26%	29%	27%	26%
2	1895	496	901	420	129	1274	257	46
	34%	33%	35%	33%	37%	35%	32%	32%
3	1264	372	543	305	74	846	182	40
	23%	25%	21%	24%	21%	23%	23%	28%
		C		C				
4	548	154	249	126	40	352	93	11
	10%	10%	10%	10%	11%	10%	12%	8%
5	202	53	87	51	14	117	46	7
	4%	4%	3%	4%	4%	3%	6%	5%
							F	
6 (Last choice)	55	13	22	15	3	31	8	3
	1%	1%	1%	1%	1%	1%	1%	2%
Mean	2.3	2.3	2.2	2.3	2.3	2.3	2.4	2.4
		C		C			F	

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q2c

2c. Main purpose of geographic coverage: Equity for historically disadvantaged racial or ethnic groups (of any income level)

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5532	1493	2562	1257	350	3670	799	145
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	1713	459	796	383	75	1204	216	40
==========	31%	31%	31%	30%	21%	33%	27%	28%
						EG	E	
1 (First choice)	626	171	280	151	32	448	81	15
	11%	11%	11%	12%	9%	12%	10%	10%
2	1087	288	516	232	43	756	135	25
	20%	19%	20%	18%	12%	21%	17%	17%
						EG	E	
3	1717	462	831	355	121	1134	244	39
	31%	31%	32%	28%	35%	31%	31%	27%
			D					
4	1191	325	558	263	83	759	182	39
	22%	22%	22%	21%	24%	21%	23%	27%
5	658	190	273	173	48	421	108	19
	12%	13%	11%	14%	14%	11%	14%	13%
		C		C				
6 (Last choice)	253	57	104	83	23	152	49	8
	5%	4%	4%	7%	7%	4%	6%	6%
				BC			F	
Mean	3.2	3.2	3.1	3.3	3.4	3.1	3.3	3.3
				C	F		F	

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q2d

2d. Main purpose of geographic coverage: Service to newly built neighborhoods

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5548	1498	2562	1262	349	3674	810	144
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	559	160	253	122	34	292	129	24
==========	10%	11%	10%	10%	10%	8%	16%	17%
							EF	EF
1 (First choice)	168	51	73	33	9	79	49	10
	3%	3%	3%	3%	3%	2%	6%	7%
							EF	F
2	391	109	180	89	25	213	80	14
	7%	7%	7%	7%	7%	6%	10%	10%
							F	
3	563	154	241	135	38	348	101	17
	10%	10%	9%	11%	11%	9%	12%	12%
							F	
4	1774	467	823	402	111	1157	249	48
	32%	31%	32%	32%	32%	31%	31%	33%
5	2303	613	1094	526	148	1621	295	48
	42%	41%	43%	42%	42%	44%	36%	33%
						GH		
6 (Last choice)	349	104	151	77	18	256	36	7
	6%	7%	6%	6%	5%	7%	4%	5%
						G		
Mean	4.2	4.2	4.2	4.2	4.2	4.3	3.9	3.9
					GH	GH		

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q2e

2e. Main purpose of geographic coverage: Service to absolutely everyone in the service area

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5567	1494	2572	1272	350	3690	809	145
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	1797	514	808	417	125	1178	284	50
==========	32%	34%	31%	33%	36%	32%	35%	34%
1 (First choice)	1348	386	610	305	95	896	206	34
	24%	26%	24%	24%	27%	24%	25%	23%
2	449	128	198	112	30	282	78	16
	8%	9%	8%	9%	9%	8%	10%	11%
3	506	142	216	119	33	333	71	11
	9%	10%	8%	9%	9%	9%	9%	8%
4	1255	310	593	304	70	885	164	28
	23%	21%	23%	24%	20%	24%	20%	19%
				B		G		
5	1756	459	840	374	105	1119	259	53
	32%	31%	33%	29%	30%	30%	32%	37%
			D					
6 (Last choice)	253	69	115	58	17	175	31	3
	5%	5%	4%	5%	5%	5%	4%	2%
						H		
Mean	3.4	3.4	3.5	3.4	3.3	3.4	3.4	3.4
			B					

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q2f

2f. Main purpose of geographic coverage: Other response - rating

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5098	1411	2356	1116	312	3385	750	130
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	269	59	115	85	20	193	33	5
==========	5%	4%	5%	8%	6%	6%	4%	4%
				BC				
1 (First choice)	187	40	81	62	15	141	18	3
	4%	3%	3%	6%	5%	4%	2%	2%
				BC		G		
2	82	19	34	23	5	52	15	2
	2%	1%	1%	2%	2%	2%	2%	2%
3	90	25	35	26	7	60	11	3
	2%	2%	1%	2%	2%	2%	1%	2%
4	176	54	80	35	10	120	30	3
	3%	4%	3%	3%	3%	4%	4%	2%
5	374	110	161	79	24	245	50	8
	7%	8%	7%	7%	8%	7%	7%	6%
6 (Last choice)	4189	1163	1965	891	251	2767	626	111
	82%	82%	83%	80%	80%	82%	83%	85%
			D					
Mean	5.6	5.6	5.6	5.4	5.5	5.5	5.6	5.6
		D	D					

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q2_grouped

2. Main purpose of geographic coverage: Other response - categories (Open-end, multiple responses accepted)

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	759	201	348	190	51	522	122	22
	100%	100%	100%	100%	100%	100%	100%	100%
Comments about service (routes, frequency, ease of use, safety, etc.)	269	82	110	72	21	192	32	9
	35%	41%	32%	38%	41%	37%	26%	41%
		C				G		
NET: Existing ranked category ==========	65	18	29	17	6	48	7	2
	9%	9%	8%	9%	12%	9%	6%	9%
Service to absolutely everyone in the service area	35	11	14	10	5	26	3	1
	5%	5%	4%	5%	10%	5%	2%	5%
Equity for historically disadvantaged racial or ethnic groups (of any income level)	12	2	6	4	1	10	1	-
	2%	1%	2%	2%	2%	2%	1%	
Meet the needs of seniors and people with disabilities	11	4	3	3	-	9	1	-
	1%	2%	1%	2%		2%	1%	
Equity for people with low incomes (of any race)	11	3	4	4	1	9	1	-
	1%	1%	1%	2%	2%	2%	1%	
Service to newly built neighborhoods	6	1	4	1	-	3	1	1
	1%	0%	1%	1%		1%	1%	5%
Students/youth/near schools	60	14	28	15	2	43	11	1
	8%	7%	8%	8%	4%	8%	9%	5%
Near jobs/industrial, business areas	59	17	32	10	2	37	15	3
	8%	8%	9%	5%	4%	7%	12%	14%
							E	
Rural/suburban areas	43	10	21	11	4	26	10	-
	6%	5%	6%	6%	8%	5%	8%	
Comments about survey/equity	41	8	18	12	1	27	7	2
	5%	4%	5%	6%	2%	5%	6%	9%
High density/congested areas	36	10	16	10	1	24	7	1
	5%	5%	5%	5%	2%	5%	6%	5%
Reduce auto use/pollution	32	4	19	7	4	20	5	1
	4%	2%	5%	4%	8%	4%	4%	5%
			B					
Near essential services (shopping, medical facilities, etc.)	29	3	18	7	2	14	12	-
	4%	1%	5%	4%	4%	3%	10%	
			B				F	
To recreational/entertainment/tourist destinations	29	7	16	6	-	22	6	1
	4%	3%	5%	3%		4%	5%	5%
Increase/encourage use of public transit	24	3	18	3	1	18	5	-
	3%	1%	5%	2%	2%	3%	4%	
			BD					
Provide connections to other transportation options	20	4	11	5	3	10	5	-
	3%	2%	3%	3%	6%	2%	4%	
Areas with the most demand	20	5	8	5	3	13	2	-
	3%	2%	2%	3%	6%	2%	2%	
Meet the needs of people without cars/who want alternatives	16	6	7	3	-	8	7	1
	2%	3%	2%	2%		2%	6%	5%
Better coverage on east side	9	2	6	1	-	7	-	-
	1%	1%	2%	1%		1%		
Better coverage on west side	4	3	-	1	-	2	2	-
	1%	1%		1%		0%	2%	
Other response	75	19	32	22	4	53	12	1
	10%	9%	9%	12%	8%	10%	10%	5%

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3a

3a. Restore service priorities: Maximize ridership overall

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5481	1474	2553	1242	345	3645	803	143
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice ==========	2451	736	1124	465	159	1575	372	62
	45%	50%	44%	37%	46%	43%	46%	43%
		CD	D					
1 (First choice)	1641	514	733	305	106	1061	238	40
	30%	35%	29%	25%	31%	29%	30%	28%
		CD	D					
2	810	222	391	160	53	514	134	22
	15%	15%	15%	13%	15%	14%	17%	15%
			D					
3	527	142	242	125	31	341	70	13
	10%	10%	9%	10%	9%	9%	9%	9%
4	457	122	213	102	18	311	53	11
	8%	8%	8%	8%	5%	9%	7%	8%
						E		
5	676	165	321	175	45	483	88	19
	12%	11%	13%	14%	13%	13%	11%	13%
				B				
6	1213	264	588	335	81	827	195	32
	22%	18%	23%	27%	23%	23%	24%	22%
			B	BC				
7 (Last choice)	157	45	65	40	11	108	25	6
	3%	3%	3%	3%	3%	3%	3%	4%
Mean	3.4	3.1	3.4	3.7	3.4	3.4	3.4	3.5
			B	BC				

