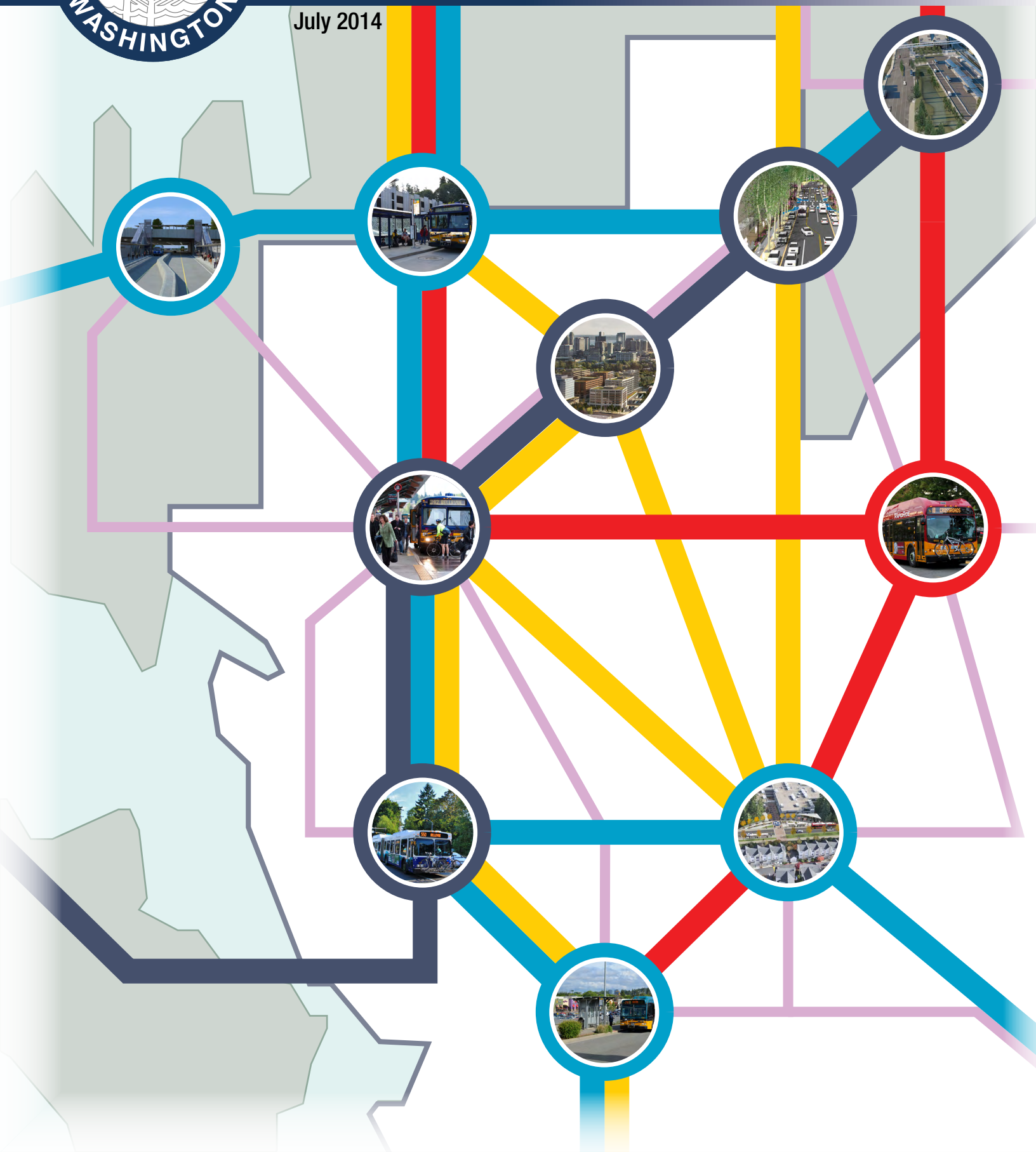
Bellevue Transit Master Plan

July 2014



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John Tiscornia, Guy de Gouville, Oran Viriyincy, Michelle Whitfield, Sound Transit, WSDOT, City of Redmond, and Wright Runstad & Co.

PHOTO BY John Tiscornia

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City of Bellevue, Washington

RESOLUTION NO. 8777

A RESOLUTION authorizing adoption of the Bellevue Transit Master Plan (TMP).

WHEREAS, the Bellevue City Council has identified transportation as a high priority and transit solutions as an increasingly important part of a local and regional transportation system that supports land use goals and level-of-service standards as set forth in the Bellevue Comprehensive Plan; and

WHEREAS, in June 2003, the City Council adopted Resolution 6859, which approved the City's Transit Plan; and

WHEREAS, in July of 2012 the City Council determined to update the City's 2003 Transit Plan, approved project principles, a scope of work and a community engagement strategy, and directed the Transportation Commission to oversee Plan preparation; and

WHEREAS, in May, 2013, the City Council approved a set of market-driven strategies that lead to a vision of "Abundant Access" which means guiding additional transit service to/from Bellevue's major activity centers where transit demand is high and expected to increase in the future; and

WHEREAS, the Bellevue Transportation Department (BTD) has worked with the Mayor and City Council, and members of the Transportation, Planning, Arts, and Human Services Commissions and the Parks and Community Services Board to produce the proposed Plan that includes a Service Element, a Capital Element, and a Policy Element; and

WHEREAS, BTD held project workshops and attended meetings with community organizations to seek comments, and solicited comments on-line from the larger Bellevue community and from individuals in the development of the proposed Plan; and

WHEREAS, BTD has briefed the Mayor and City Council on the results of those workshops and other public comments; and

WHEREAS, Bellevue's Development Services Department issued a State Environmental Policy Act (SEPA) Determination of Non-Significance for the Bellevue Transit Master Plan on May 8, 2014; and

WHEREAS, on June 26, 2014, the Transportation Commission conducted a public hearing on the proposed Plan and recommended to the Council that the Plan be adopted; now, therefore,

THE CITY COUNCIL OF THE CITY OF BELLEVUE, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1. The Bellevue Transit Master Plan (TMP), a copy of which has been given Clerk's Receiving No. 51485 is hereby adopted.

Passed by the City Council this 7th day of July, 2014,
and signed in authentication of its passage this 7th day of July.

Claudia Balducci, Mayor

Myrna L. Basich, City Clerk

PHOTO BY Guy de Gouville

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Figure 1 The 2030 Frequent Transit Network (FTN).

FREQUENT TRANSIT NETWORK (FTN)

2030 Growing Resources Scenario

- East Link (Seattle - Bellevue - Overlake)
- 1 Issaquah Highlands - Bellevue - U. District
- 2 Lynnwood - Bellevue
- 3 Westwood Village - Renton - Bellevue
- 4 Redmond - U. District
- 5 Totem Lake - Kirkland - Bellevue
- 6 Crossroads - Bellevue
- 7 Redmond - Crossroads - Eastgate - Factoria
- 11 Bellevue - Factoria - Renton
- 12 Eastgate - Overlake Village - Kirkland
- 13 Bellevue - Eastgate
- 14 Kirkland - Bel-Red - Eastgate

WEEKDAY SERVICE FREQUENCIES (in minutes):

Priority Bus Corridors	Peak	Base	Night
	8	10 - 15	15 - 30

MAJOR HUBS:

BELLEVUE TC
East Link, 1, 2, 3, 5, 6, 11, 13

EASTGATE
1, 7, 12, 13, 14

FACTORIA
7, 11

SOUTH BELLEVUE P&R
East Link, 1, 3, 11

CROSSROADS
6, 7

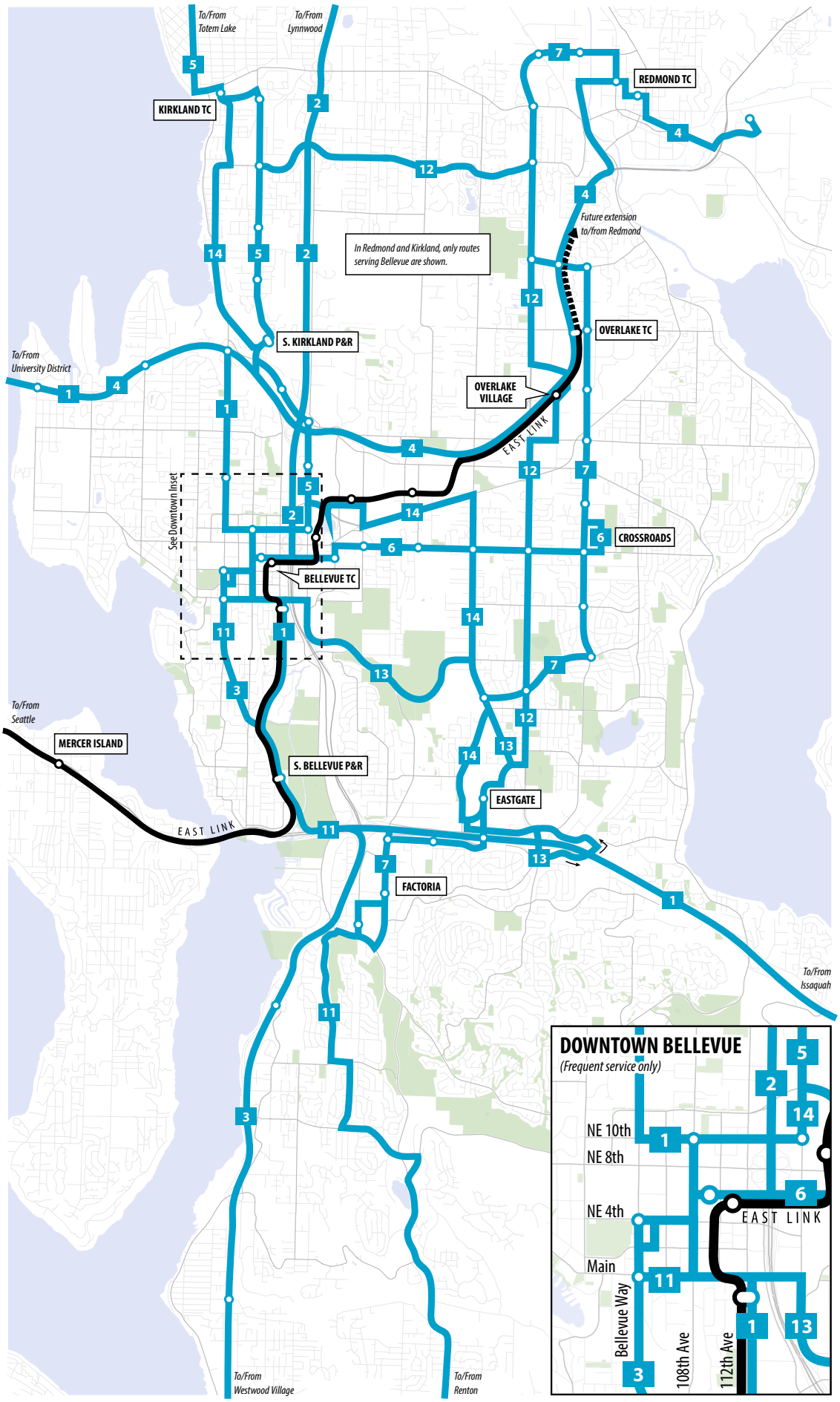
OVERLAKE VILLAGE
East Link, 12

OVERLAKE TC
East Link, 4, 7

REDMOND TC
4, 7

KIRKLAND TC
5, 12, 14

SOUTH KIRKLAND P&R
4, 5, 14



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Executive Summary

The Bellevue Transit Master Plan (TMP) is a comprehensive look ahead at the system that will be required to meet Bellevue's transit needs through 2030. The TMP establishes short- and long-term strategies and projects that foster a high-quality transit system that effectively connects residents, employees, and visitors in Bellevue with the places they want to go.

This executive summary presents the highlights of the full report, which summarizes the two-year long TMP planning process, including a review of existing and future conditions and the community outreach conducted in support of the plan, and presents the City's service and capital visions for transit in Bellevue. The Policy Element functions as the guiding framework for the planning process and identifies the strategies that should be pursued to realize the service and capital visions. The Service Element presents route-level recommendations that are responsive to different financial scenarios (reduced, stable, and growing resources) and attune to different time horizons (2015, 2022, and 2030).

The Service Element's highest priority is to enhance all-day service on Frequent Transit Network (FTN) corridors (shown at left). Encouraging long-term ridership growth in these corridors requires service enhancements paired with a supportive land use environment, transit facilities, pedestrian and bicycle amenities, and speed and reliability infrastructure, as detailed in the Capital Element.

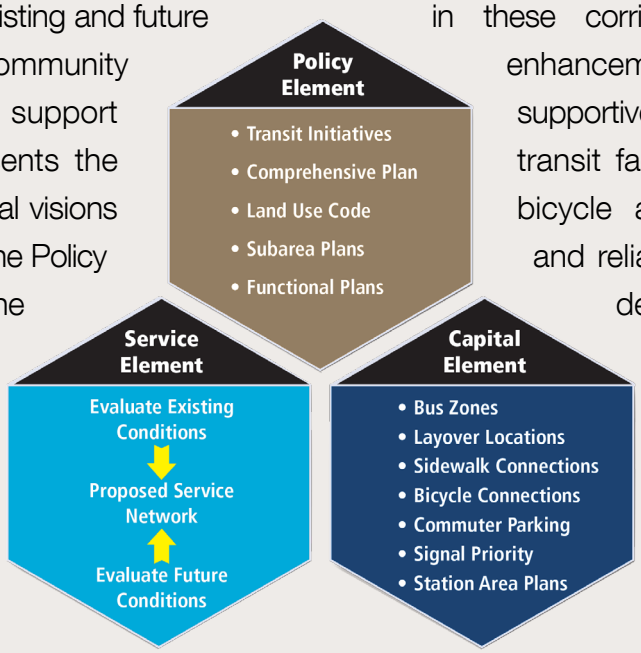


Figure 2 The Transit Master Plan (TMP) comprises three major elements—the Policy, Service, and Capital Elements.

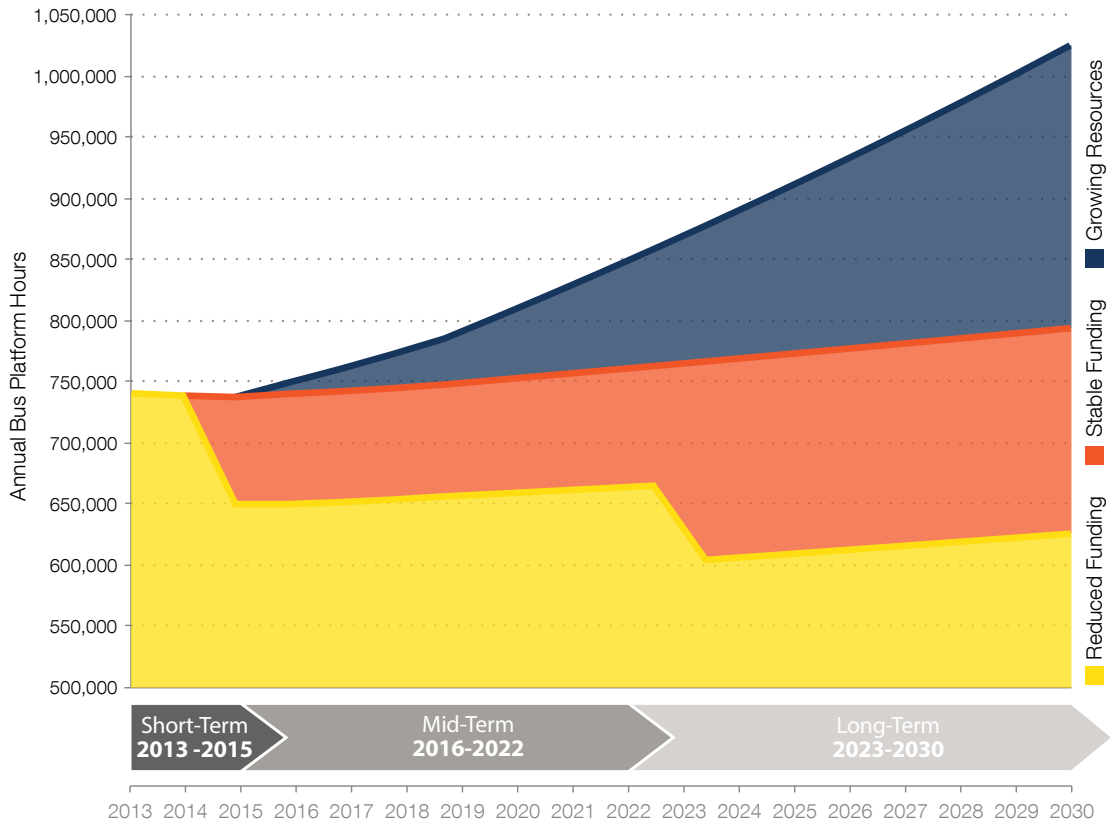


Figure 3 Projected future bus service funding scenarios.

What is the Transit Master Plan?

Although the City of Bellevue does not operate its own transit system, the Bellevue Transit Master Plan (TMP) is designed to positively influence regional transit agencies to keep Bellevue moving and maximize transit performance. The TMP envisions a public transportation network that serves a more diverse variety of people and trip purposes, and that is the mode of choice for an increasing number of people who live, work, shop, and play in Bellevue. Ultimately, achieving this vision will require new financial resources to be secured for transit. The TMP provides a realistic perspective on these financial uncertainties by carefully evaluating investment trade-offs and identifying the highest priority transit improvements to advance incrementally toward Bellevue's 2030 Growing Resources target (see above chart). The scalability of TMP strategies positions Bellevue to maximize the return on investment on existing and anticipated public transportation projects and to capture opportunities that might arise from improved economic conditions. Partnerships have already begun to coalesce around the TMP—such as the Bellevue College Connection project, shown on page 14—which bodes well for future opportunities for interagency partnerships and coordination with local and regional efforts to meet Bellevue's transit needs through 2030.

Why update the 2003 Transit Plan?

On July 9, 2012, Council initiated the Bellevue Transit Master Plan (TMP), an update of the City's 2003 Transit Plan. The TMP builds on the successes of the City's previous plan by considering current transit operations and performance, the priorities expressed by the public about the network, projected growth in population, employment, and ridership, and anticipated changes resulting from the introduction of East Link light rail and various planned and potential investments in roadway and transit infrastructure. Council charged the Transportation Commission with overseeing the update process with input from members of the Planning, Arts, and Human Services Commissions and the Parks and Community Services Board.

▲ *2030 Vision for Growth in Downtown Bellevue*

▲ *East Link Light Rail in Downtown Bellevue*

▲ *Transit-Oriented Development in Bel-Red*

▲ *Transit-Oriented Development in Eastgate*

Figure 4 Planned and projected growth in Bellevue activity centers is closely related to investments in transit.

Figure 5 A special thanks to all members of the community who provided input that helped to develop the Transit Master Plan.

What did the community tell us?

The Bellevue Transit Master Plan obtained input from the community through a variety of means, each of which provided direction for the Policy, Service, and Capital Elements. The earliest and most expansive outreach was conducted via the web-based Transit Improvement Survey, which generated input from over 4,200 respondents, nearly 1,100 of whom are Bellevue residents, including current riders, former riders, and those who have never used transit in Bellevue. To facilitate input from recent immigrants and other non-native English speakers, comment cards were distributed to local human services agencies in multiple languages. Video interviews were conducted with representative members of the community, and voluntary surveys were distributed to bus drivers to gain their perspective about safety, signal, and delay issues affecting transit operations in Bellevue. Businesses and organizations also provided their perspectives on transit service in Bellevue by submitting letters to the City and encouraging their employees and members to complete the Transit Improvement Survey. The main themes from this input include strong support for improving service frequency throughout the day—especially in the peak—and if service cuts are necessary, they should be targeted to low-ridership coverage and peak-only routes before affecting the frequency or span of high-ridership routes. When asked how the City should invest in transit, respondents supported infrastructure that increase transit speed and reliability.

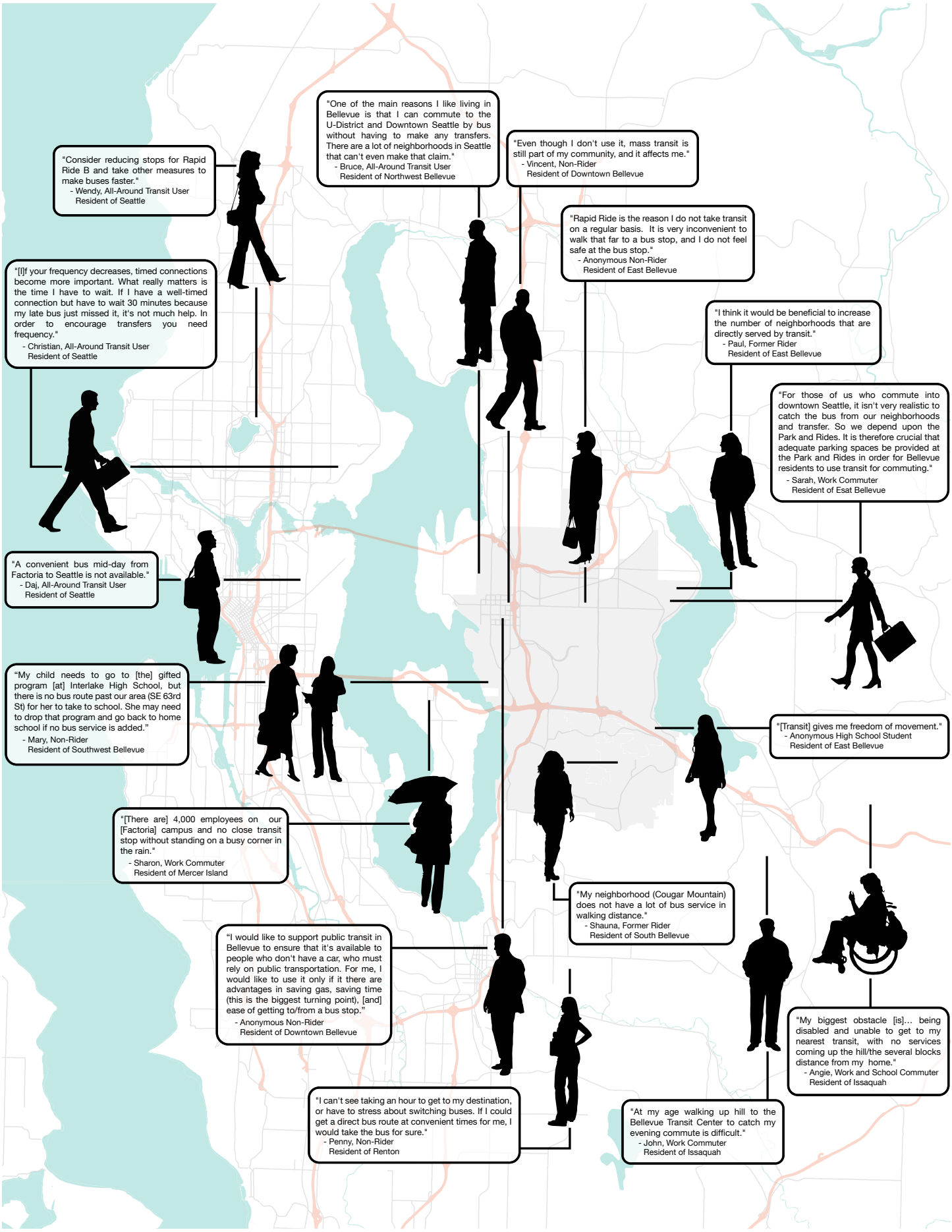


Figure 6 Representative comments submitted by respondents of the Transit Improvement Survey.

Figure 7 City board and commission members, transit agency representatives, other local stakeholders, and City staff participated in three Transit Master Plan workshops.

What did we learn at TMP workshops?

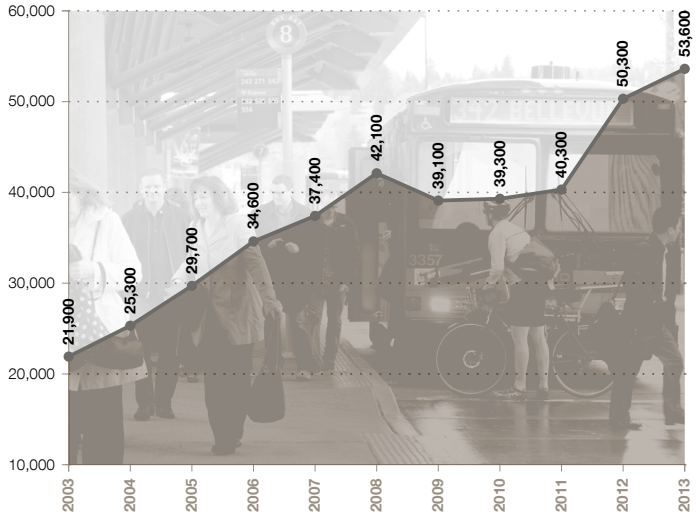
The Transportation Department sought the perspectives of City board and commission members, transit agency representatives, and representatives from other community stakeholders by engaging them at three workshops held at various stages of the Transit Master Plan (TMP) process. The three workshops included the TMP Forum in September 2012, the Transit Network Design Workshop in January 2013, and the Capital Workshop in September 2013. Each of these informed the development of the service and capital visions. These events served as valuable forums for evaluating the tradeoffs among competing service allocation and capital investment decisions that are inherent to transit planning.

For example, a mapping exercise was used to consider where participants thought services of varying frequencies might reasonably be deployed—and where they may not be warranted—based on projected changes in population and employment. The workshops also provided an opportunity for representatives to consider how the Council-approved Project Principles, existing Comprehensive Plan policies, and examples from other cities could inform transit-supportive policies in Bellevue that are reflective of the perspectives obtained from the broader community. Keypad polling was used at the latter two workshops to complement the discussion and record participants' preferences among competing priorities.

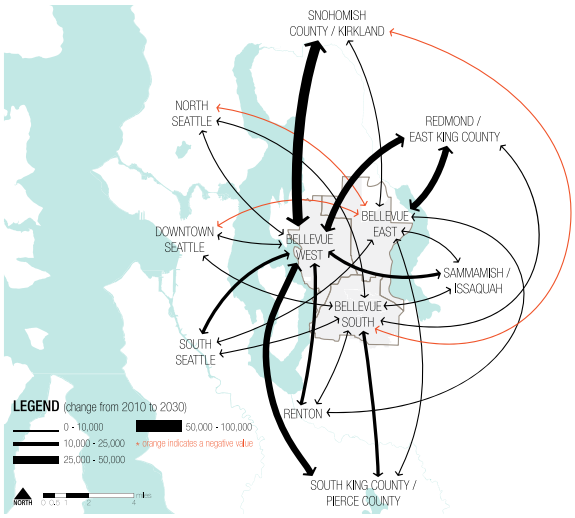
What did technical analysis tell us?

Recommendations in the Bellevue Transit Master Plan (TMP) arose from a detailed analysis of existing transit performance statistics and projected travel demand. Between 2003 and 2013, average weekday ridership in Bellevue increased by 144 percent, or an additional 31,700 daily boardings and alightings (ons/offs). Assessment of the current transit landscape also provided an improved understanding of service coverage in two dimensions: geographical coverage (where is service available) and time of day coverage (when is service available).

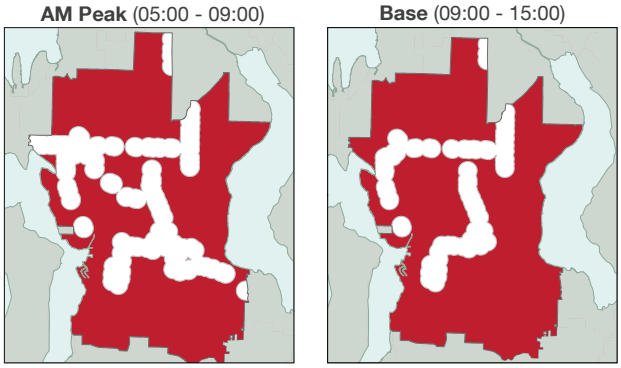
Travel demand modeling was used to evaluate changing demographics, land use characteristics, and travel patterns that affect future traffic conditions and transit performance. Projected vehicle and person throughput was considered by mode (bus and auto) for twenty Frequent Transit Network corridors being considered for potential speed and reliability improvements. In some cases, micro-simulation modeling software was also used to assess the benefits and impacts of repurposing existing general purpose travel lanes as arterial high-occupancy vehicle lanes.



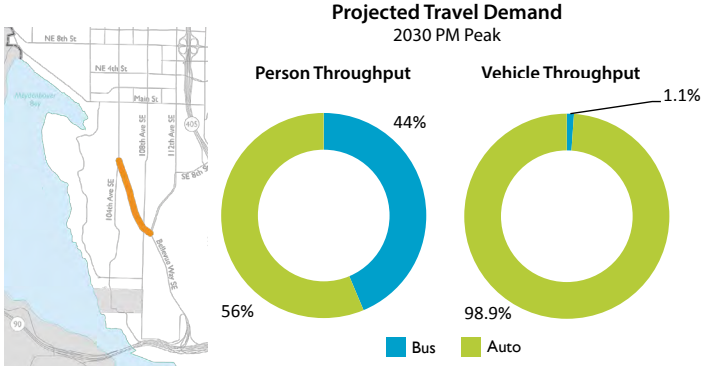
▲ *Daily ons/offs in Bellevue, Fall 2003–2013*



▲ *Projected change in regional travel demand, 2010–2030*

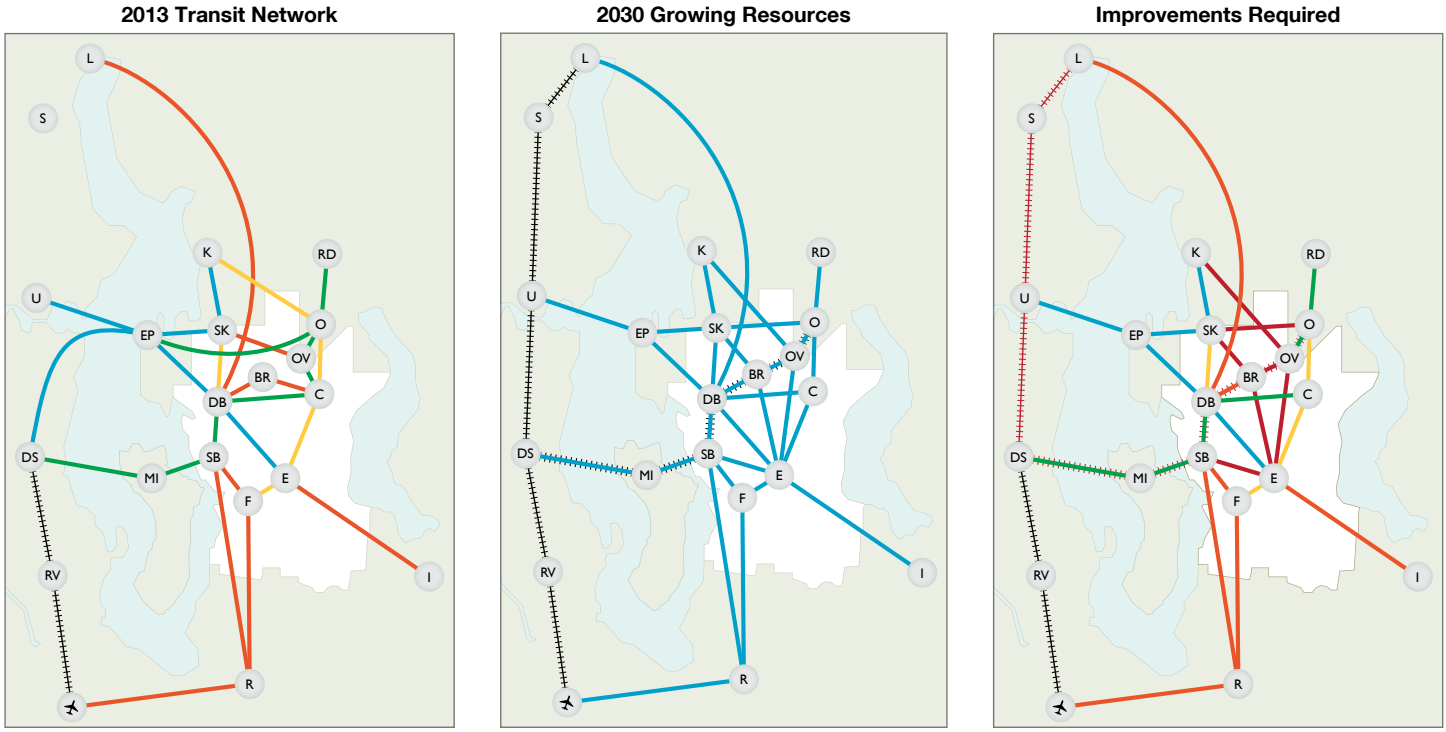


▲ *Areas (in red) lacking frequent (15-min.) service, Fall 2011*



▲ *Projected person and vehicle throughput, Bellevue Way SE*

Figure 8 Representative results from some of the technical analyses completed in support of the Transit Master Plan.



Legend

BELLEVUE

- **BR** Bel-Red
- **C** Crossroads
- **DB** Downtown Bellevue
- **E** Eastgate
- **F** Factoria
- **SB** S. Bellevue Park & Ride

REGION

- **DS** Downtown Seattle
- **EP** Evergreen Point
- **I** Issaquah Transit Center
- **K** Kirkland Transit Center
- **L** Lynnwood
- **MI** Mercer Island
- **O** Overlake Transit Center
- **OV** Overlake Village
- **R** Renton
- **RD** Redmond Transit Center
- **RV** Rainier Valley
- **S** Shoreline
- **SK** S. Kirkland Park & Ride
- **U** University District
- SeaTac

	Peak	Midday	Night
Very Frequent (every train connection)	8	10-15	15-30
LRT	8	10	15

Note: numbers reflect approximate peak/midday/night frequencies.

2013 - 2030 FTN Upgrades Required

- 8 **No Upgrade Needed** - 2030 FTN-Level Service
- 10 **Upgrade by 2 min.** - Existing Very Frequent Service
- 15 **Upgrade by 7 min.** - Existing Frequent Service
- 30 **Upgrade by 20+ minutes** - Existing All-Day Service
- N **New Service** - No Existing Service at any Frequency

Figure 9 Progress toward realizing the 2030 FTN by frequency of service connections between major centers.

What does the TMP tell us?

Informed by public input, technical studies, and market analyses, the Bellevue Transit Master Plan (TMP) identifies service and capital investment priorities needed to establish a Frequent Transit Network that meets the transit needs of most Bellevue residents and workers. The plan was developed with feedback from Metro and Sound Transit, whose partnership is critical to creating a seamless, fully-integrated, and user-friendly transit network in Bellevue.

The plan presents a bold vision supported by practical, achievable strategies in the near term that establish a foundation for longer-term improvements through the 2030 plan horizon year. The TMP also provides guidance on how transit investment`s will be prioritized in the future, and contains performance measures that establish how the city will track progress made in accomplishing the plan over time.

What does "Abundant Access" mean?

The Bellevue Transit Master Plan aims to:

"Support planned growth and development with a bold transit vision that provides efficient, useful, attractive service for most people, to most destinations, most of the time, serving maximum ridership."

This "Abundant Access" statement and supporting Market Driven Strategies—detailed in the Policy Element—supports Downtown growth, Bel-Red corridor redevelopment, and Bellevue's other activity centers (Crossroads, Eastgate, and Factoria) with a well-connected Frequent Transit Network (FTN) that seamlessly interfaces with East Link light rail. The FTN also focuses capital investments to serve the most riders and provide the highest quality of service to people who travel to/from or within Bellevue.

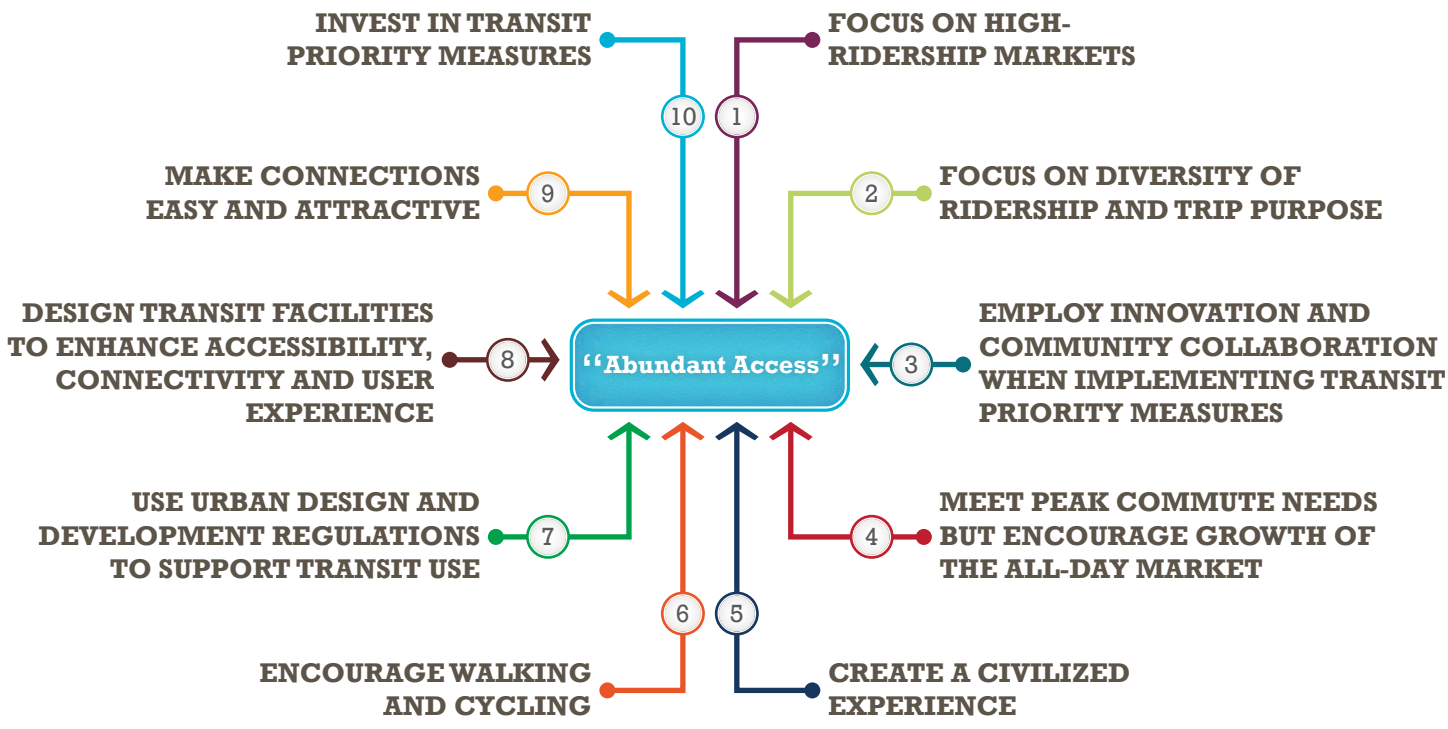
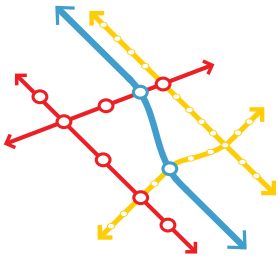


Figure 10 The "Abundant Access" vision statement and supporting Market Driven Strategies.

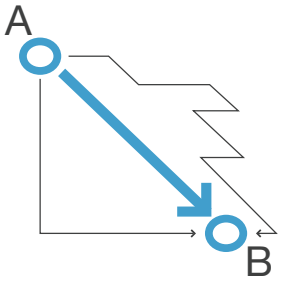
Convenient
making it the logical choice for the largest possible share of trips.

Frequent
to minimize waiting times and improve connections.

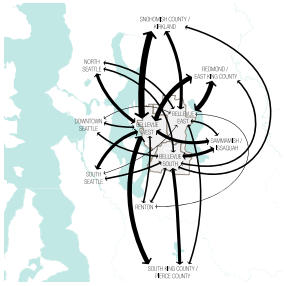
Efficient
in terms of being designed for high ridership and cost-effective operations.



Simple
with the fewest possible discrete lines so that each can have the best possible frequency, speed, and duration without complicated redundancy.



Direct
to major activity centers in Bellevue by minimizing the degree to which a route deviates from the shortest path between its start and end points.



Regionally Connected
with a complete network of regional links in all directions, with particular focus on abundant north-south service along I-405.

Figure 11 Goal statements reflecting what the "Abundant Access" vision statement aims to achieve.

What are the Service-Oriented Strategies?

On May 20, 2013, the Bellevue City Council approved a set of service-oriented strategies that lead to a vision of "Abundant Access," which aims to guide additional transit service to/from Bellevue's major activity centers where transit demand is high and expected to increase in the future. The City recognizes that this approach of maximizing the return on investment of limited resources has an impact on coverage routes in Bellevue's lower-density residential areas where service is less productive. Participants in the Bellevue Transit Master Plan (TMP) outreach efforts overwhelmingly agreed that if service reductions are necessary, Metro should delete commuter routes operating empty in the counter-flow direction and low-performing coverage routes before impacting high demand Frequent Transit Network corridors. Consistent with this guidance, the Service Element details route-level recommendations for nine funding/time-horizon scenarios that align with the TMP's vision statement and service-oriented strategies. The service vision presented on page 12 demonstrates how these strategies translate into service allocation decisions in the most optimistic scenario considered by the Transit Master Plan.

What are the Capital-Oriented Strategies?

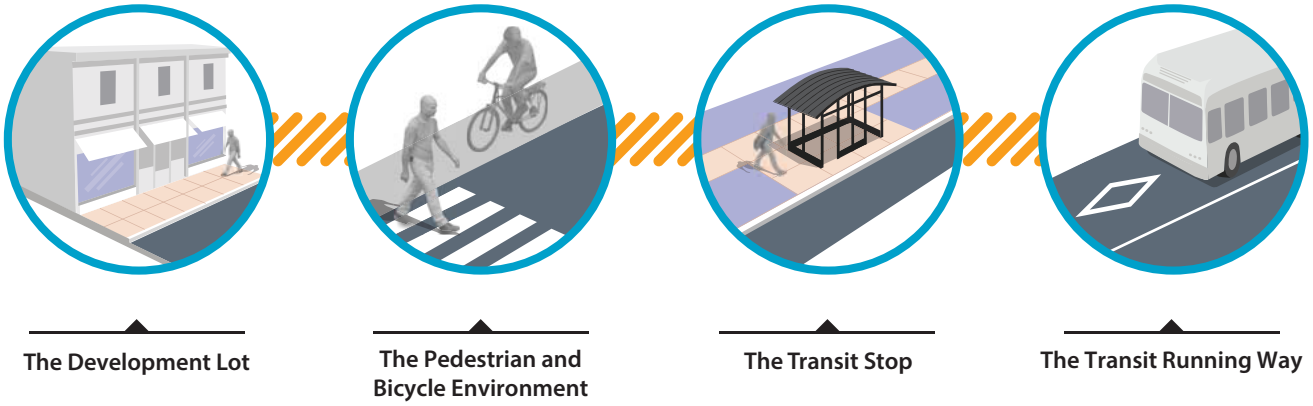


Figure 12 Areas related to transit capital facilities over which the City of Bellevue has influence.

The Bellevue Transit Master Plan (TMP) recognizes that the City has an influence over how well transit services perform along Frequent Transit Network (FTN) corridors locally. This includes influencing demand for transit by co-locating appropriate land uses to transit services, connecting pedestrians and bicycles to the transit network, providing convenient, safe, and comfortable transit stops and commuter parking facilities, and maintaining roadways, traffic signals, and other infrastructure that supports efficient and reliable operations. The Capital Element recommends investments that will help the City realize its proposed 2030 FTN thereby enabling more people, to reach more destinations, in less time. All running way projects have been ranked as high, medium, or low priority depending on the value they bring to improving transit speed and reliability along FTN corridors. The project prioritization presented in the TMP is the first step in the multi-stage process from transportation project inception to implementation. To move these projects forward to construction, transit capital investments will still have to compete with other infrastructure priorities identified in other Long Range Facility Plans before they are incorporated into Bellevue's Transportation Facilities Plan and then Capital Investment Program. The capital vision presented on page 14 demonstrates how this policy framework would translate into practical, achievable strategies in the near term that establish a foundation for longer-term improvements through the 2030 plan horizon year.

What is the Transit Service Vision?