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3b

3b. Restore service priorities: Reduce the growth of traffic congestion

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5473	1472	2548	1242	345	3642	798	143
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice ==========	2230	579	1052	487	142	1389	339	64
	41%	39%	41%	39%	41%	38%	42%	45%
							F	
1 (First choice)	1118	252	551	265	68	675	176	36
	20%	17%	22%	21%	20%	19%	22%	25%
			B	B			F	
2	1112	327	501	222	74	714	163	28
	20%	22%	20%	18%	21%	20%	20%	20%
		D						
3	682	204	312	125	37	418	112	20
	12%	14%	12%	10%	11%	11%	14%	14%
		D	D					
4	644	164	298	162	39	469	79	10
	12%	11%	12%	13%	11%	13%	10%	7%
						GH		
5	942	233	426	262	62	651	140	33
	17%	16%	17%	21%	18%	18%	18%	23%
				BC				
6	846	258	394	178	55	625	111	14
	15%	18%	15%	14%	16%	17%	14%	10%
		D				GH		
7 (Last choice)	129	34	66	28	10	90	17	2
	2%	2%	3%	2%	3%	2%	2%	1%
Mean	3.4	3.5	3.4	3.5	3.5	3.5	3.3	3.2
						GH		

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3c

3c. Restore service priorities: Improve service that especially benefits people with lower incomes

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5479	1474	2552	1239	345	3643	798	144
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	2330	591	1122	536	134	1606	310	51
==========	43%	40%	44%	43%	39%	44%	39%	35%
			B			GH		
1 (First choice)	975	256	462	224	58	685	129	29
	18%	17%	18%	18%	17%	19%	16%	20%
2	1355	335	660	312	76	921	181	22
	25%	23%	26%	25%	22%	25%	23%	15%
			B			H	H	
3	1408	389	646	301	87	906	219	34
	26%	26%	25%	24%	25%	25%	27%	24%
4	978	292	430	219	69	625	147	37
	18%	20%	17%	18%	20%	17%	18%	26%
		C						F
5	537	145	239	133	41	355	84	15
	10%	10%	9%	11%	12%	10%	11%	10%
6	184	44	100	37	9	127	30	6
	3%	3%	4%	3%	3%	3%	4%	4%
7 (Last choice)	42	13	15	13	5	24	8	1
	1%	1%	1%	1%	1%	1%	1%	1%
Mean	2.9	2.9	2.9	2.9	3.0	2.9	3.0	3.1
							F	

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3d

3d. Restore service priorities: Improve service that especially benefits historically disadvantaged racial or ethnic groups

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5460	1471	2545	1234	345	3630	798	143
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	1088	271	518	264	54	774	129	41
==========	20%	18%	20%	21%	16%	21%	16%	29%
						EG		EG
1 (First choice)	405	92	193	113	15	297	47	14
	7%	6%	8%	9%	4%	8%	6%	10%
				B		EG		E
2	683	179	325	151	39	477	82	27
	13%	12%	13%	12%	11%	13%	10%	19%
						G		EG
3	977	284	441	215	68	686	126	20
	18%	19%	17%	17%	20%	19%	16%	14%
						G		
4	1239	333	594	257	72	799	193	33
	23%	23%	23%	21%	21%	22%	24%	23%
5	1052	305	486	214	72	652	169	21
	19%	21%	19%	17%	21%	18%	21%	15%
		D					FH	
6	883	234	410	208	62	575	145	20
	16%	16%	16%	17%	18%	16%	18%	14%
7 (Last choice)	221	44	96	76	17	144	36	8
	4%	3%	4%	6%	5%	4%	5%	6%
				BC				
Mean	4.0	4.0	4.0	4.0	4.2	3.9	4.2	3.8
					FH		FH	

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3e

3e. Restore service priorities: Improve service that especially benefits essential workers

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5466	1469	2549	1238	347	3635	801	144
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	1266	368	578	287	82	861	202	33
==========	23%	25%	23%	23%	24%	24%	25%	23%
1 (First choice)	584	169	271	127	42	400	95	13
	11%	12%	11%	10%	12%	11%	12%	9%
2	682	199	307	160	40	461	107	20
	12%	14%	12%	13%	12%	13%	13%	14%
3	870	227	403	220	63	589	130	27
	16%	15%	16%	18%	18%	16%	16%	19%
4	1128	286	537	255	78	726	179	29
	21%	19%	21%	21%	22%	20%	22%	20%
5	1238	353	574	247	69	819	163	32
	23%	24%	23%	20%	20%	23%	20%	22%
		D						
6	883	219	423	201	48	584	117	23
	16%	15%	17%	16%	14%	16%	15%	16%
7 (Last choice)	81	16	34	28	7	56	10	-
	1%	1%	1%	2%	2%	2%	1%	
				B				
Mean	3.9	3.8	3.9	3.8	3.8	3.8	3.7	3.8

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3f

3f. Restore service priorities: Improve service that especially benefits seniors and people with disabilities

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5505	1480	2558	1253	348	3665	802	146
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	1467	359	651	415	110	985	226	39
==========	27%	24%	25%	33%	32%	27%	28%	27%
				BC				
1 (First choice)	660	164	294	182	49	447	101	13
	12%	11%	11%	15%	14%	12%	13%	9%
				BC				
2	807	195	357	233	61	538	125	26
	15%	13%	14%	19%	18%	15%	16%	18%
				BC				
3	968	220	480	246	53	677	137	26
	18%	15%	19%	20%	15%	18%	17%	18%
				B	B			
4	962	258	458	219	63	669	139	22
	17%	17%	18%	17%	18%	18%	17%	15%
5	909	246	450	177	50	606	139	19
	17%	17%	18%	14%	14%	17%	17%	13%
			D					
6	1086	354	478	176	66	666	146	39
	20%	24%	19%	14%	19%	18%	18%	27%
		CD	D					FG
7 (Last choice)	113	43	41	20	6	62	15	1
	2%	3%	2%	2%	2%	2%	2%	1%
		CD						
Mean	3.8	4.0	3.8	3.5	3.6	3.7	3.7	3.9
		CD	D					

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3g

3g. Restore service priorities: Other response - rating

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	4979	1366	2316	1089	308	3293	734	132
	100%	100%	100%	100%	100%	100%	100%	100%
NET: First + second choice	242	58	92	84	19	174	29	3
==========	5%	4%	4%	8%	6%	5%	4%	2%
				BC	H	H		
1 (First choice)	186	45	72	63	14	135	22	2
	4%	3%	3%	6%	5%	4%	3%	2%
				BC		H		
2	56	13	20	21	5	39	7	1
	1%	1%	1%	2%	2%	1%	1%	1%
				BC				
3	45	8	25	11	5	31	4	3
	1%	1%	1%	1%	2%	1%	1%	2%
4	43	13	15	15	4	28	7	1
	1%	1%	1%	1%	1%	1%	1%	1%
5	86	22	41	18	5	56	13	3
	2%	2%	2%	2%	2%	2%	2%	2%
6	307	87	131	74	19	188	47	8
	6%	6%	6%	7%	6%	6%	6%	6%
7 (Last choice)	4256	1178	2012	887	256	2816	634	114
	85%	86%	87%	81%	83%	86%	86%	86%
		D	D					
Mean	6.6	6.6	6.6	6.4	6.4	6.5	6.6	6.7
		D	D					

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q3_grouped

3. Restore service priorities: Other response - categories (Open-end, multiple responses accepted)

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	583	160	250	156	42	402	90	16
	100%	100%	100%	100%	100%	100%	100%	100%
Security for riders/drivers	163	35	65	60	10	115	29	2
	28%	22%	26%	38%	24%	29%	32%	13%
				BC			H	
Increase service levels (frequency, stops, shelters, etc.)	134	49	57	26	10	86	29	5
	23%	31%	23%	17%	24%	21%	32%	31%
		D					F	
NET: Existing ranked category	55	16	28	11	7	39	8	1
==========	9%	10%	11%	7%	17%	10%	9%	6%
Maximize ridership overall	26	9	12	5	5	19	2	-
	4%	6%	5%	3%	12%	5%	2%	
Improve service that especially benefits people with lower incomes	12	4	6	2	-	9	2	1
	2%	3%	2%	1%		2%	2%	6%
Reduce the growth of traffic congestion	11	-	8	3	-	10	1	-
	2%		3%	2%		2%	1%	
Improve service that especially benefits historically disadvantaged racial or ethnic groups	9	2	5	2	1	6	2	-
	2%	1%	2%	1%	2%	1%	2%	
Improve service that especially benefits seniors and people with disabilities	6	2	4	-	2	3	1	-
	1%	1%	2%		5%	1%	1%	
Improve service that especially benefits essential workers	4	3	1	-	-	2	2	-
	1%	2%	0%			0%	2%	
Restore to previous service levels	35	13	16	5	5	25	3	-
	6%	8%	6%	3%	12%	6%	3%	
Cleanliness	33	9	12	10	-	23	7	-
	6%	6%	5%	6%		6%	8%	
Improve service to students/youth/schools	30	6	13	9	2	22	5	-
	5%	4%	5%	6%	5%	5%	6%	
Comments about survey/equity	28	3	14	8	2	19	1	2
	5%	2%	6%	5%	5%	5%	1%	13%
			B			G		
Improve service to jobs/industrial, business areas	24	7	12	4	1	16	5	1
	4%	4%	5%	3%	2%	4%	6%	6%
Fare enforcement/removal of homeless people	24	9	9	6	1	15	5	-
	4%	6%	4%	4%	2%	4%	6%	
Lower fares/free transit	18	5	10	3	-	15	3	-
	3%	3%	4%	2%		4%	3%	
Lower environmental impact	14	2	7	5	-	12	1	1
	2%	1%	3%	3%		3%	1%	6%
COVID-19 precautions	12	3	5	4	1	10	1	-
	2%	2%	2%	3%	2%	2%	1%	
Improve infrastructure (dedicated lanes, pedestrian safety, road improvements, etc.)	12	-	9	3	-	10	2	-
	2%		4%	2%		2%	2%	
Improve service to rural/suburban areas	11	2	4	5	3	3	4	-
	2%	1%	2%	3%	7%	1%	4%	
Improve service to essential services (shopping, medical facilities, etc.)	10	2	7	1	-	8	-	2
	2%	1%	3%	1%		2%		13%
Other response	62	16	25	17	2	42	7	3
	11%	10%	10%	11%	5%	10%	8%	19%

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q9

9. How often have you been riding TriMet in the last 12 months? This includes trips on buses, MAX, WES and LIFT paratransit.