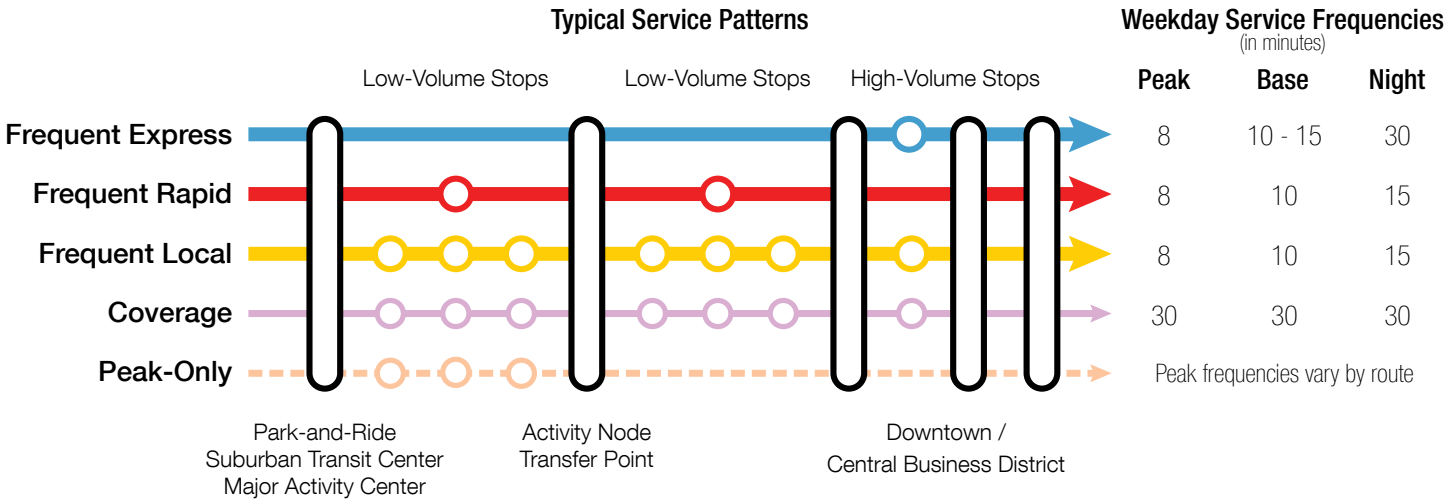


Figure 13 Types of transit service proposed by Transit Master Plan, their typical service patterns, and weekday service frequencies.

The Transit Master Plan (TMP) envisions restructuring transit services in Bellevue such that by 2030: (1) the route structure is simplified to create easier to understand, higher-frequency, and less redundant service; (2) transfers are generally more common, but they are faster and more reliable; (3) coverage routes through low-ridership areas are differentiated from high-ridership Frequent Transit Network (FTN) services, improving operating efficiency and freeing up resources to enhance the frequency of core services; (4) East Link users will enjoy "every-train connections" to FTN bus services throughout most of the day, so transferring between bus and light rail will typically require a wait of only a few minutes.

This vision for transit service in Bellevue in 2030 is based on the Growing Resources scenario, which anticipates a growth in total bus operating resources of 38 percent by 2030 from Spring 2012 levels to accommodate the projected near tripling of transit demand over this time period. If these increases in operating resources do not occur—or if resources are reduced instead—the 2030 Stable and Reduced Funding scenarios provide recommendations for how the core features of the Growing Resources scenario can be largely retained. In the lower resource scenarios, the 2030 vision calls for a similarly structured Frequent Transit Network, albeit with reduced frequency, which is achieved by eliminating Coverage and low-ridership Peak-Only services.

Figure 14 The 2030 Growing Resources Network.

BELLEVUE TRANSIT VISION

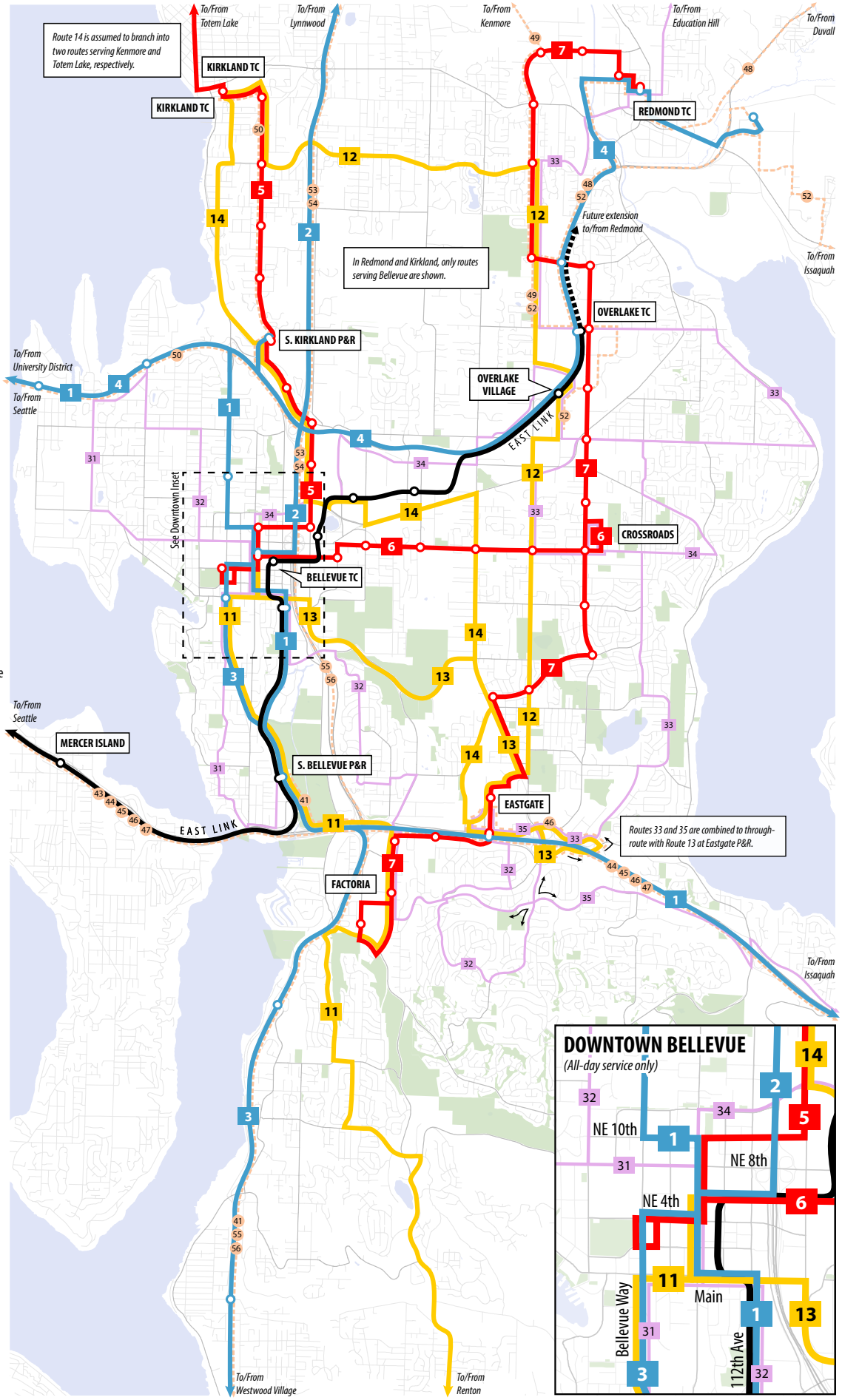
2030 Growing Resources Scenario

- East Link (Seattle - Bellevue - Overlake)
- 1 Issaquah Highlands - Bellevue - U. District
- 2 Lynnwood - Bellevue
- 3 Westwood Village - Renton - Bellevue
- 4 Redmond - U. District
- 5 Totem Lake - Kirkland - Bellevue
- 6 Crossroads - Bellevue
- 7 Redmond - Crossroads - Eastgate - Factoria
- 11 Bellevue - Factoria - Renton
- 12 Eastgate - Overlake Village - Kirkland
- 13 Bellevue - Eastgate
- 14 Kirkland - Bel-Red - Eastgate
- 31 South Bellevue - Bellevue - Yarrow Point
- 32 Eastgate - Factoria - Bellevue - Yarrow Point
- 33 Redmond - Overlake - Crossroads - Eastgate
- 34 Crossroads - Bel-Red - Bellevue
- 35 Issaquah - Eastgate
- 41 South Bellevue - Lake Kathleen
- 43 Eastgate - Seattle
- 44 North Bend - Issaquah - Eastgate - Seattle
- 45 Bear Creek - Sammamish - Eastgate - Seattle
- 46 Seattle - Eastgate - North Issaquah
- 47 Issaquah Highlands - Eastgate - Seattle
- 48 Duvall - Redmond - Overlake
- 49 Kenmore - Kingsgate - Overlake
- 50 Kirkland - Seattle
- 52 Issaquah - Sammamish - Overlake
- 53 Shoreline - Bothell - Bellevue
- 54 Everett - Bellevue
- 55 Auburn - Kent - Renton - Bellevue
- 56 Kent - Bellevue

WEEKDAY SERVICE FREQUENCIES (in minutes):

	Peak	Base	Night
Frequent Express	8	10 - 15	30
Frequent Rapid	8	10	15
Frequent Local	8	10	15
Coverage	30	30	30
Peak-Only	Frequency varies by route		

N



What is the Transit Capital Vision?

Existing Conditions

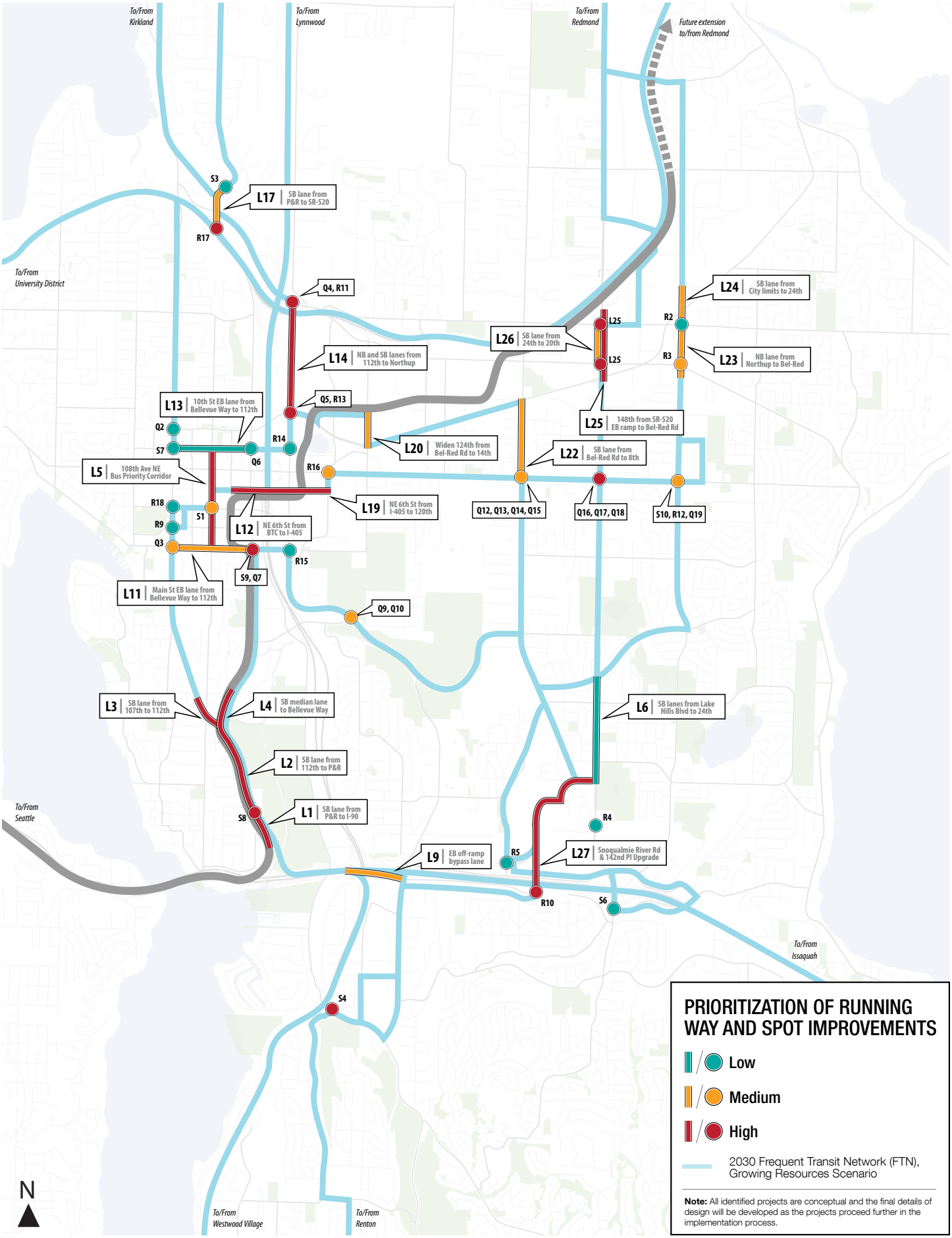
Preliminary Design Concept

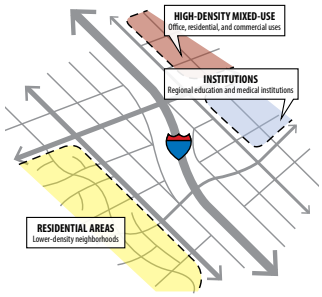
Figure 15 Running Way Project L27: The Bellevue College Connection Multimodal Transportation Corridor

The capital vision addresses the various ways that the City can positively affect the performance and user experience of transit within Bellevue through land use planning, urban design, and physical infrastructure. This includes consideration of four broad topics based on the areas over which the City of Bellevue has direct influence: (1) influencing demand for transit by co-locating appropriate land uses to transit services; (2) connecting pedestrians and bicyclists to the transit network; (3) providing convenient, safe, and comfortable transit stops; (4) constructing and maintaining roadways and traffic signals in a way that supports efficient and reliable transit operations.

Increasing traffic congestion and the associated increases in transit travel time and reduced reliability have detrimental effects both on transit ridership and on operating costs for the region's transit providers. The Transit Running Way section of the capital vision identifies a total of 107 capital projects that would benefit transit speed and reliability, 60 of which are depicted in the map at right. The Transit Master Plan also includes several tracking and additional study projects and 44 near-term transit signal priority projects, identifies existing non-motorized projects that are a priority for transit, and reviews potential improvements to bus stops and commuter parking facilities.

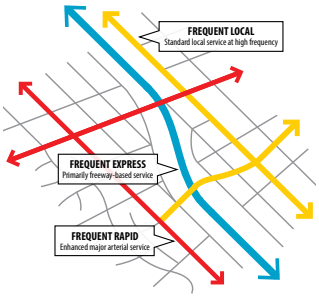
Figure 16 Prioritization of the proposed transit running way and spot improvement projects.





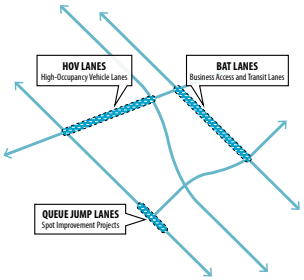
The Development Lot

The places, public and private, where all trips begin. Density, land use diversity, and urban design impact a place's ability to support frequent transit service.



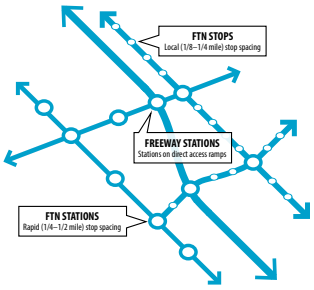
Frequent Transit Network

Convenient, efficient, frequent, simple, direct, and regionally connected service that connects more people to more destinations in less time.



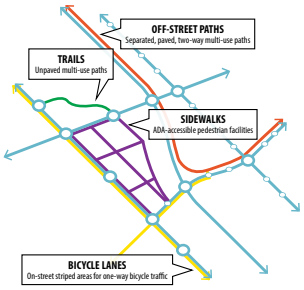
Running Way Projects

Roadway and traffic signal infrastructure investments improve the speed and reliability of transit services operating along FTN corridors.



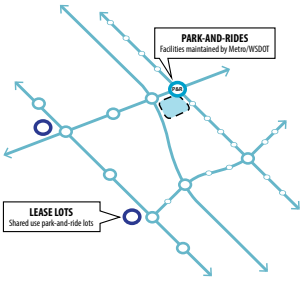
FTN Stations and Stops

The first point of contact between the passenger and the transit system should be comfortable, safe, and accessible to pedestrians and bicyclists.



Ped-Bike Access Network

All transit users are pedestrians at some point of the trip. Sidewalks, bicycle lanes, off-street paths, and trails link places to transit service.



Park-and-Ride Access

Facilities that offer automobile and bicycle parking adjacent to transit service, connecting those who do not live near transit to concentrated services.

Figure 17 Illustrations of how the components of the service and capital visions support existing and planned land uses in Bellevue.

How does it all fit together?

The service and capital visions of the Transit Master Plan describe two distinct components of the transit system, but they are inseparably related to one another, with each both influencing and being influenced by the other. Existing and future land uses, population and employment characteristics, and street networks directly inform the location of transit services and stops. The 2030 Frequent Transit Network (FTN) represents the core of the services envisioned and includes all routes operating 8–15 minute headways all-day. Because these routes will serve the primary connections between local and regional activity centers and the majority of ridership, corridors served by the FTN are the most important to target for capital investments, including running way enhancements and pedestrian, bicycle, and park-and-ride facilities that help people reach transit services. Each of these components is vital to achieving an attractive, useful, and well-utilized transit system. The map at right provides an example of how these components relate to one another in Eastgate and vicinity.

Figure 18 The proposed 2030 Growing Resources Network and its supporting capital investments in Eastgate and vicinity.

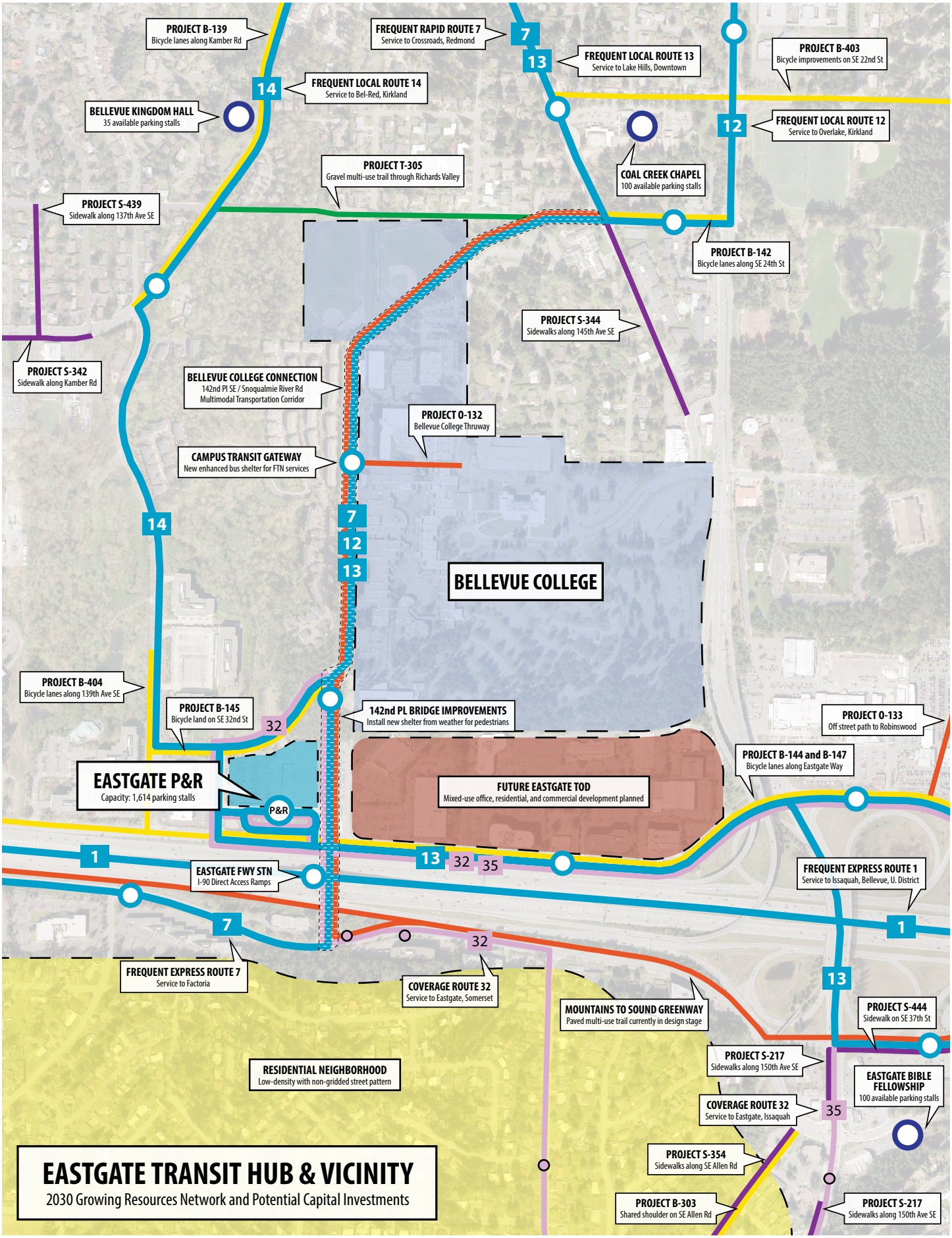


PHOTO BY Shane Valle

SECTION 1: BACKGROUND

INTRODUCTION

PLAN PURPOSE

Bellevue's *Comprehensive Plan* acknowledges that responding to anticipated growth in travel necessitates a multi-modal transportation solution that offers the public real choices about how they travel within, to, from, and through Bellevue. Looking to the future, the Bellevue City Council envisions a public transportation network that serves a more diverse range of people and trip purposes, and that is the mode of choice for an increasing number of people who live, work, and play in Bellevue. Council's perspective on transit is reflective of the values expressed by members of the community. According to the 2014 Budget Survey, 90 percent of Bellevue residents agree or strongly agree that the City should "work with regional agencies to improve local and regional public transportation serving Bellevue"—up from 83 percent in 2012 (see Figure 20).

The role of transit in Bellevue is evolving, and this plan is part of that process. On July 9, 2012, Council initiated the Bellevue Transit Master Plan (TMP), an update of the City's *2003 Transit Plan*. The TMP builds on the successes of the City's previous plan by considering current transit operations and performance, the priorities expressed by the public about this network, projected growth in population, employment, and ridership, and anticipated changes resulting from the introduction of East Link light rail and various planned and potential investments in roadway and transit infrastructure.

Council charged the Transportation Commission with overseeing the update process with input from members of the Planning, Arts, and Human Services Commissions and the Parks and Community Services Board (see Project Principles, Appendix 2). This project also benefitted from the active involvement

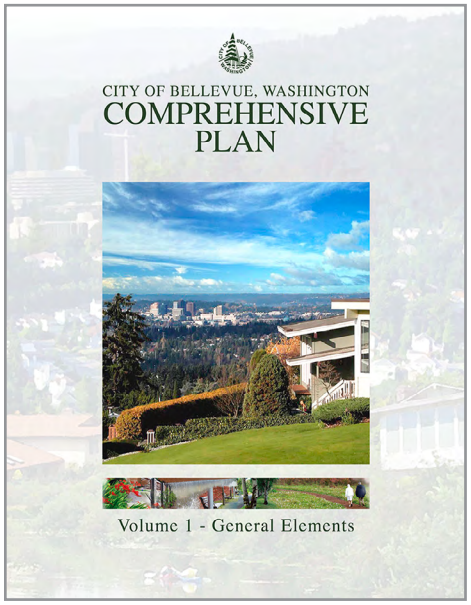


Figure 19 Bellevue's Comprehensive Plan, currently undergoing its decennial update, includes a variety of policies that promote transit operations in the city.

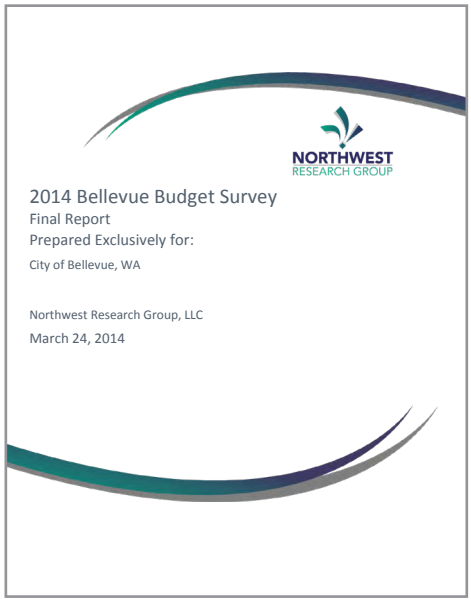


Figure 20 In the 2014 Budget Survey—and all previous City budget survey efforts—public support for transit consistently ranks the highest across an array of transportation strategies on how to handle traffic and congestion in Bellevue.

and support of residents, business owners, and the workforce as well as numerous institutions and agencies, such as Bellevue College, Sound Transit, King County Metro, and adjacent jurisdictions. As indicated in Figure 21, these diverse groups collectively spoke of the many ways that transit benefits Bellevue (see the *Benefits of Transit Report* for details), including:

- **Economic Benefits** – Businesses, especially large employers, frequently locate in communities with strong public transit services;
- **Environmental Benefits** – Cities benefit from reduced traffic congestion and improved air quality when people take transit;
- **Community Benefits** – An effective transit system may reduce parking demand, improve commute times, make more efficient use of right-of-way, and support development in activity centers near transit stops.
- **Individual Benefits** – Public transportation provides an affordable, and for many, necessary, alternative to driving.

The Transit Master Plan aims to maximize these benefits for Bellevue by coordinating with local and regional transit efforts to identify the types of service and capital features required to meet Bellevue's needs today and through 2030.

"Speaking from a corporate perspective, we couldn't provide mobility to our workforce without a robust transit system in Bellevue."

– JIM STANTON, SENIOR COMMUNITY AFFAIRS MANAGER, MICROSOFT

Microsoft

Figure 21 Efficient, useful, well-utilized public transit provides a variety of benefits, summarized here in four broad categories: benefits to the economy, environment, community, and individuals.

PLANNING PROCESS

The Transit Master Plan Summary Report is the result of a two year-long process undertaken by the Transportation Department to comprehensively understand the current state of fixed-route bus transit service in Bellevue and plan for the city's anticipated needs in the years ahead. This process included extensive outreach to the community, consultation with local stakeholders and transit agencies officials, and an assortment of technical analyses in support of transit service and capital planning. More specifically, the TMP process included:

- Compilation and analysis of existing fixed-route bus transit network performance statistics;
- Examination of current and future market conditions and projected travel demand by mode;
- Outreach to the public, city boards and commissions, and other local stakeholders to elicit the perspectives and service priorities of various groups;
- Consultation with local transit officials to ensure that the proposals ultimately advanced reflect adopted service guidelines, multi-modal integration plans, and the realities associated with potential transit funding situations in the coming years;
- Consideration of a wide variety of potential projects, both new and those previously identified by other planning efforts, to determine where and how City investments can help make transit operations faster and more reliable;
- Examination of other components of the transit trip over which the City has influence, including the development lot, pedestrian and bicycle environment, and transit stop, to determine where investments can be made to improve the transit user's experience and attract additional ridership.

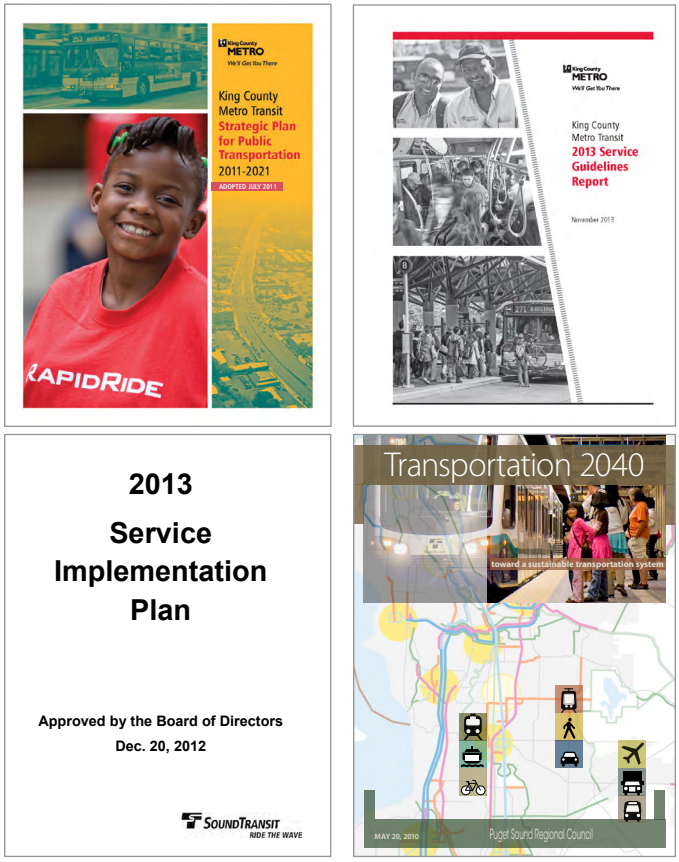
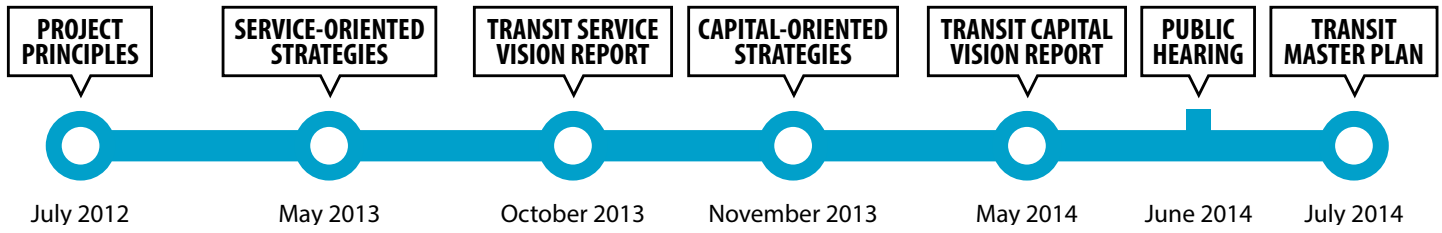


Figure 22 All of the reports compiled by the City of Bellevue in support of the Transit Master Plan derive data from and strive for consistency with documents published by King County Metro, Sound Transit, and the Puget Sound Regional Council, including the *Strategic Plan for Public Transportation 2011-2021*, *Service Guidelines Reports*, the *2013 Service Implementation Plan*, and *Transportation 2040*.

To date, the Transportation Department has published an assortment of documents describing each stage in the overall TMP process. All of these documents, briefly summarized in Appendix 1 on page 116, are available to view and download at www.bellevuewa.gov/transit-plan-documents.htm. These efforts were generally organized into two separate but closely related processes: the Service Element and the Capital Element (see Sections 3 and 4, respectively). Both leveraged technical analyses and input obtained from community outreach to arrive at the service- and capital-oriented strategies, as indicated by Figure 24 and Figure 25 on the following pages. Collectively referred to as the market-driven strategies, these define the priorities of the "Abundant Access" vision statement—addressed in greater detail in the Policy Element (see Section 2)—which guided the development of the service and capital visions. Reports associated with these strategies and visions represent the most significant milestones of the TMP planning process, as shown in Figure 23.

The TMP planning process began with an assessment of the fixed-route services provided by the existing transit network and how well they perform, outreach to determine the attitudes and preferences of the community related to transit, and projections of future travel demand within Bellevue and between Bellevue and other regional markets. As shown in Figure 24, the results of these endeavors served as inputs in the development of the service-oriented strategies. These strategies consider the

Figure 23 Transit Master Plan timeline of project milestones.

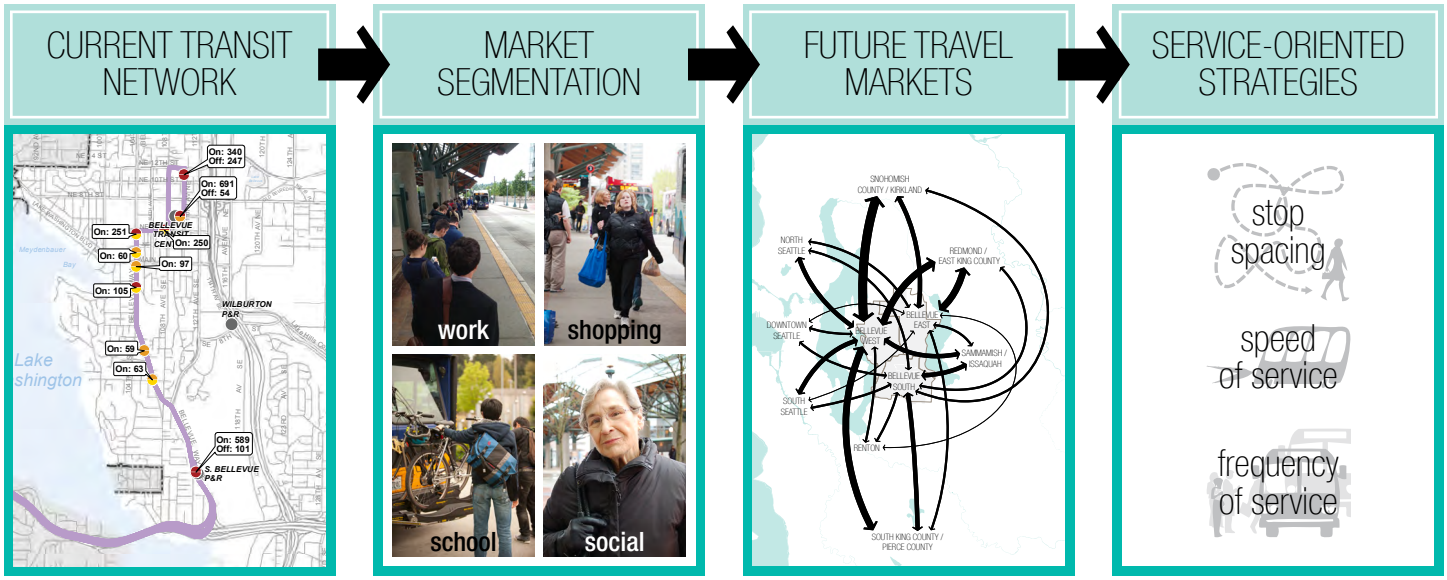


fundamental tradeoffs associated with operating transit service and advance the priorities believed to best reflect the city's needs and the preferences identified by the community.

The transit service vision uses these strategies as its guide and presents route-level recommendations that are responsive to different financial scenarios (reduced, stable, and growing Resources) and attune to different time horizons (2015, 2022, and 2030). These nine networks were created to plan for the uncertainty that exists in the financial outlook of transit while incrementally guiding network development toward the aspirational 2030 Growing Resources network to the extent possible with available funding.

The 2030 Frequent Transit Network (FTN) represents the core of the services envisioned in the Growing Resources scenario and includes all routes operating 8–15 minute headways all-day (see Figure 1). Because these routes will provide the primary connections between local and regional activity centers and serve the most ridership, corridors served by the FTN are the most important to target for capital investments that would improve service speed and reliability, pedestrian and bicycle access to transit, and other infrastructure improvements. Therefore, as shown in Figure 25,

Figure 24 This graphic describes the Service Element planning process, which arrived at six service-oriented strategies based on a detailed review of the current transit network, an assessment of the attitudes and preferences that drive traveler choices, and an evaluation of future travel markets.



What service types are in place today and how well do they perform?

What are the attitudes and preferences that drive traveler choices?

Which segments in which travel markets should transit services compete for?

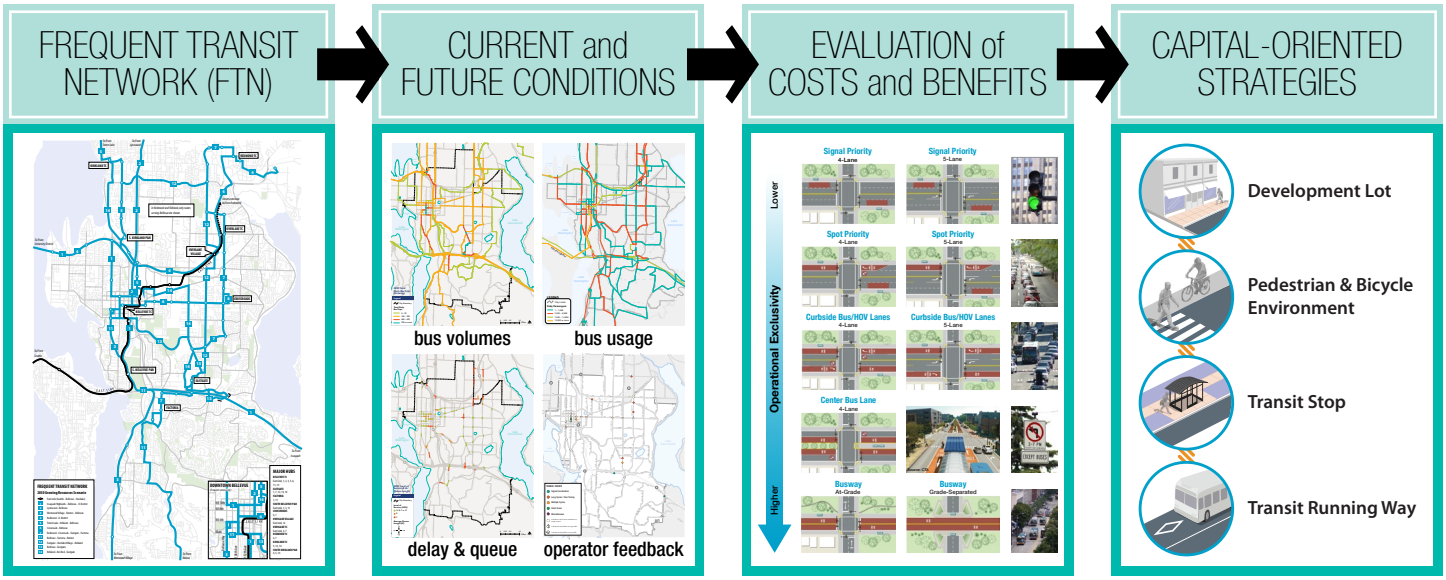
What kinds of strategies can best seize these opportunities?

the FTN served as the starting point for all analyses conducted as part of the Capital Element.

The capital-oriented strategies were developed based on assessments of the current and future conditions along FTN corridors, input obtained from community outreach efforts, and consideration of the types of improvements that could influence the public's decision to use transit. The capital vision reflects these priorities, identifies the various types of infrastructure that support productive, accessible, efficient transit services in Bellevue, and recommends investments that would help the City realize and maximize the performance of the 2030 FTN.

Whereas the Service and Capital Elements were addressed in succession, with the latter building on the outcomes of the former, the Policy Element section in this report represents a compilation of all the strategy and policy considerations addressed by the Transit Master Plan, which were identified at various stages of the TMP planning process to provide guidance to the other two elements and the overall planning effort. Because these strategies and policies serve as the framework upon which the rest of the plan is based, the Policy Element precedes the Service and Capital Elements in this report.

Figure 25 This graphic describes the Capital Element planning process, which arrived at four Capital-Oriented Strategies based on an assessment of current and future conditions on corridors served by the 2030 Frequent Transit Network, identified by the growing resources scenario of the service vision, and an evaluation of the costs and benefits of various potential transit priority infrastructure investments.



Where is bus service expected to be convenient, reliable, easy-to-use?

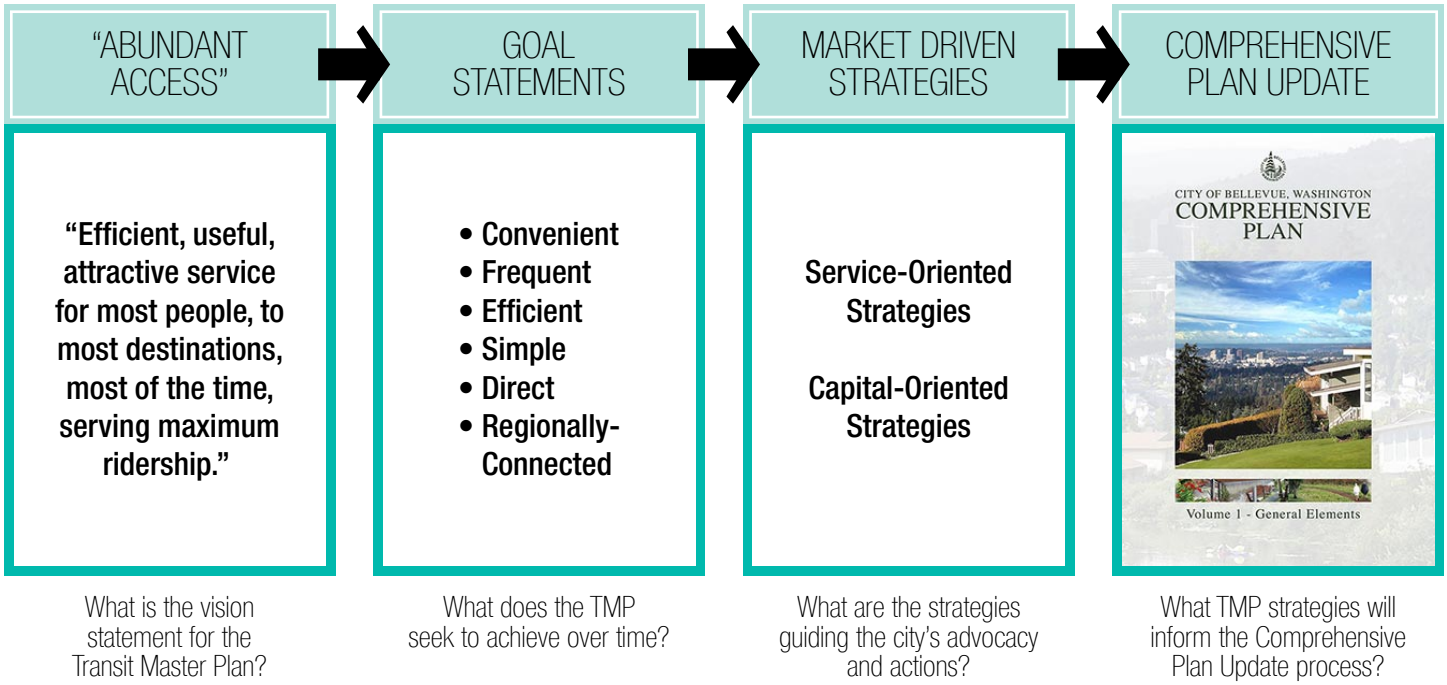
What are the current and future conditions on FTN corridors?

What are the costs and benefits of different levels of operational exclusivity?

What strategies can influence the public's decision to use transit?

Before presenting the service and capital visions, it is instructive to first review some of the Transit Master Plan's more significant foundational materials. The resulting vision is meant to be a logical extension of the principles established by City Council, the opinions expressed by the public, and the priorities identified by various officials, representatives, and other stakeholders throughout the planning process. The following pages describe the community input that guided all aspects of this planning effort, followed by a brief summary of the current state of fixed-route transit in Bellevue and the projected changes in land use, population, employment, and ridership on which the need for changes to and investment in the future network is based.

Figure 26 This graphic describes the structure of the Policy Element, with the "Abundant Access" vision statement and goals leading to market-driven strategies that inform both the service and capital visions and the Comprehensive Plan Update process.



COMMUNITY OUTREACH

Analysis of existing and future conditions can help to inform where and how resources might reasonably be allocated to achieve productive and efficient services; however, such analysis only provides guidance, not definitive answers. Situations frequently arise in which decisions must be made about competing interests of comparable merit that simply reflect different perspectives. Given limited resources, often only one solution can be pursued. Careful consideration must therefore be given to how alternative courses of action would address the values and interests of the end-users of the transit system—the public.

To that end, the Transit Master Plan obtained input from the community through a variety of means, each of which provided direction for the Policy, Service, and Capital Elements. The earliest and most expansive outreach was conducted via the web-based Transit Improvement Survey, which generated input from over 4,200 respondents—of which nearly 1,100 are Bellevue residents—including current riders, former riders, and those who have never used transit in Bellevue. To facilitate input from recent immigrants and other non-native English speakers, comment cards were distributed to local human services agencies in multiple languages, including Chinese, Russian, and Spanish. Video interviews were conducted with several individuals representative of some aspect of the community, and voluntary surveys were distributed to coach operators to obtain their perspective about common issues affecting transit in Bellevue. Businesses and organizations were also encouraged to provide their perspectives on transit service in Bellevue, and many did so directly by submitting letters to the City and indirectly by encouraging their employees and members to complete the Transit Improvement Survey.[1]

1 Refer to the *Phase 1 Outreach Report* for translated results of the non-Enligh comment card outreach, video interview transcriptions, letters obtained from businesses and organizations, and the complete results of the responses received to the Transit Improvement Survey.