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5467	1519	2604	1301	355	3747	821	147
	100%	100%	100%	100%	100%	100%	100%	100%
NET: Frequent/Regular rider	1519	1519	-	-	91	1055	222	39
==========	28%	100%			26%	28%	27%	27%
Frequent rider (I rode almost every day)	746	746	-	-	53	498	135	15
	14%	49%			15%	13%	16%	10%
							FH	
Regular rider (I rode several times a week)	773	773	-	-	38	557	87	24
	14%	51%			11%	15%	11%	16%
						EG		
NET: Occasional/Infrequent rider	2604	-	2604	-	141	1760	425	66
==========	48%		100%		40%	47%	52%	45%
						E	EF	
Occasional rider (I rode several times a month)	1136	-	1136	-	51	788	174	23
	21%		44%		14%	21%	21%	16%
						E	E	
Infrequent rider (I rode less than once a month)	1468	-	1468	-	90	972	251	43
	27%		56%		25%	26%	31%	29%
							F	
Non-rider (I didn't ride TriMet)	1301	-	-	1301	121	905	169	40
	24%			100%	34%	24%	21%	27%
					FG	G		
I'm not sure	43	-	-	-	2	27	5	2
	1%				1%	1%	1%	1%

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table County

17. County (grouped from home zip code)

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5070	1407	2392	1235	355	3747	821	147
	100%	100%	100%	100%	100%	100%	100%	100%
Multnomah	3747	1055	1760	905	-	3747	-	-
	74%	75%	74%	73%		100%		
Washington	821	222	425	169	-	-	821	-
	16%	16%	18%	14%			100%	
			D					
Clackamas	355	91	141	121	355	-	-	-
	7%	6%	6%	10%	100%			
				BC				
Clark	76	14	37	24	-	-	-	76
	1%	1%	2%	2%				52%
				B				
Oregon - other	49	12	22	14	-	-	-	49
	1%	1%	1%	1%				33%
Washington State - other	22	13	7	2	-	-	-	22
	0%	1%	0%	0%				15%
		CD						

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q17

18. What is your age?
*Removed from total: Prefer not to say

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5248	1465	2503	1242	348	3689	809	146
	100%	100%	100%	100%	100%	100%	100%	100%
Under 18	48	26	16	5	-	36	6	1
	1%	2%	1%	0%		1%	1%	1%
		CD						
18-24	323	165	134	24	22	225	46	10
	6%	11%	5%	2%	6%	6%	6%	7%
		CD	D					
25-34	1057	346	508	196	46	747	140	24
	20%	24%	20%	16%	13%	20%	17%	16%
		CD	D			EG		
35-44	1394	353	641	386	88	1039	162	28
	27%	24%	26%	31%	25%	28%	20%	19%
				BC		GH		
45-54	1005	247	460	289	74	707	174	28
	19%	17%	18%	23%	21%	19%	22%	19%
				BC				
55-64	682	167	321	192	70	440	133	25
	13%	11%	13%	15%	20%	12%	16%	17%
				BC	F		F	
65 or more	739	161	423	150	48	495	148	30
	14%	11%	17%	12%	14%	13%	18%	21%
			BD				EF	F
*I prefer not to say	86	14	41	31	7	58	12	1

19. What gender do you identify with?
*Removed from total: Prefer not to say

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5067	1434	2430	1166	338	3569	778	143
	100%	100%	100%	100%	100%	100%	100%	100%
Female	2834	696	1336	778	197	2022	403	67
	56%	49%	55%	67%	58%	57%	52%	47%
			B	BC	GH	GH		
Male	1984	645	976	352	127	1353	347	71
	39%	45%	40%	30%	38%	38%	45%	50%
		CD	D				EF	EF
Non-binary	228	83	108	35	14	174	27	5
	4%	6%	4%	3%	4%	5%	3%	3%
		D	D					
Self-identify (specify)	21	10	10	1	-	20	1	-
	0%	1%	0%	0%		1%	0%	
		D	D			G		
*I prefer not to say	254	43	111	99	15	171	43	3

20. Do you live with a disability?
*Removed from total: Prefer not to say

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	4991	1401	2393	1162	334	3515	769	137
	100%	100%	100%	100%	100%	100%	100%	100%
No	3870	1029	1841	977	236	2804	578	103
	78%	73%	77%	84%	71%	80%	75%	75%
			B	BC		EG		
Yes	1121	372	552	185	98	711	191	34
	22%	27%	23%	16%	29%	20%	25%	25%
		CD	D		F		F	
*I prefer not to say	343	78	151	111	21	232	52	10

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q21_1

21. What is your race or ethnicity? (Check all that apply.)
*Removed from total: Prefer not to say

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	4768	1360	2313	1058	311	3358	749	131
	100%	100%	100%	100%	100%	100%	100%	100%
White	3521	958	1705	840	258	2559	518	89
	74%	70%	74%	79%	83%	76%	69%	68%
			B	BC	FGH	GH		
NET: People of color	1486	484	715	267	64	968	271	48
==========	31%	36%	31%	25%	21%	29%	36%	37%
		CD	D			E	EF	E
Hispanic/Latino	571	223	262	77	21	390	122	15
	12%	16%	11%	7%	7%	12%	16%	11%
		CD	D			E	EF	
Asian/Asian American	347	93	168	82	24	209	77	15
	7%	7%	7%	8%	8%	6%	10%	11%
							F	
Multi-racial or bi-racial	234	78	105	51	10	178	34	3
	5%	6%	5%	5%	3%	5%	5%	2%
						H		
African American/Black	227	77	99	45	5	175	21	10
	5%	6%	4%	4%	2%	5%	3%	8%
						EG		EG
American Indian or Alaskan Native	182	43	113	25	8	74	21	9
	4%	3%	5%	2%	3%	2%	3%	7%
			BD					F
Other response	50	14	24	12	3	34	10	3
	1%	1%	1%	1%	1%	1%	1%	2%
Pacific Islander	48	21	18	9	-	37	6	2
	1%	2%	1%	1%		1%	1%	2%
		C						
*I prefer not to say	534	113	220	200	43	366	70	14

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q21_2

21. What is your race or ethnicity? (Two categories)
*Removed from total: Prefer not to say

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	4768	1360	2313	1058	311	3358	749	131
	100%	100%	100%	100%	100%	100%	100%	100%
White only	3281	876	1597	791	247	2390	477	83
	69%	64%	69%	75%	79%	71%	64%	63%
			B	BC	FGH	G		
People of color	1487	484	716	267	64	968	272	48
	31%	36%	31%	25%	21%	29%	36%	37%
		CD	D			E	EF	E

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q22

22. Including yourself, how many people live in your household?
*Removed from total: Prefer not to say

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	5237	1453	2506	1241	353	3681	811	146
	100%	100%	100%	100%	100%	100%	100%	100%
1	1227	456	578	183	61	940	168	28
	23%	31%	23%	15%	17%	26%	21%	19%
		CD	D			EG		
2	1819	438	940	435	141	1225	323	58
	35%	30%	38%	35%	40%	33%	40%	40%
			B	B	F		F	
3	805	217	378	205	62	540	137	24
	15%	15%	15%	17%	18%	15%	17%	16%
4	825	182	372	264	62	563	106	22
	16%	13%	15%	21%	18%	15%	13%	15%
				B	BC			
5	339	101	137	94	18	238	50	11
	6%	7%	5%	8%	5%	6%	6%	8%
				C				
6	133	36	63	34	9	98	18	2
	3%	2%	3%	3%	3%	3%	2%	1%
7	47	9	24	13	-	40	6	1
	1%	1%	1%	1%		1%	1%	1%
8	20	5	7	7	-	18	1	-
	0%	0%	0%	1%		0%	0%	
						G		
9	11	4	4	3	-	10	-	-
	0%	0%	0%	0%		0%		
10 or more	11	5	3	3	-	9	2	-
	0%	0%	0%	0%		0%	0%	
*I prefer not to say	97	26	38	32	2	66	10	1
Mean	2.6	2.5	2.6	2.9	2.6	2.6	2.6	2.6
				BC				