Figure 27 Postcard advertising the Transit Improvement Survey.

Figure 28 A participant in the outreach to non-native English speakers and her completed comment card.

Figure 29 Coach operators identified transit operations issues in Bellevue related to safety, speed, and reliability.

Finally, the Transportation Department solicited the perspectives of City board and commission members, transit agency representatives, and representatives from other community stakeholders by engaging them at three workshops held at various stages of the TMP process. These events served as valuable forums for evaluating the tradeoffs among competing service and capital investment decisions inherent to transit and advancing policies reflective of the perspectives obtained from the community at large.

Transit Improvement Survey

The Bellevue Transit Improvement Survey was conducted between February and March of 2012. The survey addressed all aspects of transit use and user experience in Bellevue, answering the broad questions: Who uses transit in Bellevue and how? How do people perceive various qualities about transit service in Bellevue? What are peoples' priorities for transit service in Bellevue? Some of its most significant outcomes include the identification of (1) common characteristics of transit use in Bellevue by trip purpose, places of origin and destination, and demographic characteristics, (2) the factors that most influence individuals' decision to use (or not use) transit in Bellevue, (3) the qualities of service that are most important to current and potential transit users, and (4) the community's priorities for municipal investment in transit, advocacy to transit agencies, and preferred solutions in the event of service reductions resulting from diminished resources.[2]

Commuting to/from work is the most common trip purpose among transit users in Bellevue (see Figure 31), but more than three-quarters of all respondents use transit for more than one trip purpose. Almost regardless of trip purpose, transit users selected the same three qualities of service

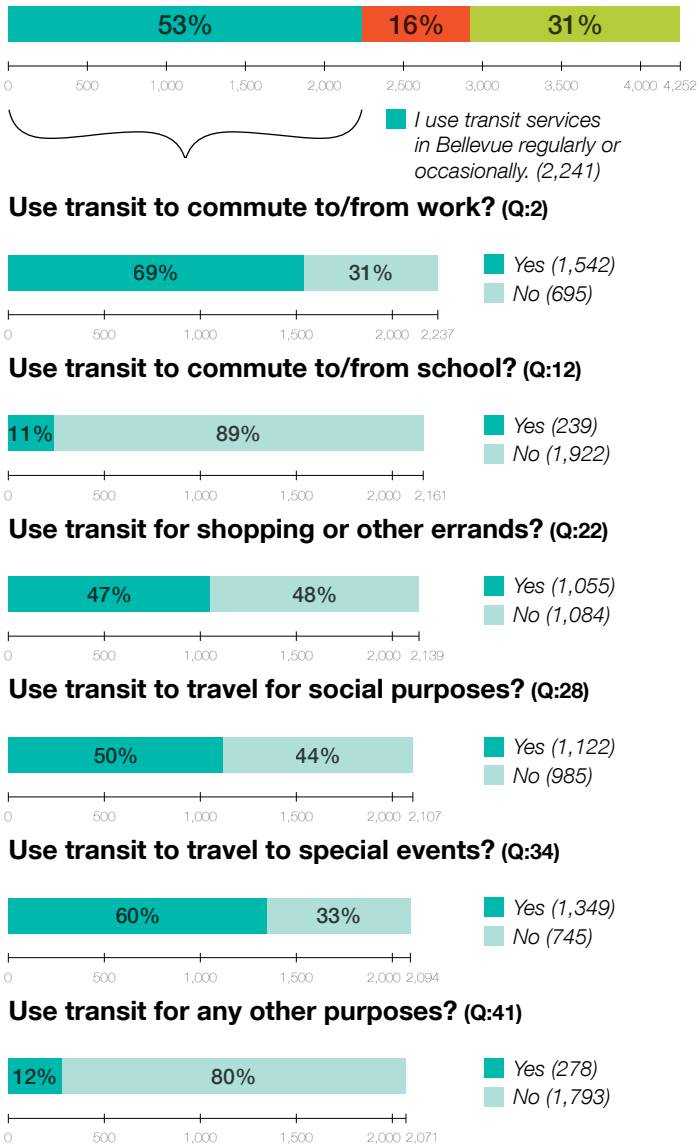


Figure 31 Trip purpose(s) of the 2,241 respondents who identified themselves as current users of transit in Bellevue.

2 Refer to the *Transit Improvement Survey Report* for a thorough review of the results obtained.

Figure 32 Selected write-in comments provided by Transit Improvement Survey respondents.

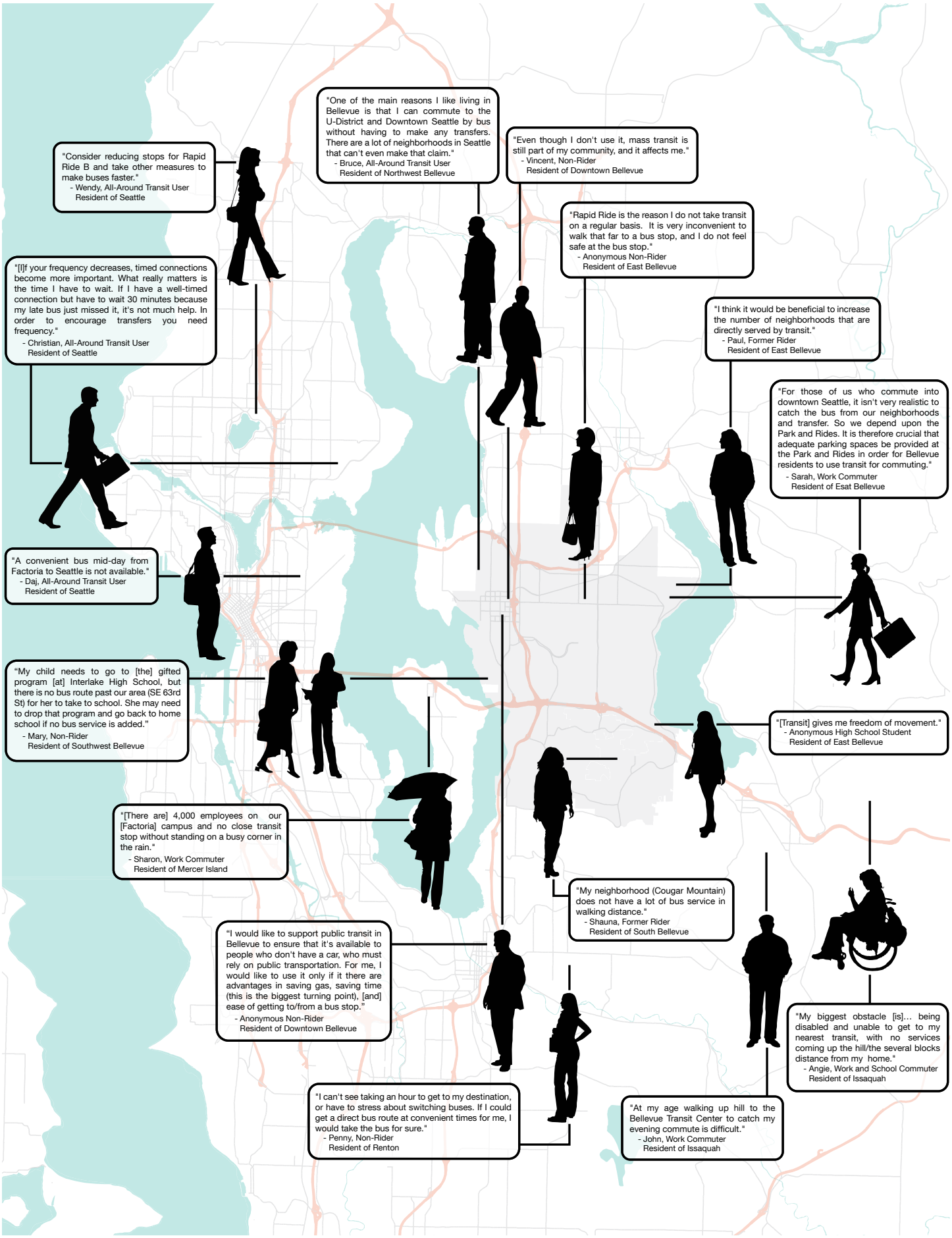


Table 1 Advocacy priorities of respondents who currently use transit in Bellevue.

	All Respondents		Bellevue Residents	
Quality of Service	Count	Percent	Count	Percent
Increase Frequency During Peak	643	33.2%	149	22.8%
Increase Frequency to Reduce Overcrowding	249	12.9%	74	11.3%
Increase Vehicle Capacity at Park & Rides	183	9.5%	65	9.9%
Other	168	8.7%	54	8.3%
Increase Frequency During Midday	152	7.9%	58	8.9%
Revise Schedules to Improve Connections	131	6.8%	44	6.7%
Expand Service Coverage in Bellevue	114	5.9%	71	10.9%
Install Additional Shelters	60	3.1%	30	4.6%
Increase Frequency on Weekends	50	2.6%	30	4.6%
Extend Service at Night on Weekends	48	2.5%	20	3.1%
Increase Frequency During Late Night	47	2.4%	22	3.4%
Expand ORCA Sales Locations in Bellevue	41	2.1%	18	2.8%
Extend Service at Night on Weekdays	32	1.7%	13	2.0%
Increase Bicycle Capacity at Park & Rides	18	0.9%	6	0.9%
respondents	**1,936**		**654**	

Figure 33 Half of all work commuters who responded to the Transit Improvement Survey cited increased productivity and/or relaxation as a reason for choosing to use transit instead of driving.

as their three highest priorities: (1) the frequency of weekday service, (2) schedule reliability and on-time performance, and (3) the speed of service. A perception that traveling by transit takes too long is the most common reason why former riders no longer use transit and why non-riders have never used transit, and both former and non-riders cite lacking service frequency among their top three reasons for not using transit.

When asked how the City could best leverage its influence with local transit agencies to improve service in Bellevue, respondents emphasized improving frequency during peak hours, which received more than twice as much support as the second-highest priority of reducing overcrowding. Bellevue residents are more likely than respondents overall to support advocacy for increased frequency throughout the day and expansion of service coverage into un-served Bellevue neighborhoods. Park-and-ride vehicle capacity is also considered to be inadequate and worthy of advocating for additional investment. When asked how the City should invest municipal resources to improve transit, current transit users' three highest priorities were to (1) invest in roadway and transit signal infrastructure to improve transit speed and reliability, (2) provide real-time arrival information at major stops, and (3) increase vehicle parking capacity at park-and-ride lots (see Table 1). Finally, when asked how to address a hypothetical future budget shortfall, respondents tended to favor revenue-increasing solutions over service reduction solutions. When considering the difficult choices associated with reduced funding and service cuts, Transit Improvement Survey respondents overwhelmingly agreed that if service reductions are necessary, Metro should eliminate low-performing coverage routes before impacting off-peak service frequency or span of service at night, both of which received little support.

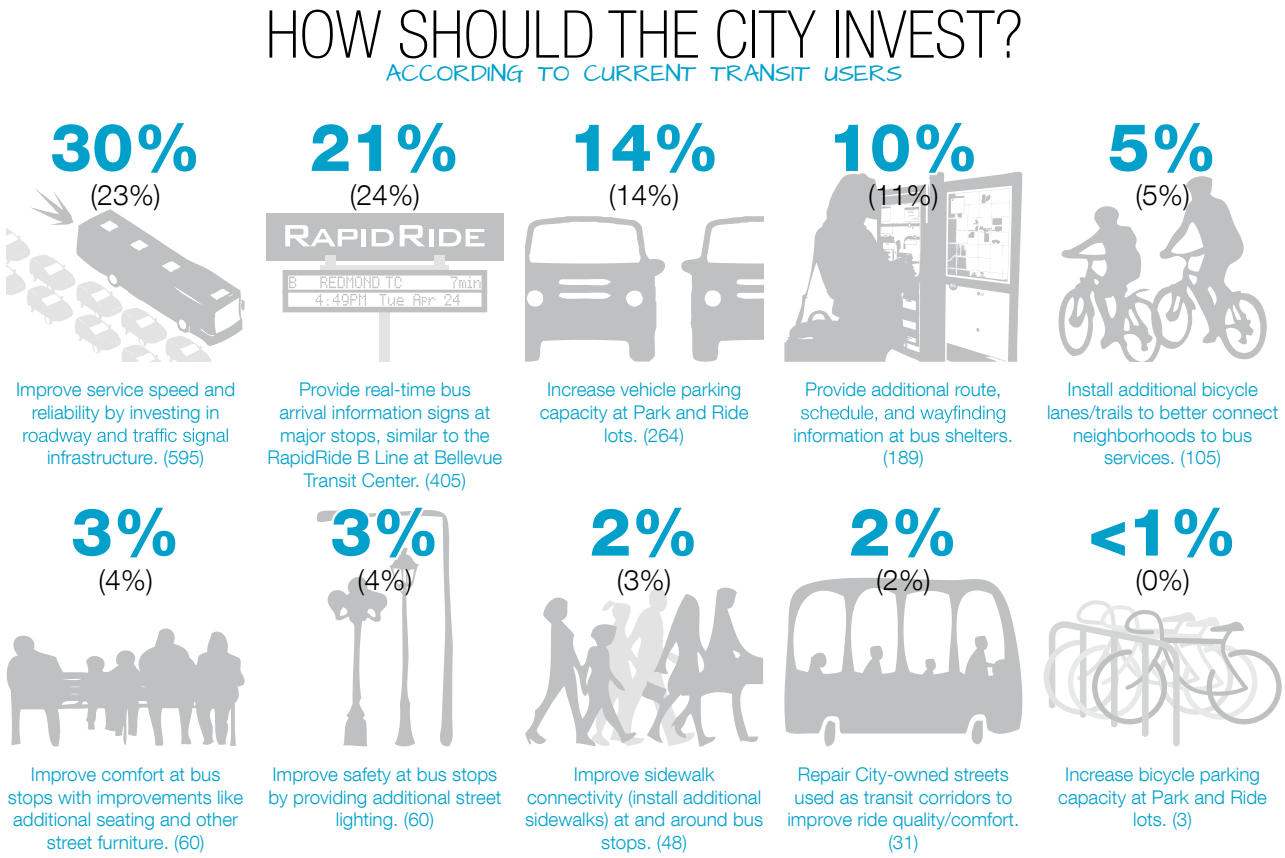


Figure 34 Priorities for municipal investment in transit among those who currently use transit services in Bellevue, according to the Bellevue Transit Improvement Survey. Large blue percentages reflect all current transit users, small black percentages in parentheses reflect all current transit users who reside in Bellevue, and small blue numbers in parentheses following each description reflect the total number of respondents.

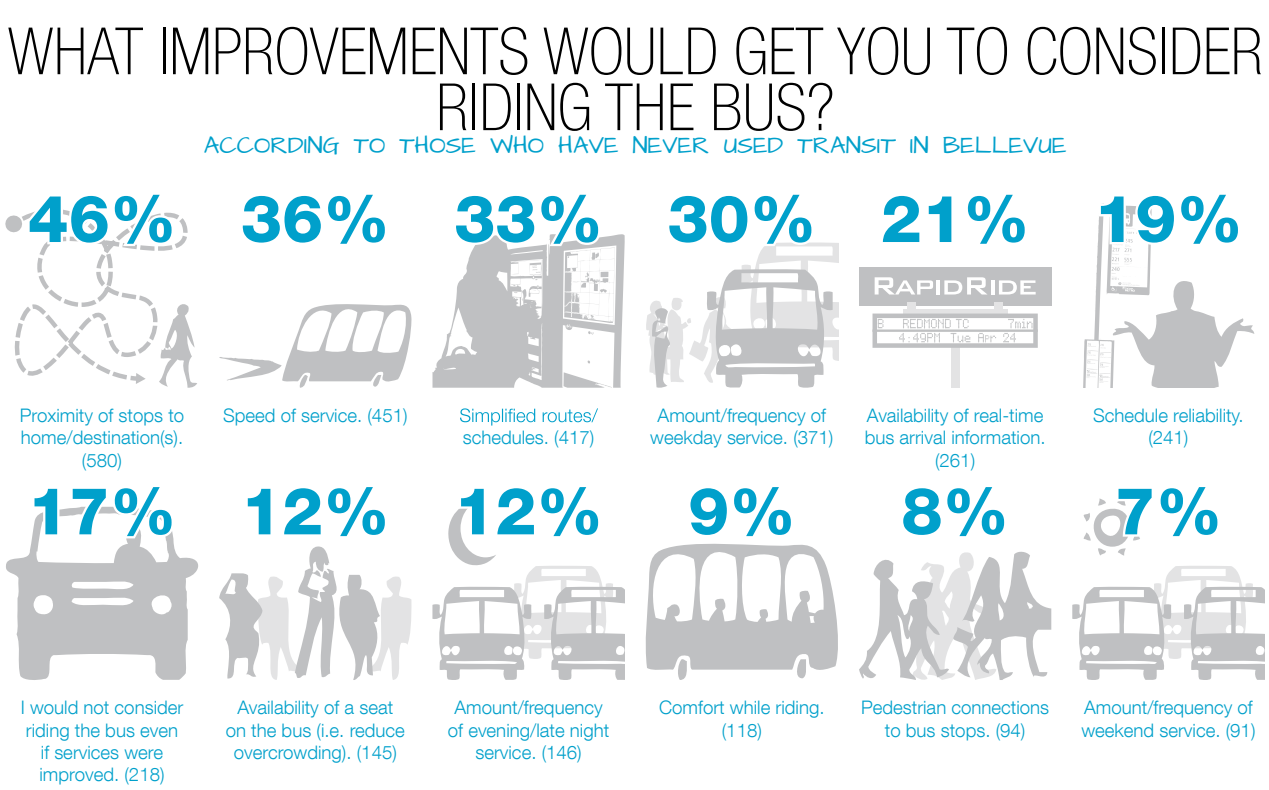
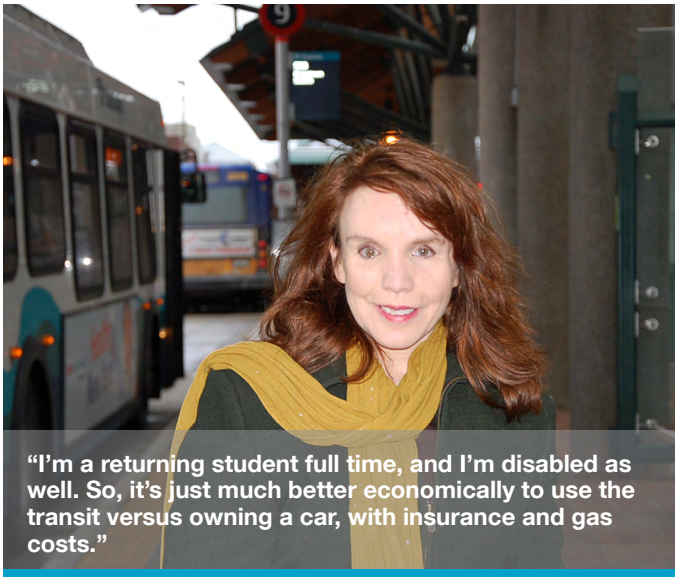


Figure 35 Factors that would encourage those who have never used transit services in Bellevue to consider doing so, according to the Bellevue Transit Improvement Survey. Large blue percentages reflect all current transit users; small blue numbers in parentheses following each description reflect the total number of respondents.

Figure 36 Comments from selected stakeholder interviews.

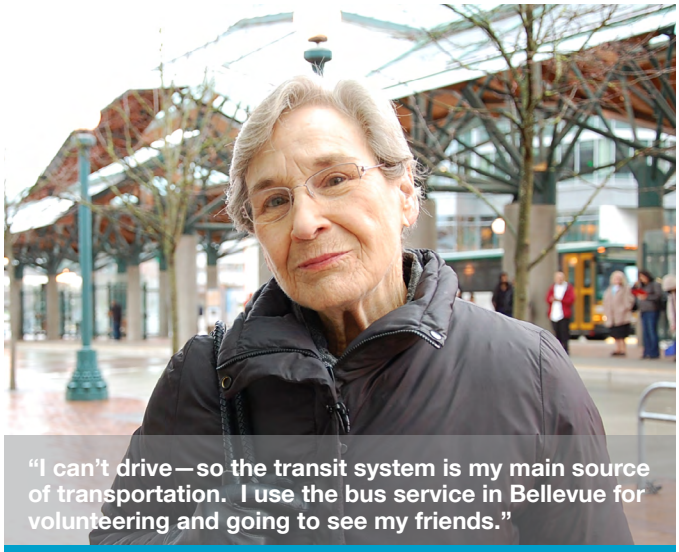
"The October 2011 service changes are absolutely great... I love the B Line. I love that Route 245 from Factoria to Kirkland via Sammamish High School and Crossroads now runs every fifteen minutes. I don't need to look at a schedule before I take the bus. I love that unproductive routes were deleted in favor of more productive routes that serve more people."

– DANIEL WARWICK, STUDENT AT INTERLAKE HIGH SCHOOL



"I'm a returning student full time, and I'm disabled as well. So, it's just much better economically to use the transit versus owning a car, with insurance and gas costs."

– ANGIE CHANDLER, BELLEVUE RESIDENT



"I can't drive—so the transit system is my main source of transportation. I use the bus service in Bellevue for volunteering and going to see my friends."

– MARJ LEIDY, BELLEVUE RESIDENT

"Transit is very important to me. I live in Kirkland and I come here to the Division of Vocational Rehabilitation in Bellevue at least three or four times per week to get some training to get back to work."

– TIM STEINERT, KIRKLAND RESIDENT

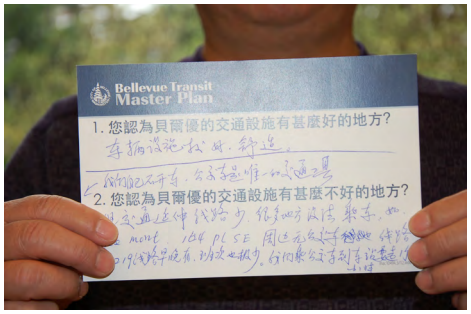
"I use transit pretty much every day for the work week, Monday through Friday. I've got a class on campus here every day, and then on the weekends I use the ORCA card to get around downtown. So my actual personal vehicle hardly ever comes into context; I'm always on a Metro bus."

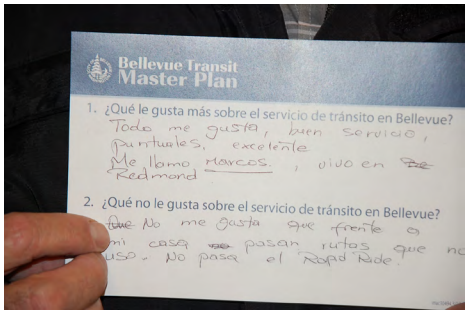
– ANDY NUTZHORN, STUDENT AT BELLEVUE COLLEGE

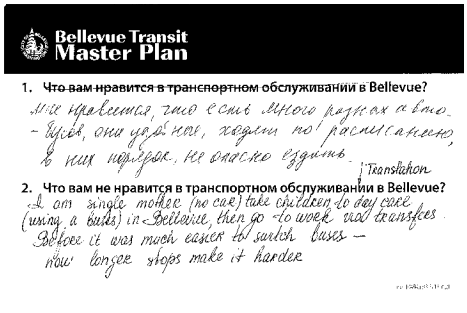
"I can't see well enough to drive, and physically I can't—my back is really too bad at this point to drive, even if my eyes were good enough, which they are not. It would not be safe for me to drive."

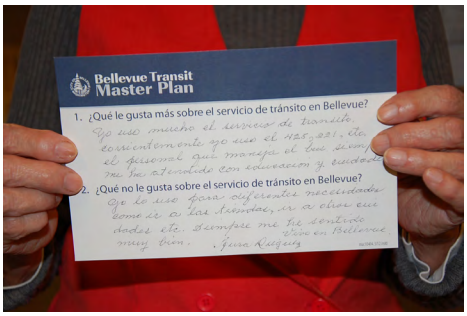
– STACEY DUNN, BELLEVUE RESIDENT

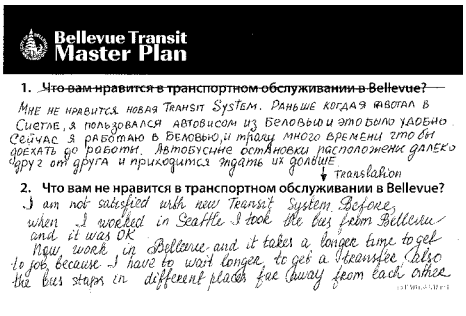
Figure 37 Some of the Chinese, Spanish, and Russian comment cards submitted by participants in outreach to non-native English speakers.

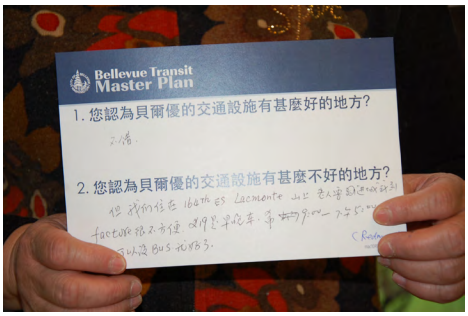


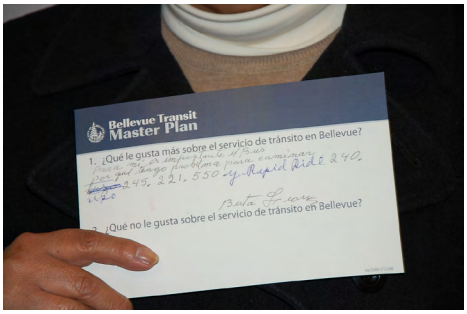


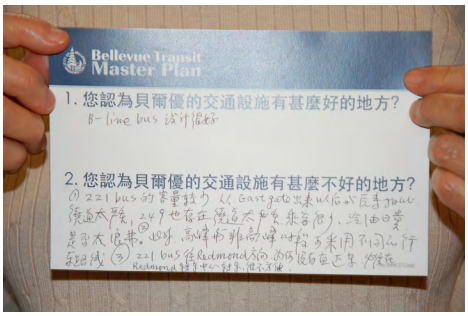


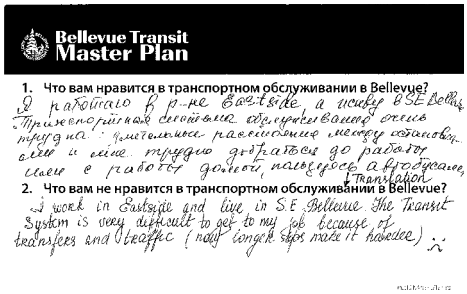


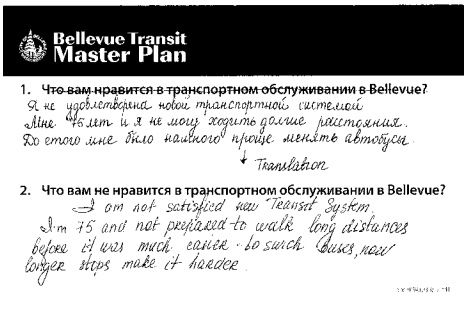


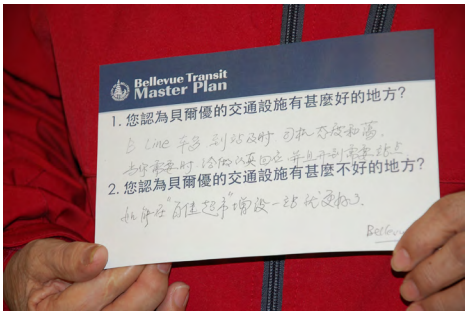


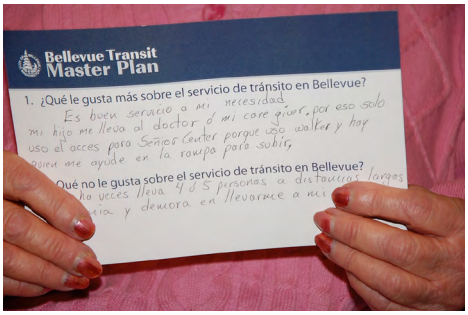


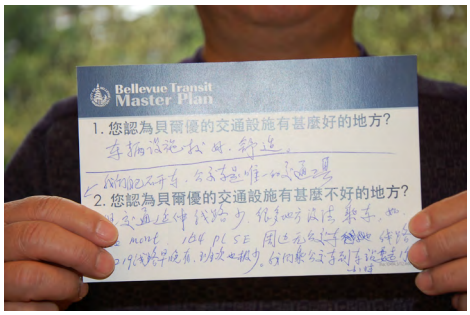


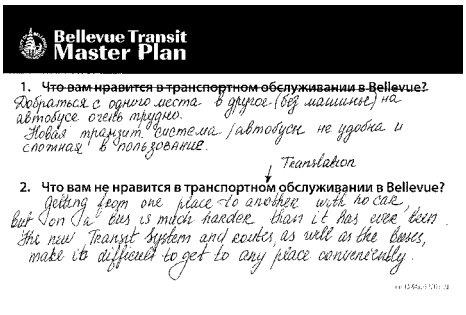












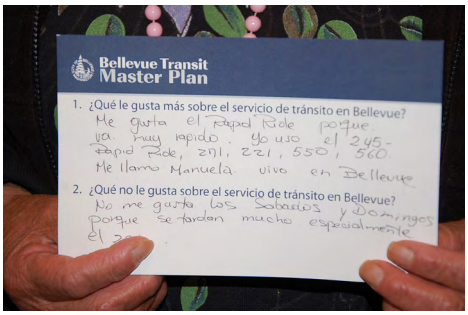


Figure 38 Excerpts from letters, interviews, and comments made by various organizations who provided input to the Transit Master Plan.

"Employees at our headquarters in Bellevue documented on RideshareOnline.com savings of over 35 metric tons of CO2 Equivalent in 2013 through alternative commuting. With continued investment in transit infrastructure, we believe the already strong, positive environmental impacts of our alternative commuters could be increased dramatically, year after year."

CHI PAK, SENIOR MANAGER OF CORPORATE SUSTAINABILITY, T-MOBILE USA, INC.

"During the school year, over 3,000 Bellevue School District high school students access metro transit as their primary mode of transportation to and from school. Our students depend on reliable, consistent and timely mass transit between their neighborhoods and schools to arrive to school on time and ready to learn."

TERRY PARKER, TRANSPORTATION MANAGER, BELLEVUE SCHOOL DISTRICT

"Bus travel to and from downtown Bellevue from employment centers to homes, and parts in between, helps employees, residents, and business patrons move Bellevue's economy forward."

BETTY NOKES, PRESIDENT AND CEO, BELLEVUE CHAMBER OF COMMERCE

"Abundant transit and great overall mobility are key strategies to support the growth of our thriving and livable downtown."

PATRICK BANNON, PRESIDENT, BELLEVUE DOWNTOWN ASSOCIATION

"People with disabilities must have accessible and reliable public transportation in order to work and be productive members of their communities. When people with disabilities work, lives of isolation and poverty are transformed into lives of inclusion and self-sufficiency. When people with disabilities work, businesses experience increased profits and higher employee satisfaction and morale. People with disabilities who have jobs pay taxes, support our economy, and no longer rely upon other social services to survive."

CHRISTINA BRANDT, CHIEF EXECUTIVE OFFICER, ATWORK!

"With transportation accounting for nearly 47 percent of our communities' greenhouse gas emissions in Washington state, policies that accelerate energy-efficient transit choices and transit ridership will be a key part of the solution to reduce transportation-related GHG emissions."

ANDY WAPPLER, VP OF CORPORATE AFFAIRS, PUGET SOUND ENERGY

"The dramatic increase in the senior population over the next two decades highlights the need for a transportation system where mobility choices and access to services are provided equally and affordably to all residents and are responsive to the needs of people for whom transit is a necessity, including seniors, people with disabilities, low-income populations, youth, people of color, people with limited proficiency in English and people without access to private vehicles. The transit system should ensure that all people have access to mobility options that allow them to move freely around the community, preserve dignity, maximize independence and provide access to the full range of activities that contribute to quality of life."

PAULA L. HOUSTON, CHIEF EXECUTIVE OFFICER, SENIOR SERVICES

"Nearly a third of our students ride transit as their primary mode of transportation, which alleviates congestion in our neighborhood and throughout Bellevue."

RAY WHITE, VP ADMINISTRATIVE SERVICES, BELLEVUE COLLEGE

"Our Children's Bellevue Clinic and Surgery Center is a significant trip generator in downtown Bellevue, attracting over 250 patients and their families and over 100 employees and volunteers daily. Patients and staff arrive throughout the day - not just at peak times. It is critical that the frequency and span of transit service on Bellevue's most productive corridors be maintained which is consistent with Children's travel demand."

PAULO NUNES-UENO, DIR. OF TRANSPORTATION & SUSTAINABILITY, SEATTLE CHILDREN'S HOSPITAL

"Proximity to the variety of transportation options that the Bellevue Transit Center provides was integral to our decision to relocate Concur's headquarters from Redmond to downtown Bellevue in May 2013... As Concur grows, we strongly believe that increased transit options will help us attract and retain the best talent.

Bus and rail service to Bellevue is not only about getting to work - it's about livability, quality of life and living smart. All three values are necessary for our company to thrive."

SANDY BUMSTEAD, DIRECTOR OF FACILITIES, CONCUR TECHNOLOGIES

"Transit service offers people with special needs access to vital human services, health care, educational opportunities, employment, and a wide range of other activities that in many cases they would not be able to access without transit. Transit therefore plays an important role in reducing social and economic inequalities by enhancing mobility for people, regardless of age, race, income or disability. In particular, it helps to bridge the mobility divide currently existing for many low-income families, people with disabilities, or older adults who lack access to a vehicle."

LAUREN THOMAS, INTERIM CEO, HOPELINK

TMP Forum and Workshops

The three workshops held in support of the Transit Master Plan included the TMP Forum in September 2012, the Transit Network Design Workshop in January 2013, and the Capital and Policy Workshop in September 2013. Each of these provided guidance that helped inform the development of the service and capital visions.

TMP Forum

The TMP Forum provided an opportunity for representatives from the Transportation, Planning, Human Services, and Arts Commissions, the Parks and Community Services Board, and the Bellevue Network on Aging to engage in a discussion with City Councilmembers Kevin Wallace and (then-mayor) Conrad Lee and City staff about trends and policies related to transit in Bellevue, and how the Council-approved Project Principles (see Appendix 2) should be considered in the context of some of the fundamental tradeoffs regarding transit service allocation. The following four main themes summarize that discussion, and the quotes (below right) provide insight into participants' recognition of the need to make strategic investments in transit to grow ridership:

1. Transit is an essential component of the City's mobility strategy and an increasingly important tool for addressing Bellevue's anticipated growth in travel demand.
2. More can be done to improve transit service for people who depend on transit due to age or disability, in areas of lower density, and at non-peak hours.
3. Current sources of funding won't cover everything that needs to be done; as such, the near-term focus needs to be on maximizing ridership.
4. We need to make strategic investments to support future development and growth in ridership.

Figure 39 Then-Mayor Conrad Lee discusses the role of transit in Bellevue with Planning Commissioners Tebelius and Carlson, Human Services Commissioner Yantis, Parks & Community Services Boardmember Hollebeke, and City staff at the TMP Forum.

Figure 40 TMP Forum participants including Councilmember Lynne Robinson (then of the Parks & Community Services Board) and Commission-members Fateeva (Arts), Laing (Planning), McEachran (Human Services), and Bishop (Transportation).

Figure 41 Transportation Commission member Tom Tanaka discusses potential speed and reliability improvements at intersections with Commission-members Beighle (Human Services), Sheffels (Planning), and Heath (Parks & Community Services).

Figure 43 Participants contemplate how to allocate the transit service resources they were provided.

Figure 44 'Rules' of the network design exercise.

Figure 45 Consultant Jarrett Walker highlights how the networks designed by Groups 5 and 6 demonstrate the trade-off between providing a grid of frequent service and widespread coverage with infrequent service, respectively.

Transit Network Design Workshop

The Transit Network Design Workshop was held early in the Service Element planning process to more clearly define priorities related to the location and frequency of transit service in and around Bellevue. Board and commission members and other stakeholders were asked to brainstorm what corridors should be prioritized in the 2030 transit network and what service frequency should be allocated to each based on the projected growth in population, employment, and ridership, and the values previously expressed by the community, Council, and TMP Forum participants. Keypad polling was used to record participants' preferences among competing priorities, from which the following themes can be drawn:

1. Pursue robust all-day service with supplementary peak service. This approach was favored by most, though a notable minority preferred emphasis of peak-only commuter services instead.
2. Encourage transferring to foster a more frequent and more connective network. More than half favored this approach; nearly a third preferred more direct service at the expense of frequency.
3. Prioritize abundant service rather than investing in service that caters to higher-end markets.
4. Consider homes and jobs within one-quarter to one-half mile of transit to be served. About half of participants considered this distance an acceptable maximum; most others consider one quarter-mile as the acceptable maximum.
5. It is acceptable to not provide service to between 25 and 35 percent of Bellevue's population if necessary to provide a more useful, better-performing network for all users. About one-fifth considered 15 percent to be the maximum acceptable unserved share of the population; less than one-tenth of respondents considered service coverage of 95 percent or more necessary.

Capital and Policy Workshop

Following the completion of the *Transit Service Vision Report*, the Capital and Policy Workshop was held to consider potential policies and infrastructure investments that would improve transit travel time and reliability along major transit corridors identified in the proposed 2030 network. Workshop participants discussed the appropriate degree to which transit should be given priority over other modes—if at all—and in which situations. This was considered both in terms of the language used in City policies and in relation to transit priority treatments used along particular corridors. The following themes summarize the majority opinions expressed by participants during the discussion and keypad polling exercise.

1. Bellevue faces difficult choices about the use of its limited street right-of-way.
2. It is neither possible nor desirable to build enough roadway improvements to keep pace with ever accelerating demand for travel in single-occupant vehicles.
3. In principle, high-ridership frequent transit deserves a higher priority than low-occupant private vehicles in access to limited road capacity.
4. Manage arterial travel lanes to maximize the throughput capacity for people rather than vehicles.
5. Transforming high-volume arterials into transit-supportive corridors requires careful and coordinated planning.
6. Package transit speed and reliability improvements with supportive land use policies, pedestrian and bicycle amenities, stop/station design, and transportation demand management strategies.
7. Make transit the logical choice for a wide range of people and situations by ensuring reliable operations.
8. Consider pursuing bold investments in transit priority on some high-demand corridors by 2030.

Figure 46 Then-Mayor Conrad Lee opens the Capital and Policy Workshop by emphasizing the important role of transit in Bellevue's future.

Figure 47 Participants cast votes using keypad polling devices. City officials, staff, and project consultants did not cast votes during audience polling exercises.

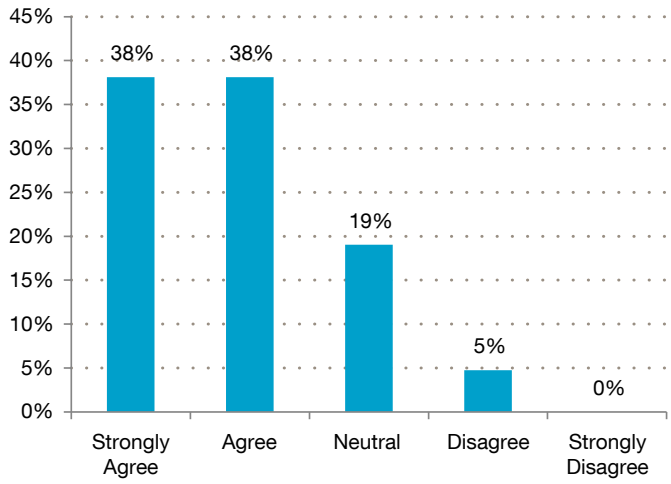


Figure 48 According to participants' keypad polling responses, in principle, high-ridership frequent transit deserves a higher priority than low-occupant private vehicles in access to limited road capacity.

EXISTING AND FUTURE CONDITIONS

BACKGROUND

In response to community feedback, the Transit Master Plan examines opportunities and obstacles to improving transit in Bellevue. This section summarizes recent changes and current and projected future conditions relating to transit in Bellevue to inform the identification of future service and capital improvements.[1]

Since the adoption of the 2003 *Transit Plan*, hundreds of millions of dollars in HOV access ramps, transit centers, park-and-ride lots, and speed and reliability projects have been completed in Bellevue in support of transit operations. Figure 52 reflects the array of capital improvements implemented since 2003 in coordination with King County Metro, Sound Transit, and WSDOT. Services operating in Bellevue have also been restructured on several occasions since 2003, with the most significant recent revision occurring in Fall 2011. Among other notable changes, that network restructuring resulted in the introduction of the RapidRide B Line, a route whose concept was first defined by a planning study conducted in 2001 (see Figure 50), providing an example of how long-range planning programs like the TMP ultimately translate into tangible improvements.

In addition to these transit improvements, much has also changed in Bellevue in the decade since that plan's adoption: the city has grown significantly in terms of both population and employment, Downtown has developed into the primary regional urban center on the Eastside and competes as much with Seattle as it does with its neighboring suburbs,

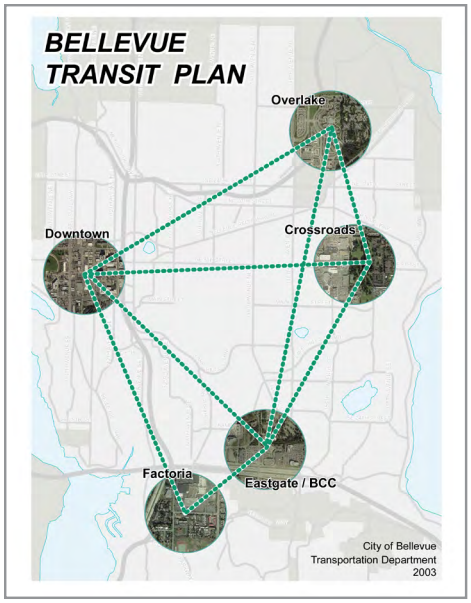


Figure 49 The 2003 *Transit Plan* provided recommendations about how transit service should operate in Bellevue and what capital investments and policy strategies could be pursued to support those transit services locally.

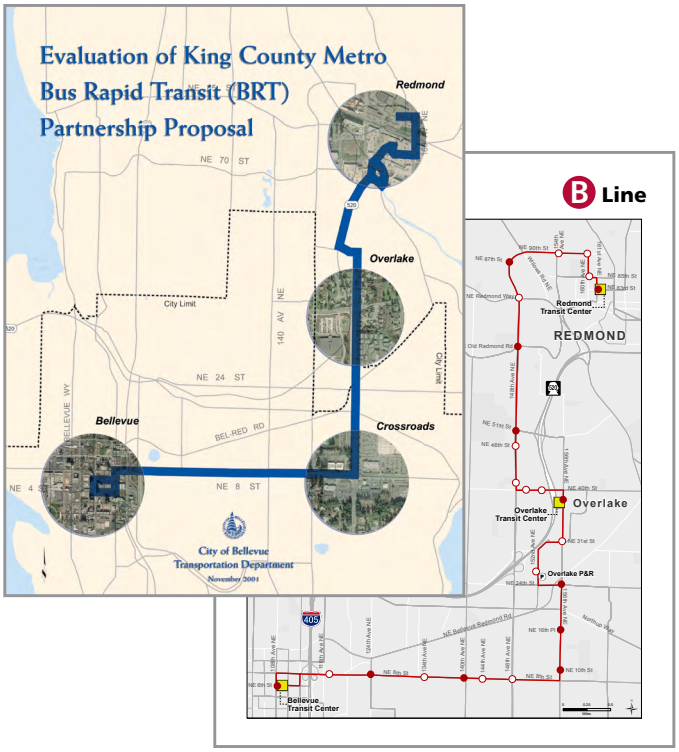
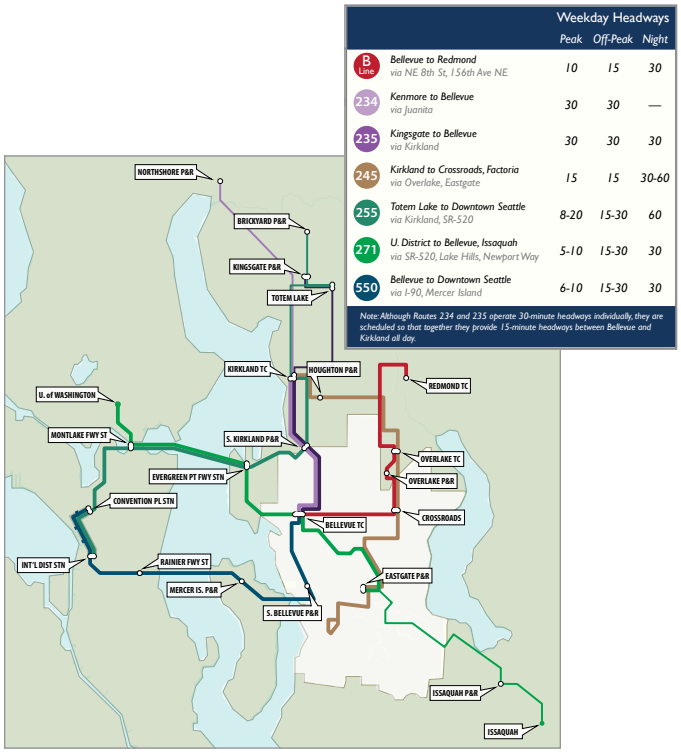


Figure 50 This 2001 BRT evaluation report provides an example of how long-term service planning established a vision for future implementation. The RapidRide B Line ultimately began service in Fall 2011.