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table Q23

23. What was your total annual household income before taxes in 2021?
*Removed from total: I prefer not to say

		RIDERSHIP IN LAST 12 MONTHS			COUNTY			
	Total	Frequent/ Regular rider	Occasional /Infreq. rider	Non-rider	Clackamas	Multnomah	Washington	Other
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Total	4496	1294	2164	1006	299	3191	671	112
	100%	100%	100%	100%	100%	100%	100%	100%
Less than $10,000	358	160	156	33	30	249	64	8
	8%	12%	7%	3%	10%	8%	10%	7%
		CD	D					
$10,000 to just under $20,000	403	178	171	51	21	311	56	5
	9%	14%	8%	5%	7%	10%	8%	4%
		CD	D			H		
$20,000 to just under $30,000	422	193	168	57	27	306	69	7
	9%	15%	8%	6%	9%	10%	10%	6%
		CD	D					
$30,000 to just under $40,000	393	150	159	78	29	283	58	8
	9%	12%	7%	8%	10%	9%	9%	7%
		CD						
$40,000 to just under $50,000	398	140	179	77	21	285	63	14
	9%	11%	8%	8%	7%	9%	9%	13%
		CD						
$50,000 to just under $60,000	398	97	224	76	20	265	50	5
	9%	7%	10%	8%	7%	8%	7%	4%
			BD					
$60,000 to just under $70,000	322	62	181	79	9	226	33	15
	7%	5%	8%	8%	3%	7%	5%	13%
			B	B		EG		EG
$70,000 to just under $80,000	294	67	136	90	23	208	36	16
	7%	5%	6%	9%	8%	7%	5%	14%
				BC				FG
$80,000 to just under $90,000	220	42	106	70	12	162	30	5
	5%	3%	5%	7%	4%	5%	4%	4%
			B	BC				
$90,000 to just under $100,000	258	49	139	68	14	182	40	6
	6%	4%	6%	7%	5%	6%	6%	5%
			B	B				
$100,000 to just under $125,000	397	68	220	108	28	281	65	9
	9%	5%	10%	11%	9%	9%	10%	8%
			B	B				
$125,000 to just under $150,000	226	36	120	70	27	146	42	3
	5%	3%	6%	7%	9%	5%	6%	3%
			B	B	FH		H	
Over $150,000	407	52	205	149	38	287	65	11
	9%	4%	9%	15%	13%	9%	10%	10%
			B	BC				
*I prefer not to say	838	185	380	267	56	556	150	35

Comparison Groups: BCD/EFGH
T-Test for Means, Z-Test for Percentages
Uppercase letters indicate significance at the 95% level.
Table FPL150

Appendix D: Survey 2 Instrument

Lots of things have changed as a result of the COVID-19 pandemic, including how and where people ride TriMet. As we restore our bus operator workforce, we anticipate growing our bus service by more than 30% over current levels in the coming years. Working with the community, we're looking into changes and improvements to our bus service that would help more people get to more places and ensure that TriMet is meeting current and future riders' needs.

Our Forward Together Draft Service Concept is based on what we heard from our community in the spring of 2022: that we should focus on rebuilding ridership and improving equity for people living on a low income and in communities prioritized in TriMet's Equity Index.

We invite you to read the Forward Together Draft Service Concept, then take the short survey below to weigh in by October 31, 2022. Or join us at one of six open houses we're holding in October. Please note that the service changes described in the Draft Service Concept will be adjusted – potentially quite a bit – based on feedback from riders and the community. Thank you for helping us make transit better, and we'll see you on board!

1a. Do you think that the service changes outlined in the Draft Service Concept over the next few years are the right way to improve TriMet's bus routes?

- ◯ Strongly agree
- ◯ Agree
- ◯ Neither agree nor disagree
- ◯ Disagree
- ◯ Strongly disagree
- ◯ I'm not sure

1b. Do you have any comments?

2a. The Draft Service Concept would reduce bus service in some low-ridership, higher-income areas in order to expand service in underserved communities. Looking at the map on trimet.org, did we do this...

- ◯ Too much (We cut too much from low-ridership higher-income areas.)
- ◯ About right
- ◯ Not enough (We should cut more from low-ridership higher-income areas to fund more service in lower income areas.)
- ◯ I'm not sure

2b. Do you have any comments?

3. How often do you ride TriMet?

- ◯ Frequent rider (I ride almost every day)
- ◯ Regular rider (I ride several times a week)
- ◯ Occasional rider (I ride several times a month)
- ◯ Infrequent rider (I ride less than once a month)
- ◯ Non-rider (I don't ride TriMet)

Route specific feedback

Would you like to provide feedback about changes that are being considered on specific bus routes? You can comment on up to five routes.

4a. Bus route

4b. For that bus route, how well does the proposed suggestion meet your needs?

- ◯ Very well
- ◯ Somewhat well
- ◯ Neither well nor poorly
- ◯ Somewhat poorly
- ◯ Very poorly
- ◯ I'm not sure

4c. Why did you give that rating?

5. Do you want to comment on another route?

- ◯ Yes
- ◯ No

Route specific feedback

6a. Bus route

6b. For that bus route, how well does the proposed suggestion meet your needs?

- ◯ Very well
- ◯ Somewhat well
- ◯ Neither well nor poorly
- ◯ Somewhat poorly
- ◯ Very poorly
- ◯ I'm not sure

6c. Why did you give that rating?

7. Do you want to comment on another route?

- ◯ Yes
- ◯ No

Route specific feedback

8a. Bus route

8b. For that bus route, how well does the proposed suggestion meet your needs?

- ◯ Very well
- ◯ Somewhat well
- ◯ Neither well nor poorly
- ◯ Somewhat poorly
- ◯ Very poorly
- ◯ I'm not sure

8c. Why did you give that rating?

9. Do you want to comment on another route?

- ◯ Yes
- ◯ No

Route specific feedback

10a. Bus route

10b. For that bus route, how well does the proposed suggestion meet your needs?

- ◯ Very well
- ◯ Somewhat well
- ◯ Neither well nor poorly
- ◯ Somewhat poorly
- ◯ Very poorly
- ◯ I'm not sure

10c. Why did you give that rating?

11. Do you want to comment on another route?

- ◯ Yes
- ◯ No

Route specific feedback

12a. Bus route

12b. For that bus route, how well does the proposed suggestion meet your needs?

- ◯ Very well
- ◯ Somewhat well
- ◯ Neither well nor poorly
- ◯ Somewhat poorly
- ◯ Very poorly
- ◯ I'm not sure

12c. Why did you give that rating?

Thank you!

Next steps:

- **October 31, 2022**: Forward Together community survey concludes.
- **Late 2022**: Forward Together concept finalized, with changes planned based on feedback from riders and the community.
- **2023**: First bus service changes take effect, subject to hiring more bus operators, additional rider outreach and TriMet Board approval.

Questions? Contact hello@trimet.org

Appendix E: Survey 2 Crosstabs

Q1a - Do you think that the service changes outlined in the Draft Service Concept over the next few years are the right way to improve TriMet's bus routes?	Frequent rider	Regular rider	Infrequent rider	Occasional rider	Non-rider	NA
Strongly agree	141	120	70	109	12	1
Agree	276	254	155	249	22	7
I'm not sure	88	69	47	48	16	4
NA	16	12	11	12	1	57
Neither agree nor disagree	147	137	87	121	15	8
Disagree	204	200	123	194	33	9
Strongly disagree	572	376	159	334	85	17

Q2 - The Draft Service Concept would reduce bus service in some low-ridership, higher-income areas in order to expand service in underserved communities. Looking at the map on trimet.org, did we do this...	Frequent rider	Regular rider	Infrequent rider	Occasional rider	Non-rider	NA
Not enough	77	56	47	49	10	
About right	305	276	177	265	19	1
I'm not sure	245	190	129	171	55	7
NA	23	15	15	15	6	56
Too much	794	631	284	567	94	39

Q3 - How often do you ride TriMet?	
Frequent rider	1,444
Regular rider	1,168
Occasional rider	1,067
Infrequent rider	652
Non-rider	184
NA	103

In / Out of heavy IPs	Q1a - Do you think that the service changes outlined in the Draft Service Concept over the next few years are the right way to improve TriMet's bus routes?	Frequent rider	Regular rider	Infrequent rider	Occasional rider	Non-rider	NA
Response from 1 of 4 high-volume IP addresses	Strongly agree	12	9	2	8		
	Agree	32	22	21	22	3	
	I'm not sure	20	9	3	8		
	NA	2	5		2		14
	Neither agree nor disagree	28	24	7	17		1
	Disagree	42	49	16	60	6	2
	Strongly disagree	168	154	31	132	13	8
Response from any other IP address	Strongly agree	129	111	68	101	12	1
	Agree	244	232	134	227	19	7
	I'm not sure	68	60	44	40	16	4
	NA	14	7	11	10	1	43
	Neither agree nor disagree	119	113	80	104	15	7
	Disagree	162	151	107	134	27	7
	Strongly disagree	404	222	128	202	72	9

In / Out of heavy IPs	Q2 - The Draft Service Concept would reduce bus service in some low-ridership, higher-income areas in order to expand service in underserved communities. Looking at the map on trimet.org, did we do this...	Frequent rider	Regular rider	Infrequent rider	Occasional rider	Non-rider	NA
Response from 1 of 4 high-volume IP addresses	Not enough	7	7	4	2		
	About right	38	27	19	35	1	
	I'm not sure	64	49	16	35	6	
	NA	9	1	1	4		7
	Too much	186	188	40	173	15	18
Response from any other IP address	Not enough	70	49	43	47	10	
	About right	267	249	158	230	18	1
	I'm not sure	181	141	113	136	49	7
	NA	14	14	14	11	6	49
	Too much	608	443	244	394	79	21