1 Refer to the *Existing and Future Conditions Report* for more information about the use of geographic information systems, route performance data, market research, and travel demand model data informing this work.

planning studies have established new visions for activity centers including Eastgate and Bel-Red, and East Link will connect Bellevue to Sound Transit's regional light rail network by 2023.

Meanwhile, King County Metro, the primary transit operator in Bellevue, has confronted funding shortfalls twice since the TMP process began in 2012, creating uncertainty about what level of resources will be available for transit in the future. It is in this context of growth, both realized and projected, and future changes both planned and unknown that the Transit Master Plan establishes a vision for how bus services will operate in Bellevue through 2030, how these will be coordinated with East Link light rail, and how the City can direct infrastructure investments to maximize the usefulness and attractiveness of those services to the community and thereby its ridership potential.



		Weekday Headways		
		Peak	Off-Peak	Night
B Line	Bellevue to Redmond via NE 8th St, 156th Ave NE	10	15	30
234	Kenmore to Bellevue via Juanita	30	30	—
235	Kingsgate to Bellevue via Kirkland	30	30	30
245	Kirkland to Crossroads, Factoria via Overlake, Eastgate	15	15	30-60
255	Totem Lake to Downtown Seattle via Kirkland, SR-520	8-20	15-30	60
271	U. District to Bellevue, Issaquah via SR-520, Lake Hills, Newport Way	5-10	15-30	30
550	Bellevue to Downtown Seattle via I-90, Mercer Island	6-10	15-30	30

Note: Although Routes 234 and 235 operate 30-minute headways individually, they are scheduled so that together they provide 15-minute headways between Bellevue and Kirkland all day.

Figure 51 Spring 2012 Frequent Transit Network, reflecting all-day routes that operate headways of 15 minutes or better during the peak and 30 minutes or better off-peak.

Figure 52 An assortment of major transit capital projects completed since the adoption of Bellevue's 2003 Transit Plan.

Bellevue Transit Center (2003) - $16 million

Downtown Bellevue HOV Access (2005) - $144 million

RapidRide B Line (2011) - $10 million

Eastgate Park-and-Ride (2004) - $27 million

Eastgate Direct Access Ramp (2006) - $19 million

I-90 Two-Way Transit & HOV (2009–2016) - $188 million

EXISTING TRANSIT LANDSCAPE (2003–2013)

Figure 53 The RapidRide B Line provides frequent, all-day service between Downtown Bellevue and Redmond via Crossroads and Overlake, serving about 8,400 daily ons/offs in Bellevue in Spring 2013.

Figure 54 Sound Transit Express Route 550 is the primary transit connection between Downtown Bellevue and Seattle. Service operates all day along much of the future East Link light rail corridor.

Figure 55 Route 245 is an all-day route that provides frequent service from Kirkland to Overlake, Crossroads, Bellevue College, Eastgate, and Factoria, serving about 5,000 daily ons/offs in Bellevue in Spring 2013.

The evaluation of existing conditions involved extensive use of geographic information systems, route performance data, market research, and travel demand model data to provide:

- An overview of the current bus network structure, services provided in terms of miles and hours, and ridership;
- An assessment of transit service availability and competitiveness in terms of service area coverage, frequency of service by day-of-week and time period, and travel times comparing buses and automobiles between major activity and neighborhood centers;
- An appraisal of route performance as measured by efficiency, effectiveness, and reliability;
- An understanding of demographic characteristics influencing transit performance;
- An understanding of public opinion regarding transit service in Bellevue.[2]

Existing Services

As of the Spring 2012 service period, which serves as the baseline for the purposes of the Transit Master Plan, King County Metro and Sound Transit jointly operate 42 bus routes with at least one stop in Bellevue.[3,4] These can most generally be classified as one of two types of service: all-day or peak-only.[5] Seventeen routes comprise Bellevue's all-day service network, which provide connections from morning through evening between areas of concentrated activity via highways, major arterials,

2 For more information about these topics, refer to the *Existing and Future Conditions Report*, *Transit Network Profile Report*, and *Transit Improvement Survey Report*.

3 Sound Transit contracts with King County Metro, Community Transit, and Pierce Transit to operate regional express buses in Bellevue.

4 These do not include the routes that Metro operates for the Bellevue School District, which operate only one trip each in the AM and PM peak periods.

5 Route 280 is the lone exception, which provides night owl service.

and neighborhood streets, serving a variety of travel needs and trip purposes (see Figure 58). The peak-only service network provides faster travel times and accommodates very high demand for travel to and from major employment centers and park-and-ride lots during morning (5–9 AM) and afternoon (3–6 PM) commuting periods (see Figure 59).

All routes in the all-day service network do not provide the same level of service. As shown in Table 2, the two primary qualities differentiating all-day services are frequency and span. The RapidRide B Line is the only route in Bellevue currently classified by Metro as "very frequent," operating 15-minute headways or better all day. Six additional routes operate 30-minute headways or better all day with 15-minute frequency during peak hours, currently considered "frequent" by Metro. All other all-day routes were classified as "local" services in Spring 2012.[6] Twenty-four routes are weekday peak-only services, accounting for about 20 percent of the approximately 740,880 annual platform hours operated with at least one stop in Bellevue in 2012.[7]

Research suggests that 15-minute service is considered a significant threshold to making transit competitive with driving, particularly for commuters; less frequent services are generally considered to be unattractive to those with alternative means of travel available. Access to frequent service in Bellevue is currently most widespread during the peak periods. On weekdays during the AM peak (5–9 AM), 37 percent of Bellevue's population has access to 15-minute service within a quarter-mile radius of a

6 Over the course of the two year TMP process, revisions were made to several routes following the establishment of the service planning baseline. For example, Route 246 is now classified as "hourly," operating 60-minute headways all-day; Route 249 now operates 60-minute headways off-peak; Route 216 now serves Bellevue in the AM peak only; Route 566 has been divided into two separate routes—566 (all-day) and 567 (peak-only)—and both only provide service to Bellevue during peak hours.

7 Peak-Only Route 219 was deleted in the Summer 2012 service change.

Figure 56 Route 271 provides frequent all-day service between the University of Washington and Issaquah via BTC, Bellevue College, and Eastgate, serving about 6,700 daily ons/offs in Bellevue in Spring 2013.

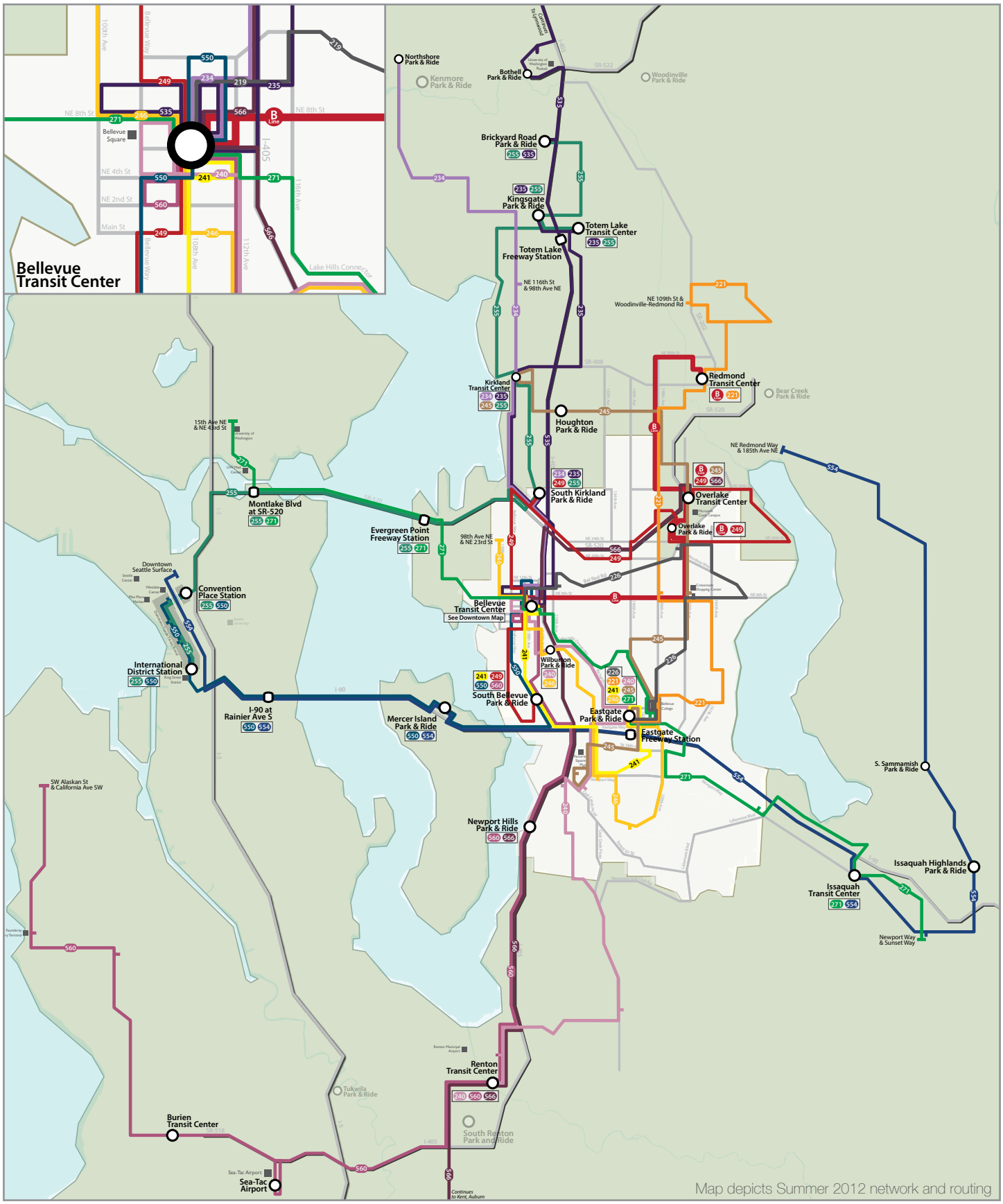
Figure 57 Metro Route 235 provides all-day service between Downtown Bellevue and the Kingsgate Park-and-Ride via the South Kirkland Park-and-Ride and Downtown Kirkland. Although Routes 234 and 235 operate 30-minute headways individually, they are scheduled so that together they provide 15-minute headways between the downtowns of Bellevue and Kirkland.

Table 2 Typical frequency, span, and days of operation by service family, as currently defined by Metro.

2012 Service Family		Frequency (Headway in min) Peak	Off-Peak	Night	Span	Days of Service
All-Day	Very Frequent	≤15	≤15	≤30	16-20 hrs	7 days
	Frequent	≤15	30	30	16-20 hrs	7 days
	Local	30	30-60	—*	12-16 hrs	5-7 days
	Hourly	≥60	≥60	—	8-12 hrs	5 days
Peak-Only		8 trips/day minimum	—	—	Peaks	5 days

**Night service on local corridors varies based on ridership and connections.*

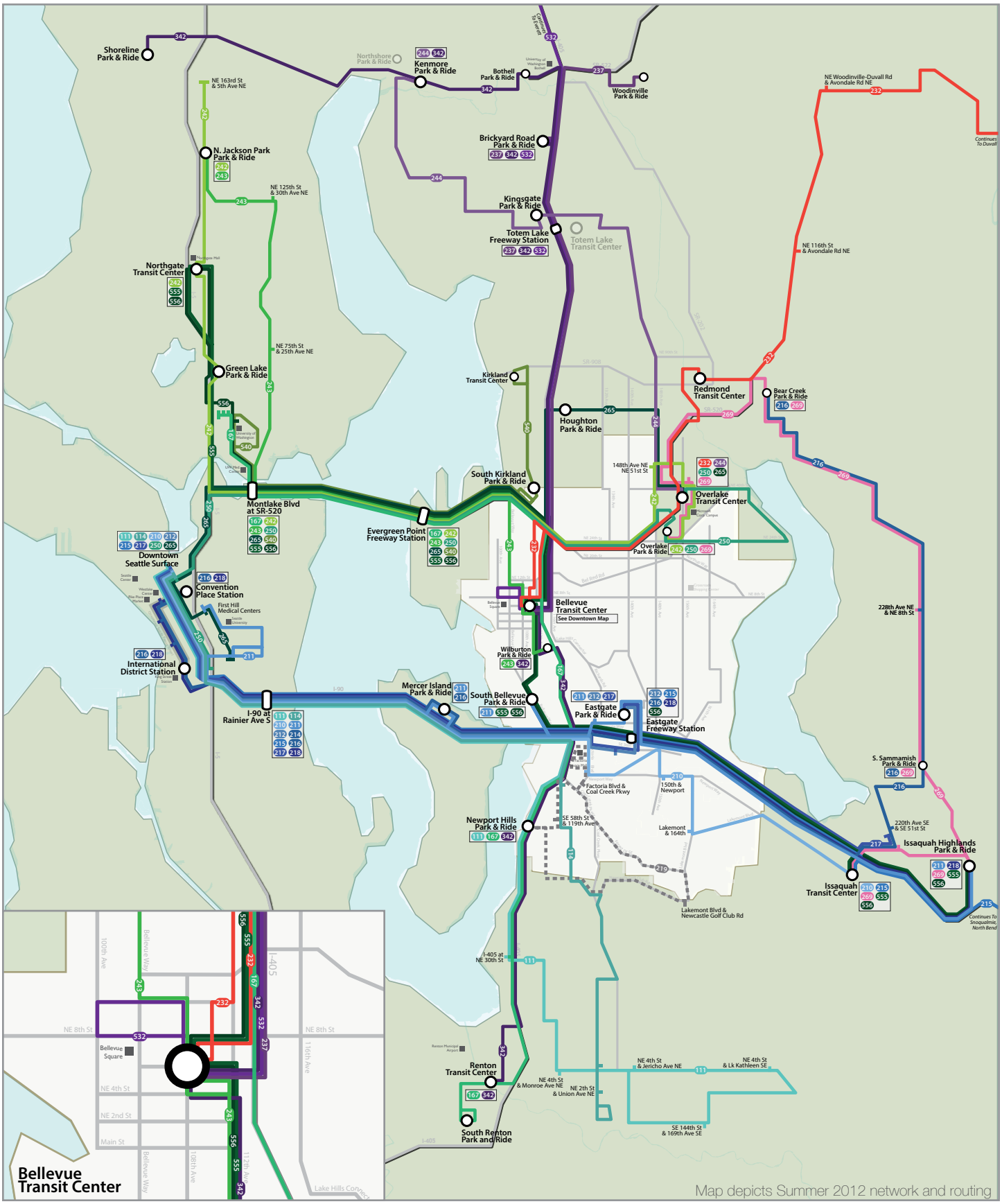
Figure 58 All-day service network, Spring 2012.
Includes the RapidRide B Line and Routes 221, 226, 234, 235, 240, 241, 245, 246, 249, 255, 271, 535, 550, 554, 560, and 566*.



* **Note:** In 2013, Route 566 was divided into two separate routes. Route 566 (Auburn–Overlake) now serves Auburn, Kent, and Renton all-day and continues to Bellevue and Overlake only during peak periods. Route 567 (Kent–Bellevue–Overlake) is a peak-only "super express" service that makes no intermediate stops.

Figure 59 Peak-only service network, Spring 2012.

Includes Routes 111, 114, 167, 210, 211, 212, 215, 216, 217, 218, 219**, 232, 237, 242, 243, 244, 250, 265, 269, 342, 532, 540, 555, 556.



** **Note:** Route 219 was deleted as part of the Summer 2012 service change.

bus stop. Only 29 percent of Bellevue's population enjoys such access mid-day (9 AM–3 PM), and the percentage declines further during evening hours (6–10 PM) to only 13 percent—those areas within one quarter-mile of RapidRide B Line stops. It should be noted that a quarter-mile of straight-line distance likely over-estimates accessibility, as the actual walking distance may be much longer than a quarter-mile.

Service Performance

In Fall 2013, there were approximately 53,640 average weekday boardings and alightings (ons/offs) in the city of Bellevue. Between 2003 and 2013, transit use in Bellevue grew by 144 percent, or an additional 31,700 daily ons/offs.[8] The most significant growth during this period occurred in Downtown Bellevue (134% increase), Eastgate (348% increase), and Crossroads (118% increase).

While ridership on most Bellevue routes has grown since 2003, certain routes had much larger gains than others. High ridership corridors are typically those with frequent service that have strong anchors at both route ends—namely areas with higher population and/or employment density. Route 550, Route 245, and the RapidRide B Line are all examples of such corridors. These routes each had frequency increases to accommodate growing demand, and they show clearly that connecting the right population and employment markets with high quality, frequent transit service leads to improved ridership. By contrast, usage of coverage routes (e.g. Route 246) that broaden the geographical reach of transit with circuitous neighborhood routing have not increased as consistently as high frequency corridors. Balancing the needs of lower density areas with continued ridership growth in high density and growing corridors will be an on-going challenge.

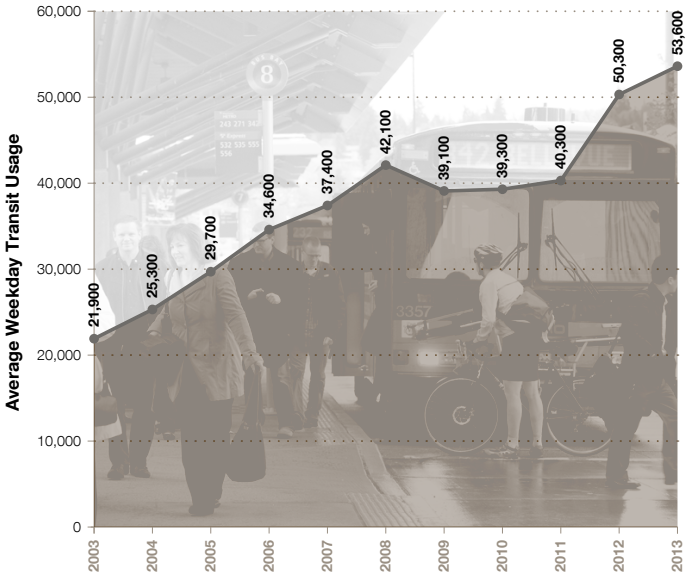


Figure 60 Daily boardings and alightings (ons/offs) at bus stops in Bellevue, Fall 2003–2013.

8 Ridership figures prior to Spring 2013 did not include data for routes operated by Community Transit (532, 535) or Pierce Transit (566), which account for about 5,350 daily ons/offs in Fall 2013. If these routes are not considered, daily ons/offs have increased by 120 percent since Fall 2003.

FUTURE TRANSIT LANDSCAPE (2014–2030)

Consistent with direction provided by City Council, the Transit Master Plan aims to "determine where and how transit investments can deliver the greatest degree of mobility and access possible for all populations."[9] To that end, the Transit Master Plan looks to the future and strives to be compatible with Bellevue's land use and transportation plans and the challenges and opportunities of changing demographics, land use characteristics, and travel patterns. As with the assessment of existing conditions, consideration of future conditions included the use of geographic information systems and travel demand modeling to provide an evaluation of changing demographics, land use characteristics, and travel patterns that will affect future transit performance.

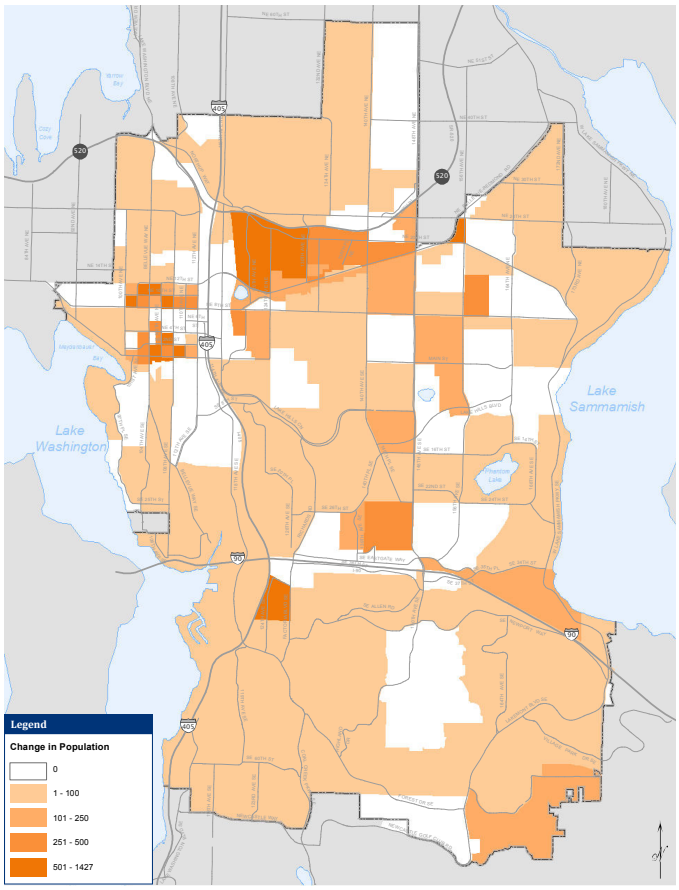


Figure 61 Population growth in Bellevue, 2010–2030.

Population & Employment Growth

Between 2010 and 2030, Bellevue is expected to increase in population by over 28,000 people. Downtown Bellevue is expected to double in size, reaching 19,000 residents by 2030 and comprising about 45 percent of the city's projected population growth over the next twenty years (see Figure 61). Bel-Red is expected to accommodate about 7,500 additional residents—almost another third of the projected growth—and other mixed use areas will account for about 16 percent. The number of jobs in Bellevue is expected to increase by over 54,000 between 2010 and 2030 (see Figure 62). Downtown Bellevue is projected to capture over half of these additional jobs, Bel-Red about 18 percent, Eastgate almost 14 percent, and the SR-520 corridor nearly 5 percent. Other commercial and industrial lands in the city are expected to capture the remaining 12 percent of projected growth in employment.

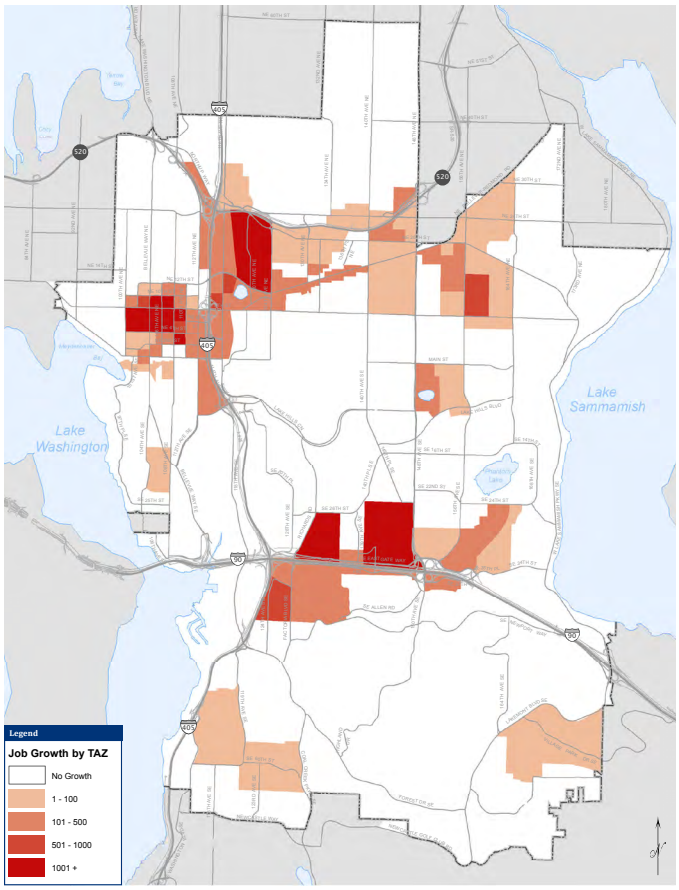


Figure 62 Employment growth in Bellevue, 2010–2030.

9 Refer to the Project Principles in Appendix 2.

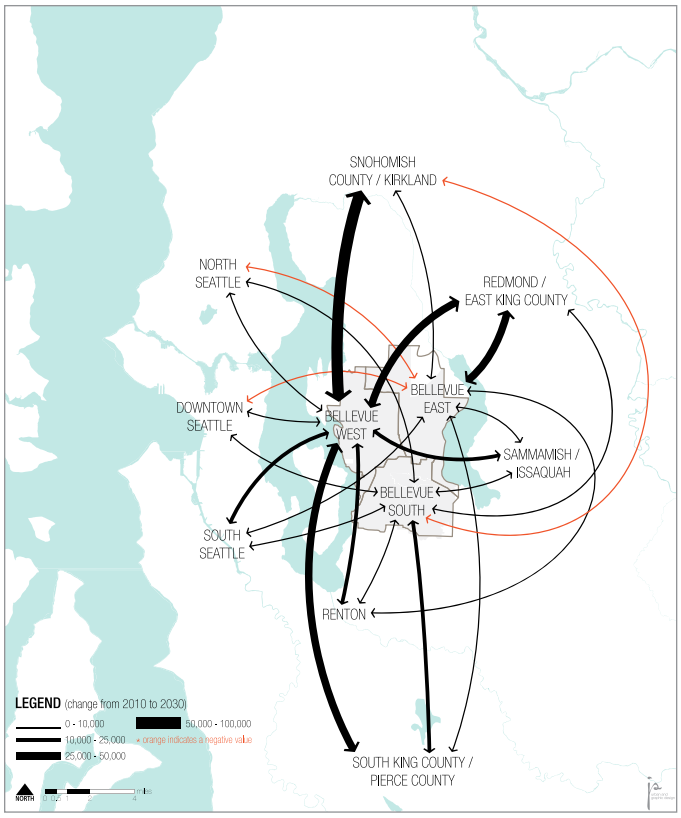


Figure 63 Change in regional travel demand, 2010–2030.

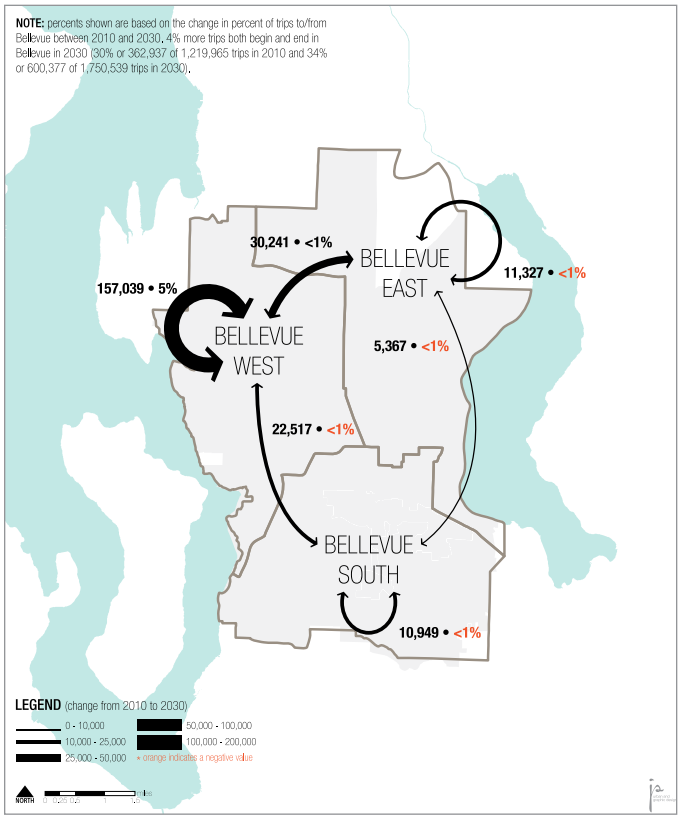


Figure 64 Change in local travel demand, 2010–2030.

Travel Demand Growth

The City's Bellevue-Kirkland-Redmond (BKR) travel demand model was used to examine existing (2010) and future (2030) travel patterns. According to BKR model projections, the total number of daily person trips to/from or internal to Bellevue will increase from 1,220,000 in 2010 to 1,751,000 in 2030, a 43 percent increase. Approximately 43 percent of the projected increase in daily trips is regional travel to/from the Bellevue West area, which includes Downtown—the largest, production/attraction market for trips to/from Bellevue.[10]

The number of trips beginning or ending outside of Bellevue is projected to increase by over 260,000 trips. The largest increases are from the I-405 North Corridor, the SR-520 corridor to Redmond, and the I-405 South/SR-167 corridor markets (see Figure 63). Although the Seattle market is smaller than the close-in suburban markets in terms of total trips, due to the more transit supportive land uses in Seattle, transit ridership between Bellevue and Seattle remains greater than any other regional transit market.

About 237,000 new daily trips are projected to occur entirely within Bellevue between 2010 and 2030 (see Figure 64). The Bellevue West area alone will serve an estimated 157,000 new trips daily—most of them non-work trips (144,000)—with the number of internal trips projected to more than double between 2010 and 2030. This reflects the growing importance of Downtown Bellevue as not just a job center, but also as both a thriving neighborhood and a regional destination. The non-work trip market, particularly in the densely populated and retail/entertainment-rich part of the Bellevue West area, represents the single-largest untapped market for transit in Bellevue.

10 Refer to the *Existing and Future Conditions Report* for additional flow maps and forecast data.

Future Roadway Investment

Although transit infrastructure investments are primarily the focus of the Capital Element, it should be noted that existing plans are in place and conceptual design work is already funded for several roadway projects that will benefit bus transit operations in Bellevue.[11] Infrastructure investments that can improve the average speed of coaches on city streets will improve the travel time, schedule reliability, and cost efficiency of transit services, potentially improving its competitiveness with other modes and contributing to increased ridership. The service vision assumes that some of these projects will be completed in the coming years and will contribute to the successful implementation of the proposed mid- and long-term networks. More fundamentally, the increase in demand for transportation associated with the projected growth in population and employment could outpace available infrastructure capacity, so these projects help increase the overall performance of Bellevue's transportation system, not just that of transit operations.

Some of the investments detailed in the City's 2013–2024 Transportation Facilities Plan (TFP) include extensions of NE 4th St and NE 6th St, creation of a gridded street network in Bel-Red, and widening 120th Ave NE. These will improve mobility between Downtown Bellevue, Bel-Red, and Overlake, balancing circulation throughout the existing downtown grid by drawing traffic away from NE 8th St and other roadways accessing or crossing I-405. Other projects under consideration include redesigning Snoqualmie River Road adjacent to the west side of Bellevue College to accommodate high volumes of bus traffic and eliminate the existing service deviation through the campus and installing an HOV lane on Bellevue Way SE to I-90 to improve traffic flow.

11 Refer to Appendix A of the *Existing and Future Conditions Report* for the complete project list from the Transportation Facilities Plan (TFP).

Figure 65 Artist rendering of East Link light rail integrated with the NE 6th St HOV Extension (TFP-211, CIP R-162), identified as Running Way Project L19 in the Transit Master Plan.

Figure 66 Improvements to Snoqualmie River Rd would facilitate the restructuring of service between Bellevue College and the Eastgate Park-and-Ride. This existing project (TFP-252) has been refined by the Transit Master Plan, with the above conceptual renderings reflecting how planning for the project has advanced.

East Link Light Rail

Approved by Puget Sound-area voters in 2008, Sound Transit's East Link light rail will run between International District Station in Downtown Seattle and Overlake via I-90, Mercer Island, South Bellevue, Downtown Bellevue, and the Bel-Red corridor. Service is projected to open in 2023 and will serve six stations in Bellevue. Light rail transit (LRT) is expected to address the most significant transit ridership market for Bellevue: in 2012, four of the top ten highest-ridership bus routes (550, 255, 554, and 212) operating in Bellevue had a terminus in Downtown Seattle. By providing the cross-lake market with high capacity transit services, implementation of East Link represents a transformational opportunity to reimagine the current bus network in Bellevue.

Convenient transfers from light rail stations to the bus network can effectively extend the reach of the regional light rail transit system. Effective intermodal integration is required at East Link stations to ensure reliable connections and avoid unnecessary transfer delay. A primary emphasis of the future bus network will therefore be to provide connections to East Link light rail service. This will require the reduction or elimination of routes that duplicate services provided by East Link and the shifting of resources to routes that strengthen bus connectivity with LRT stations.

The BKR travel demand model estimates that 140,900 average weekday boardings and alightings will take place on transit in Bellevue in 2030. Of these, an estimated 20 percent will take place at the six LRT stations in Bellevue.[12] The majority of transit usage in 2030—nearly 80 percent of weekday boardings and alightings—is projected to take place on Bellevue's bus network. This represents a 133 percent increase over Spring 2012 bus usage in Bellevue. By 2030, about 25 percent of light rail patronage in Bellevue is

Figure 67 East Link will give transit users a fast, frequent, reliable connection between the Eastside's biggest population and employment centers and Downtown Seattle.

Figure 68 Bellevue will be served by six stations, including South Bellevue Station, three stations in and around Downtown, and two stations in Bel-Red.

12 Figures reflect the 2030 Growing Resources Network, including East Link service assumptions, as defined in the *Transit Service Vision Report* and as calculated by the City's Bellevue-Kirkland-Redmond (BKR) travel demand model (EMME version MP30R6.2).

expected to come from bus transfers.

In the *Transit Service Vision Report*, the 2030 scenarios all presume the opening of East Link light rail to its planned terminus at Overlake Transit Center. Consistent with direction from Sound Transit, the Transit Master Plan assumes that East Link will operate frequencies of every 8 minutes during the peak, every 10 minutes during the day, and every 15 minutes in the evening. Additionally, it is assumed that North Link to Lynnwood will be complete by 2030. Trains from East Link merge with those from the existing Central Link to run together through the Downtown Seattle Transit Tunnel. In addition, it is assumed that all of these trains continue north at least to Northgate. This implies extreme frequency along the core Seattle corridor extending from the International District to Northgate, specifically frequencies of every 4 minutes during the peak, every 5 minutes all day, and every 7.5 minutes in the evening.

That assumption has important consequences for the Eastside, especially for SR-520 bridge services. Frequencies at the University of Washington Station (open in 2016) will be so high that it will be easy to connect to Link to complete trips to/from many core Seattle destinations, including Downtown, the University District, Ravenna, and Northgate. As a result, fewer SR-520 services need to continue into Downtown Seattle, especially in lower-resource scenarios. While Link may not be faster to Downtown Seattle than a direct SR-520 bus, other considerations will have to be weighed, such as the limitations of street capacity for buses in Downtown Seattle. For these reasons, it is generally assumed that while SR-520 would continue to have peak-period services to Downtown Seattle, the all-day pattern would focus more on frequent cross-lake services to the University of Washington Station to take advantage of the extremely frequent light rail service available there.

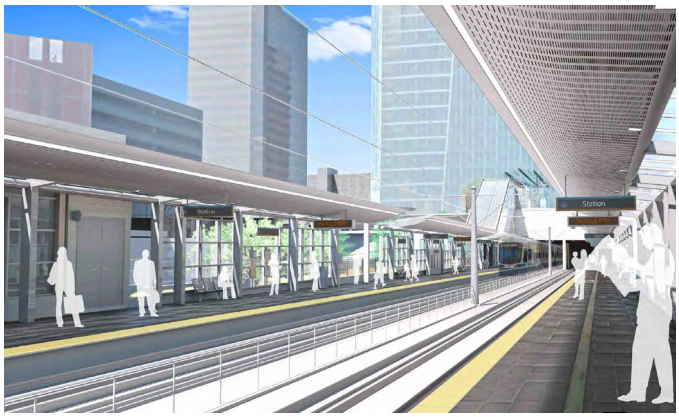


Figure 69 Bird's eye (top) and platform (bottom) views reflecting the 60% design of the station in Downtown Bellevue. The Bellevue Transit Center, where bus services will continue to operate, is immediately across 110th Ave NE to the north.

Figure 70 The 60% design of the South Bellevue Station includes designated space for bus layover and on-site bus stops for routes traveling on Bellevue Way SE.

PHOTO BY Michelle Whitfield

SECTION 2: POLICY ELEMENT

TMP POLICY FRAMEWORK

Adopted by the Bellevue City Council on July 9, 2012, the Project Principles shown in Figure 72 represent the Council's priorities for directing development of the Transit Master Plan. The City Council envisions a fully integrated and user-friendly network of transit services for Bellevue that supports the city's growth, economic vitality, and livability.

Encouraging long-term ridership growth involves building capacity to meet future demand for transit service by: (i) providing service where there is anticipated to be high ridership, typically where there is some mix of higher residential or commercial density and at major activity centers; (ii) building and supporting pedestrian, bicycle, and park-and-ride facilities that help people access the transit system; (iii) improving the way people make transit connections so they can reach more destinations in less time; (iv) investing in speed and reliability enhancements like transit priority measures and BRT.

Given Metro's focus on creating a more efficient and productive transit system, the Bellevue Transit Master Plan has adopted strategies that align the City's interests and priorities with Metro's Strategic Plan and associated Service Guidelines. In this context, the Transit Master Plan seeks to make better use of the region's limited resources as efficiently and effectively as possible. To enhance transit performance in Bellevue, it will be critical to integrate the provision of increased transit supply with a supportive land use environment and land use mix, improved transit passenger and walking amenities, and transit-supportive infrastructure. These can be thought of as demand factors for transit, and they are closely related to and can mutually reinforce one another.

On the transit supply side, the overall vision is for transit service to increase over time to have a larger portion of Bellevue's population and jobs located within walking distance of the network, as well as

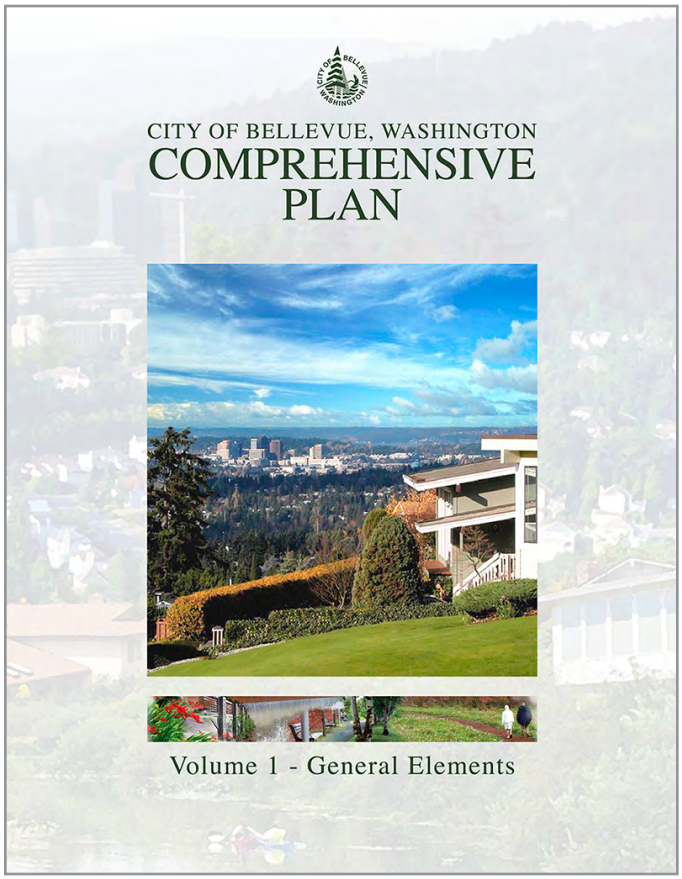


Figure 71 Bellevue's Comprehensive Plan, currently undergoing its decennial update, includes a variety of policies that promote the improvement of the transit services operating in the city. These policies highlight the City's recognition that enabling people to substitute single occupancy vehicle trips for transit trips has the potential to convey multiple public benefits, including increased transportation options, reduced growth of traffic congestion, decreased air, water, and noise pollution, support for climate change emission reduction goals, and stimulation of the local economy.

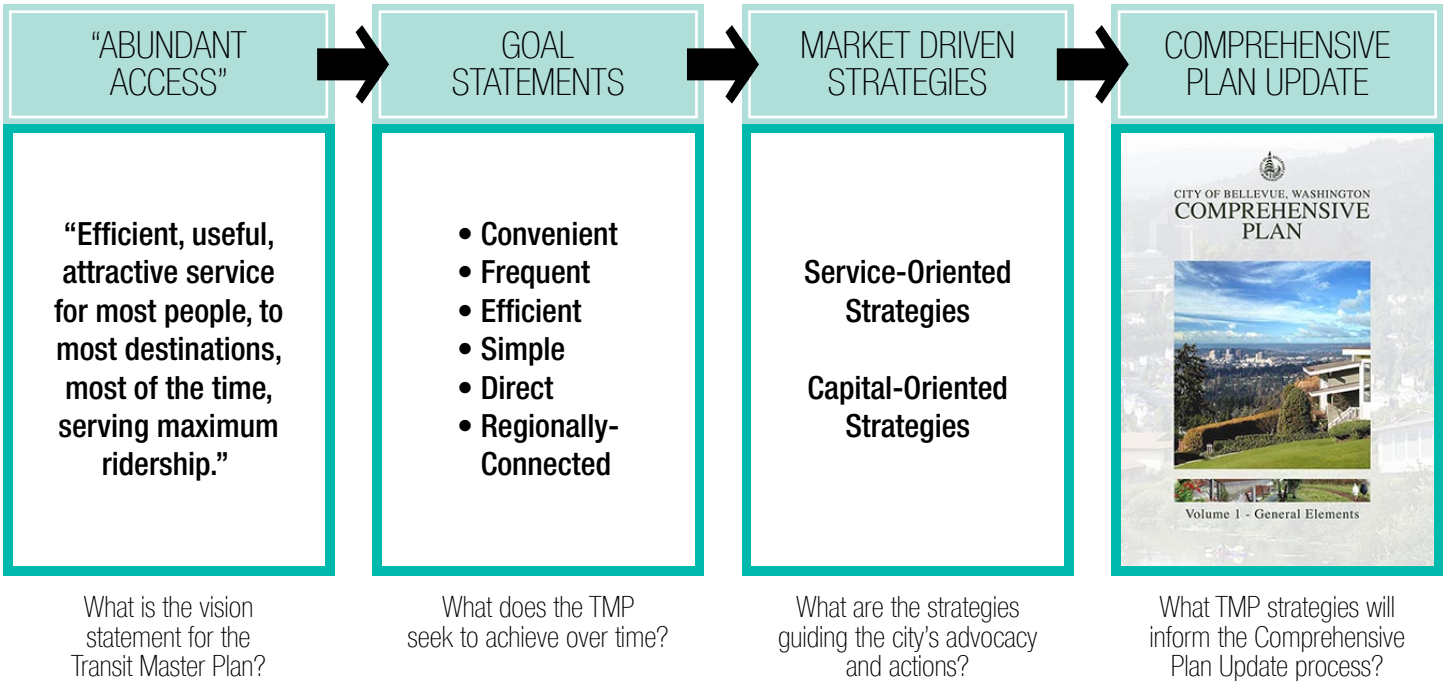
for its frequency and quality of service to improve as demand increases. In short: transit service in Bellevue should be designed to help more people reach more destinations in less time.

The Transit Master Plan vision statement arises from a consideration of competing transit service priorities. It is recognized that by moving toward one goal, the City is moving away from others that have some support, but these choices are in the best interest of the community and will lead to a network that provides abundant access and reflect the features of other successful urban transit systems in the United States and around the world. The following policy framework takes a fresh look at the current Comprehensive Plan policies, offering a new template based on extensive input from the community and board and commission members. In addition to shaping the development of the Transit Master Plan, the policies presented here will also help guide the updates being made to transit policies in Bellevue's Comprehensive Plan.

Figure 72 Transit Master Plan Project Principles, approved by the Bellevue City Council, July 9, 2012.

1. **Support planned growth and development in Bellevue with a bold transit vision that encourages long-term ridership growth.**
2. **Engage community stakeholders in setting the priorities for transit delivery.**
3. **Determine where and how transit investments can deliver the greatest degree of mobility and access possible for all populations.**
4. **Incorporate other transit-related efforts (both bus and light rail) underway in Bellevue and within the region.**
5. **Indentity partnership opportunities to further extend transit service and infrastructure.**
6. **Develop measures of effectiveness to evaluate transit investments and to track plan progress.**

Figure 73 This graphic describes the structure of the Policy Element, with the "Abundant Access" vision statement and goals leading to market-driven strategies that inform both the Service and Capital Visions and the Comprehensive Plan Update process.



Vision Statement

The Transit Master Plan is organized by an overall vision statement and six goals. Ten market-driven strategies summarize how the goals will be achieved.

Support planned growth and development with a bold transit vision that provides efficient, useful, attractive service for most people, to most destinations, most of the time, serving maximum ridership.

A number of important themes are embedded in this "Abundant Access" vision statement. First, the idea that the City should ***"support planned growth and development with a bold transit vision"*** emphasizes that Bellevue should plan, design, and build a community that increases transit's appeal as the mode of choice for an increasing number of people who live, work, shop, and play in Bellevue. That transit service should be ***"efficient, useful, attractive"*** suggests it is meant to be useful to people in a wide range of situations, not just people who lack travel options. ***"To most destinations, most of the time"*** means that taking transit is not a niche activity only for commuters; rather, it is part of the overall urban framework and will be used by a broad range of people throughout the city. Finally, ***"serving maximum ridership"*** aligns Bellevue's vision with the focus of King County Metro's Service Guidelines on a transit system that results in high productivity (ridership per unit of cost).

Goal Statements

Bellevue's transit vision is supported by six goals that articulate what the TMP seeks to achieve over time (see Figure 74). The City recognizes that achieving these goals necessitates making choices among competing priorities.[13] After carefully evaluating these trade-offs, the TMP endorses the market-driven strategies presented on the following pages.

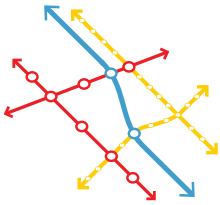
13 Refer to the *Market Driven Strategies Report* for details.

Figure 74 Transit Master Plan goal statements.

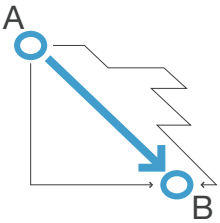
CONVENIENT, making it the logical choice for the largest possible share of trips.

FREQUENT, to minimize waiting times and improve connections.

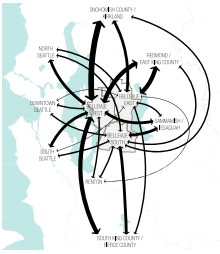
EFFICIENT, in terms of being designed for high ridership and cost-effective operations.



SIMPLE, with the fewest possible discrete lines, so that each can have the best possible frequency, speed, and duration without complicated redundancy.



DIRECT to major activity centers in Bellevue by minimizing the degree to which a route deviates from the shortest path between its start and end points.



REGIONALLY CONNECTED, with a complete network of regional links in all directions, with particular focus on abundant north-south service along I-405.

Transit Strategies

Ten strategies guide the City's actions toward realizing the "Abundant Access" vision statement. These strategies recognize that encouraging long-term ridership growth in Bellevue necessitates transit service enhancements that support existing and emerging travel patterns paired with the City's commitment to a supportive land use environment, pedestrian and bicycle amenities, convenient and attractive service access facilities, and transit speed and reliability infrastructure. The result will be a more productive transit network that benefits both transit users and the transit agencies operating the service.

The market-driven strategies arose from the collaborative community outreach process. These discussions were challenging because they involved choosing where to invest limited resources in the transit system. After carefully evaluating these trade-offs, the market-driven strategies formulated in the TMP guide additional transit service and capital investments to/from Bellevue's major activity centers where transit demand is high and expected to increase in the future. It is recognized that this approach of maximizing return on investment consequently impacts coverage routes in lower density residential areas where service is less productive.

The desired end state of these market-driven strategies is a Frequent Transit Network (FTN) where transit service and capital investments need to be focused to serve the most riders and provide the highest quality of service. The FTN supports Downtown growth, Bel-Red corridor redevelopment, and Bellevue's other activity centers with well-connected bus routes that seamlessly interface with East Link light rail. People traveling along FTN corridors can expect convenient, reliable, easy-to-use services that are frequent enough that they never need to refer to a schedule. The core characteristic of the FTN is that it provides all-day, frequent service, wherein the headway (the time between successive buses) of individual constituent routes is 8 minutes or better in peak hours, 10–12 minutes mid-day, and 15–30 minutes at night. Appendix 7 on page 132 describes the measures of effectiveness (MOEs) that will be used to track progress toward realizing a service network that reflects these characteristics.

Figure 75 Ten strategies guide the City's actions toward realizing the "Abundant Access" vision statement.

1 Transit needs to maximize the return on investment on existing and anticipated public transportation projects by providing transit service where high ridership is anticipated, typically where there is some mix of higher residential or commercial density and at major activity centers.

Sometimes referred to as effectiveness, productivity is essentially the return-on-investment of a transit service. It is a measure of how much ridership a line attracts relative to the cost of providing the service. Today, two-thirds of transit patronage in Bellevue takes place in Downtown Bellevue, Factoria, Crossroads, and Eastgate—major activity centers for which traffic is managed and concurrency standards are established to help guide land development and transportation improvement decisions. As land use and travel patterns change, so does demand for transit. Looking to the future, the transit network should provide more frequent bus service to support: (1) population and employment growth in the rapidly developing areas of Downtown Bellevue and the Eastgate/I-90 corridor; (2) areas of redevelopment in the Bel-Red corridor that will require the introduction of completely new services; (3) the East Link light rail line that will require feeder bus connectivity to extend the reach of this transformational investment in public transportation. By making sure frequent bus service is directed to these productive activity centers, transit providers maximize the amount of service they can provide given limited funding. Thus, while coverage services should be provided to the extent possible within available resources, when trade-offs are required, places that foster more productive service should be prioritized.

"I favor setting up high-ridership corridors for transit that serve high density areas."

– DALLAS EVANS, PARKS & COMMUNITY SERVICES BOARD

"Some neighborhoods will always be difficult to serve... There is pressure on King County and Sound Transit to reduce unproductive service. To expect that service is going to grow in the short-term is unrealistic. For now we should maintain strong productivity on the transit service we have."

– KRIS LILJEBLAD, ARTS COMMISSION

"There is a geographic coverage issue; that said, it's not realistic to serve low-density single family areas with constant service. Until 2030, we'll just keep getting denser around East Link nodes.... If parking is free, people will use it. If you don't build the parking, and if you have good transit, people will use it."

– HAL FERRIS, BELLEVUE PLANNING COMMISSION

2 Great transit networks arise from designing services that are useful to the broadest and most diverse possible spectrum of user groups and trip purposes.

For example, Route 240, which links Downtown Bellevue to Renton, is an example of a productive service (i.e., 22 boardings/platform hour and a cost/ boarding of $5.50) catering to workers, students, and other user groups. Given these diverse attributes, it is understandable why twelve more trips were added to this route in Spring 2012. This high performing route stands in stark contrast to Route 925, a former DART shuttle van operation serving Newport Hills, Newcastle, and Factoria. This highly specialized route lacked the appeal for a broad user group with diverse travel patterns. For this reason, in October 2011, Route 925 was eliminated due to poor performance (i.e., 1 boarding/platform hour and a cost/ boarding of $135). Except as required by the Americans with Disabilities Act, we will resist designing specialized services for specialized user groups, and seek instead to design versatile services that many different people find useful for many kinds of trips.

"With 19% of Bellevue residents being older adults and the numbers rapidly increasing in the coming years, the need for available, accessible and easy transit is vital. Transit provides active living such as entertainment, shopping, dining, doctor's appointments, etc. for day, afternoon, and evening travel. Keeping seniors mobile will keep the money in Bellevue!"

– HOUSING & TRANSPORTATION COMMITTEE, BELLEVUE NETWORK ON AGING

"I would like to see more night time service on 234. If it existed I would use it to return home after shopping / dinner / drinks / a movie in Bellevue."

– JOHN, KIRKLAND RESIDENT, CURRENT TRANSIT USER

"Make bus routes more accessible during the late evening. Most Bellevue bus routes end at around 10pm or 11pm. This makes it difficult for people to go to social gatherings in the late evening."

– JUAN, BELLEVUE RESIDENT, CURRENT TRANSIT USER

3 Employ innovation and community collaboration when implementing transit priority measures along Frequent Transit Network corridors.

As the city grows in the future, decisions about how to use the city's streets in the most productive and efficient way possible will be an ongoing challenge. As such, the creation of transit-supportive communities necessitates staying current on changes in transit infrastructure design, speed and reliability tools, and facility types as they evolve. It is important to ensure that transit facilities are designed and built taking into consideration the overall characteristics of the street, the adjoining land use types, and other factors. This approach informs the project development process, from planning through design and finally construction.

"Bus priority of some kind is needed on NE 8th and on 148th where the bus has "pocket" pull-outs at some stops. No one will let the bus back into traffic. It's a big loss of time for busses."

– PAT SHEFFELS, BELLEVUE PLANNING COMMISSION

4 In addition to moving peak commuters, transit has an important role to play in improving the mobility of people who need or want to access family and friends, recreation, education, entertainment, health care, and the many activities that contribute to individual and community well-being.

This strategy speaks to the objective of developing a transit network that will appeal to many different people making a wide variety of trips. This means providing service at most hours of the day in all directions, offering travel alternatives to those with options and lifeline services to those without. The existing network in Bellevue is not well designed to capture non-peak trips, as frequencies during the off-peak (with headways typically more than 15 minutes) are often insufficient. Increasing off-peak frequencies on services like Route 245 (that links Kirkland to Factoria via Overlake, Crossroads, Bellevue College, and Eastgate) has the potential to significantly improve the appeal of transit to a wide variety of trip purposes. In Fall 2011 Metro began operating 15-minute headways mid-day on Route 245. Today, this route is among the ten highest ridership routes operating in Bellevue and the most frequent Eastside route that serves neither the Bellevue Transit Center nor Seattle. Indeed, with the majority of its transit patronage occurring in the mid-day, Route 245 is an example of a route with consistent productivity all-day. The transit network should improve the all-day frequencies on routes like 245 that connect many major trip generators, since these destinations can justify better service along the entire corridor. Peak commuters, too, benefit from off-peak service, as today's complex jobs often require off-peak travel, and many people go to work without being sure exactly when they'll be able to come home.

"I wish there were more evening/night buses."
– MICHAEL, BELLEVUE RESIDENT, FORMER TRANSIT USER

"I need to get to work by 5:00 AM and no buses run early enough for me to get to work on time."
– MYRA, BELLEVUE RESIDENT, FORMER TRANSIT USER

"The bus I use is only available during standard commuting times, and it would be better if it was offered later."
– LAURA, REDMOND RESIDENT AND CURRENT TRANSIT USER

"Transit in Bellevue primarily benefits the working commuter, especially those who work in downtown Bellevue…. Bellevue has changing demographics that need non-commute transit: more seniors, young singles that don't own cars, more minorities, more households without kids. These groups need short trip, more convenient, more predictable transit."
– PAT SHEFFELS, BELLEVUE PLANNING COMMISSION

5 Transit should focus on creating an attractive product at an appropriate price point for the widest possible spectrum of the population.

It is sometimes suggested that transit agencies should develop higher-quality services for high-end markets, possibly with lower crowding, particularly nice seating, and so on. Luxury services at high price points should generally be left to the private sector so that transit can focus on creating an attractive product at an appropriate price point for the widest possible spectrum of the population. The idea that everyone should have a seat during peak hours, for example, may be important for very long commutes but is not practical for shorter trips around Bellevue during busy times.

"Streamline Metro routes such that there are minimal redundancies, like the RapidRide B Line has done. However, when reducing redundancies, please provide more frequent trips for the buses that run the route."

– JASON, BELLEVUE RESIDENT, CURRENT TRANSIT USER

6 As the transit network moves towards attracting more patrons who take transit by choice, it will be increasingly important to factor in the pedestrian and bicycle experience as part of a more holistic ridership strategy so that transit can run more efficiently.

The efficiency of the transit network is compromised when bus routes try to get too close to everyone's home. Integrating pedestrian and bicycle use with transit service is an effective means of attracting new riders by increasing the catchment areas of stations and stops. Since transit cannot provide universal door-to-door access, ensuring that stops are easily accessible to a large percentage of the public is important to enhancing ridership. Walking and bicycling are already the predominant methods by which people access transit; today only 16 percent of transit customers access public transportation at park-and-ride facilities in Bellevue. Transit's role is to provide an attractive alternative to the personal automobile, so it must focus on faster services that are worth walking or bicycling to.

"Transit creates more active communities. People walk more (health benefits)… A good transportation system is fundamental to viability, the city will stagnate, and residents who want that will choose not to live here."

– HAL FERRIS, BELLEVUE PLANNING COMMISSION

"A reliable transit system has sufficient frequency regardless of day of the week or time of day and is within walking distance from home."

– BARBARA, BELLEVUE RESIDENT, CURRENT TRANSIT USER

"I would like for my children to start using a bus to get home from school, but there is no safe pedestrian connection from existing bus stops for them to be able to walk home alone."

– LANA, BELLEVUE RESIDENT, NON-TRANSIT USER

7 Use urban design and development regulations in Bellevue's major activity centers to support transit use.

While the transit system is designed to serve the City's land use vision it is also important that land use development provide for and encourage transit access and use. This strategy supports expanding transit-supportive urban design and development regulations beyond Downtown and the Bel-Red areas (where these tools are in place) to other major activity centers in Bellevue. This expansion is being coordinated internally with the Department of Planning and Community Development and regional efforts being led by the Puget Sound Regional Council to develop model transit overlay ordinance language.

"An important benefit of transit is that whenever a transit trip replaces a single auto trip it eases the congestion that hurts all businesses and all commuters. Bellevue could not reach its projected growth without transit. We can't just build roads to meet our growth."

– TOM TANAKA, BELLEVUE TRANSPORTATION COMMISSION

"Allow more commercial and residential density in nodes and corridors with true pedestrian orientation between buildings and transit stops."

– MIKE, KIRKLAND RESIDENT, CURRENT TRANSIT USER

8 Design transit facilities to enhance accessibility, connectivity, and user experience.

The location and design of transit stops, centers, and park-and-ride facilities is an important factor in determining how far pedestrians, cyclists, and drivers must travel to reach transit services and the quality of the wait once they get there. These facilities are the most consistently visible image of a city's transit system. When stops, centers, and park-and-ride facilities are poorly designed, difficult to reach, or uncomfortable for users, it can negatively affect the image of a transit system and reduce opportunities for capturing choice ridership. When local governments partner with transit agencies—as is the case with work underway at the South Kirkland Park-and-Ride, a transit oriented development project that integrates housing within a transit hub—the transit facility environment will enhance connectivity between different modes of transportation and contribute to a positive community identity.

"For those of us who commute into downtown Seattle, it isn't very realistic to catch the bus from our neighborhoods and transfer. So we depend upon the park & rides. It is therefore crucial that adequate parking spaces be provided at the park & rides in order for Bellevue residents to use transit for commuting."

– SARAH, BELLEVUE RESIDENT, CURRENT TRANSIT USER

"If the bus route came closer to where I live I wouldn't need to drive to the Park and Ride. So either the city should have a lot more Park and Ride spaces or have more bus routes in un-served parts of Bellevue."

– PAT, BELLEVUE RESIDENT, CURRENT TRANSIT USER

9 The only way to efficiently serve multi-centered cities like Bellevue is with routes that are frequent and that make it easy to connect from one route to another at attractive and safe connection facilities.

A transit network is more than the sum of its parts. The usefulness of the network lies in the way all the parts work together, not just how they function individually. A single transit line may be useful for some trips, but it has more value when it is well-connected with all the other lines; a passenger can travel along one line but also to anywhere those connecting lines go. These improved connections contribute to greater coverage and more direct and shorter trips. The transit network should be managed to take into account how all the parts—Link light rail, RapidRide lines, and bus routes—work together to enable people to reach more destinations in less time.

"In Paris and New York City, transit is how I did things. I didn't know my way around, and in Paris couldn't even speak the language, but I had my map so I could do it. If we had a bus system like that with a lot of easy transfers, I would use it."

– HOWARD KATZ, BELLEVUE NETWORK ON AGING

"When the East Link Light Rail is completed, sync bus schedule arrivals with train arrivals / departures so people can get off the bus and not have to wait any more than 5-10 minutes for the train and vice versa."

– TIMOTHY, BELLEVUE RESIDENT, CURRENT TRANSIT USER

10 Invest in transit priority measures along Frequent Transit Network corridors.

The development of transit requires investment. Prioritizing funding for long-term capital projects that improve transit speed, reliability, and capacity in FTN corridors will maximize transit efficiency. Since the adoption of the 2003 Transit Plan, hundreds of millions of dollars in projects have been completed in Bellevue in support of transit. The Transit Master Plan builds on the successes of the 2003 Transit Plan by positioning the City to leverage additional partnerships with regional transit agencies. To secure additional funding, the City may want to: (1) renew and seek new local funding sources to implement Transit Master Plan capital priorities; (2) work with partners to lobby for new transit funding mechanisms, such as tax increment financing, dedication of tolling revenues, and other locally- or regionally-based transit funding sources; (3) create partnerships and leverage private investment to help fund priority capital investments; (4) seek federal and state grants with other agencies.

"The RapidRide B Line is impossibly slow once it gets close to downtown. That bus should have the right of way and traffic signal priority downtown because without it, cars cut it off in rush hour and it is much faster to walk."

– KRISTEN, BELLEVUE RESIDENT, CURRENT TRANSIT USER

"Increase HOV lanes for buses to use to get around rush hour traffic and prioritize signals to allow buses to move through congested areas faster."

– DARYL, BELLEVUE RESIDENT, CURRENT TRANSIT USER

PHOTO BY Guy de Gouville

SECTION 3:
SERVICE ELEMENT

SERVICE VISION

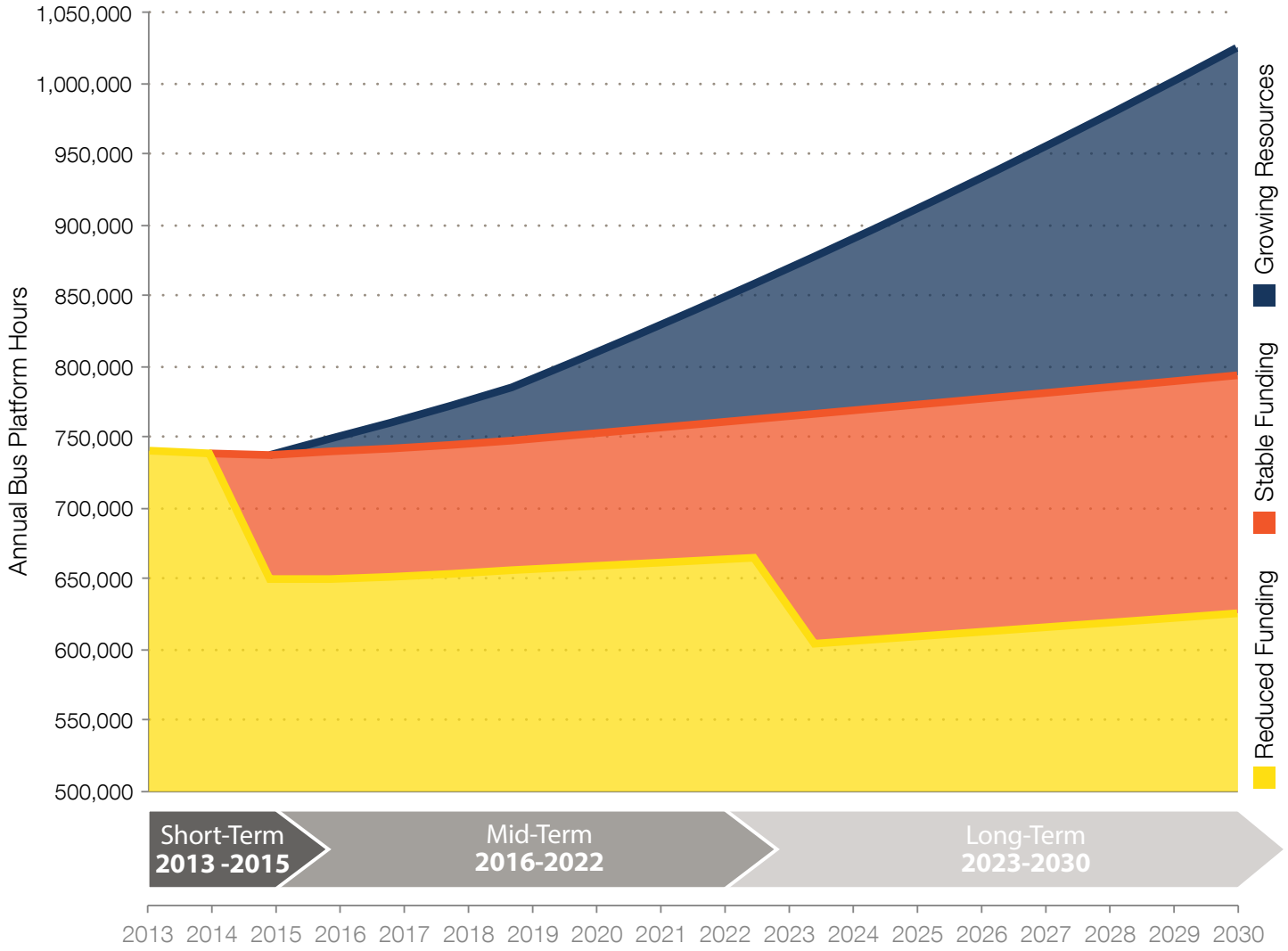
CONTEXT

Metro Service Reductions

On April 22, 2014, voters rejected the King County Transportation District's proposal (Proposition 1) to fund transit and roads with an increased sales tax and an annual vehicle fee. Metro proposes to phase the reductions over the next four service changes starting in September 2014.

The service vision prepares for uncertainty by advancing a series of proposals to address the city's future transit needs and priorities, including route-level recommendations that are responsive to different financial scenarios (reduced, stable, and growing resources) and attune to different time horizons (short-, medium-, and long-term). The following paragraphs provide a synopsis of each scenario's intent. For additional details about their definition, refer to the *Funding Scenarios Report.*

Figure 77 Projected future bus service funding scenarios. With the defeat of Proposition 1 on April 22, 2014, the region is currently on the Reduced Funding trajectory.



Time Horizons

Because of the many significant changes Bellevue will undergo in the coming years, including considerable growth, the emergence of new activity centers (e.g. Bel-Red), the start of East Link light rail operations, and the completion of other major regional transportation investments, it is important to consider both how transit will function when the system is fully operational in 2030 and the incremental steps that will need to be taken to bring that vision to fruition.

Planning for 2030 considers Bellevue's transit needs in the context of all of the developments noted above. Planning for 2022 addresses growth in demand through the final year in which buses constitute the only transit service operating in Bellevue. Finally, planning for 2015 considers what steps can be taken in the short-term to pursue the long-term vision in the context of uncertain transit funding and without the benefits of new infrastructure investments.

Short-Term: 2013–2015
Planning for the next two years, including both minor adjustments that enable incremental steps toward the long-term service vision and potentially significant service reductions beginning in 2014.

Mid-Term: 2016–2022
Includes planning for the impacts on traffic circulation and transit operations of the construction of East Link, SR-520, I-405, potential I-90 tolling, and land use developments in Bellevue.

Long-Term: 2023–2030
Focuses on Bellevue's transit needs in the context of considerable growth, the emergence of new activity centers (e.g. Bel-Red), the start of East Link light rail operations, and completion of major regional transportation investments.

Funding Scenarios

Since the elimination of the Motor Vehicle Excise Tax (MVET) as a revenue source for local transit agencies in 1998, transit agencies have increasingly relied on unstable local sales tax revenue to support their operation, the only substantial source available. The vulnerability of this source of revenue to changing economic conditions makes it difficult to plan future transit services within reasonable fiscal constraints.

Because the state of transit funding cannot accurately be predicted for any given time, this plan considers three distinct funding scenarios for each time horizon to address the fullest range of potential outcomes. The proposals advanced by the TMP will therefore be more readily adaptable to changing circumstances over the course of the plan's twenty-year implementation period. As of April 2014, Bellevue is currently on the Reduced Funding trajectory.

Reduced Funding:
A financially-constrained outlook for the future of bus service in Bellevue, this scenario includes two one-time reductions in annual service. The first is a 17 percent decrease in Metro platform hours in 2014, consistent with Metro's projected funding shortfall absent new funding, followed by a 29 percent reduction in ST Express service in 2024, reflecting reallocation of resources from bus to East Link light rail.

Stable Funding:
A continuation of the status quo with no significant reductions or expansions of bus platform hours. Annual increases of 0.5 percent are applied to account for schedule maintenance, and ST Express bus service is retained, albeit reconfigured, following the introduction of East Link light rail in 2023.

Growing Resources:
The most significant departure from current transit operations in Bellevue. An growth rate of 2.25 percent is applied, reflecting the annual increment needed to reach PSRC projections that suggest a near doubling of demand for transit (and the resources expended to meet this demand) by 2040.

Cost Baseline

The budget constraint for each scenario, as defined in the *Funding Scenarios Report*, is based on the current universe of routes—both Metro and Sound Transit Express—that had at least one stop in the City of Bellevue in Spring 2012, which equates to 740,880 annual platform hours.[14] This budget includes extensive services that also operate in other cities, and should not be confused with any notion of "Bellevue's share" of regional transit resources. The Bellevue Transit Master Plan does not intend to make strong recommendations about what the Kirkland and Redmond networks should look like. However, the three cities' networks are highly interdependent and will eventually need to consist of a single design over the entire three-city area. At this stage, the appropriate position for a Bellevue TMP is to recommend a network that makes sense for Bellevue, that connects the three cities effectively, and that is broadly fair to all three cities in terms of resource distribution.

Construction Mitigation

The service vision includes proposed network design scenarios for 2022, the year just before East Link opens. However, East Link construction impacts could not be studied in the context of this report, because Sound Transit was not yet able to provide sufficiently detailed and reliable descriptions of the likely impacts. Construction often requires temporary closures of important facilities such as connection points, park-and-rides, and travel lanes, the most serious of which are likely to be at the South Bellevue Park-and-Ride. These closures can impact transit's speed, reliability, and general usefulness, and a mitigation plan is required to balance impacts between transit, motorists, bicycles, and pedestrians.

14 Note that Routes 219 and 925 are excluded from the Spring 2012 Baseline Network. See the *Funding Scenarios Report* for details.

Service Types

New service categories have been defined to more effectively communicate the distinctions between the service types included in these networks. The core idea used to define service categories is that transit's usefulness is particularly tied to three features: frequency and span, the speed-access tradeoff, and reliability. Five of the categories depicted in Figure 78 appear in the proposed 2030 Growing Resources scenario.

- **Frequent Express** are similar to existing ST routes 550 (Bellevue-Seattle) and 545 (Redmond-Seattle). They run mainly on freeways and make widely spaced stops, with long non-stop segments along freeways. Average stop spacing exceeds 1 mile on freeway segments, and is kept around 1/2 mile when running on arterials unless there is a compelling need to stop more closely.
- **Frequent Rapid** is similar to RapidRide, running mostly on arterials with very high frequency. Stop spacing tends to be 1/4 to 1/2 mile, usually close enough to not require an underlying local service to stop more frequently, but wide enough to be notably faster and more reliable than a local.
- **Frequent Local** is standard local bus service at high frequency, with stops every 1/8 to 1/4 mile.

The above three categories are collectively called the Frequent Transit Network (FTN), which is the network of services most useful to most people. The two remaining service types are **Infrequent or Secondary Local** services, which serve the purpose of providing coverage where low ridership is expected, and **Peak Express**, which are expected to decline as a share of all services but will continue to be needed in corridors where a large surge in demand happens only during the peak commute.

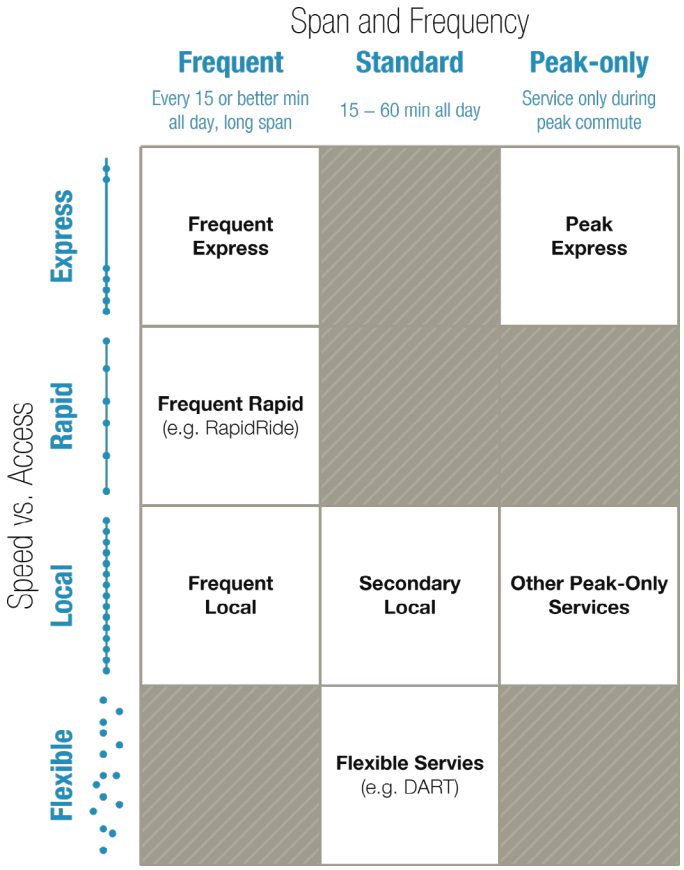


Figure 78 Types of transit service, as defined by frequency and span, the speed-access tradeoff, and service reliability.

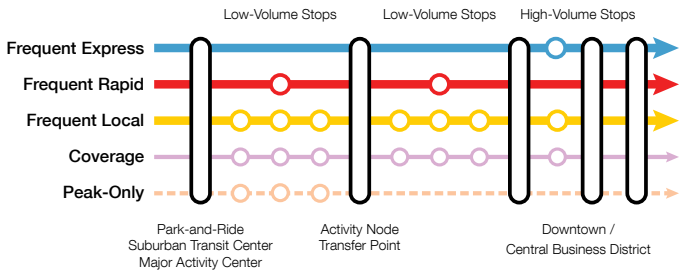
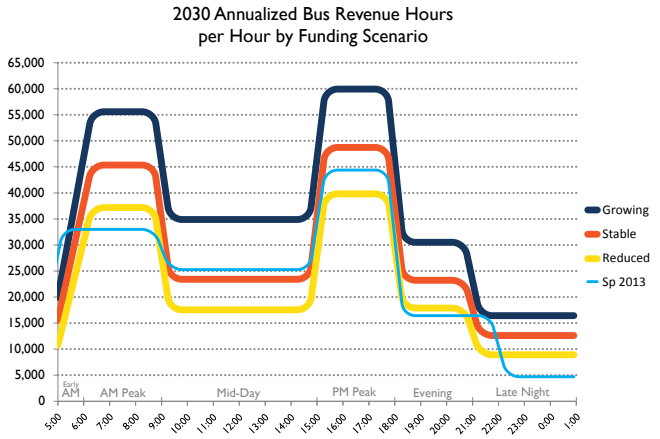
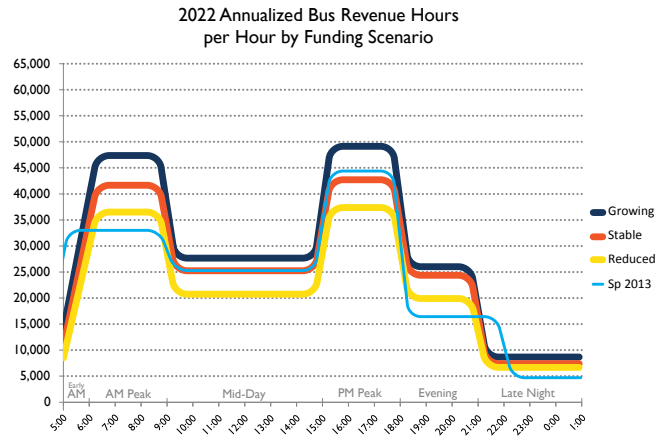


Figure 79 Types of transit service as they are depicted in Transit Master Plan proposed network maps and their typical stop spacing.

PROPOSED NETWORKS





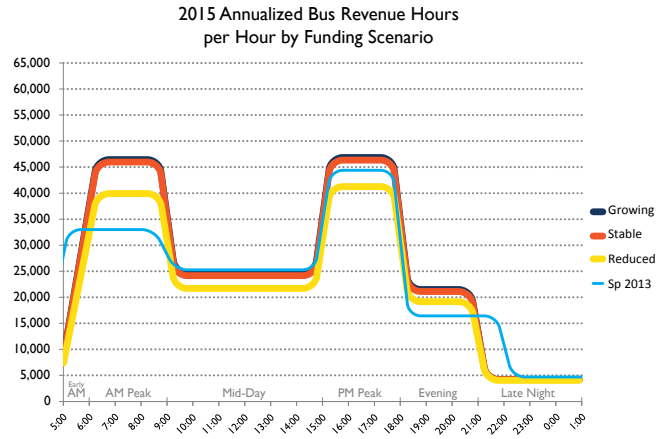


Figure 80 (above) Annualized bus revenue hours per hour by funding scenario. The hourly figures depicted are averaged from the total revenue hours operated during each period and therefore do not represent a precise operating schedule. Each scenario also includes unallocated contingency hours in addition to those depicted in the chart. See individual scenario charts for details. Time periods are currently defined differently than in future scenarios, so Spring 2012 figures for the Early AM period (4:00-5:00a) are not depicted above.

Figure 81 (opposite) These diagrams depict the connections and their associated frequencies offered by each of the nine proposed future transit networks.

Stemming from its consideration of multiple time horizons and funding scenarios, the service vision proposes a total of nine future transit networks. Figure 81 provides a matrix of the connection opportunities offered by each of the proposed future transit networks, as well as the service frequencies operated between each activity center in Bellevue and the surrounding region.

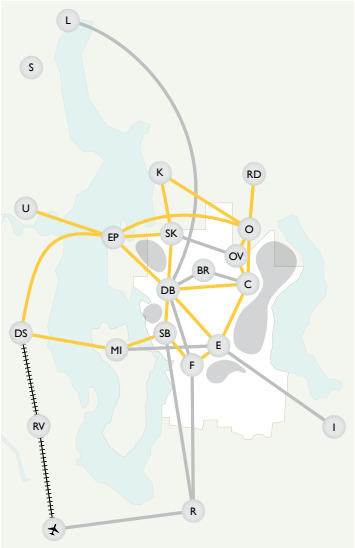
The 2030 Growing Resources network may be regarded as the ideal scenario, offering a comprehensive, well-connected grid network of very frequent all-day service, wide-reaching supplementary coverage service, and multi-modal integration wherein buses operate as frequently as East Link light rail to ensure short waiting times when transferring. All other scenarios are either incremental steps building toward that goal over time or a compromise attempting to provide the nearest approximation of that vision given constrained resources. Therefore, when comparing the three Growing Resources networks over the three time horizons, a clear progression toward greater connectivity and higher frequency can be identified with each subsequent phase. The same can generally be said for the progression of the Stable Funding networks, though the improvements are more incremental in nature. However, because the Reduced Funding scenario experiences a loss of resources with each subsequent period, the 2030 network represents a worst-case scenario in which all coverage service is eliminated in an effort to maintain some semblance of frequent service between major activity centers and coordination with the multi-billion dollar investment in regional light rail. This section presents each of the proposed future transit networks and briefly describes their defining characteristics.[15,16]

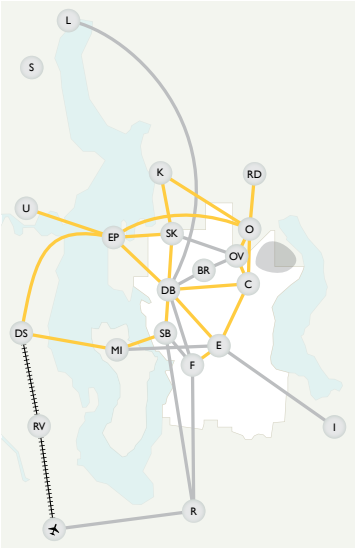
15 For more information, refer to the *Transit Service Vision Report.*

16 Refer to Appendix 3 on page 122 for an overview of how the available resources of each of the 2030 scenarios are divided amongst the various service types in terms of annual platform hours and the percentage split.

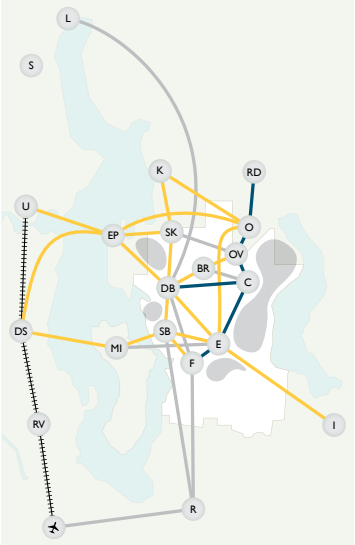
Growing Resources | Stable Funding | Reduced Funding

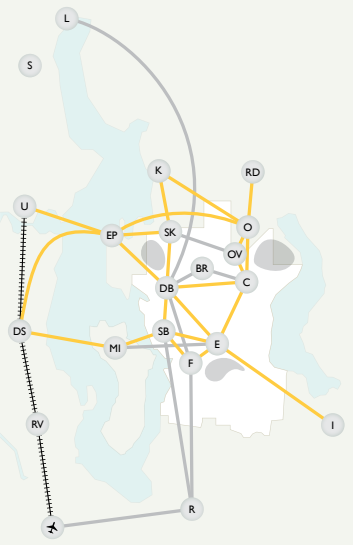
2015 | Short-Term

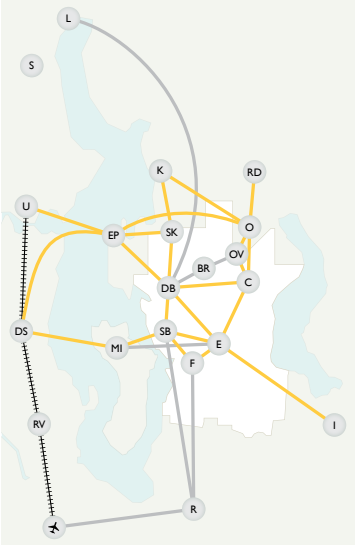




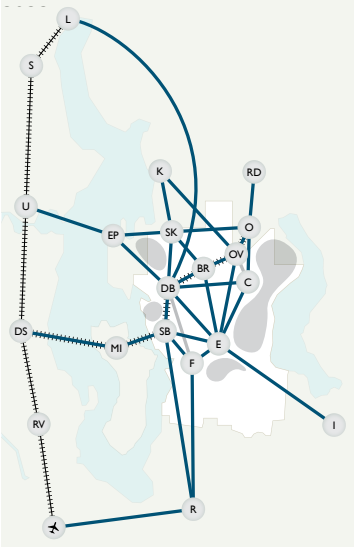
2022 | Mid-Term

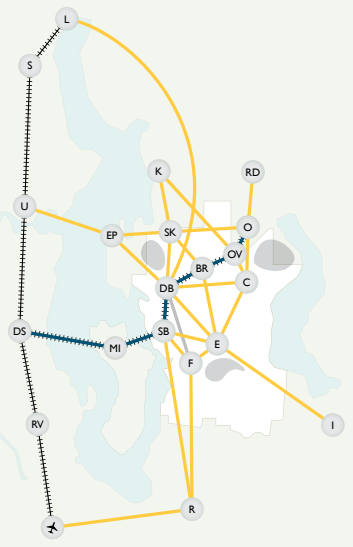


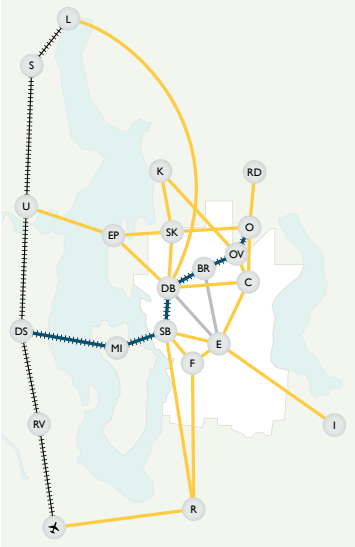




2030 | Long-Term







2030

BELLEVUE
- **BR** Bel-Red
- **C** Crossroads
- **DB** Downtown Bellevue
- **E** Eastgate
- **F** Factoria
- **SB** South Bellevue Park & Ride

REGION
- **DS** Downtown Seattle
- **EP** Evergreen Point
- **I** Issaquah Transit Center
- **K** Kirkland Transit Center
- **L** Lynnwood
- **MI** Mercer Island
- **O** Overlake Transit Center
- **OV** Overlake Village
- **R** Renton
- **RD** Redmond Transit Center
- **RV** Rainier Valley
- **S** Shoreline
- **SK** South Kirkland Park & Ride
- **U** University District
- SeaTac

	Peak	Midday	Night
Very Frequent (every train connection)	≤8	≤12	15-30
Frequent	10-15	15	15-30
Infrequent	30	15-30	30-60

Note: numbers reflect approximate peak/midday/night frequencies.

LRT

2030 Service Vision

The three networks comprising the 2030 Service Vision represent the widest range of potential outcomes between the various funding scenarios. The Growing Resources scenario is the most optimistic considered by the TMP, while the Reduced Funding scenario is the most financially constrained of any of the nine networks proposed.

2030 Growing Resources

The 2030 Growing Resources scenario envisions a growth in total bus operating resources of 38 percent by 2030 from Spring 2012 service levels. The BKR travel demand model anticipates that transit demand will triple by this time, so even this growth in service—less than a doubling—will mean that average loads and average productivity (passenger boardings per hour of service) must also increase. This means that even in this most abundant scenario, it is important to focus on more efficient service deployment to ensure that there is adequate supply where demand is high.

Buses will have to be larger and deployed with a priority to serving high demand corridors efficiently. This means that service duplication must be avoided, and as the network grows more frequent it will become more dependent on fast, reliable connections. The network will have to make maximum use of East Link's high capacity by encouraging connections to Link rather than duplicating any part of it. The expectation of many commuters that they will have a single-seat ride from origin to destination will simply not be viable when this level of demand must be accommodated.