For that bus route, how well does the proposed suggestion meet your needs?	Total	1-Vermont	FX2-Division	4-Fessenden	6-Martin Luther King Jr Blvd	8-Jackson Park/NE 15th	9-Powell Blvd	10-Harold St	11-Rivergate/Marine Dr	12-Barbur/Sandy Blvd	14-Hawthorne	15-Belmont/NW 23rd	16-Front Ave/St Helens Rd	17-Holgate/Broadway	18-Hillside	19-Woodstock/Glisan	20-Burnside/Stark	21-Sandy Blvd/223rd	22-Parkrose	23-San Rafael	24-Fremont/NW 18th	25-Glisan/Rockwood	26-Thurman/NW 18th	29-Lake/Webster Rd	30-Estacada
Total	5277	55	75	89	49	133	34	48	4	44	34	67	32	382	0	141	44	13	12	3	45	18	32	11	2
NET: Well	26%	4%	47%	78%	24%	20%	35%	46%	75%	52%	82%	48%	13%	14%		48%	52%	38%	17%	67%	40%	83%	3%	73%	0%
Neither well nor poorly	6%	7%	12%	8%	20%	20%	21%	0%	0%	14%	12%	21%	9%	3%		5%	20%	23%	17%	0%	16%	11%	3%	0%	0%
NET: Poorly	64%	85%	41%	11%	45%	54%	35%	48%	25%	30%	3%	22%	75%	81%		38%	23%	31%	67%	33%	44%	6%	94%	9%	100%
I'm not sure	4%	4%	0%	3%	10%	6%	9%	6%	0%	5%	3%	9%	3%	1%		9%	5%	8%	0%	0%	0%	0%	0%	18%	0%

For that bus route, how well does the proposed suggestion meet your needs?	31-Webster Rd	32-Oatfield	33-McLoughlin /King Rd	34-Linwood/River Rd	35-Macadam/Greeley	36-South Shore	37-Lake Grove	38-Boones Ferry Rd	39-Lewis & Clark	43-Taylors Ferry Rd	44-Capitol Hwy/Mocks Crest	45-Garden Home	46-North Hillsboro	47-Main/Evergreen	48-Cornell	50-Cedar Mill	51-Vista	52-Farmington /185th	53-Arctic/Allen	54-Beaverton-Hillsdale Hwy	55-Hamilton	56-Scholls Ferry Rd	57-TV Hwy/Forest Grove	58-Canyon Rd	59-Walker/Park Way
Total	6	16	30	15	113	28	5	499	788	77	61	19	171	92	58	7	11	38	1	40	38	57	36	7	8
NET: Well	17%	6%	47%	27%	72%	18%	0%	5%	6%	22%	26%	26%	5%	5%	60%	14%	45%	89%	0%	70%	0%	56%	47%	29%	88%
Neither well nor poorly	50%	13%	10%	0%	12%	4%	0%	1%	0%	5%	23%	11%	2%	1%	7%	0%	0%	5%	0%	10%	3%	11%	22%	14%	0%
NET: Poorly	33%	75%	30%	67%	14%	75%	100%	93%	93%	62%	43%	58%	92%	89%	29%	71%	55%	3%	100%	15%	97%	23%	28%	57%	0%
I'm not sure	0%	6%	13%	7%	3%	4%	0%	1%	1%	10%	8%	5%	2%	4%	3%	14%	0%	3%	0%	5%	0%	11%	3%	0%	13%

For that bus route, how well does the proposed suggestion meet your needs?	61-Marquam Hill/Beaverton	62-Murray Blvd	63-Washington Park/Arlington Hts	64-Marquam Hill/Tigard	65-Marquam Hill/Barbur Blvd	66-Marquam Hill/Hollywood	67-Bethany/158th	68-Marquam Hill/Collins Circle	70-12th/NE 33rd Ave	71-60th Ave	72-Killingsworth/82nd Ave	73-122nd Ave	74-162nd Ave	75-Cesar Chavez/Lombard	76-Hall/Greenburg	77-Broadway/Halsey	78-Denney/Kerr Pkwy	79-Clackamas/Oregon City	80-Kane/Troutdale Rd	81-Kane/257th	82-South Gresham	84-Powell Valley/Orient Dr	85-Swan Island	87-Airport Way/181st	88-Hart/198th
Total	135	25	2	127	50	172	17	104	159	55	23	2	2	24	38	92	39	9	10	11	1	5	0	12	13
NET: Well	10%	48%	100%	6%	8%	8%	71%	7%	33%	73%	48%	0%	0%	38%	47%	85%	21%	56%	20%	18%	100%	60%		75%	46%
Neither well nor poorly	4%	16%	0%	1%	0%	1%	6%	2%	7%	2%	26%	50%	0%	38%	8%	3%	10%	11%	10%	9%	0%	0%		0%	8%
NET: Poorly	84%	36%	0%	87%	90%	90%	24%	91%	58%	20%	22%	0%	50%	21%	32%	7%	69%	11%	60%	64%	0%	40%		8%	31%
I'm not sure	2%	0%	0%	6%	2%	1%	0%	0%	3%	5%	4%	50%	50%	4%	13%	5%	0%	22%	10%	9%	0%	0%		17%	15%

For that bus route, how well does the proposed suggestion meet your needs?	91-New	92-South Beaverton Express	94-Pacific Hwy/Sherwood	95-New	96-Tualatin/I-5	97-Tualatin-Sherwood Rd	98-New	99-Macadam/McLoughlin	111-New	113-New	115-New	120-New	130-New	131-New	140-New	144-New	145-New	150-New	152-Milwaukie	154-Willamette /Clackamas Heights	155-Sunnyside	156-Mather Rd	190-New	291-Orange Night Bus
Total	6	7	63	12	71	7	6	52	15	27	23	5	6	4	0	3	1	11	1	9	2	0	22	4
NET: Well	83%	0%	11%	92%	6%	43%	67%	8%	60%	85%	48%	80%	33%	25%		33%	0%	73%	100%	22%	100%		77%	25%
Neither well nor poorly	0%	0%	6%	0%	1%	0%	17%	8%	7%	0%	9%	0%	33%	50%		0%	0%	0%	0%	0%	0%		0%	0%
NET: Poorly	17%	86%	81%	8%	92%	57%	0%	83%	20%	11%	35%	20%	0%	25%		67%	0%	27%	0%	56%	0%		0%	0%
I'm not sure	0%	14%	2%	0%	1%	0%	17%	2%	13%	4%	9%	0%	33%	0%		0%	100%	0%	0%	22%	0%		23%	75%

Appendix F: Costing

Forward Together Budgeting and Cost Estimation

The Forward Together Service Concept is designed to be a budget-constrained plan based on the amount of service TriMet believes it can deliver in the next few years, if it is able to fully restore its operator staffing. Because of the great degree of uncertainty about important cost drivers such as wages, price inflation, and hiring, this estimate is exactly that; an estimate, based on the best available information in mid-2022 when the Service Concept was developed.

This appendix describes how the budget and cost estimate were developed, and presents a summary of the final route cost estimate for the Service Concept.

Establishing a Budget

The first step in developing a constrained service plan is determining a budget for how much service to design. Forward Together was intended to be a practical, achievable service plan, so we didn't want to create a plan with no limits. At the same time, while TriMet service in mid-2022 was substantially reduced from its pre-pandemic service level, the agency's financial capacity to operate service is greater than its current number of operators. That meant that we could plan for a service level above the mid-2022 baseline.

Ultimately, the budget is expressed in terms of service hours per week. Weekly service hours are used in order to establish a single conceptual network plan without any adjustments for seasonal services. This budget has three main components:

- Spring 2022 weekly service hours.
- Restoration service hours (the difference between Spring 2022 and Fall 2019).
- Estimated new service hours provided by additional State Transportation Improvement Fund (STIF) revenues.

These three pools of resources together comprise the total service hour budget for the Service Concept. This budget neither assumes a reduction in resources arising from higher costs in the coming years, not growth of resources arising from higher payroll tax receipts. The only resources included are existing service hours in mid-2022; service hours restored to get back to the 2019 service level; and new service hours expected via the dedicated STIF funding source.

Deadhead and Layover

The Service Concept is a conceptual service plan, developed well in advance of TriMet's actual scheduling process. That means that it cost estimate cannot precisely account for layover and deadhead costs, because those require a more detailed schedule and block/runcut structure to assess exactly. To account for these factors, we make two further budget assumptions.

First, our route cost estimates are conducted in revenue hours. Here, "revenue hours" means the time the vehicle spends in revenue service, picking up and dropping passengers along its route, plus the layover time allocated at the beginning and end of routes for driver breaks and to maintain schedule adherence.

Second, to account for recovery time, we apply a minimum layover requirement of 8% of runtime or 5 minutes (whichever is greater) to each route's cycle time. That means that if a route has a round-trip run time of 60 minutes, 4.8 minutes is added to its base cycle time. It should be noted that the 8%/5 minute rule is an absolute minimum; in most cases the actual amount of allocated layover is substantially higher, because layover is ultimately determined by the gap between the run time of the route and the cycle imposed by the design headway, described in the next paragraph.

Spring 2022 Weekly Service Hours	36,640.0
COVID Restoration Service Hours	9,738.0
New STIF Service Hours	2,422.0
Total Service Hour Design Budget	48,800.0
Service Hour - Revenue Hour Conversion Factor	0.93
Total Revenue Hour Design Budget	45,530.4

Figure 98: Forward Together Service Concept Design Budget

Round-rip run time	60 minutes
Minimum Layover (8%)	4.8 minutes (8% of round-trip running time)
Minimum cycle time	64.8 minutes
Frequency	15 minutes
Cycle time adjusted for frequency	75 minutes
Total layover	15 minutes (20% of full cycle time)
Excess layover	11.2 minutes (14.9% of full cycle time)

Figure 99: Forward Together Service Concept Cost Estimate Layover Handling

The base cycle time is then rounded up to the nearest multiple of the route's headway to ensure even spacing; this is referred to in our cost estimate as the "module time". In most cases, the actual layover is higher than the minimum required layover due to the difference between cycle time and module time (the next higher multiple of the frequency); this is referred to as "excess layover" time.

Figure 99 provides an example of how layover is used to determine cycle times in these cost estimates.