One notable improvement that is affordable only in the Growing Resources scenario is here referred to as "every-train connections," provided by routes comprising the Frequent Transit Network (FTN) shown in Figure 82. East Link frequencies are expected to be every 8 minutes peak, every 10 minutes midday, and every 15 minutes in the evening. All Frequent Rapid and Frequent Local services will match this

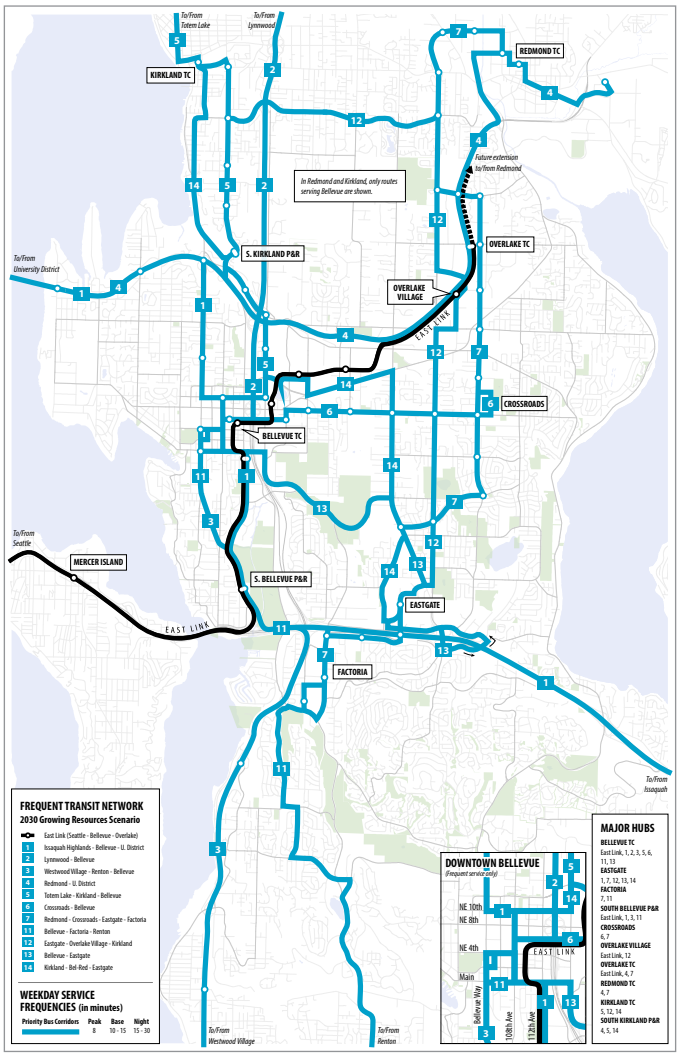
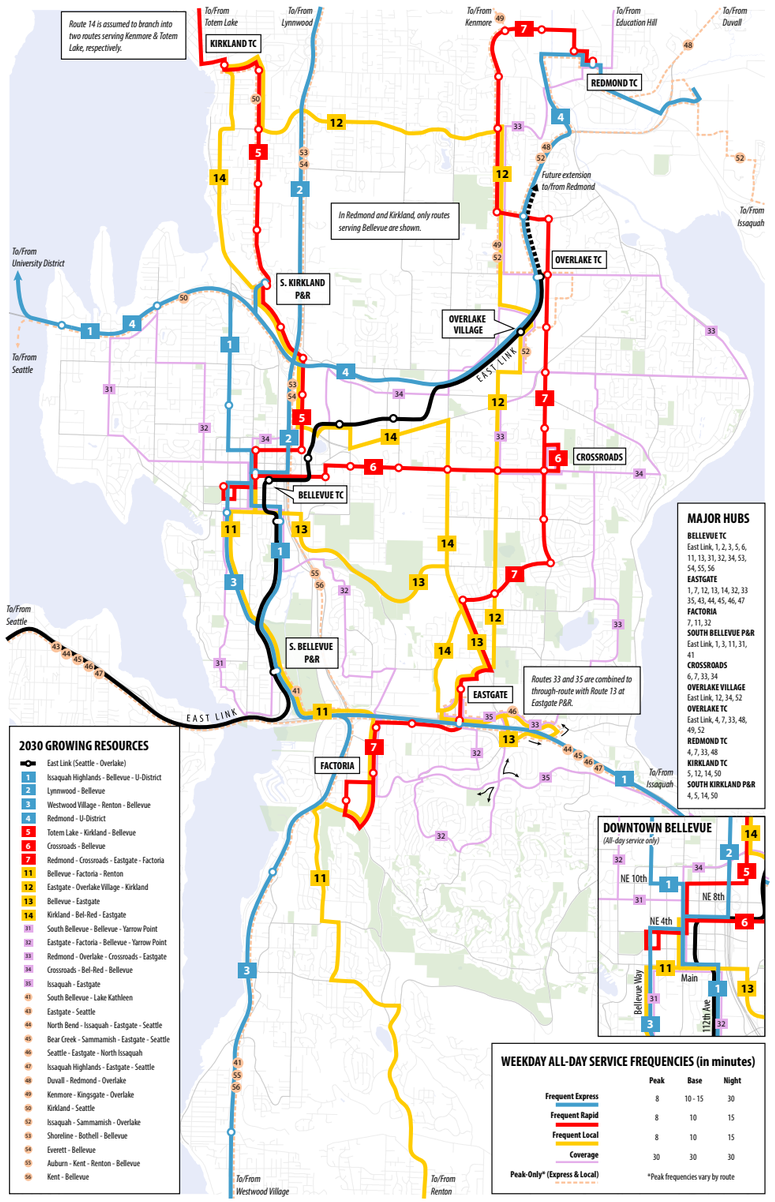
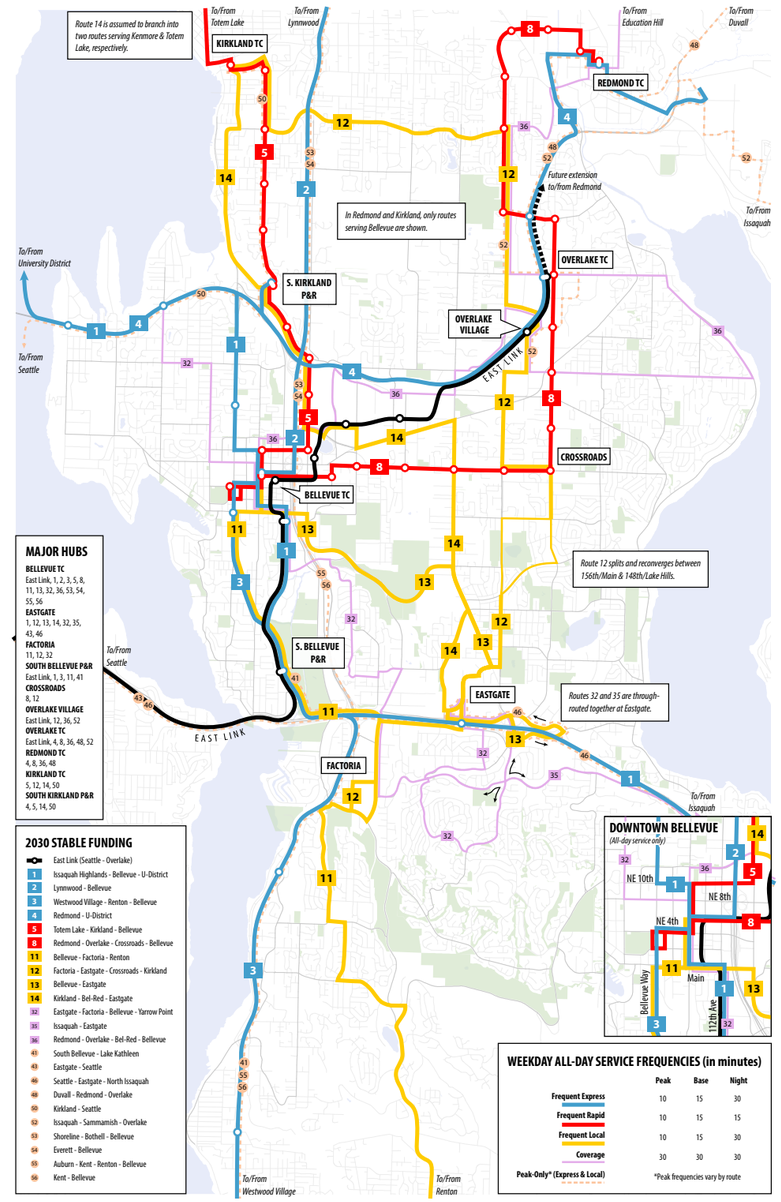


Figure 82 The 2030 Frequent Transit Network (FTN), based on the Growing Resources Scenario, represents the core service vision being persued by the Transit Master Plan.

2030 | Growing Resources



2030 | Stable Funding



2030 | Reduced Funding

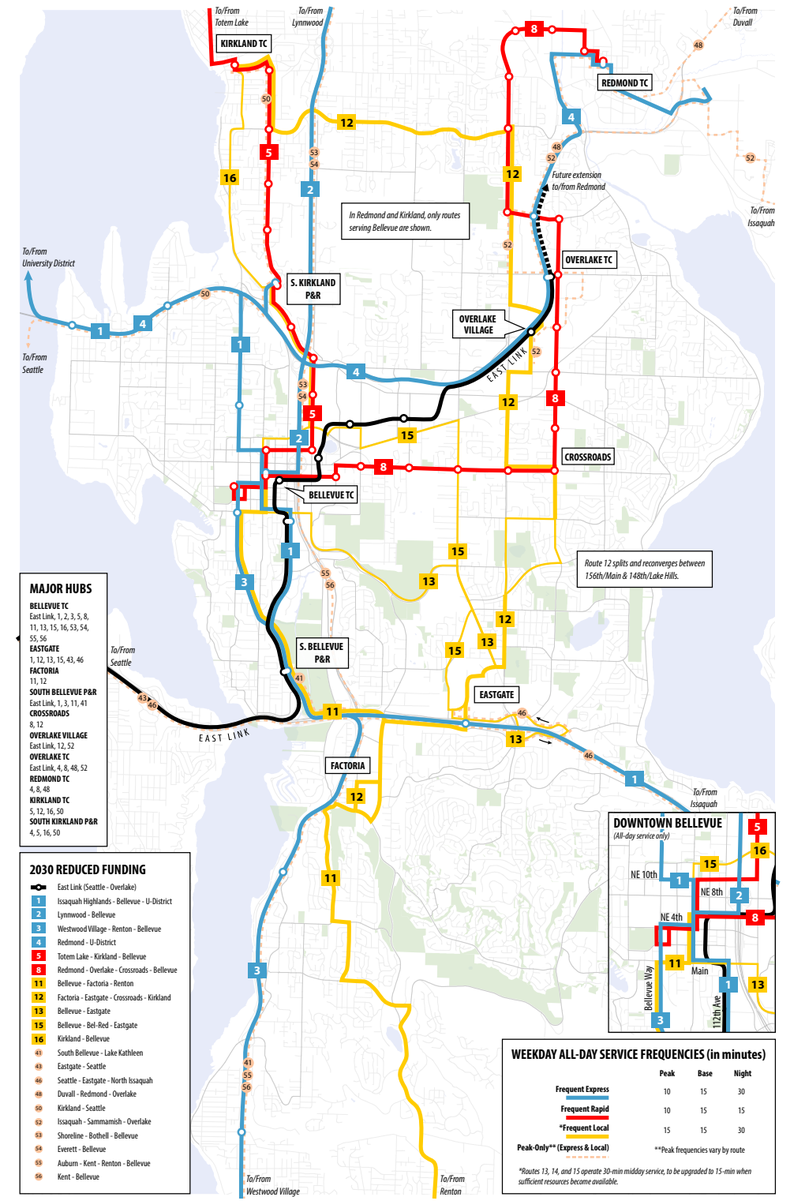


Figure 83 2030 Proposed Network Maps. Route-level details are available for each funding scenario in the *Transit Service Vision Report*.

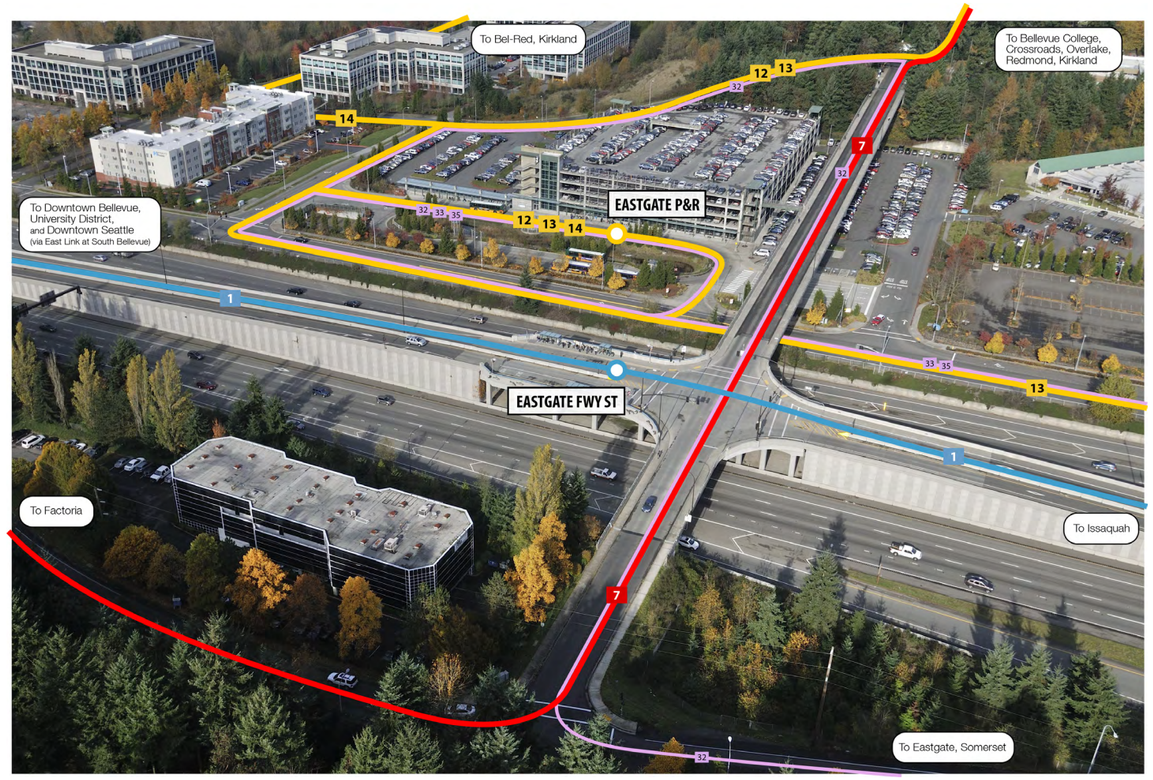
Unfold for full-size map

frequency during all times of the day, and Frequent Express services will match it during all times except in the evening. Thus, most FTN services throughout Bellevue will match East Link frequency so that every train trip has its own connecting bus trip. These may not always be waiting for the train, but they will come within a few minutes after each train arrives.

The need to support much higher demand has an impact on coverage services, where demand will be lowest and will grow most slowly. In the Growing Resources scenario, the current level of coverage deployed around Bellevue is assumed to remain. Coverage route frequencies are standardized at 30 minutes throughout the day and evening—much better than they currently offer. The coverage area is neither expanded nor reduced, despite low ridership on many of the coverage segments. The overall percentage of Bellevue residents and jobs covered by transit improves by 2030, but not because coverage is expanded. Rather, this happens because the majority of new residents and jobs added to the city are located along the FTN.

Coverage services focus on low-density areas or areas with difficult street patterns where low ridership can be predicted regardless of the service provided. Coverage areas that are served typically have continuous but low-density development (entirely or almost entirely single-family) and often also have somewhat difficult but not impossible street patterns for transit. In the Growing Resources scenario, all of the existing coverage area is retained; however, some current routes are partly coverage and partly on the proposed FTN, so these are restructured so that they better complement the FTN without duplicating it.

Although the TMP envisions a greater emphasis on the core all-day network of transit services in



Bellevue, the accommodation of peak trips remains an important consideration in designing the long-term scenarios. To ensure that peak commute needs are being met, the peak networks assumed in the long-term scenarios are designed so that planned vehicle capacity in the cross-lake and I-405 corridors can accommodate any anticipated growth in future passenger loads. However, the robust Frequent Express network proposed for 2030, combined with East Link and North Link, changes the route structure of peak express services. Currently, these services often directly connect remote residential areas with large employment centers, creating many complex and overlapping route patterns. In the future, the much simpler Frequent Express and Link services will form a framework on which many of these trips can be routed. These trips may require a connection, unlike existing services, but very frequent FTN services will ensure short wait times, and this will allow for a much more efficient deployment of capacity and thus a higher-capacity and higher-ridership network overall.

One key focus is to ensure that if Link is useful for a portion of an existing peak express trip, that service is restructured to truncate at East Link or North Link so long as the total travel time is reasonable. This eliminates the need for direct services from the Eastside to Northgate or Ravenna and even some trips between the Eastside and Downtown Seattle on SR-520. As the most abundant scenario, the Growing Resources scenario is the most generous in retaining peak express services.

2030 Stable Funding

The Stable Funding scenario presumes that service resources remain near the current level, growing only with a low level of inflation. In this scenario, the only moment when any significant growth in resources occurs comes with the opening of East Link in 2023, when the existing Route 550 is replaced by light rail and its resources can be reinvested elsewhere in the bus system. The Stable Resources scenario does

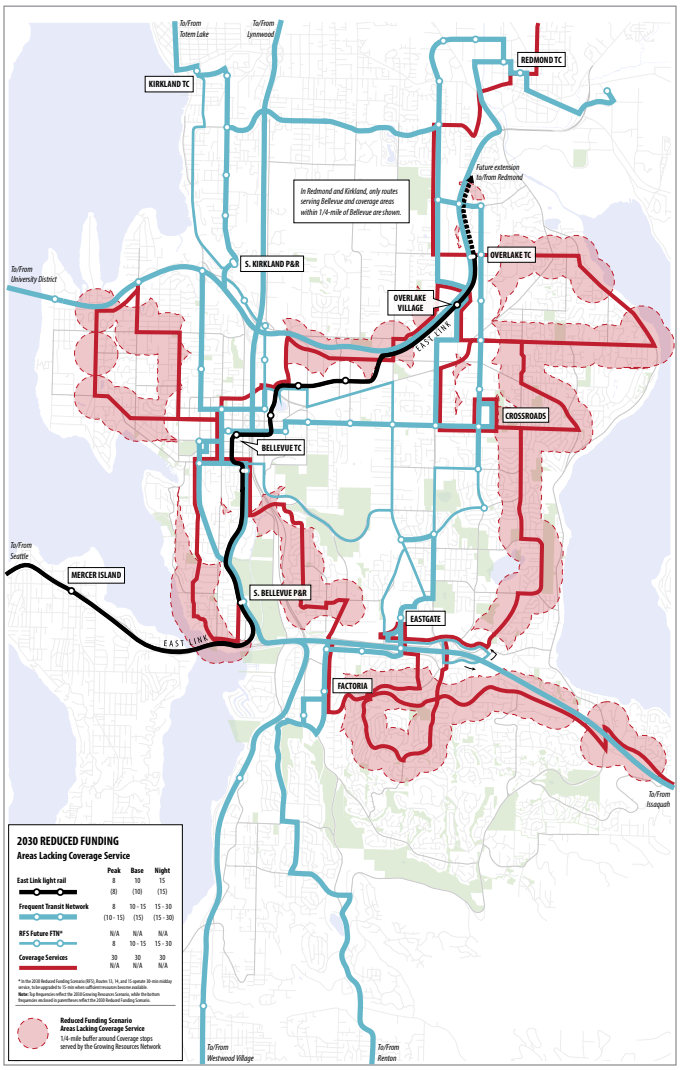


Figure 84 (opposite) Transit services at the Eastgate Park-and-Ride and Eastgate Freeway Station in 2030 based on the Growing Resources network. Frequent connections are available to Bellevue College, Crossroads, Downtown Bellevue, Factoria, Issaquah, Overlake, Redmond, and Kirkland.

Figure 85 (above) Areas lacking Coverage service in the 2030 Reduced Funding Scenario as compared to that proposed for the 2030 Growing Resources Scenario.

not mean “status quo” in any sense. In this scenario, Bellevue’s transit demand grows dramatically, yet resources do not increase accordingly to meet that growth. The only way to face this situation is to reduce the low-ridership Coverage services.

Coverage services are pared back to only those that serve higher concentrations of jobs or housing. An alternative approach would have been to retain all coverage routes but cut them to operate hourly at most times of day. This would have ensured very low ridership but retained the provision of lifeline access. The proposed Frequent Rapid service between Crossroads and Eastgate (Route 7) is deleted, leaving only Frequent Local Route 12 service along this segment. Frequencies operated by the FTN are reduced but remain at 15 minutes or better all-day, except in the evening. This is adequate capacity to handle projected crowding across the lake, but some overcrowding is likely even if high-capacity buses are used consistently. Finally, four low-performing peak-only routes are eliminated, including Routes 44, 45, 47, and 49, consistent with those identified by King County Metro in April 2013 as candidates for potential elimination.

2030 Reduced Funding

In the Reduced Funding scenario for 2030, Bellevue’s overall transit demand more than doubles, but the resources available for bus service are 15 percent less than what they are today. East Link is added, but unlike in the higher resource scenarios, the bus service East Link replaces (primarily Route 550) is removed from the budgeted resources. In the context of a more than doubling of Bellevue’s transit demand, transit falls far behind the expectations of all cities in the region and severely disappoints most of its stakeholders. Transit inevitably loses market share, though some of this loss will be to walking, bicycling, car-sharing, and other non-SOV options. In this context, transit must narrow its focus to the highest-demand markets where the available resources can achieve the most ridership—and thus the most

regional mode shift—and those where there is no reasonable non-automobile alternative.

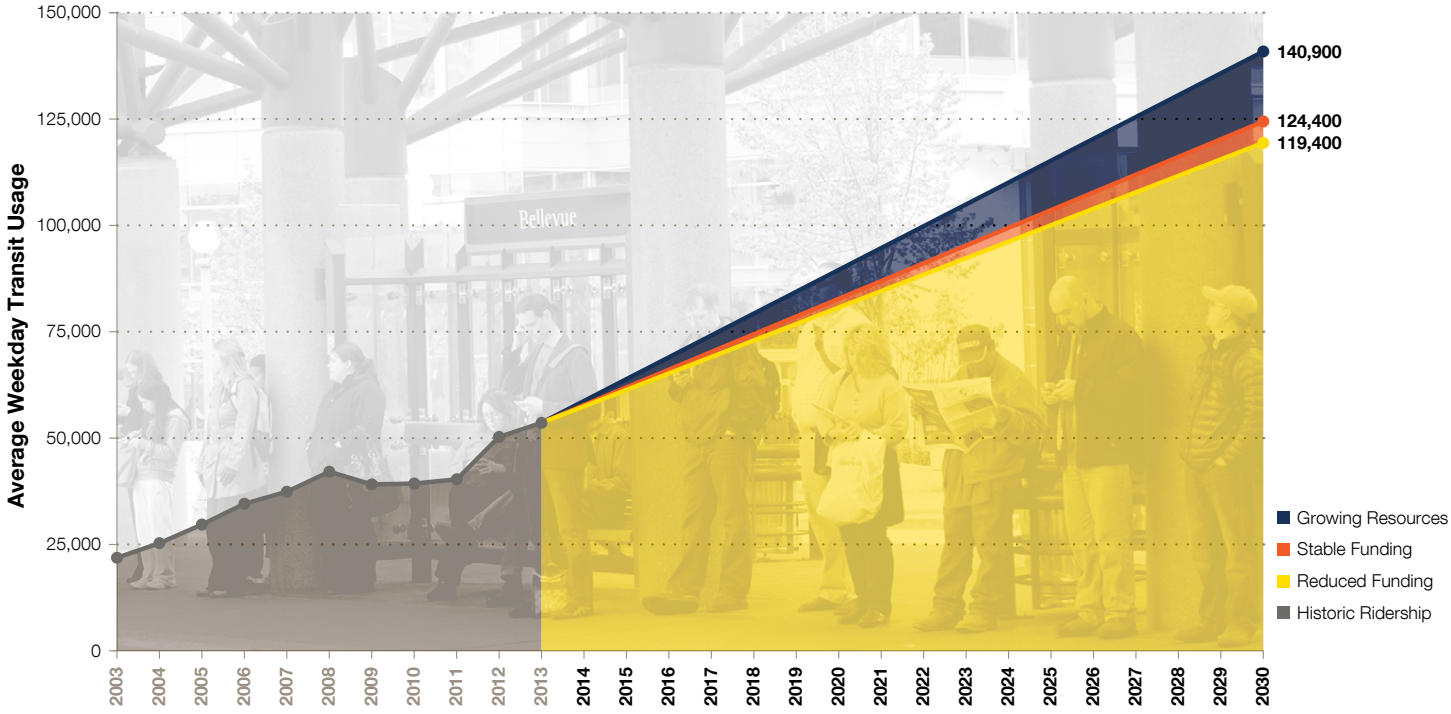
The FTN route structure is unchanged from the Stable Funding scenario, and Frequent Express and Frequent Rapid services are retained at the same frequencies. By contrast, the Frequent Local network—aimed at shorter trips that are more likely able to shift to walking or bicycling—must be cut substantially. Some of these (indicated by narrower lines on the map) will operate frequencies of only every 30 minutes midday, which are meant to be upgraded when sufficient resources become available. These markets, which make good use of transit's high capacity and serve trips that are too long for most people to walk or bicycle, become the most important role a diminished transit system can serve in being relevant to the regional access and sustainability.

In such a financially starved scenario, Coverage services, which can expect consistently low ridership, must be eliminated entirely, as even operating hourly service would require too many resources to maintain these services without significantly affecting the FTN. The urgency of meeting high-ridership needs and managing overcrowding would be the dominant regional transit concern, leaving no resources for low-ridership coverage areas. Because the Stable Funding scenario already reduces Peak Express services to the minimum amount deemed tolerable to ensure adequate capacity, no further cuts to these services are made in the Reduced Funding scenario.

2030 Projected Outcomes

Figure 86 shows how average daily ridership compares across the three 2030 scenarios and to the trend exhibited between 2003–2013. As indicated, ridership is projected to more than double regardless of which scenario is realized, but implementation of the Growing Resources scenario will result in a near-tripling of daily ridership. Because the lower-resource scenarios retain high-ridership FTN service to the extent possible, with most eliminations being targeted to lower-ridership Coverage and Peak services, the projected ridership is not impacted as significantly as it could be; however, the social service aspect of these networks is considerably reduced.

Figure 86 Average daily ridership from Fall 2003–2030 in Bellevue, reflecting projected variation based on implementation of the Growing, Stable, and Reduced Funding scenarios.



2022 Service Vision

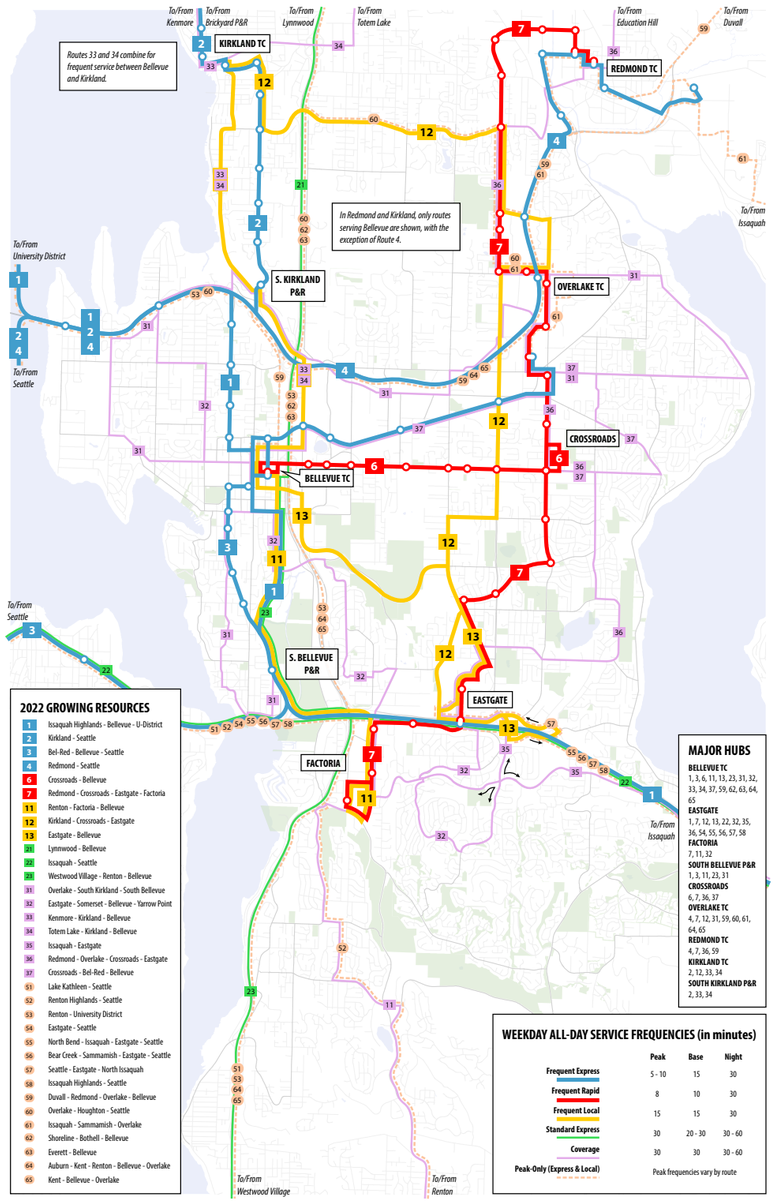
The three networks proposed for 2022 can be thought of as intermediary networks that are intended to move service in the direction of the long-term vision, anticipating the arrival of East Link light rail to the extent that available resources allow. Although the differences between the Growing Resources and Reduced Funding scenarios are less dramatic than in the 2030 networks, the implementation of these scenarios would have significantly different implications for the availability of transit service in Bellevue.

2022 Growing Resources

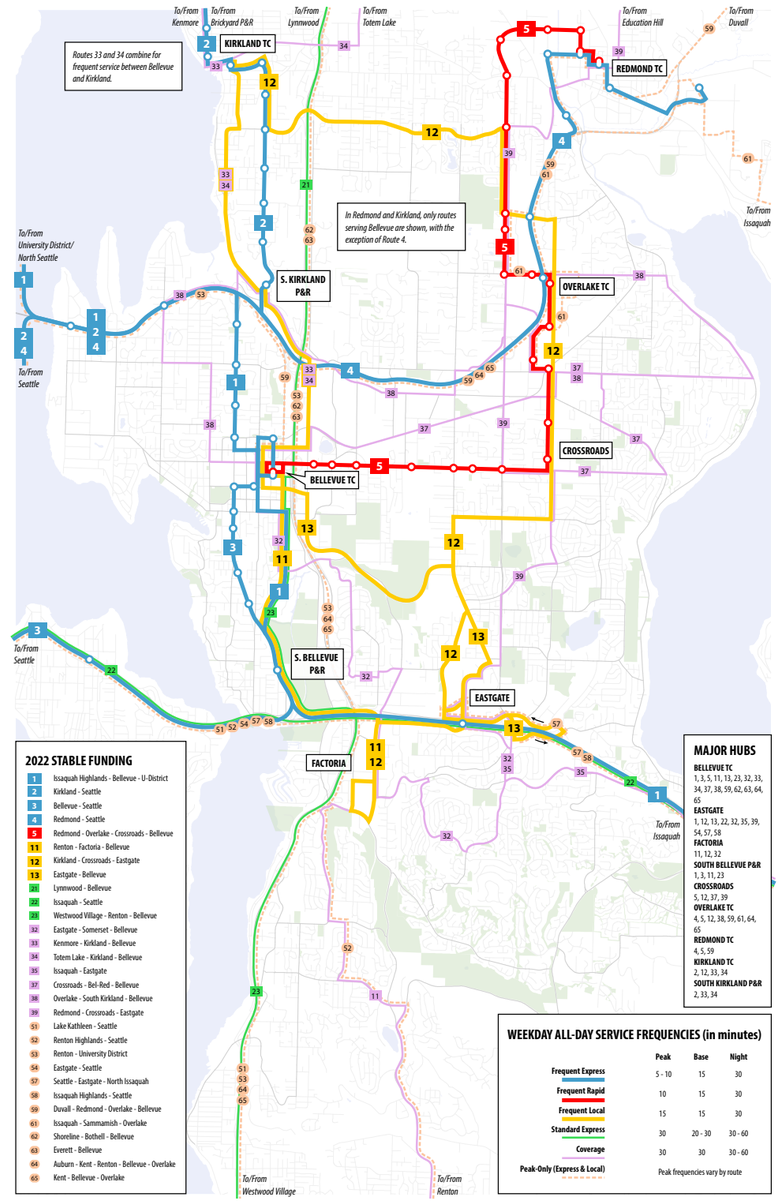
In the 2022 Growing Resources scenario, it is possible to implement many of the local and regional improvements envisioned in the 2030 Growing Resources scenario. This includes the development of a grid of high frequency service, composed . On the east side of Bellevue, separate north-south lines running at high frequency all day serve 148th Ave NE (Route 12) and 156th Ave NE (Route 7). Easy north-south travel on the east side of Bellevue means easier access to Bellevue and Redmond employers from growing areas to the south and from Issaquah. It also means easier access from these employers to Bellevue College, Eastgate employment areas, and Factoria. Coupled with these frequent north-south corridors in eastern Bellevue are frequent east-west services on Bel-Red Road (Route 1), NE 8th St (Route 6), and Lake Hills Connector (Route 13). The key feature of a high frequency grid is that travel is possible between any two points via a reasonably direct path, which allows the focus of transit to be on providing broadly useful service for a wide range of possible trips.

Another notable feature of the 2022 Growing Resources scenario is the extension of Frequent Express service to the future station areas in the Bel-Red corridor to Overlake Village to approximate the forthcoming East Link service. Existing Route 550,

2022 | Growing Resources



2022 | Stable Funding



2022 | Reduced Funding

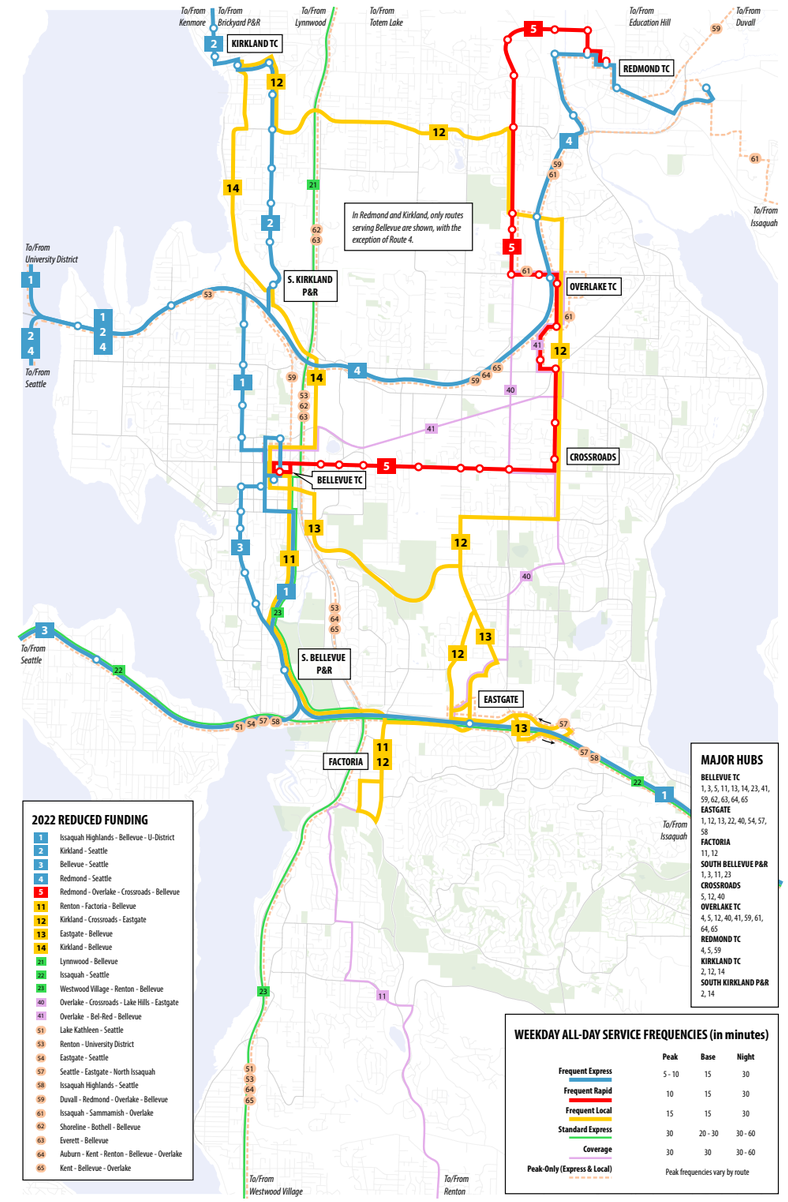


Figure 87 2022 Proposed Network Maps. Route-level details are available for each funding scenario in the *Transit Service Vision Report*.

Unfold for full-size map

which currently ends in Downtown Bellevue, is here referred to as Route 3 and is extended eastward to Overlake Village via Bel-Red Road. This service could help form the basis for early wins in the redeveloping Bel-Red corridor by encouraging the development of transit-oriented emplyoment prior to East Link's completion. Although this extension concept can only be afforded in the 2022 Growing Resources scenario, the possibility of a Bel-Red local improvement district—or other similar local revenue source—could be studied to help fund this temporary service

In the Growing Resources scenario, all areas currently served by transit would continue to be served by restructured Coverage services. Standard all-day express service, which would operate less frequently than Frequent Express services, is proposed along the north and south I-405 corridor and along I-90 between between Issaquah and Seattle. A generous Peak Express network is also retained in the Growing Resources scenario.

2022 Stable Funding

The 2022 Stable Funding scenario has only slightly more resources available than the current network, yet it must accommodate a growing demand for transit in Bellevue, particularly in the city's denser activity centers. As a result, coverage service must be reduced somewhat to ensure that adequate frequency can be retained where it will be heavily used and where the livability of transit-oriented development relies upon it. The following are some notable differences from the Growing scenario.

The Growing scenario's extension of existing Route 550 service into Bel-Red is not included in the Stable or Reduced Funding scenarios. However, as noted, the city may wish to consider other means of funding this temporary service if it is deemed important to the early redevelopment of the Bel-Red station areas. Frequent Rapid Route 7 connecting Redmond, Overlake, Crossroads, Eastgate and Factoria is also not affordable in the Stable Funding scenario, and is

replaced by a Frequent Local north-south line (Route 12), similar to existing Route 245. The Frequent Rapid network is thus limited to a single line (Route 5) that is identical to the existing RapidRide B Line. Additionally, it is not possible to provide frequent service with the available resources, so north-south access in east Bellevue and the high-frequency grid proposed in the Growing Resources scenario are not offered by the Stable or Reduced Funding scenarios.

Coverage service is reduced somewhat compared to that offered in the Growing Resources scenario, but the only areas that experience a total loss of coverage are the areas east of 156th Ave between I-90 and NE 8th St and portions of Clyde Hill and Medina along 84th Ave NE. Peak Express services are also trimmed, requiring some peak commuters to make connections while still ensuring adequate capacity for all regional and local commute trips.

2022 Reduced Funding

The 2022 Reduced Funding scenario recommends how transit service should be allocated in a situation where limited resources require significant cuts at the same time that transit demand is growing and a larger share of Bellevue's economy relies on transit. In this dire situation, it is difficult to justify services that cannot generate high ridership and services that provide only marginal increases in convenience over other services that are also available. As a result, the cuts envisioned in the 2022 Reduced Funding scenario elimiante services devoted to covering low-density and no-growth areas. These are permanently low-ridership services, and retaining them in the face of so few resources would require cutting services that are much more important to the livability and economic competitiveness of Bellevue's growing dense areas. Peak express routes that duplicate other services are deleted, and while this will require connections for some riders, the urgent need in such an impoverished scenario is to retain regional mobility and adequate capacity.

Figure 88 The service reductions proposed by Metro as of July 2014 would affect 27 of Bellevue's 33 Metro routes, accounting for approximately 35,000 daily weekday rides. Changes are planned to be made in four phases beginning in September 2014.

Figure 89 Following the April 22, 2014 voter rejection of the King County Transportation District Proposition 1, Metro is proposing to revise Route 271 off of the Bellevue College campus on to 148th Ave NE. This would impact general purpose traffic where buses will stop for transit passengers in-lane at frequent intervals along 148th—a major north-south arterial. For transit patrons, this proposal adds a half-mile walk from the 148th Ave bus stop to the campus, further exacerbating riders' perceptions about the inconvenience of using transit. Furthermore, it would significantly limit access to campus among students and faculty with disabilities. Nearly a third of Bellevue College students ride transit as their primary mode of transportation.

Note: Routes 221, 226, and 245 will continue to operate through the Bellevue College campus—a revision from Metro's original reduction proposal published in 2013, which would have also removed Route 245 from the campus. None of the TMP's 2015 networks recommend revising routing through the Bellevue College campus for any services.

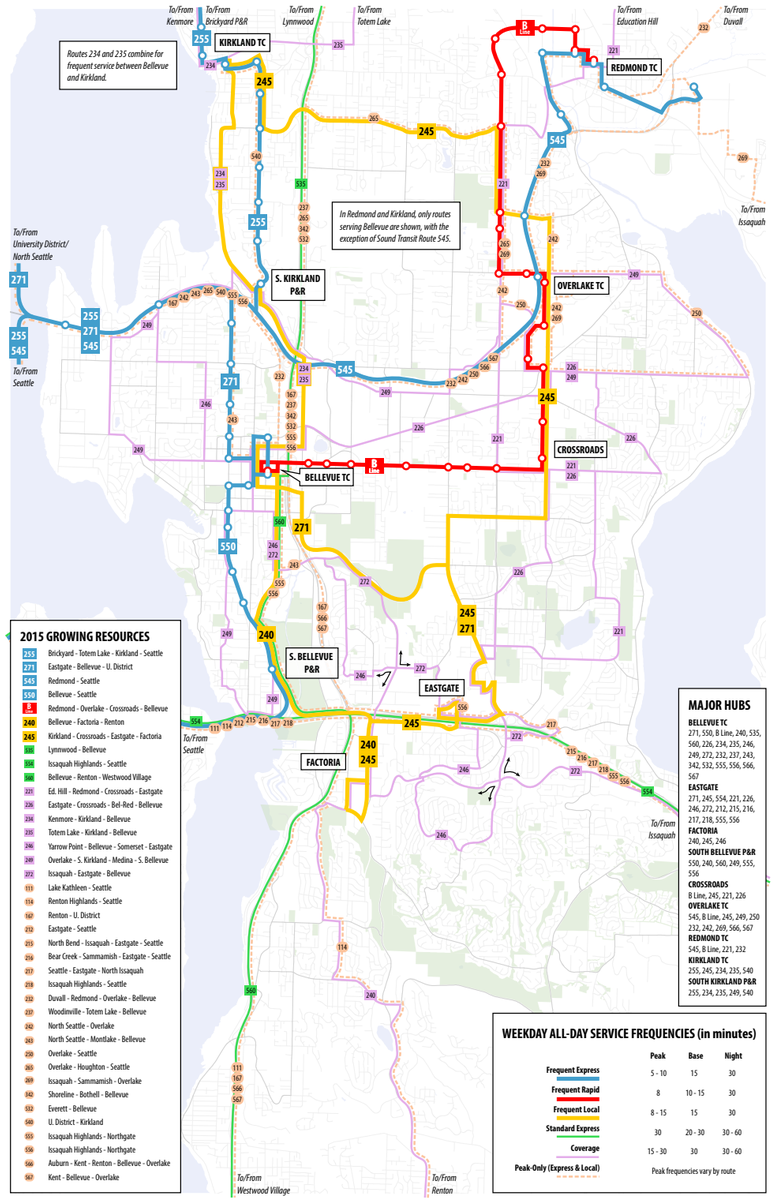
2015 Service Vision

The 2015 Service Vision provides guidance for near-term actions that can begin moving Bellevue's transit network toward the long-term vision while remaining sensitive to the existing route structure and a desire to not alter it too radically too quickly. The Growing Resources and Stable Funding scenarios are almost identical because the resource expansion rate assumed under the Growing scenario has not had time to grow significantly by 2015, so the difference between these scenarios is only 1 percent.

The key issue distinguishing these two similar visions from the Reduced Funding scenario is whether or not a new source of operating funds is implemented to stabilize King County Metro's budget. Following the elimination of the MVET in 1998 and the recession in 2008–2009, King County Metro has encountered funding shortfalls on several occasions, which it has responded to by improving operational and administrative efficiency, raising fares, and other changes. Despite these efforts, the temporary Congestion Reduction Charge (CRC) implemented in 2012 will expire as scheduled in 2014, resulting in a 15.7% funding shortfall. In April 2014, King County voters rejected Proposition 1, which would have provided dedicated transportation funding to preserve current Metro service levels by levying a 0.1% sales and use tax and a $60 vehicle fee, each for up to ten years.[17] Metro will therefore implement service reductions of 550,000 annual service hours system-wide between September 2014 to September 2015, so barring the implementation of a new source of funding in the coming months, Bellevue is currently on the trajectory of the Reduced Funding scenario. King County Metro's current proposed reductions are different in several areas from Bellevue's Reduced Funding scenario, so the City will work with Metro in an effort to reach a compromise reduction strategy.

17 Proposition 1 would have also established a low-income vehicle fee rebate of $20 and provided funding for a low-income Metro transit fare.