Other Assumptions

There are several other assumptions made in this estimate. These include:

- Speed. In general, routes are assumed to travel at the same speed they do today, based on scheduled speeds of existing mid-2022 TriMet service. Where new routes operate in segments that are not served today, we use the speed of the closest comparable route operating on a similar roadway nearby.
- Time periods. Our cost estimating methodology divides the day into several discrete time periods (early morning, AM Peak, Midday, PM Peak, etc). Frequencies, speeds and vehicle requirements are constant across each period.
- Extension of TriMet LIFT service area. TriMet is required to provide paratransit service within 3/4-mile of all of its routes. To account for the potential cost impact of the extension of the LIFT service area, 19% of the resources required to provide fixed-route service on new segments is set aside to account for these potential costs.

Tolling Mitigation Projects

Several projects included in the Service Concept assume that new funding would be available to mitigate the impacts of future I-205 Abernathy tolls. Each project is directly related to improving transit's usefulness for trips that could be impacted by tolls on the bridge. Each tolling mitigation project would improve the frequency of a line already identified in the Service Concept; there are no new lines that are solely assumed to be funded via new revenues for this purpose.

These projects are not included in the Forward Together budget. They include:

- The cost to upgrade Line 79 from 30-minute to Frequent Service between Clackamas Town Center and Oregon City. The basic 30-minute service is included in the Service Concept design budget.
- The cost to upgrade Line 35 from 30-minute to Frequent Service between downtown Portland the Oregon City. The basic 30-minute service is included in the Service Concept design budget.
- The cost to upgrade the extension of Line 76 between Tualatin and Oregon City to 30-minute service. This route extension is included in the design budget at 60-minute frequency.
- The cost to upgrade new Line 145 (the Jennings Rd. route) to 30-minute service. This route is included in the design budget at 60-minute frequency.

Service Concept Cost Estimate Summary

Figure 100 provides a summary of the total cost of the Service Concept. The design budget target for the concept way 45,530 weekly revenue hours. The basic cost of the routes of the concept with no tolling mitigation projects was 47,052 revenue hours, about 3.3% above the target. The cost of the resources set aside to account for LIFT expansion was 572 weekly revenue hours. The total estimated weekly revenue hours cost of the basic Service Concept with no tolling improvements is 47,624 revenue hours, about 4.6% above the target.

The total cost of the tolling mitigation projects described in the last section is 1,302 weekly revenue hours. The total cost of the Service Concept included all tolling projects is 48,926 weekly revenue hours, about 7.5% above the target.

While the full cost of the Service Concept is higher than the target, the purpose of this estimate is important to keep in mind. The Service Concept is a "concept" for how TriMet's network could look as it restores and expands service during the next few years. The purpose of this estimate was to ensure that the Concept did not substantially overshoot or undershoot a reasonable assumption for how much service TriMet could actually provide. However, as the agency considers implementing ideas from this concept in the coming years, we know that elements of this estimate will certainly be reconsidered and refined. The scheduling process will likely determine that some services could be operated more efficiently; it will likely also find that some would require more resources than assumed. TriMet's payroll tax and other revenues may change. Some of its cost drivers (labor, fleet, maintenance, fuel) may change, potentially impacting the amount of service it can provide.

The Concept is a vision for the entire network, but because it will be implemented over several years, TriMet will continue to revise and refine elements of the design as its understanding of the costs of service and the resources available evolve.

Budgeted Weekly Service Hours	
Spring 2022 Weekly Service Hours	36,640
COVID Restoration Service Hours	9,738
New STIF Service Hours	2,422
Total Service Hour Design Budget	48,800
Service Hour - Revenue Hour Conversion Factor	*0.93*
Total Weekly Revenue Hour Design Budget	45,530
Allocated Weekly Service Hours	
Draft Service Concept Fixed Route Revenue Hours (no tolling projects)	47,052
TriMet LIFT Extension Revenue Hours	572
Total Weekly Revenue Hours (no tolling projects)	47,624
Total Weekly Tolling Mitigation Project Revenue Hours	1302
Total Weekly Service Concept Revenue Hours	48,926

Figure 100: Forward Together Service Concept Cost Estimate Layover Handling

Route Costing

Figure 101 below, continued on the following pages summarizes the cost estimate for each route. The following data points are included:

- Route Number.
- Route Name.
- Route Category (Frequent, Standard or Rush-Hour service).
- Distance (round trip miles).
- Speed (base speed; adjustments are made for each period in detailed calculations).
- Frequency (peak and midday).
- Drive time (round trip run time before layover added).
- Base Cycle time (round trip run time with minimum required layover).
- Module time (cycle time rounded up to the nearest multiple of the midday frequency).
- Peak and midday vehicle requirement.
- Total span (hours per day).
- Daily Revenue Hours.
- Weekly Revenue Hours.

Guide to Route Naming Conventions

The route cost table shown below includes a entries for all routes in the Service Concept. Some routes have multiple entries, because their service design is more complex. These routes are identified by the following naming conventions.

Services that operate only during the peak are indicated by the word "peak" in the number field. So the "4 peak" entry in the table below shows the variant of Line 4 that would operate during rush hour, which includes the extension of the route in NW Portland. Routes that operate only during the peak periods or identified similarly: see routes 51 peak or 63 peak in this table for examples.

Some routes have multiple segments that are costed separate. For example, Line 44 has three entries: 44 SL, 44A LL, 44B LL. In these examples, "SL" means "shortline", "LL" means longline, and the A/B lettering indicates that these are branches of a single trunk. The entry for 44L shows the cost of the portion of Line 44 north of the split point at PCC Sylvania; 44A LL is the cost of the service between Commerce Circle and PCC, while 44B LL is the cost of the service between Tigard and PCC.

Some other examples of routes costed in this format include Line 76 (76 SL / 76LL), and Line 15 (15 SL / 15 LL / 15 peak). Line 15 is a special case in that it has both a longline-shortline design, as well as extra school trips. In this example, the extra school trips are accounted for under "15 peak".

					Weekdays									Weekends							Weekly Rvh
#	Route Name	Category	Round-Trip Dist (mi)	Base Spd (mph)	Peak Freq (min)	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Peak Vehicles	Mid Vehicles	Span (hrs)	Rev Hours per Day	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Mid Veh	Span (hrs)	Rev Hours per Day	
FX2	Division	FX	27.7	14.0	12	12	119	128	132	11	11	20	220	12	133	144	144	12	19	198	1,496
4	Fessenden/ Woodstock	Frequent Service	40.3	9.5	0	15	254	275	285	FALSE	19	7	199	15	285	308	315	21	-	316	1,627
4 peak	Fessenden/ Woodstock	Rush-Hour Service	41.7	9.5	15	0	-	-	-	13	-	20	131	-	-	-	-	-	19	-	655
6	Martin Luther King Jr Blvd	Frequent Service	22.8	13.5	15	15	102	110	120	8	8	20	148	15	114	123	135	9	14	152	1,044
7	Tacoma / Swan Island	Standard Service (30 min)	31.5	12.7	30	30	149	161	180	6	6	20	106	30	167	180	180	6	19	78	686
8	Jackson Park / NE 15th	Frequent Service	16.9	10.4	15	15	98	106	120	8	8	20	146	15	110	118	120	8	19	129	988
9	Powell Blvd	Frequent Service	30.9	12.0	15	15	155	167	180	12	12	20	212	15	173	187	195	13	14	195	1,450
10	Harold St	Standard Service (30 min)	19.3	13.9	30	30	83	90	90	3	3	13	58	30	93	101	120	4	11	50	390
11	Rivergate/Marine Dr	Standard Service (60 min)	23.1	23.0	60	60	60	65	120	2	2	20	26	60	68	73	120	2	19	22	174
12	Barbur / Sandy Blvd	Frequent Service	31.3	12.0	15	15	157	169	180	12	12	20	212	15	176	190	195	13	19	198	1,456
14	Hawthorne	Frequent Service	15.8	10.4	15	15	91	98	105	7	7	20	128	15	102	110	120	8	14	121	882

Figure 101: Forward Together Service Concept Route Costing Table (1/2)