2015 | Growing Resources



2015 GROWING RESOURCES

- 255 Brickyard - Totem Lake - Kirkland - Seattle
- 271 Eastgate - Bellevue - U. District
- 545 Redmond - Seattle
- 550 Bellevue - Seattle
- B Line Redmond - Overlake - Crossroads - Bellevue
- 240 Bellevue - Factoria - Renton
- 245 Kirkland - Crossroads - Eastgate - Factoria
- 535 Lynnwood - Bellevue
- 556 Issaquah Highlands - Seattle
- 560 Bellevue - Renton - Westwood Village
- 221 Ed. Hill - Redmond - Crossroads - Eastgate
- 226 Eastgate - Crossroads - Bel-Red - Bellevue
- 234 Kenmore - Kirkland - Bellevue
- 235 Totem Lake - Kirkland - Bellevue
- 246 Yarrow Point - Bellevue - Somerset - Eastgate
- 249 Overlake - S. Kirkland - Medina - S. Bellevue
- 272 Issaquah - Eastgate - Bellevue
- 113 Lake Kathleen - Seattle
- 114 Renton Highlands - Seattle
- 142 Renton - U. District
- 212 Eastgate - Seattle
- 215 North Bend - Issaquah - Eastgate - Seattle
- 216 Bear Creek - Sammamish - Eastgate - Seattle
- 217 Seattle - Eastgate - North Issaquah
- 218 Issaquah Highlands - Seattle
- 232 Duvall - Redmond - Overlake - Bellevue
- 237 Woodinville - Totem Lake - Bellevue
- 242 North Seattle - Overlake
- 243 North Seattle - Montlake - Bellevue
- 250 Overlake - Seattle
- 265 Overlake - Houghton - Seattle
- 269 Issaquah - Sammamish - Overlake
- 342 Shoreline - Bothell - Bellevue
- 532 Everett - Bellevue
- 540 U. District - Kirkland
- 555 Issaquah Highlands - Northgate
- 556 Issaquah Highlands - Northgate
- 566 Auburn - Kent - Renton - Bellevue - Overlake
- 567 Kent - Bellevue - Overlake

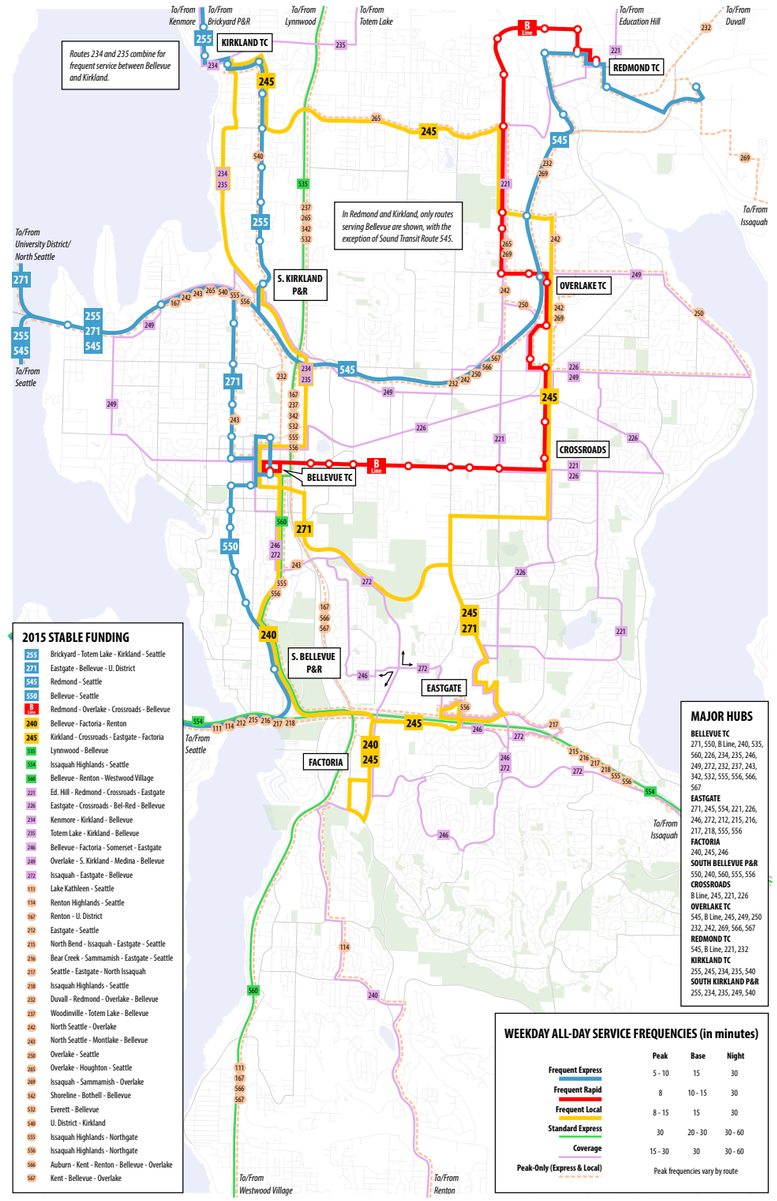
MAJOR HUBS

BELLEVUE TC
271, 550, B Line, 240, 535, 560, 226, 234, 235, 246, 249, 272, 232, 237, 243, 342, 532, 555, 556, 566, 567
EASTGATE
271, 245, 554, 221, 226, 246, 272, 212, 215, 216, 217, 218, 555, 556
FACTORIA
240, 245, 246
SOUTH BELLEVUE P&R
550, 240, 560, 249, 555, 556
CROSSROADS
B Line, 245, 221, 226
OVERLAKE TC
545, B Line, 245, 249, 250 232, 242, 269, 566, 567
REDMOND TC
545, B Line, 221, 232
KIRKLAND TC
255, 245, 234, 235, 540
SOUTH KIRKLAND P&R
255, 234, 235, 249, 540

WEEKDAY ALL-DAY SERVICE FREQUENCIES (in minutes)

	Peak	Base	Night
Frequent Express	5 - 10	15	30
Frequent Rapid	8	10 - 15	30
Frequent Local	8 - 15	15	30
Standard Express	30	20 - 30	30 - 60
Coverage	15 - 30	30	30 - 60
Peak-Only (Express & Local)	Peak frequencies vary by route		

2015 | Stable Funding



2015 STABLE FUNDING

- 255 Brickyard - Totem Lake - Kirkland - Seattle
- 271 Eastgate - Bellevue - U. District
- 545 Redmond - Seattle
- 550 Bellevue - Seattle
- B Line Redmond - Overlake - Crossroads - Bellevue
- 240 Bellevue - Factoria - Renton
- 245 Kirkland - Crossroads - Eastgate - Factoria
- 535 Lynnwood - Bellevue
- 556 Issaquah Highlands - Seattle
- 560 Bellevue - Renton - Westwood Village
- 221 Ed. Hill - Redmond - Crossroads - Eastgate
- 226 Eastgate - Crossroads - Bel-Red - Bellevue
- 234 Kenmore - Kirkland - Bellevue
- 235 Totem Lake - Kirkland - Bellevue
- 246 Bellevue - Factoria - Somerset - Eastgate
- 249 Overlake - S. Kirkland - Medina - Bellevue
- 272 Issaquah - Eastgate - Bellevue
- 113 Lake Kathleen - Seattle
- 114 Renton Highlands - Seattle
- 142 Renton - U. District
- 212 Eastgate - Seattle
- 215 North Bend - Issaquah - Eastgate - Seattle
- 216 Bear Creek - Sammamish - Eastgate - Seattle
- 217 Seattle - Eastgate - North Issaquah
- 218 Issaquah Highlands - Seattle
- 232 Duvall - Redmond - Overlake - Bellevue
- 237 Woodinville - Totem Lake - Bellevue
- 242 North Seattle - Overlake
- 243 North Seattle - Montlake - Bellevue
- 250 Overlake - Seattle
- 265 Overlake - Houghton - Seattle
- 269 Issaquah - Sammamish - Overlake
- 342 Shoreline - Bothell - Bellevue
- 532 Everett - Bellevue
- 540 U. District - Kirkland
- 555 Issaquah Highlands - Northgate
- 556 Issaquah Highlands - Northgate
- 566 Auburn - Kent - Renton - Bellevue - Overlake
- 567 Kent - Bellevue - Overlake

MAJOR HUBS

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271, 550, B Line, 240, 535, 560, 226, 234, 235, 246, 249, 272, 232, 237, 243, 342, 532, 555, 556, 566, 567
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OVERLAKE TC
545, B Line, 245, 249, 250 232, 242, 269, 566, 567
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545, B Line, 221, 232
KIRKLAND TC
255, 245, 234, 235, 540
SOUTH KIRKLAND P&R
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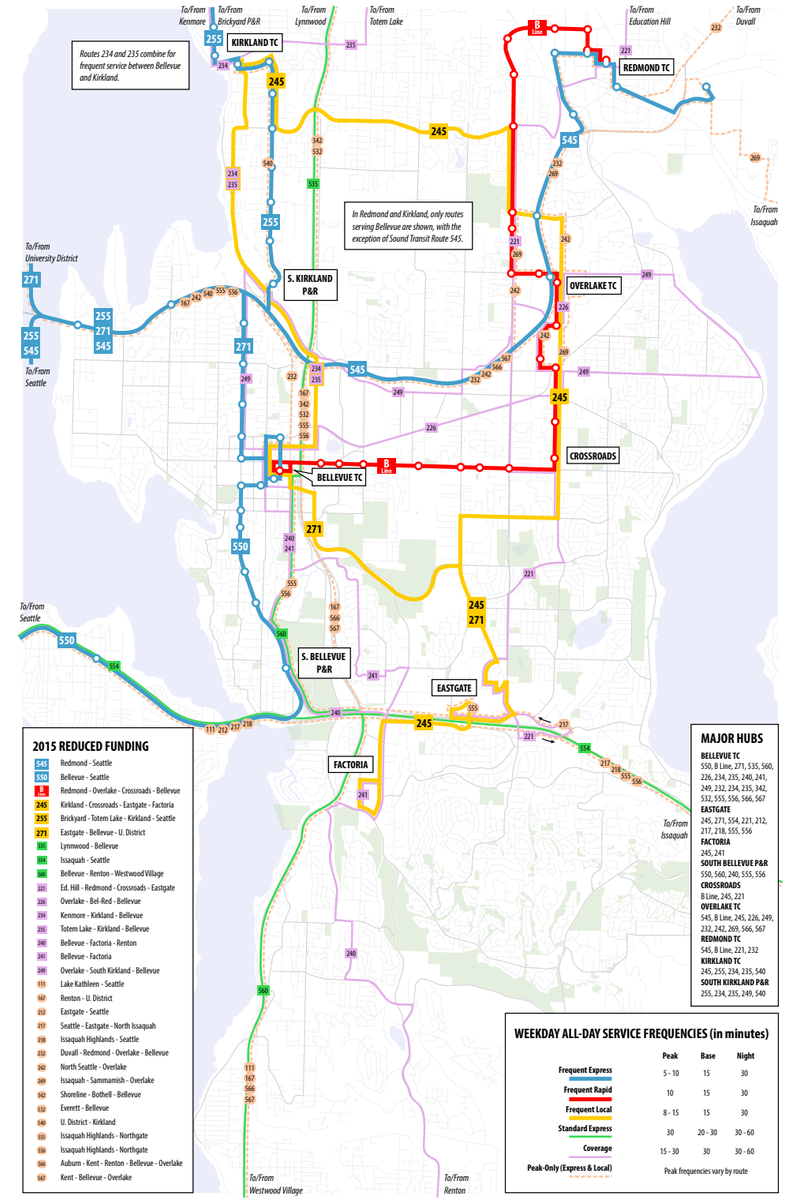
Frequent Rapid	8	10 - 15	30
Frequent Local	8 - 15	15	30
Standard Express	30	20 - 30	30 - 60
Coverage	15 - 30	30	30 - 60
Peak-Only (Express & Local)	Peak frequencies vary by route		

2015 | Reduced Funding



2015 REDUCED FUNDING

- 545 Redmond - Seattle
- 550 Bellevue - Seattle
- B Line Redmond - Overlake - Crossroads - Bellevue
- 245 Kirkland - Crossroads - Eastgate - Factoria
- 255 Brickyard - Totem Lake - Kirkland - Seattle
- 271 Eastgate - Bellevue - U. District
- 535 Lynnwood - Bellevue
- 556 Issaquah - Seattle
- 560 Bellevue - Renton - Westwood Village
- 221 Ed. Hill - Redmond - Crossroads - Eastgate
- 226 Overlake - Bel-Red - Bellevue
- 234 Kenmore - Kirkland - Bellevue
- 235 Totem Lake - Kirkland - Bellevue
- 240 Bellevue - Factoria - Renton
- 241 Bellevue - Factoria
- 249 Overlake - South Kirkland - Bellevue
- 113 Lake Kathleen - Seattle
- 142 Renton - U. District
- 212 Eastgate - Seattle
- 217 Seattle - Eastgate - North Issaquah
- 218 Issaquah Highlands - Seattle
- 232 Duvall - Redmond - Overlake - Bellevue
- 242 North Seattle - Overlake
- 269 Issaquah - Sammamish - Overlake
- 342 Shoreline - Bothell - Bellevue
- 532 Everett - Bellevue
- 540 U. District - Kirkland
- 555 Issaquah Highlands - Northgate
- 556 Issaquah Highlands - Northgate
- 566 Auburn - Kent - Renton - Bellevue - Overlake
- 567 Kent - Bellevue - Overlake

MAJOR HUBS

BELLEVUE TC
550, B Line, 271, 535, 560, 226, 234, 235, 240, 241, 249, 232, 234, 235, 342, 532, 555, 556, 566, 567
EASTGATE
245, 271, 554, 221, 212, 217, 218, 555, 556
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KIRKLAND TC
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SOUTH KIRKLAND P&R
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Peak-Only (Express & Local)	Peak frequencies vary by route		

Figure 90 2015 Proposed Network Maps. Route-level details are available for each funding scenario in the *Transit Service Vision Report*.

Unfold for full-size map

2015 Growing Resources

In the 2015 Growing Resources scenario, existing service patterns are largely retained but some opportunities are taken to move the network toward a future in which frequent service connects all of Bellevue's major centers to each other and to the region. The 2015 Growing Resources scenario resembles existing service except for the following improvements.

The key missing link in Bellevue's frequent network is filled with the addition of frequent service between Downtown Bellevue and Factoria, provided by a revised Route 240. This service runs through South Bellevue so that it can also be used for all-day travel between Factoria and Seattle via a connection to Frequent Express 550 at South Bellevue Park-and-Ride. While the existing Route 240 serves Eastgate between Downtown Bellevue and Factoria, this deviation is eliminated in favor of less-circuitous routing. Easy connections to Eastgate and points farther northeast can be provided with timed transfers with Route 245 at Factoria.

Because SR-520 construction will move the Evergreen Point and Yarrow Point Freeway Stations to the center lanes, Route 271's routing is revised to access SR-520 via Bellevue Way NE, which allows for sufficient travel distance for buses to merge to the center lanes. Route 271 has been seprated into two separate routes at Eastgate. Buses on the local infrequent routing from Issaquah proceed into Bellevue as Route 272 via the routing of existing Route 240. The loss of local service in Medina is mitigated by revising the segment of existing Route 249 between South Kirkland Park-and-Ride and Downtown Bellevue. It will replace the deleted Route 271 segment through Medina via SR-520, Yarrow Point, 84th Ave NE, NE 12th St, Lake Washington Blvd NE, NE 1st St, and NE 8th St.

Because of duplication and service overlap of existing Routes 241 and 246 in south Bellevue, both

routes are combined into a new Route 246, which is designed to provide service to all of the streets that are currently served. The northern terminus of the route in Clyde Hill is also extended farther north to the Yarrow Point Freeway Station, where connections can be made to frequent service on SR-520.

2015 Stable Funding

As noted, this scenario is nearly identical to the Growing Resources scenario. The only differences from the Growing Resources scenario are in the extent of low-ridership coverage service provided. In the Stable Funding Scenario, low-ridership coverage in Enatai and on 100th Ave NW in northwest Bellevue is eliminated, and the simplification of routes through Somerset also reduces some coverage service there.

Both of these are minor reductions in coverage, because other services generally remain within a one-quarter mile walking distance and are never more than one-half mile away.

2015 Reduced Funding

The Reduced Funding scenario envisions a 17 percent decrease in Metro operating resources, consistent with current projections absent a new source of funding. Sound Transit resources remain approximately constant, but the cumulative result is a substantial cut to transit service at a time when transit demand is rising. This scenario will be damaging to so many of the basic interests that transit serves that it requires extraordinarily difficult choices to be made.

In this scenario, the most urgent needs, based on the *Market Based Strategies*, are (i) not to damage long-term growing markets by cutting their service more than necessary because their demand is rising, and (ii) not to betray the promise of transit implied by the city's transit-oriented development, including all the major areas of intensification in the city. Bellevue is already encouraging high-density, mixed use development in certain key corridors. This kind of

Figure 91 Route 210 provides peak-only service between Issaquah and Downtown Seattle via Newcastle, Eastgate, and Factoria. In Spring 2012, it was among the bottom 25% least productive routes that serve the Seattle core.

Figure 92 Route 242 provides peak-only service between north Seattle and Overlake via Northgate and SR-520. In Spring 2012, it was among Metro's top 25% most productive routes that do not serve the Seattle core by one measure.

Figure 93 Along with Routes 210 and 242 above, Route 243 (north Seattle–Bellevue) is among the twelve Bellevue routes slated for deletion as part of Metro's 2014–2015 service cuts. Route 243 was among the 25% least productive routes serving the Seattle core.

density requires frequent all-day service to be livable and functional, so cutting all-day frequencies that need to grow in the future undermines the livability and thus the viability of this growth. For this reason, it is recommended that all-day headways in high demand local and regional corridors—the future Frequent Transit Network—be protected.

Instead, two types of cuts should be made relative to the existing system: (i) deleting peak-only routes that operate empty in the counter-flow direction, and (ii) deleting low-performing coverage routes. One-way peak express service is the most expensive kind of service for a transit agency to operate. Therefore, in a manner mostly consistent with Metro recommendations, this scenario eliminates secondary peak services so that peak resources can be devoted to simpler, frequent patterns focused on park-and-rides and transit connections rather than on driving around in lower-density neighborhoods. This scenario assumes that Metro and Sound Transit will continue to acquire and deploy higher capacity buses, but apart from this, the core assumption is that everyone is going to feel considerable pain from these cuts and that cuts to peak express service—because of its high operating cost—are an inevitable area of focus.

Permanently low-ridership coverage service, which exists for reasons other than ridership, must be trimmed in this scenario. Again, this is done where the alternative is to cut services on which the livability of dense mixed-use neighborhoods rely. While these cuts will be controversial and will involve significant impacts on small numbers of people, the alternative is to cut higher-ridership services that affect larger numbers. For this reason, coverage service is eliminated in this scenario in northwest Bellevue (west of Bellevue Way), Somerset, Enatai, and all areas east of 156th Avenue between NE 20th St and I-90. Local service is retained in areas that have somewhat stronger markets or are 'on the way' between major activity centers.

It is worth noting that in the Reduced scenarios of later years, coverage is cut much further. However, those years also have more restructuring that creates a more distinct separation between low-ridership coverage services and high-ridership services. The current network has many routes that mix these functions, making their service levels harder to set. Though to a lesser extent than later time horizons, the Growing and Stable scenarios in 2015 also improve the separation of functions. In future scenarios, where more restructuring is possible, stronger segments are assigned to FTN lines, allowing coverage elements to be more easily deleted in low-resource scenarios.

It is important to emphasize that the 2015 Reduced Funding scenario is a "share the pain" vision. Few people, if anyone, can be expected to like it. In transit, it is always impossible to share pain (or benefit) exactly equally. Some riders are simply much more expensive to serve than others, so when cutting service while trying to protect as much ridership as possible, cuts tend to fall more heavily on those more expensive-to-serve customers. Again, however, the balance of investments in ridership versus investments in low-ridership coverage is ultimately a value judgment. This scenario, like all the scenarios in this report, proposes a position on that decision based on the *Market Driven Strategies Report*, but other equally valid judgments could be made about the relative importance of coverage versus ridership goals.

Figure 94 In the Reduced Funding scenario, Routes 221 and 226 would both be revised to provide more limited coverage, eliminating service to parts of Bellevue east of 156th Ave.

Figure 95 In the Reduced Funding scenario, Route 249 will also be revised to provide more limited coverage, eliminating service to Enatai (pictured) and Medina.

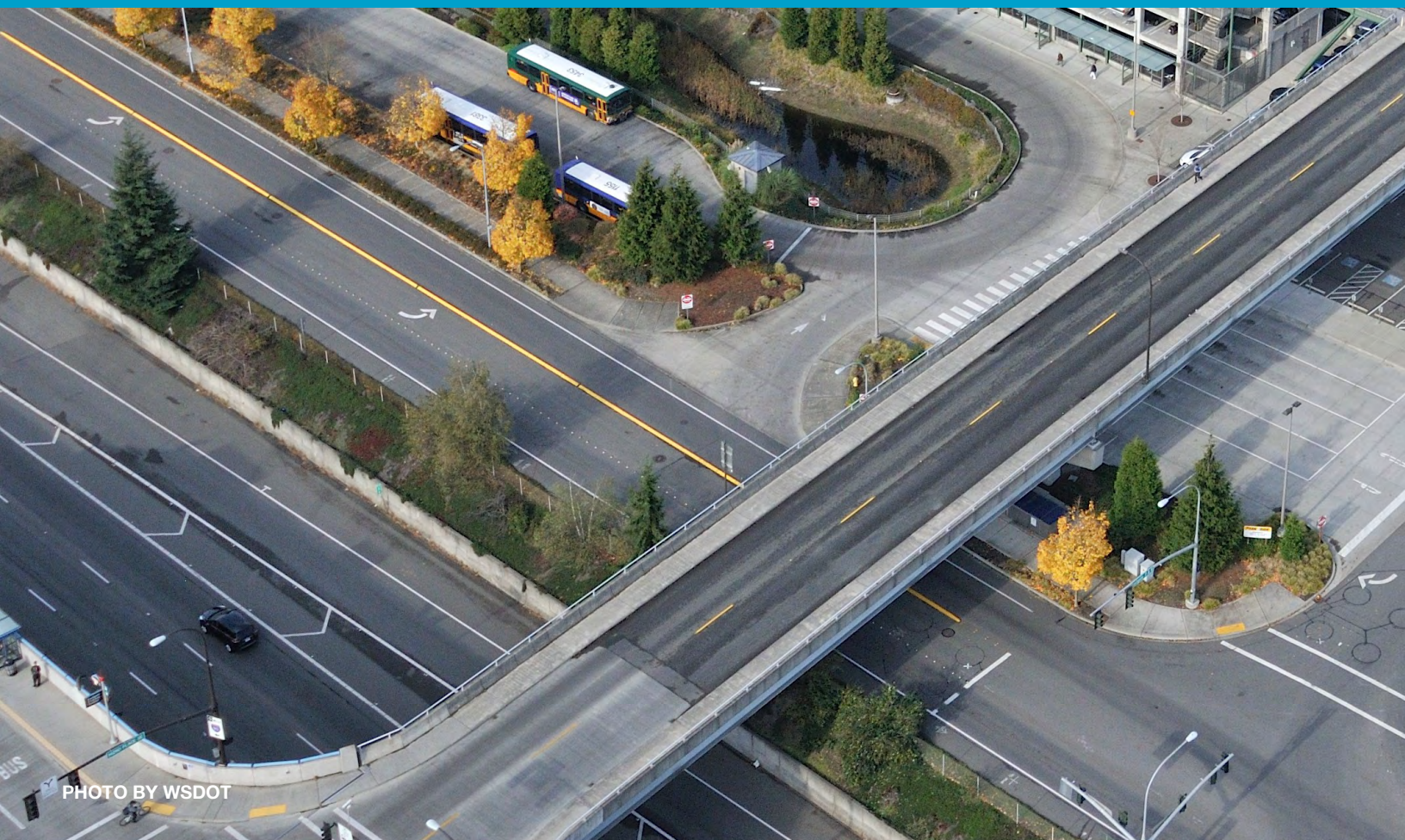


PHOTO BY WSDOT

SECTION 4:

CAPITAL ELEMENT

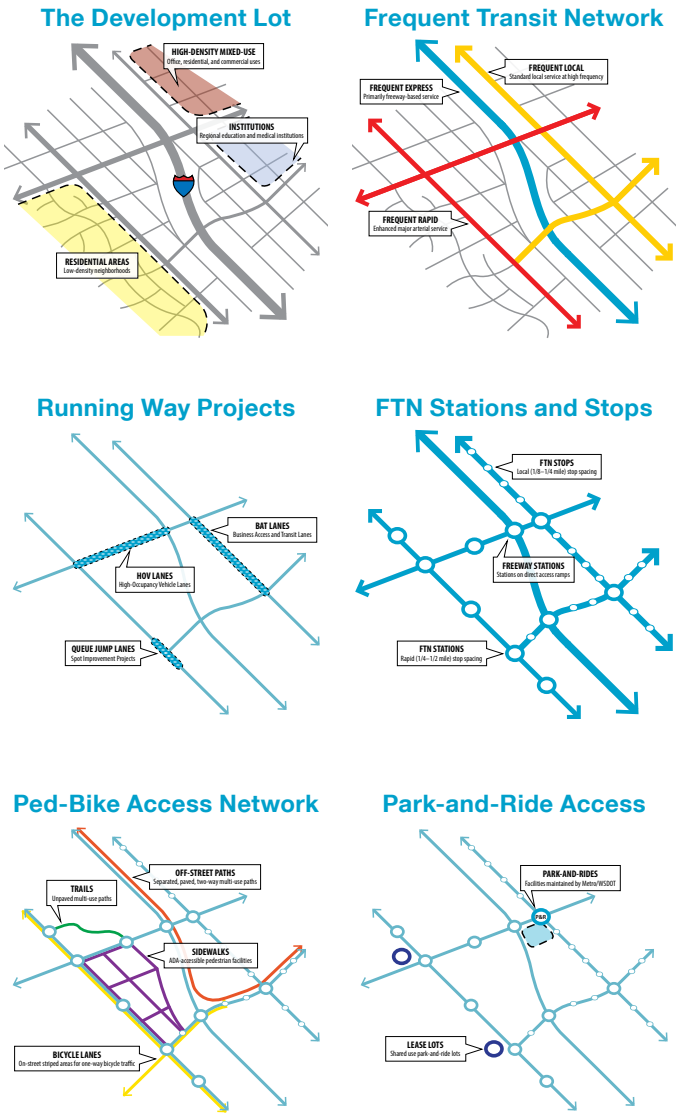
CAPITAL VISION

CONTEXT

The Capital Element seeks to address the variety of means through which the City can positively affect the operation and user experience of transit within Bellevue. While the City of Bellevue does not operate its own bus system, it must play a critical role in ensuring that high quality transit is available to keep Bellevue moving. Specifically, the City has the authority to:

- Manage street rights-of-way on which transit operates. By investing in state-of-the-art adaptive traffic signal systems with transit signal priority, Bellevue reduces transit vehicle delay, travel time, and the number of stops on city streets.
- Develop and manage sidewalks and bicycle facilities. By creating accessible communities that seamlessly integrate the pedestrian, bicycle, and transit networks Bellevue increases the market demand for public transportation.
- Set land use policies. By creating vibrant concentrations of retail, office, service, residential, and recreational activity, Bellevue ensures that the greatest possible number of residents and employees have access to high quality transit.
- Use transit as a tool to support the Bellevue Comprehensive Plan. By adopting transit supportive policies, Bellevue has clarified its commitment to public transportation as part of a balanced strategy to improve mobility and meet sustainability and economic development goals.
- Advocate for Bellevue residents and businesses in regional forums. By working with residents and businesses to identify the City's transit needs, Bellevue has been successful in identifying and attracting new transit investments.

Figure 97 The graphics below illustrate how the component parts of the service and capital visions relate to one another and support existing and planned land uses in Bellevue.



The Capital Vision addresses four topics based on the areas over which the City of Bellevue has influence on the attractiveness and performance of transit services locally. This includes influencing demand for transit by co-locating appropriate land uses to transit services, connecting pedestrians and bicyclists to the transit network, providing convenient, safe, and comfortable transit stops, and maintaining roadways, traffic signals, and other infrastructure that supports efficient and reliable operations. All aspects of the transit trip should be designed with a focus on the experience of the transit rider. These topics are organized in terms of both increasing specificity to transit operations and in the same order that they are experienced by transit users from the beginning of a transit trip. The following pages provide a brief review of each of the major issues addressed in each of the topics listed at right and shown in Figure 98 below. For additional information about each of these topics, refer to the *Transit Capital Vision Report*.

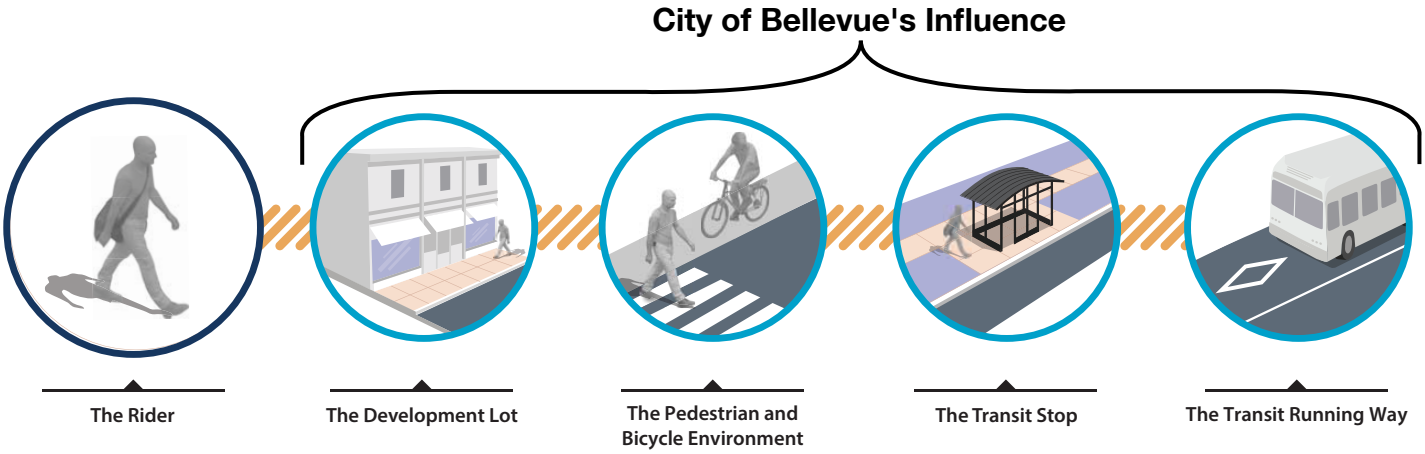
The Development Lot is where all transit trips begin. This section addresses the relationship between land use and transit services.

The Pedestrian and Bicycle Environment serves as the primary link between transit users' points of origin and transit services. More direct connections and hospitable facilities encourage greater use of transit.

The Transit Stop is the first point of contact between the passenger and the transit service. This is where pedestrians, bicyclists, and park-and-ride users transition from their mode of access to transit users.

The Transit Running Way encompasses the street rights-of-way on which transit services operate. While transit service providers define routes and schedules and operate the vehicles, the city builds and maintains roadway and traffic signal infrastructure, which significantly impact the speed and reliability of transit services.

Figure 98 Areas related to transit capital facilities over which the City of Bellevue has influence.

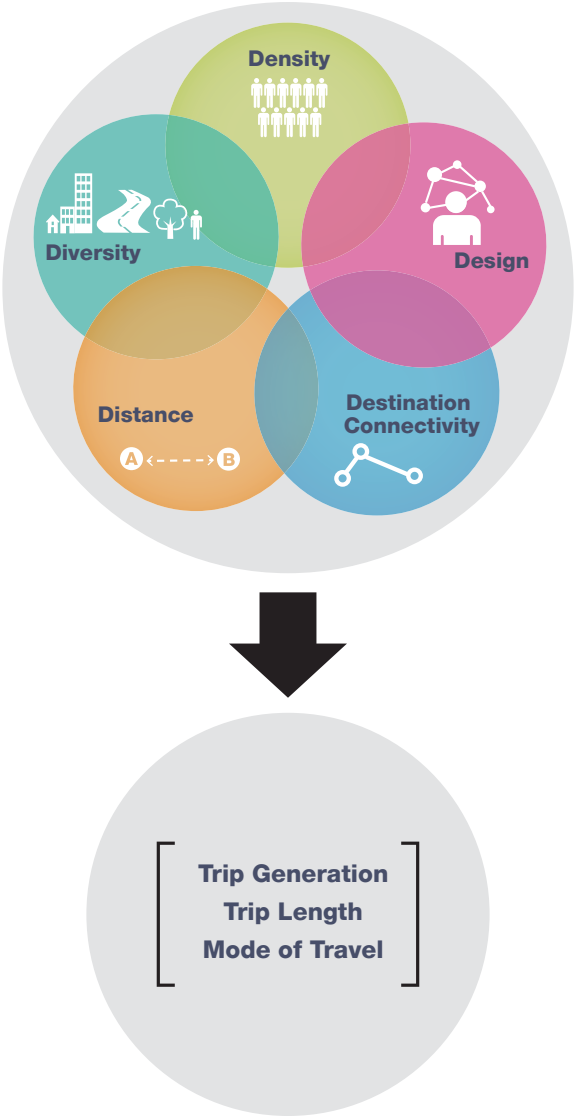


THE DEVELOPMENT LOT

"Better [integrate] land use and transportation, so that people have more choices in how they move around. This will require better pedestrian linkages for new and existing developments, and a density and mix of land uses that encourage walking and transit in appropriate locations."

- Land Use Element, *City of Bellevue Comprehensive Plan (2004: 35)*

Figure 99 The "5 Ds" of the built environment that can encourage mode shift from single-occupant vehicles (SOVs) to alternatives like public transit.



The Five Ds of the built environment—*density*, land use *diversity*, pedestrian-oriented *design*, *destination* accessibility and connectivity, and *distance* to transit—are commonly cited as the built environment factors that can encourage mode shift from single-occupant vehicles (SOVs) to public transportation, walking, and bicycling. The development lot represents both the origin and destination of every transit trip and relates to the first three Ds. The development lot includes parcels of private property (e.g. housing, offices, commercial services) and public places (e.g. schools, community centers, parks). The density, diversity, and design of these places are influenced by the zoning and subdivision regulations designated in the Comprehensive Plan.

Bellevue is a city with substantial variety in land uses, development types, and urban form. Factors that differentiate development types include urban structure (the spatial layout of a city), density (in terms of residential and employment), and design (site configuration and the dimensions and design of elements in the public realm). All of these factors affect the performance of transit in a community. The city's diverse neighborhoods have developed over a period of many decades, each reflecting the prevailing trends and consumer preferences of their time. Residential areas range from low-density single-family subdivisions and equestrian lots to mid- and high-rise apartments and condominiums. Emplyoment centers have developed in several parts of the city, ranging from auto-oriented retail and office park developments with large surface parking lots and building setbacks to the dense, mixed-use, increasingly walkable Downtown core.

Although the character of many areas will generally remain as they are today, particularly Bellevue's established single-family residential neighborhoods, other areas will realize significant changes in the

coming years. Bellevue's Comprehensive Plan—currently undergoing its decennial update—notes that a mix of employment and residential uses will continue to concentrate in Downtown, one of the major urban centers in King County. As the city center continues to grow, providing people with more transportation choices will be a key to realizing the viable, livable, memorable Downtown with a strong and diverse economy that the plan envisions. Additionally, the Bel-Red area, historically the city's warehouse and manufacturing district, is transitioning into an area of mid-rise mixed-use office, retail, and residential land uses, coinciding with the extension of Sound Transit's regional light rail network through the area.

While it is neither necessary nor recommended that all places look and function the same, it is important to recognize that some fundamental characteristics of urban form and site design increase the likelihood that an area will support access

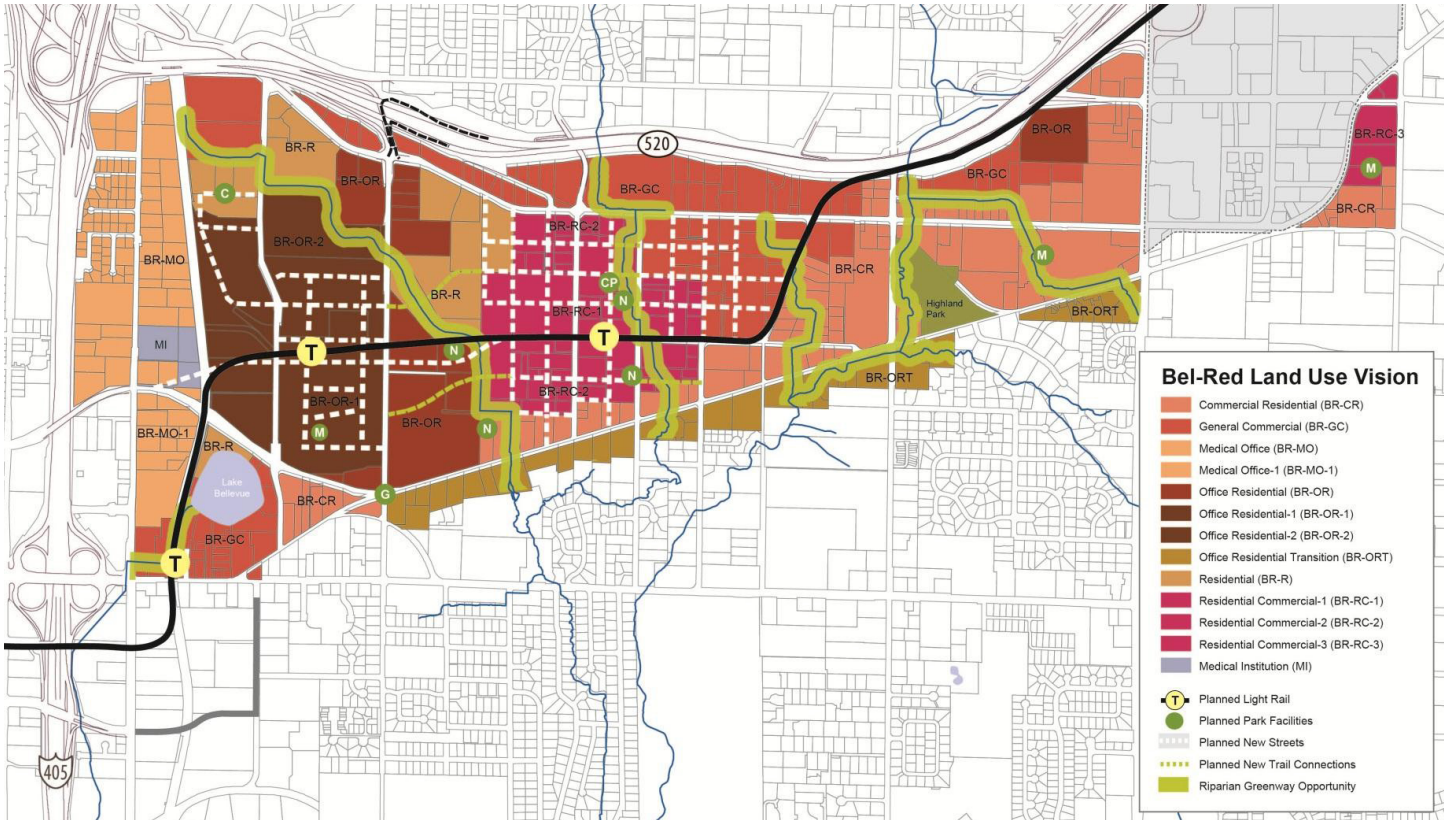
Figure 100 Bellevue is characterized by a wide variety of land use types, ranging from single-family residential neighborhoods to the dense, mixed-use Downtown core.

IMAGERY FROM Bing Maps

to and the operation of transit. The Transit Master Plan "Abundant Access" vision statement aims to provide "efficient, useful, attractive service for the most people, to most destinations, most of the time, serving maximum ridership." Thus, while coverage services will be provided to the extent possible with available resources, when trade-offs are required, places that foster productive service are prioritized. For additional information about the service-oriented strategies and future transit networks proposed by the Transit Master Plan, refer to the *Market-Driven Strategies Report* and *Transit Service Vision Report*.

Looking to the future, between 2010 and 2030 the City of Bellevue as a whole is expected to increase in population by over 28,000. Downtown is expected to accommodate about 45 percent of this projected growth, Bel-Red will accommodate almost another third of projected growth, and other mixed use areas about 16 percent. The number of jobs in Bellevue is expected to increase by over 54,000 between 2010 and 2030. Downtown Bellevue is projected to capture over half of these jobs, Bel-Red about 18

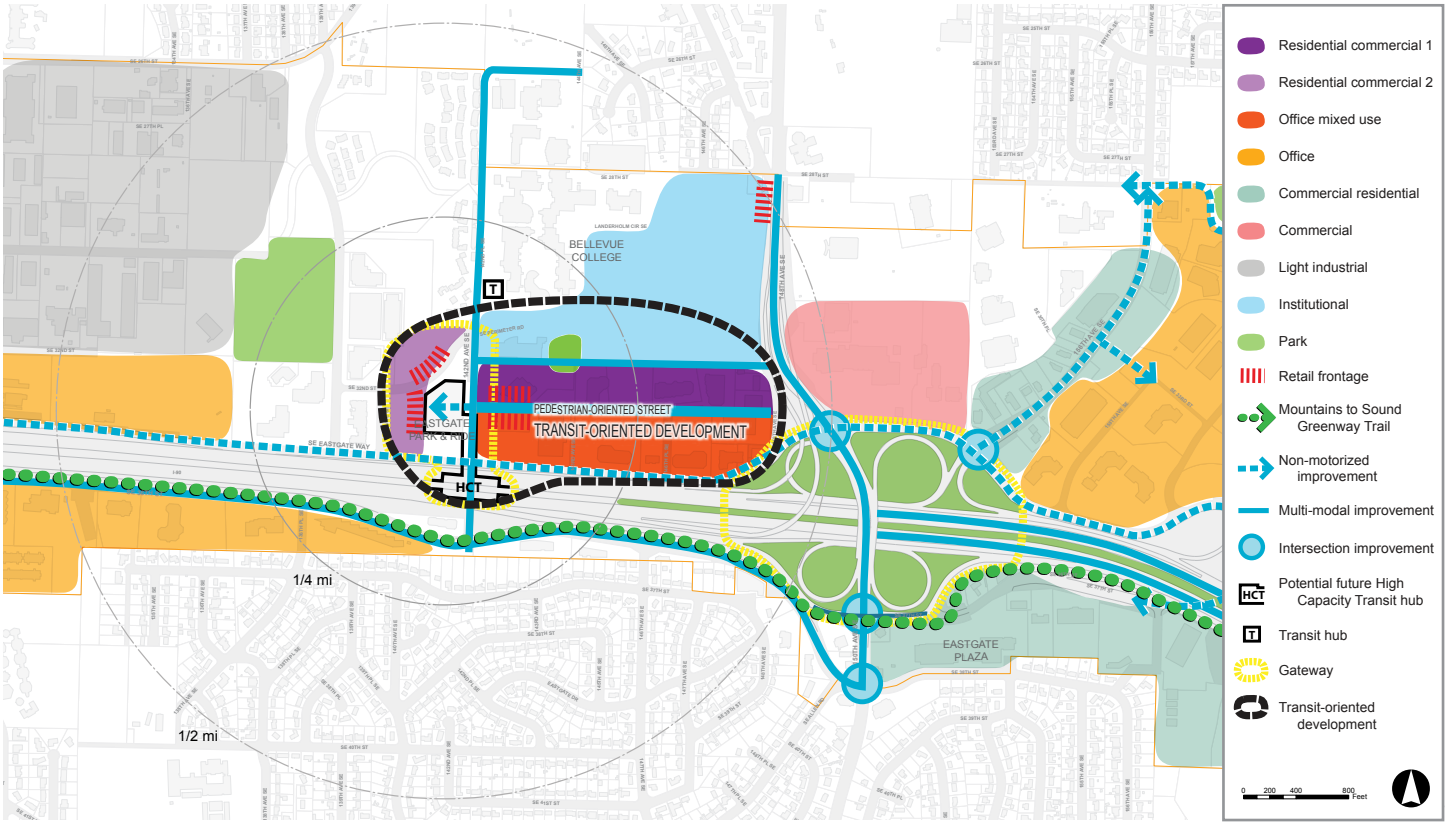
Figure 101 Artist rendering and land use vision of the future Bel-Red area—a transit-oriented, mixed-use neighborhood following the introduction of East Link light rail in 2023.



percent, and Eastgate almost 14 percent. Other commercial and industrial lands in the city will capture the remaining 12 percent of projected job growth. Focusing growth and development around these major transit stops allows more people to live near transit services, and makes more destinations accessible by transit.

To support this growth, it will be critical to integrate the provision of enhanced transit supply with a supportive land use mix, together with enhanced transit passenger and walking amenities, as well as transit supportive infrastructure. There are a number of promising trends that suggest the continued improvement of transit as a viable mobility option for Bellevue residents.