#	Route Name	Category	Round-Trip Dist (mi)	Base Spd (mph)	Weekdays									Weekends							Weekly Rvh
					Peak Freq (min)	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Peak Vehicles	Mid Vehicles	Span (hrs)	Rev Hours per Day	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Mid Veh	Span (hrs)	Rev Hours per Day	
15 LL	Belmont / NW 23rd Longline	Standard Service (30 min)	11.9	11.0	30	30	65	70	90	3	3	4	53	30	72	78	90	3	-	39	343
15 peak	Belmont / NW 23rd - Linnton / Sauvie's Extension (School Trips Only)	Rush-Hour Service	23.9	11.0	60	0	-	-	-	3	-	20	12	-	-	-	-	-	19	-	60
15 SL	Belmont / NW 23rd	Frequent Service	20.2	11.0	15	15	110	119	120	9	8	13	156	15	123	133	135	9	11	139	1,058
16	Front Ave / St Helens Rd	Standard Service (60 min)	9.5	19.4	52	52	29	34	52	1	1	20	13	60	33	38	60	1	19	11	87
17	Holgate / Broadway	Standard Service (20 min)	37.8	11.6	15	20	195	211	220	15	11	4	210	30	219	236	240	8	-	126	1,302
18	Hillside (school trips only)	Rush-Hour Service	4.3	10.0	60	0	-	-	-	1	-	20	4	-	-	-	-	-	14	-	20
19	Glisan / Beaverton	Standard Service (30 min)	51.0	14.0	30	30	219	236	240	8	8	23	146	30	245	265	270	9	23	113	956
20	Burnside / Stark	Frequent Service	52.0	13.2	15	15	236	255	270	17	18	20	337	15	265	286	300	20	14	307	2,299
22	Parkrose / San Rafael	Standard Service (30 min)	20.1	14.0	30	30	86	93	120	4	4	20	68	30	96	104	120	4	14	50	440
24	Fremont /NW 18th	Standard Service (30 min)	42.5	14.6	30	30	175	189	210	7	7	4	122	30	196	212	240	8	-	97	804
26	Thurman /NW 18th	Rush-Hour Service	6.1	12.5	60	0	-	-	-	1	-	16	4	-	-	-	-	-	14	-	20
29	Lake / Webster	Standard Service (60 min)	17.9	16.3	60	60	66	71	120	2	2	15	32	60	74	80	120	2	10	28	216
30	Estacada	Standard Service (60 min)	43.5	27.2	30	60	96	104	120	4	2	20	50	60	108	116	120	2	14	22	294
31	Webster Rd	Standard Service (30 min)	29.5	18.4	30	30	96	104	120	4	4	20	72	30	108	116	120	4	19	53	466
33	McLoughlin / King Rd	Frequent Service	30.7	13.7	15	15	134	145	150	9	10	20	177	15	150	163	165	11	14	170	1,225
35	Macadam / Greeley	Standard Service (30 min)	45.2	12.5	30	30	217	234	240	8	8	16	144	30	243	263	270	9	14	113	946
42	Vermont	Standard Service (60 min)	18.6	14.4	60	60	77	84	120	2	2	20	32	60	87	94	120	2	14	28	216
43	Taylors Ferry Rd / Marquam Hill	Standard Service (30 min)	22.8	15.5	30	30	88	95	120	4	4	20	68	30	99	107	120	4	19	50	440
44A LL	60 min - Portland-PCC Sylvania -Commerce Circle	Standard Service (60 min)	22.2	13.4	60	60	99	107	120	2	2	20	42	60	111	120	180	3	19	42	292
44B LL	60 min - Portland-PCC Sylvania - Tigard	Standard Service (60 min)	6.9	13.4	60	60	31	36	60	1	1	20	20	60	35	40	60	1	19	19	138
44 SL	20 min - Van/ Williams - Portland - PCC Sylvania	Standard Service (20 min)	32.7	13.4	20	20	146	158	160	8	8	4	147	30	164	177	180	6	-	110	953
45	Garden Home	Rush-Hour Service	28.3	14.1	60	0	-	-	-	3	-	20	12	-	-	-	-	-	19	-	60
48	Cornell	Frequent Service	23.9	16.3	15	15	88	95	105	7	7	4	128	15	99	107	120	8	-	118	876
51 peak	Vista - Dosch - Council Crest	Rush-Hour Service	11.2	10.4	60	0	-	-	-	2	-	20	8	-	-	-	-	-	19	-	40

#	Route Name	Category	Round-Trip Dist (mi)	Base Spd (mph)	Weekdays									Weekends							Weekly Rvh
					Peak Freq (min)	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Peak Vehicles	Mid Vehicles	Span (hrs)	Rev Hours per Day	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Mid Veh	Span (hrs)	Rev Hours per Day	
52	Farmington / 185th	Frequent Service	21.9	13.5	15	15	97	105	105	7	7	20	134	15	109	118	120	8	19	129	928
54	Beaverton-Hillsdale Hwy	Frequent Service	19.7	13.5	15	15	88	95	105	6	7	20	123	15	98	106	120	8	14	118	851
56	Scholls Ferry / Marquam Hill	Standard Service (30 min)	29.1	14.4	30	30	122	131	150	5	5	23	90	30	136	147	150	5	23	67	584
57	TV Hwy / Forest Grove	Frequent Service	33.6	15.4	15	15	131	142	150	9	10	16	192	15	147	159	165	11	14	175	1,310
59	Walker / Park Way	Standard Service (60 min)	14.6	16.3	60	60	54	59	60	1	1	18	19	60	60	65	120	2	14	25	145
62	Murray Blvd	Standard Service (30 min)	29.6	14.6	30	30	121	131	150	5	5	8	86	30	136	147	150	5	8	67	564
63	Washington Park / Arlington Hts	Rush-Hour Service	4.2	10.6	0	60	24	29	60	FALSE	1	4	8	60	27	32	60	1	-	8	56
63 peak	Washington Park / Arlington Hts	Rush-Hour Service	7.9	10.6	60	0	-	-	-	1	-	18	4	-	-	-	-	-	14	-	20
67	Bethany / 158th	Standard Service (30 min)	27.3	17.9	30	30	91	99	120	4	4	17	64	30	102	111	120	4	10	50	420
70	12th / NE 33rd Ave	Standard Service (20 min)	15.6	12.4	20	20	76	82	100	5	5	20	77	20	85	91	100	5	19	48	481
71	60th Ave	Frequent Service	29.1	13.2	15	15	132	143	150	10	10	23	182	15	148	160	165	11	19	170	1,250
72	82nd Ave / Killingsworth	FX	33.7	11.4	0	12	177	192	192	FALSE	16	6	209	12	199	215	216	18	-	297	1,639
72 peak	82nd Ave / Killingsworth	Rush-Hour Service	35.5	11.4	12	0	-	-	-	16	-	20	105	-	-	-	-	-	19	-	525
73	122nd Ave	Frequent Service	18.0	12.5	15	15	86	93	105	6	7	17	119	15	97	104	105	7	12	113	821
74	162nd Ave	Standard Service (30 min)	12.7	16.8	20	30	45	50	60	3	2	20	40	35	51	56	70	2	19	24	248
75	Cesar Chavez/ Lombard	Frequent Service	39.2	12.7	0	15	185	200	210	FALSE	14	7	148	15	207	224	225	15	-	231	1,202
75 peak	Cesar Chavez/ Lombard (NAYA extension)	Rush-Hour Service	40.3	12.7	15	0	-	-	-	14	FALSE	20	106	-	-	-	-	FALSE	19	-	530
76 SL	15 min Hall / Greenburg	Frequent Service	27.0	13.1	15	15	124	134	135	-	-	20	-	15	139	150	150	-	14	-	-
76 LL	Hall / Greenburg - Oregon City extension (basic)	Standard Service (30 min)	18.7	13.1	30	30	86	93	120	-	-	20	-	30	96	104	120	-	19	-	-
77	Broadway / Halsey	Frequent Service	36.7	12.1	0	15	182	197	210	FALSE	14	7	146	15	204	220	225	15	-	231	1,192
77 peak	Broadway / Halsey	Rush-Hour Service	41.2	12.1	15	0	-	-	-	14	-	20	110	-	-	-	-	-	14	-	550
78	Denney / Kerr Pkwy	Standard Service (30 min)	27.2	14.7	30	30	111	119	120	4	4	20	74	30	124	134	150	5	14	60	490
79	Clackamas/Oregon City	Standard Service (30 min)	17.5	17.0	30	30	62	67	90	3	3	18	52	30	69	75	90	3	14	39	338

#	Route Name	Category	Round-Trip Dist (mi)	Base Spd (mph)	Weekdays									Weekends							Weekly Rvh
					Peak Freq (min)	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Peak Vehicles	Mid Vehicles	Span (hrs)	Rev Hours per Day	Mid Freq (min)	Drive Time (min)	Cycle Time (min)	Module Time (min)	Mid Veh	Span (hrs)	Rev Hours per Day	
80	Kane/Troutdale Rd	Standard Service (30 min)	15.4	16.6	30	30	56	61	90	3	3	13	48	30	62	67	90	3	11	38	316
82	South Gresham	Standard Service (60 min)	9.1	16.0	60	60	34	39	60	1	1	13	13	60	38	43	60	1	11	11	87
84	Powell Valley / Orient Dr	Standard Service (60 min)	17.1	19.8	60	60	52	57	60	1	1	20	16	60	58	63	120	2	19	19	118
87	Airport way / 181st	Frequent Service	25.2	15.0	15	15	101	109	120	8	8	20	148	15	113	122	135	9	14	134	1,008
91	112th	Standard Service (30 min)	11.0	12.5	30	30	53	58	60	2	2	20	38	30	59	64	90	3	14	35	260
95	148th	Standard Service (30 min)	17.8	12.5	30	30	86	92	120	4	4	20	68	30	96	104	120	4	14	50	440
98	202nd 223rd	Standard Service (30 min)	17.7	12.5	30	30	85	92	120	4	4	20	68	30	95	103	120	4	19	50	440
111	198th / Evergreen	Standard Service (20 min)	29.9	17.0	20	20	100	108	120	6	6	18	115	20	118	128	140	7	14	119	813
113	Cornelius Pass	Standard Service (30 min)	20.0	17.0	30	30	71	76	90	3	3	20	43	30	79	86	90	-	14	-	215
115	Century	Standard Service (30 min)	12.3	11.9	30	30	62	67	90	3	3	18	45	30	69	75	90	3	14	36	297
120	Hillsboro Main st	Standard Service (30 min)	12.9	15.0	30	30	52	57	60	2	2	20	36	30	58	63	90	3	19	33	246
130	Sherwood - Tigard	Standard Service (20 min)	15.2	16.4	20	20	56	61	80	4	4	16	72	20	62	67	80	4	14	71	502
131	Tualatin - Sherwood Rd	Standard Service (60 min)	17.6	17.6	60	60	60	65	120	2	2	13	32	60	67	72	120	2	11	28	216
140	Holcomb	Standard Service (30 min)	4.6	19.0	30	30	15	20	30	1	1	18	13	30	16	21	30	1	14	11	87
144	River Rd / Oatfield	Standard Service (30 min)	19.9	12.5	30	30	95	103	120	4	4	13	64	30	107	116	120	4	11	50	420
145	Jennings	Standard Service (60 min)	22.2	12.5	60	60	107	115	120	2	2	13	29	60	120	129	180	3	11	30	205
150	Oatfield / Thiessen / Jennifer / 172nd	Standard Service (60 min)	35.4	12.5	60	60	170	184	240	4	4	13	52	60	190	206	240	4	-	44	348
152	Milwaukie	Standard Service (60 min)	10.6	12.2	30	60	52	57	60	2	1	20	21	-	-	-	-	FALSE	14	-	105
155	Sunnyside	Standard Service (30 min)	11.3	15.3	30	30	44	49	60	2	2	20	34	30	50	55	60	2	14	25	220
190	Columbia	Standard Service (30 min)	27.1	12.5	30	30	130	140	150	5	5	1	92	30	146	157	180	6	-	72	604
291	Orange Night Bus	Standard Service (60 min)	8.6	16.3	0	0	-	-	-	FALSE	FALSE	-	1	-	-	-	-	FALSE	-	-	5

Appendix G: Glossary

This appendix provides a glossary of some of the technical terms used throughout this report.

Access	The number of jobs or residents reachable from a starting location by transit and walking. Access is often calculated for many starting points in a network, based on some assumed travel-time "budget," and summarized on a map.
Annual Service Plan (ASP)	A plan released by TriMet for the service changes planned for implementation during each fiscal year.
Connection	A connection or transfer takes place when a person uses two transit vehicles to make a trip.
Coverage	Coverage can refer to the amount of geographic space, the proportion of people or the proportion of jobs that are within a certain distance of transit service. An assumption about how far people will walk to a given transit service—often ranging from 1/4 to 1/2 mile—must be made in order to estimate coverage.
Deadhead hours	The time a vehicle spends between the garage and the start or end of revenue service, or between the end of a trip on one route and the beginning of a trip on another route.
Express	Express can have a range of meanings when applied to transit. It most often describes a route with a long non-stop segment. It can also be used to describe a route with wide stop spacing and overall faster speeds, though that is more commonly called a rapid.
Feeder	A local route that connects or feeds into a radial route. Low-frequency feeders sometimes pulse so that transferring is more convenient
Fixed route transit	Fixed route transit describes any transit service that is operated on the same predictable route. In contrast, paratransit and demand-responsive service may always or often follow different routes for each vehicle trip, as they serve different customers and their trips.
Frequency	Frequency is often expressed in minutes, i.e. a service that comes every 15 minutes has "15 minute frequency." A more technical term for frequency is headway.
Frequent Service	A name used by TriMet to brand its MAX and bus routes that run every 15 minutes or less most of the day, every day.
Grid Network	A network of routes that intersect all over the city. Grid networks are best suited for places with many activity centers, as opposed to radial networks, where most people are traveling to a central location. Most trips within a grid network are possible by transit with a trip requiring a single transfer.
HB 2017	Oregon House Bill 2017, also known as Keep Oregon Moving, was a bill passed by the Oregon Legislature in 2017 that provides added funding for transportation, including public transit providers like TriMet.
Headway	Headway is the time between successive trips at a stop, a more technical transit term for frequency. A service that comes every 15 minutes can be said to have a "15 minute headway."
Investment	Service or revenue hours per capita, a measure of the relative level of transit service.
Isochrone	An illustration to help visualize where someone can go from a location, in a certain amount of time, using transit or by walking.
Land use	Land use describes the way a parcel of land is being used, for example as commercial, industrial or multi-family residential. Land use descriptions can be general or very specific. Land use is distinct from zoning, as land may be rezoned under existing uses and buildings long before changes to its use take place.
Layover	Time for driver breaks between trips. Usually included in revenue hours. Unlike recovery time, layover time sometimes cannot be skipped even when a bus is behind schedule, if drivers are guaranteed a break. Layover time can also be designed to include time for a "pulse" connection with other routes. Layover time is an essential part of the service offering on a route, because it ensures the driver is able to function reliably and may support a pulse. In some agencies, "layover" and "recovery" are used synonymously or interchangeably to mean the same thing.
Longline	Some routes have a more frequent inner segment and a less frequent outer segment. At the end of the inner segment, some buses turn around and come back, while others continue on to a more distant turnaround point. The outer, less-frequent segment is often called the "longline," though technically the longline is the longest path that buses on that route travel, and its length is the inner segment plus the outer segment. The inner segment is called the "shortline."
MAX	TriMet's network of of 5 light rail lines than make up the backbone of the public transit network in the Portland region.
Mobility	Mobility is generally used to express the ease with which people can move from place to place. It is distinct from access, which describes the extent to which people can meet their needs nearby. In some places, people have high access (they are able to meet all of their needs without traveling very far or at all) and low mobility (because traveling long distances is difficult or slow). In other places, mobility is high and access is low.
Mode share	Mode share is a technical term for the percentage of a population that uses a particular mode (e.g. transit, walking, driving) for traveling. Mode share information in the U.S. is generally reported for commute trips.
National Transit Database	The National Transit Database is a federal clearinghouse of general information about transit in the U.S. and information specific to each transit agency. Agencies of a certain size are required to submit financial and performance data to the NTD each year. https://www.transit.dot.gov/ntd/
One-seat-ride	A trip that requires boarding only one transit vehicle (no transfers).
Oregon Department of Transportation (ODOT)	The Oregon state agency charged with managing state programs related to highways, roads, bridges, railways, public transit, and other elements of the transportation system.

Paratransit	Paratransit is a transit service that provides on-demand curb-to-curb travel for people with disabilities, per the American's with Disabilities Act. It is required by this U.S. law to be provided to people who have a disability that prevents them from using fixed route transit service, within 3/4 mile of fixed route transit, during all times when fixed route transit is operating.
Peak	In some places, the busiest ("peak") periods of travel occur during two times of day, usually around the morning and afternoon rush hours, with the afternoon peak beginning earlier as high school students finish classes. Not all transit networks are characterized by a peaked demand pattern but prior to the beginning of the COVID-19 pandemic, TriMet's network exhibited a strong peak demand pattern.
Peak-only	A transit service that is peak-only operates only during the morning and afternoon travel peaks. Also referred to as Rush-Hour Service.
Productivity	The word productivity is often used in transit to describe the number of people served per unit of cost. Productivity can be expressed for an entire transit system, a subset of the system, individual lines or even for segments of lines.
Proximity	A term used to refer to how close something is to transit. See also: Coverage.
Radial	A route or network design where most routes go to and from a central point (typically a downtown). As opposed to a grid network.
Rapid	Rapid can have a range of meanings when applied to transit. It most often describes a route with wider stop spacing and overall faster speed.
Recovery time	Extra time built into a schedule to protect a route's on-time performance in case of unexpected delays. Unlike layover, which is a driver's break time, recovery time can be cut short so that the next trip can depart on-time. In some systems, recovery time includes time used to make a "pulse" connection with other routes. Recovery is an essential part of the service offering on a route, because it contributes to the route's reliability and to connections with other routes, and it also reduces the effective speed of the route. In some agencies, "layover" and "recovery" are used synonymously or interchangeably to mean the same thing.
Revenue hours	The time a transit vehicle and its operator spend out in public, available to passengers and (potentially) collecting revenue. Usually includes layover and recovery time, but excludes deadhead.
Ridership	Ridership refers informally to the number of boardings or trips taken on a transit system or a particular transit service.
Rush-Hour Service	A term used by TriMet in its maps and branding to refer to routes that operate only during the busy morning and evening peak commute periods. Also referred to as Peak-only service.
Service Enhancement Plan (SEP)	One of a group of plans developed by TriMet in the early 2010s that identified impovements to the transit network in all parts of the service area. The SEP process involved substantial outreach to other government agencies, community stakeholders, and the general public; many of the ideas first introduced in the SEPs have been incorporated into the Forward Together Service Concept.
Shortline	Some routes have a more frequent inner segment and a less frequent outer segment. At the end of the inner segment some buses turn around and come back, while others continue on to a more distant turnaround point. The outer, less-frequent segment is often called the "longline," though technically the longline is the longest path that buses on that route travel, and its length is the inner segment plus the outer segment. The inner segment is called the "shortline."
Span	The span of a transit service is the number of hours it operates during the day, e.g. a service that runs from 6:00 am to 11:30 pm would have a 17.5 hour span. Span can also describe the number of days per week and per year that a service is operated.
Standard Service	A term used by TriMet to refer to all-day routes that do not meet the 15-minute threshold of the Frequent Service brand.
Street connectivity	The degree to which streets connect to one another, and multiple paths exist between any two points, is describe as that place's connectivity. Areas with many cul-de-sacs or loops and few through routes have low connectivity; areas with grid-like street patterns have high connectivity. Low connectivity discourages trips by slower modes (such as walking or bicycling), and presents challenges for transit routing.
Transfer	When a person uses more than one transit vehicle to make a trip, they transfer in between vehicles. This is also often called a connection.
Transit dependency	If a person has a severe need for transit, due to a disability or to lack of access to an automobile, they are often referred to as transit dependent. However, transit dependency is in fact a spectrum, not a category. People with disabilities and people without their own cars may have access to rides or taxis, but the extent to which they use those rides may depend on the availability and quality of transit service.
Transit orientation	As with transit dependency, transit orientation is a spectrum, not a category. People who are living or working around higher activity densities, in places where walking to transit is safe and appealing, or who do not have easy access to an automobile may have some degree of transit orientation. Transit orientation can exist among poor and affluent populations alike.
Tripper	A tripper is a special type of transit service that makes only a few or a single trip each day. Transit agencies often send one or more trippers to relieve crowding on certain routes, or to provide direct service where none exists at other hours. Trippers often run at the start and end of school days or work shifts.
Vehicle hours	The time during which a transit vehicle is away from the garage, whether providing revenue service (represented by "revenue hours"), driving between the garage and the start or end of service (represented by "deadhead hours") or in layover and recovery time.