Figure 102 The Bellevue College Connection Multimodal Transportation Corridor (Project L27) will contribute to the integration of a balanced transportation system in Eastgate that emphasizes transit and non-motorized connectivity with Bellevue College and a cluster of mixed-use residential, retail, and office buildings around a new pedestrian-friendly "main street" envisioned east of the park-and-ride, creating a vibrant urban neighborhood where people can live, work, shop, learn, and recreate. The map below is an excerpt from the Eastgate/I-90 Land Use and Transportation Report.



THE PEDESTRIAN AND BICYCLE ENVIRONMENT

Figure 103 The SE 28th Pl stairs to 112th Ave NE dramatically reduce the network-based walking distance to the South Bellevue Park-and-Ride for portions of the Enatai neighborhood.

Figure 104 Users of Route 114 and 240 must walk along the shoulder to reach this bus stop (zone 65620)—southbound on 119th Ave SE just north of SE 56th St in Newport Hills, which serves about 50 ons/offs daily—because no sidewalk is provided to connect pedestrians from the intersection crosswalk to the bus.

A transit system involves the superimposition of two networks: the access network, used by people to reach the system, and the service network provided by bus operators, with the bus stop serving as the point of connection between the two. All transit users are pedestrians for some part of their trip, so the provision of an accessible pedestrian network is an essential component of a useful transit system. If potential transit users are unable to reach a bus stop easily, quickly, and reasonably directly, they are more likely to consider alternative travel modes if any are available to them.

A preliminarily assessment of access to the 2030 transit networks is provided by Figure 105. White areas on the maps are within one radial quarter-mile of a transit stop served by one or more FTN or Coverage routes in 2030.[18] Because population and job growth is anticipated primarily within Bellevue's mixed-use centers, all of the 2030 networks are expected to provide access to transit for larger shares of Bellevue's residents and jobs than enjoyed access in 2012.[19] For example, whereas 63 percent of jobs were within one radial quarter-mile of 15-minute transit service during the AM peak in 2012, 82 percent will have such access in 2030 regardless of funding scenario. Likewise, all funding scenarios will result in larger shares of households with access to 15-minute service in 2030 (approximately 58 percent for each) than in 2012 (42 percent). However, as shown in Table 3, access to 30-minute service is diminished in the Stable and Reduced Funding scenarios, corresponding to the reduction and elimination of Coverage service in these networks.

18 The *Transit Service Vision Report* also presents access maps reflecting half-mile radii around FTN and Coverage service bus stops. Although further than many riders who choose to use transit may be willing to walk, a half-mile remains a reasonable service distance to provide for those who depend on transit for some or all of their personal mobility needs.

19 Refer to the *Existing and Future Conditions Report* for additional information about access to the 2012 transit network.

The Transit Master Plan considers existing pedestrian and bicycle projects proposed by other planning efforts and identifies which may specifically improve non-motorized access to transit. No new pedestrian or bicycle projects are proposed.[20] The assessment completed to date represents only an initial screening of the projects identified by the *2009 Pedestrian and Bicycle Transportation Plan Report* and the *Eastgate/I-90 Transportation Strategies Report*. Any project that has some portion within one quarter-mile of an FTN bus stop is identified as a priority for transit at this stage (see Figure 107).

The basic assessment summarized here does not assign any priority ranking to a project for which this has not already been done. The 2009 Ped-Bike Plan assigns priorities of high, medium, and low based on a variety of criteria, one of which is quarter-mile proximity to and stop-level ridership at a bus stop. However, transit considerations were only one part

20 Two existing 2009 Ped-Bike Plan projects (S-464 and B-146) are modified to reflect the concepts identified by Running Way Project L27, the 142nd Pl SE/Snoqualmie River Rd Multimodal Transportation Corridor. Refer to Appendix B1 of the *Transit Capital Vision Report* for details.

Table 3 Forecast (2030) populations in Bellevue within one-quarter and one-half mile radial areas of transit stops served by routes operating 15- and 30-minute frequencies.

Funding Scenario	2030 Employment Projection				Total Jobs
	Quarter-Mile		Half-Mile		
	15-min	30-min	15-min	30-min	
Growing	82.2%	93.3%	95.2%	98.6%	184,300
Stable	82.2%	89.8%	95.2%	97.2%	
Reduced	82.2%	82.2%	95.2%	95.2%	

Funding Scenario	2030 Households Projection				Total HH
	Quarter-Mile		Half-Mile		
	15-min	30-min	15-min	30-min	
Growing	58.1%	76.6%	75.4%	91.3%	70,300
Stable	57.7%	68.5%	75.3%	85.4%	
Reduced	57.8%	57.8%	75.3%	75.5%	

Funding Scenario	2030 Population Projection				Total Pop
	Quarter-Mile		Half-Mile		
	15-min	30-min	15-min	30-min	
Growing	51.2%	72.6%	69.9%	89.3%	157,400
Stable	50.9%	63.2%	69.8%	82.1%	
Reduced	50.9%	51.0%	69.8%	70.0%	

Figure 105 Access to transit in Bellevue within one-quarter mile of 30-minute or better service on weekdays in 2030.

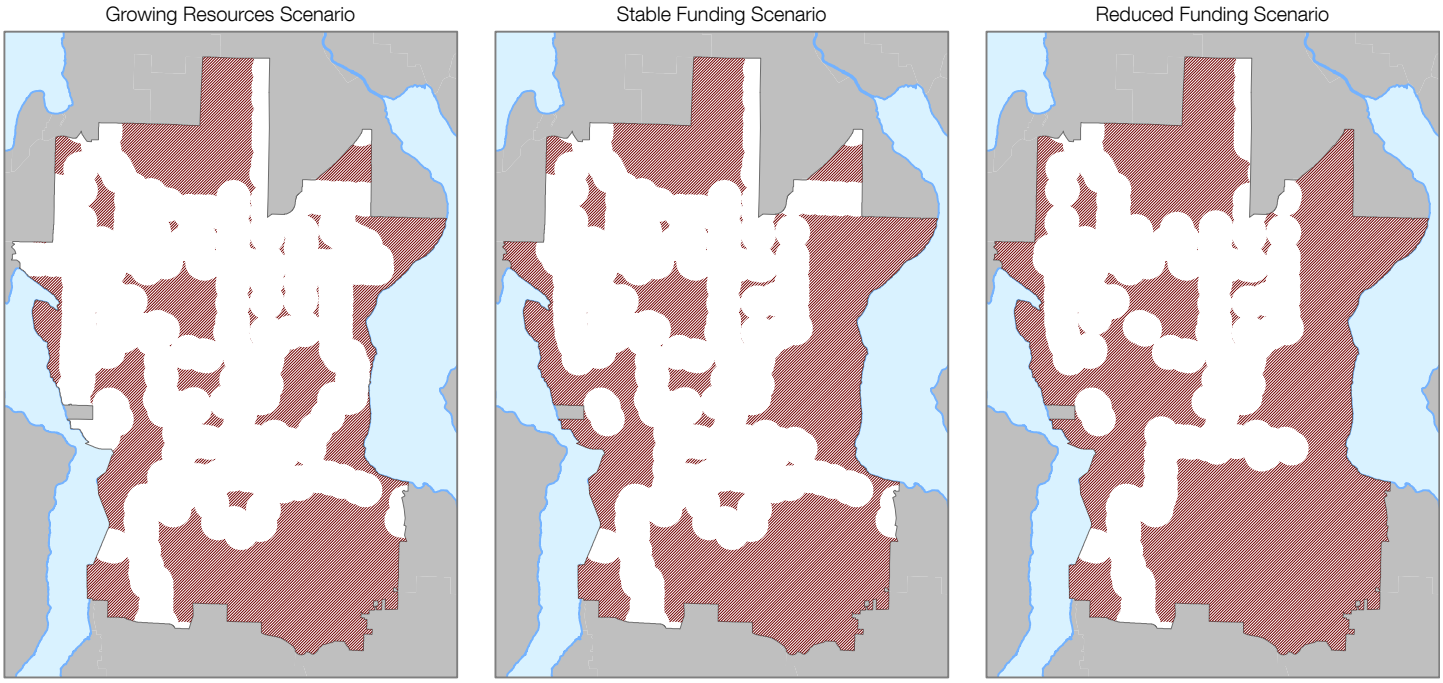


Figure 106 Existing non-motorized transportation facility types, as identified by the *2009 Pedestrian and Bicycle Transportation Plan Report.*

Table 4 Preliminary screening of transit priority pedestrian and bicycle projects.

Project Type	High Priority*		Total Priority Ped-Bike Projects	
Sidewalk Projects	89	57.8%	**154**	**45.0%**
Bicycle Projects	48	40.7%	**118**	**34.5%**
Off-Street Path Projects	11	29.7%	**37**	**10.8%**
Trail Projects	18	62.1%	**29**	**8.5%**
Multimodal Intersections	0	0.0%	**4**	**1.2%**
All Projects	166	48.5%	**342**	

Note: Percentages in the center column reflect the number of each project type rated as High Priority. Percentages in the right column reflect the number of total projects of each type.

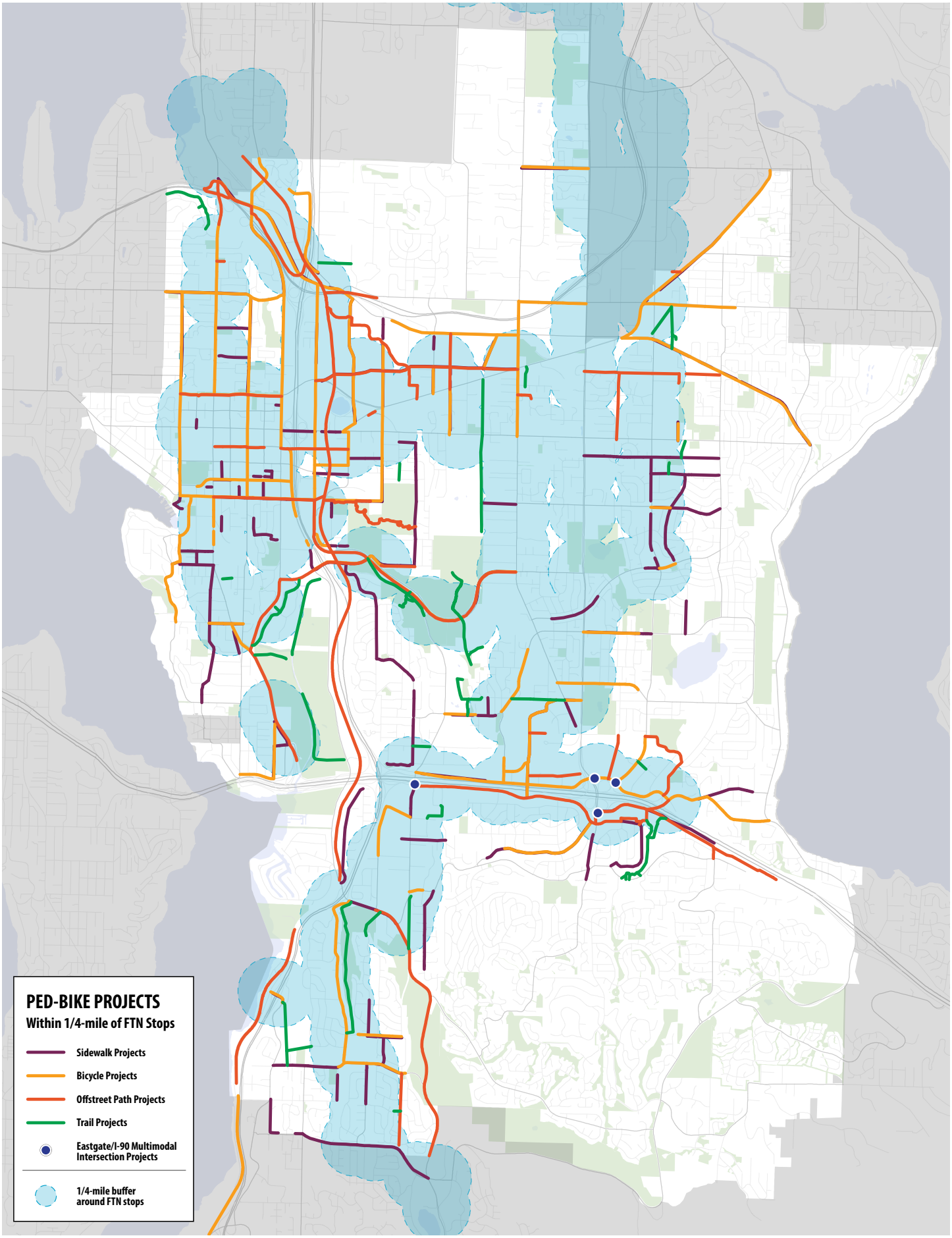
*Projects rated High Priority by the 2009 Pedestrian-Bicycle Plan project prioritization process.

of the overall prioritization scheme used in the 2009 Ped-Bike Plan, as the emphasis of that plan was not on transit. For the purposes of this preliminary screening of transit priority pedestrian and bicycle projects, these priority rankings are considered and reported, but the more rigorous access analysis currently underway will assign new, transit-centric priority rankings according to other metrics. The Eastgate/I-90 Plan did not assign priority rankings to any of the projects that it identifies.

As shown in Table 4, a total of 342 projects are identified as being transit priority non-motorized projects. Nearly half of these are sidewalk projects, of which nearly 60 percent are considered High Priority by the 2009 Ped-Bike Plan. Of the various project types, sidewalk projects are generally the most evenly distributed throughout the city. Bicycle facilities and off-street paths are somewhat less evenly dispersed throughout the city, with a particular abundance clearly identifiable in and around Downtown and Bel-Red. This is consistent with the more diffuse structure of the future bicycle network, except for the denser grids in these urban centers.

A more detailed analysis of access to transit is currently underway, which considers factors including network-based distance, travel time, route directness, and terrain grade. These factors will be used to assess the degree to which transit is accessible given current pedestrian and bicycle infrastructure and the degree to which access would be improved by transit-priority non-motorized transportation projects. This ongoing analysis will provide a quantitative assessment of how easily people beginning at any given property in the city can reach their nearest transit stop, benefitting the implementation of the Transit Master Plan, future updates of the Pedestrian and Bicycle Plan, and evaluation of the relationship between proposed route structures and land use designations.

Figure 107 Preliminary transit priority pedestrian and bicycle projects.



THE TRANSIT STOP

Figure 109 Transit use patterns in Bellevue based on Fall 2011 boarding and alighting (on/off) data.

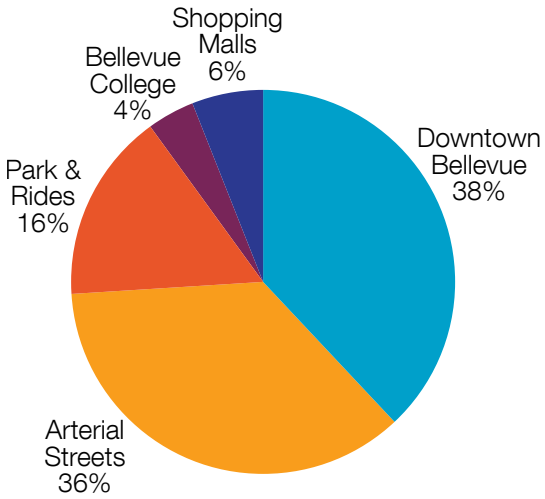
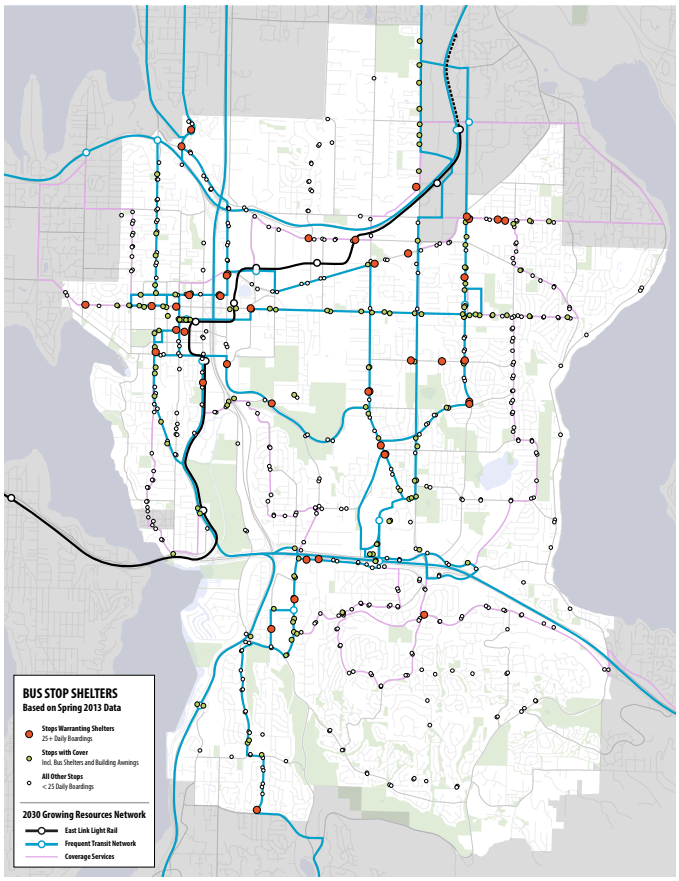


Figure 110 Bus stops warranting shelters based on Spring 2013 stop-level boardings and alightings (ons/offs).



The transit stop is the first point of interaction between the transit user and the transit system. The efficient placement of bus stops near major destinations with well-connected pedestrian and bicycle facilities helps to provide communities with viable transportation choices by making the entire transit trip shorter and more pleasant. Also important to the ability of transit to attract ridership is the quality and comfort of the transit stop and its environment.

The Transit Master Plan (TMP) does not make specific recommendations about bus stop locations for the route networks being proposed beyond the general stop spacing guidelines identified for the various service types. Instead, this section focuses on three other subjects related to the transit stop: bus stop amenities, commuter parking, and bus layover needs. The first two of these subjects relate primarily to how transit users experience their first point of contact with the transit system, while the third deals with operational considerations.

Bus Stop Amenities

Bus Shelters

As of Fall 2011, 84 percent of boardings and alightings in Bellevue took place outside of park-and-ride lots, with 36 percent at bus stops on local streets (see Figure 109). Waiting area amenities increase the convenience, comfort, safety, and usefulness of bus stops and influence the overall attractiveness of public transportation. Stop locations that are designed with paved waiting pads, shelters, benches, lighting, windbreaks, route information, trash bins, bicycle racks, and, in some cases, off-board pay stations and real-time arrival information make bus stops more hospitable places to be. The most fundamental of the various bus stop amenities is the bus shelter, which provides protection from the

elements and seating. Several factors influence the determination of need for various stop amenities. For stop shelters, the primary consideration is stop-level passenger activity. King County Metro's bus shelter warrant standard requires shelters to be installed at stops with 25 or more average daily boardings. Forty-three stops serve sufficient daily boardings to warrant a stop shelter but currently have no form of cover provided, as shown in Figure 110.

Other factors may also warrant installation of a bus shelter in the absense of high ridership. For example, stops with nearby healthcare facilities or services oriented toward older adults, rapidly growing areas, or areas that are particularly vulnerable to the elements, such as highway overpasses may indicate a need for targeted investment to improve passenger comfort and encourage additional transit use.

Schedule Information

When asked how the City should invest municipal resources to improve transit in Bellevue, 21 percent indicated that real-time bus arrival information should be provided at major stops, similar to that available at RapidRide B Line stations. Although King County Metro currently has no plans to implement this feature more broadly at standard bus stops throughout its service network, precedent exists for municipalities to pursue such investments on their own. For example, the Seattle Department of Transportation has installed digital monitors in downtown storefront windows adjacent to several high passenger activity bus stops that display real-time arrival data for all routes serving those stops (see Figure 113). Given sufficient community interest, available resources, and willing business property owners adjacent to transit stops, the opportunity exists for the City of Bellevue to consider pursuing such investments at costs many times less than most other transit infrastructure improvements.

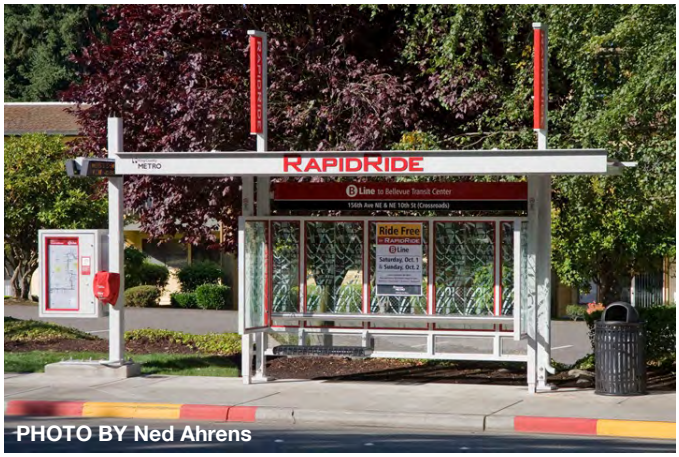


Figure 111 Stops served by RapidRide lines are distinguished from other services by the style and amenities at stations.

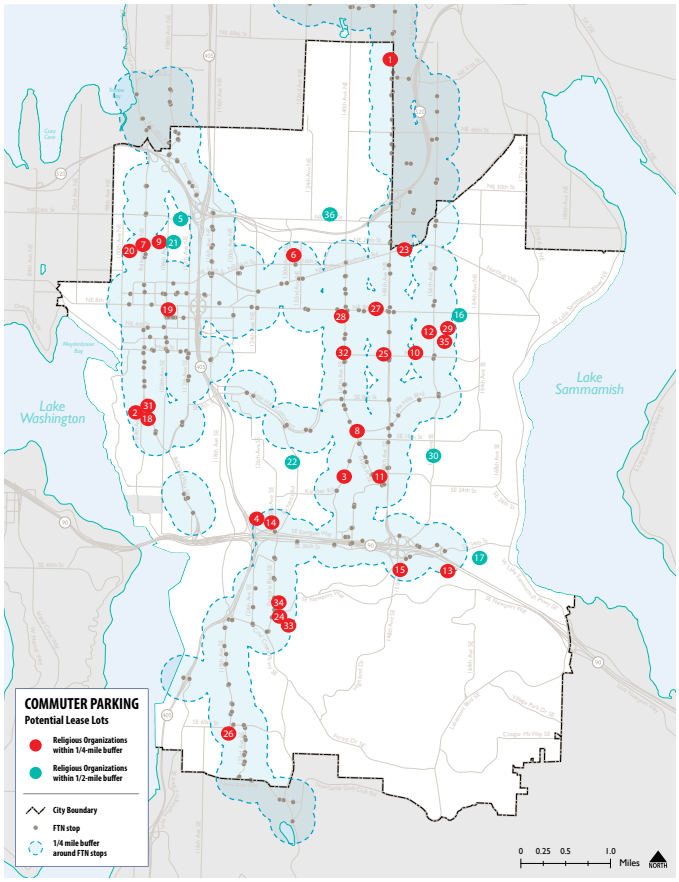
Figure 112 A covered pedestrian walkway at the Totem Lake Freeway Station on I-405 in Kirkland. Similar improvements are envisioned for the Eastgate Park-and-Ride and Freeway Station.

Figure 113 A digital signboard in Downtown Seattle, funded and installed bty the Seattle DOT, displaying real-time arrival information from OneBusAway.

Commuter Parking

Figure 115 The South Bellevue Park-and-Ride is often over capacity, with many vehicles parked along the shoulders of the driveway (circled).

Figure 116 Potential lease lots within one-quarter and one-half mile radial catchment areas of 2030 Frequent Transit Network stops.



Commuter parking facilities play an important role in concentrating transit rider demand, often in lower-density areas that would otherwise be unable to support frequent services. These facilities provide convenient access to transit via automobile or bicycle for people who do not live within convenient walking distance of a standard bus stop. By supporting the use of alternatives to the single-occupant vehicle, park-and-rides help to reduce the need for increasing roadway capacity as the region grows. Further, by concentrating transit boardings at a single point, a more frequent level of service can be supported.

Park-and-ride usage in the Puget Sound region over the past ten years can be summarized by two trends. First, there is an uneven regional distribution of park-and-ride use. Several lots east of Bellevue and/or an inconvenient distance from the FTN are under-capacity, while several lots in western Bellevue such as the South Bellevue Park-and-Ride are over-capacity. This imbalance indicates that lot location in relationship to the FTN is an important factor to consider when siting new facilities. Second, there is a trend of increasing utilization of park-and-ride lots overall, with the two study corridors reflecting a 63 percent increase between 2000 and 2013.

A review of 2030 projected commuter parking demand for the I-405 and I-90 corridors, considered in light of existing parking facilities, determined that there would be an undersupply of parking stalls available along these corridors if the 2030 Growing Resource network is implemented as proposed. If an unlimited supply of parking were available along each of the corridors, the I-90 and I-405 corridors would be short by approximately 6,300 and 4,600 stalls, respectively. Unconstrained demand is approximately double the constrained demand, suggesting that new riders will likely begin using the system given increased parking availability.

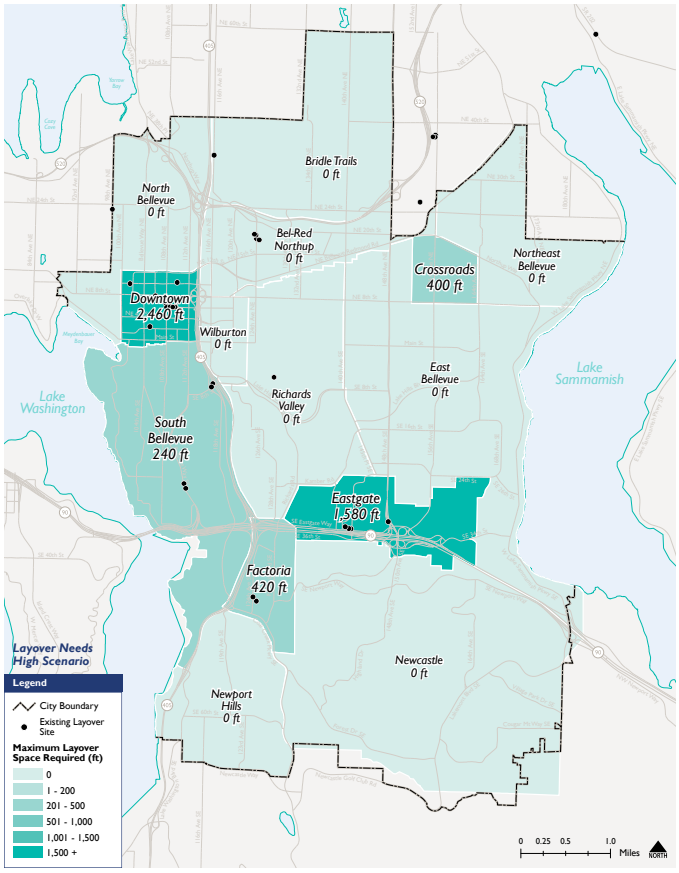
Leased lots—shared use park-and-ride lots—offer a means to better serve low-density residential areas. If all churches within a quarter-mile walking distance of the FTN were to share their parking, more than 3,500 stalls would become available. Figure 116 provides a reference map showing the twenty-five church locations that fall within a quarter-mile radius of FTN stops, as well as the seven additional churches that are within a half mile walking distance.

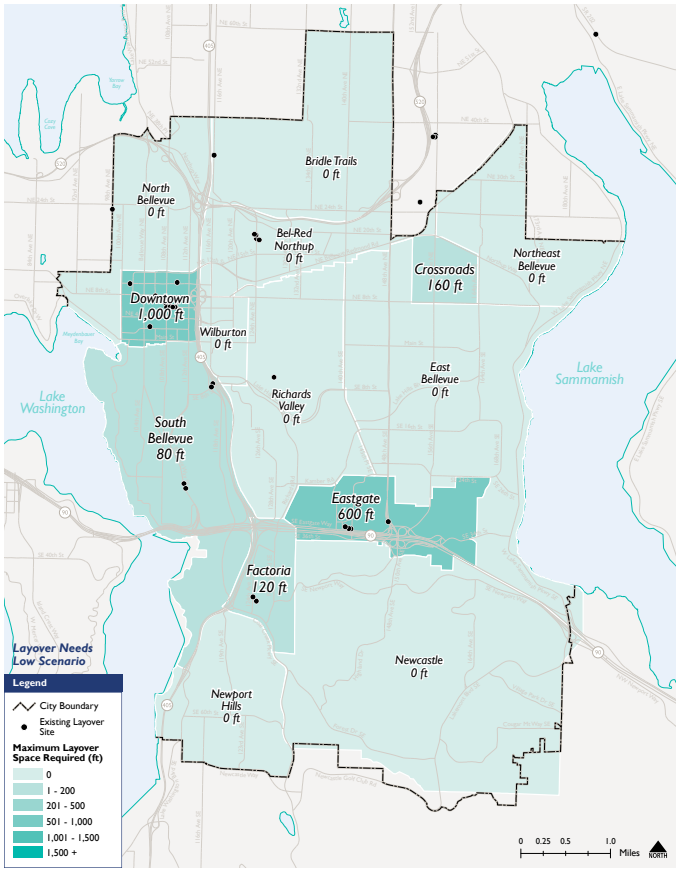
Bus Layover Needs

The layover, or amount of time between the end of one trip and the start of the next trip, requires that space be provided at transit facilities or designated along nearby streets or parking lots for transit vehicles to park while not in service. Inefficiencies result when vehicles must travel from their route terminal to reach the layover location. Understanding how much layover space will be required and where that space can most efficiently be accommodated can help to ensure that the scarce regional transit resources allocated to Bellevue are used to provide service to passengers, not lost to operational inefficiencies.

It is estimated that the maximum layover space required for the 2030 Growing Resources network will range from 3,560 to 8,480 feet, depending on the assumptions made. The two maps in Figure 117 depict the high and low layover need estimates by Mobility Management Area (MMA). It is estimated that approximately 7,000 feet of layover space currently exist in the study area that includes Bellevue and portions of other Eastside communities. While this total might be sufficient to accommodate the projected needs in aggregate, future proposed routes have different terminals than existing routes, so additional analysis will be required in the coming years to determine where these needs can be optimally accommodated.

Figure 117 Bus layover needs in linear feet by Mobility Management Area (MMA): low estimate (top) and high estimate (bottom).





THE TRANSIT RUNNING WAY

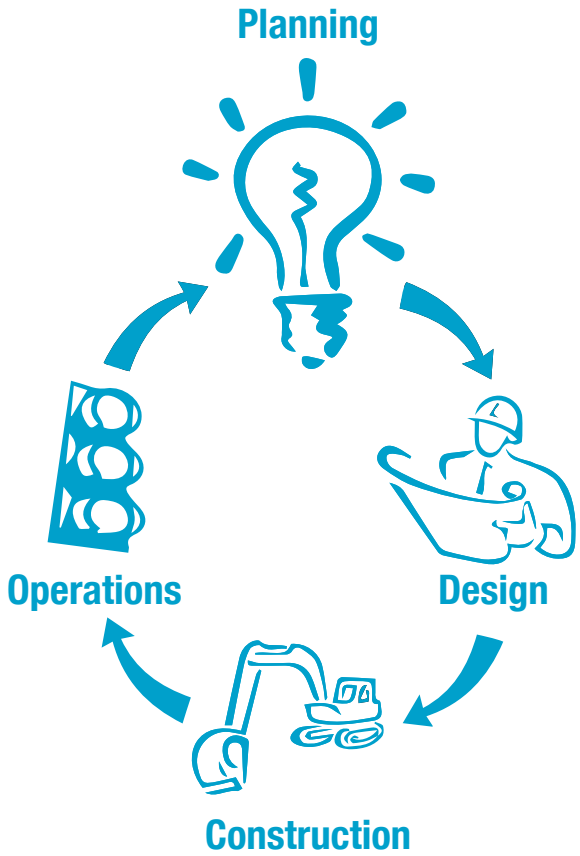


Figure 118 Given that the TMP represents a long-range vision, all of the project descriptions and visualizations are framed as "conceptual." The final details of design will be developed as the projects proceed further along in the implementation process.

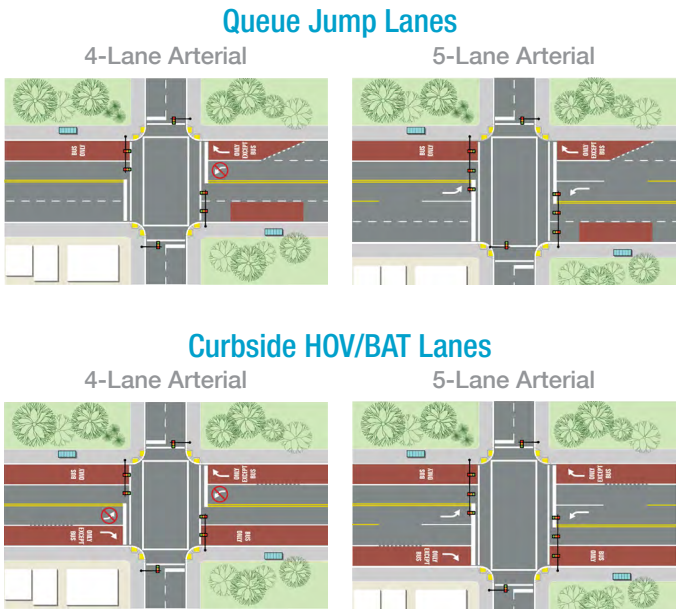


Figure 119 Typical right-of-way configurations reflecting the implementation of queue jump lanes and curbside HOV and BAT lanes, which represent the majority of the running way and spot improvement projects proposed.

Increasing traffic congestion and the associated increases in transit travel time and reduced reliability have detrimental effects both on transit ridership and on operating costs for the region's transit providers. Service that is too slow or unpredictable is less able to provide an attractive alternative to other travel modes, which may lead some riders to stop using transit. This has the potential to contribute to even more congestion if those former riders replace travel by transit with driving alone. According to respondents of the *Transit Improvement Survey*, the perception that traveling by bus takes too long is the most common reason why former transit users in Bellevue no longer do so. While traveling by transit does currently tend to take longer than traveling by car to many destinations in Bellevue, the degree to which this is the case varies considerably based on the particular origin and destination pairs considered, with some being more competitive than others.[21] Reducing the travel time for transit relative to auto driving times can help to attract more people to use transit by choice for more of their travel needs.

From the perspective of King County Metro and Sound Transit, slower and less reliable service translates into more expensive service to operate if established service levels are to be maintained. Metro spends tens of thousands of annual service hours—costing millions of dollars each year—to maintain existing service levels on routes that operate along highly congested roads. For example, a route may need four buses to operate in the morning, mid-day, and evening, but congestion-related delays may require the addition of a fifth bus to maintain the same level of service in the afternoon peak. The cost of a fifth bus and the operating hours necessary to operate it are directly caused by congestion and travel time delays that can potentially

21 Refer to the *Transit/Auto Travel Time Analysis* for additional details.

be addressed by capital projects that would improve travel speed and schedule reliability.

The Capital Vision identifies a total of 107 capital projects that would benefit transit speed and reliability. As shown in Table 5, these include 19 running way improvement projects, 39 spot improvement projects, 5 tracking and additional study projects, and 44 near-term transit signal priority (TSP) projects. Refer to Appendix 6 on page 127 for the complete list of capital projects being proposed. All project descriptions and visualizations presented here are conceptual (see Figure 118).

These include some existing projects already adopted in the Transportation Facility Plan (TFP) and/or Transportation Improvement Program (TIP), previously proposed projects from past planning efforts (e.g. Eastgate/I-90 Land Use and Transportation Project, Downtown Transportation Plan Update), and numerous new projects conceived during the TMP Capital Element planning process. New projects were advanced through a multi-stage process that began with the development of a transit priority toolbox, was followed by a geographic information system- (GIS-) based issue identification analysis, and ultimately proceeded through several iterations of project feasibility screening. Travel demand modeling was used to provide some inputs into the issue identification analysis, and both travel demand and micro-simulation models were used to help assess the potential degree of benefit provided by certain subsets of the total project list.

General cost estimates were identified for each project based on a high-level review of the type and extent of projects and their associated physical investments. acquisition. The cost ranges identified are consistent with the scale of the projects, but they do not reflect detailed design or engineering.

Intersection treatments are spot improvements that include transit signal priority (TSP), queue jump lanes, and left turn restrictions.

Bus stop treatments refer to the various configurations that can be used with respect to the relationship between stops and travel lanes, including in-lane stops, curb extensions, and transit islands.

Running way treatments are improvements implemented along the length of a street segment that include BAT lanes, arterial HOV lanes, transit-only lanes or streets, contra-flow bus lanes, and busways.

Transit signal priority (TSP) adjusts traffic signal timing to expedite transit vehicle movement along a corridor, typically either by extending the length of a green phase or shortening a red phase in the direction of an approaching bus.

Table 5 Summary of speed and reliability projects by type.

Project Type	No. of Projects
Running Way Improvements	19
HOV Lanes	8
BAT Lanes	6
Roadway Construction	5
Spot Improvements	39
Queue Jump Lanes	16
Intersection and Roadway Improvements	13
Signalization Improvements	10
Transit Signal Priority Projects (Near-term)	44
Tracking & Additional Study	5
Total	107

Project Prioritization

The Transportation Commission assigned priorities to each of the running way, spot improvement, and location-specific tracking projects presented in this report. The results of this priorization are mapped in Figure 121. For a more thorough explanation of the project prioritization process, refer to the Running Way section of the *Transit Capital Vision Report*.

The purpose of prioritizing the proposed capital projects is to maximize the value to the Frequent Transit Network (FTN). Thus, the FTN's long-term composite scores serve as the primary means of identifying a project's priority. These initial priority assignments were then refined according to three separate considerations: (1) the existing inclusion of a proposed project in the Transportation Facilties Plan (TFP) or Capital Investment Program (CIP), (2)

Figure 120 Running Way Improvement Project L1: A southbound median HOV lane will be constructed on Bellevue Way SE between the South Bellevue Park-and-Ride and I-90 by Sound Transit as part of the East Link light rail extension project. This will be achieved by constructing a new lane, thereby maintaining all existing general purpose lanes. Aerial images depict roadway striping before and after construction.

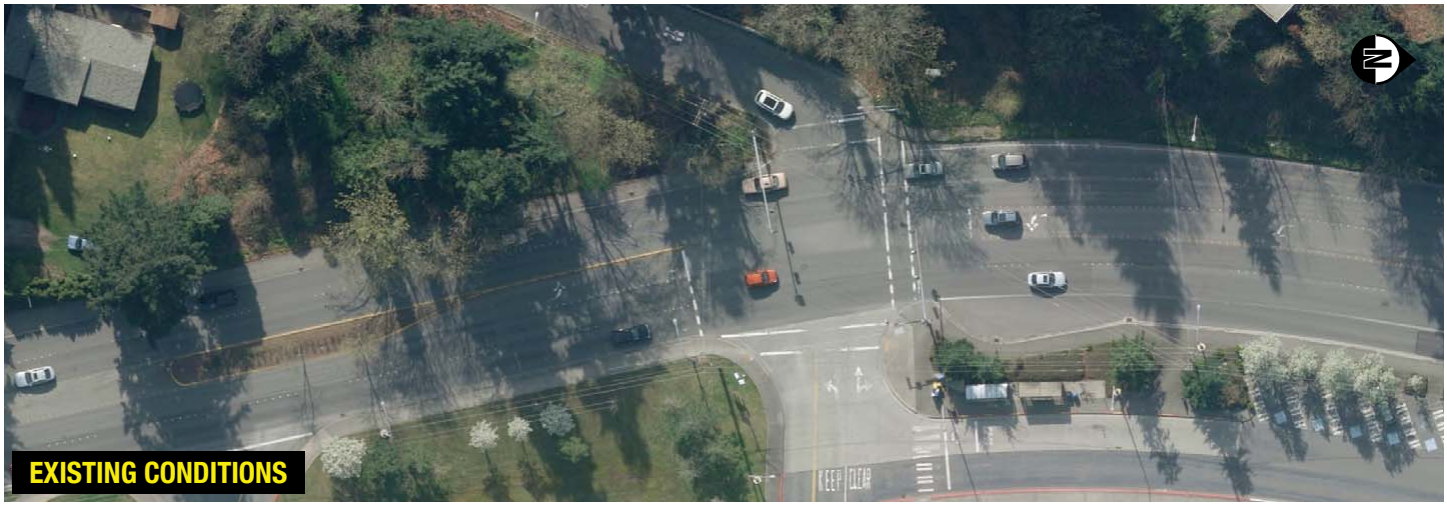


Figure 121 Prioritization of the proposed transit running way and spot improvement projects.

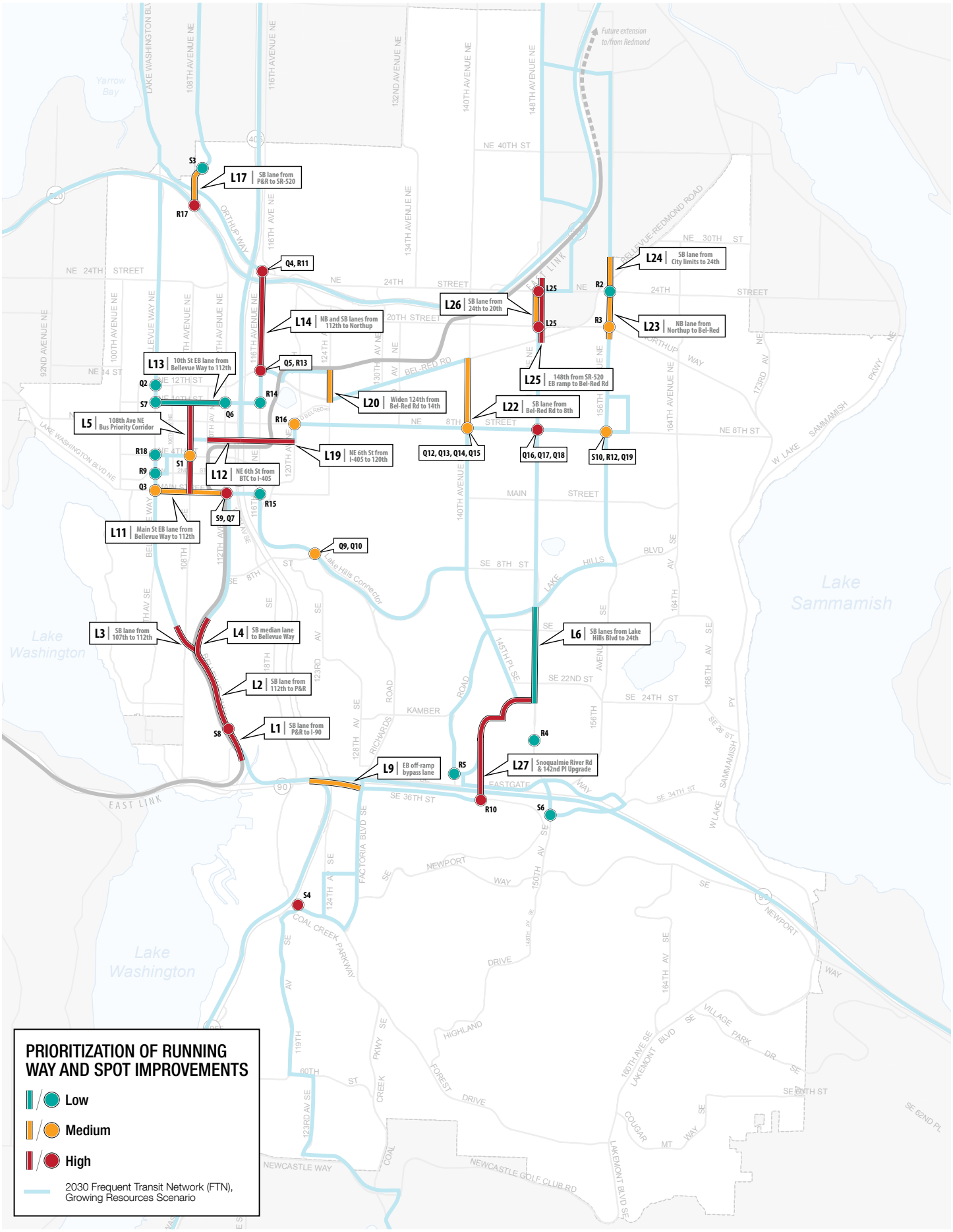


Figure 122 (top) Brochure for the Bellevue College Connection: 142nd Pl SE/Snoqualmie River Rd Multimodal Transportation Corridor (Project L27).

Figure 123 (bottom) Before and after aerial views of a new mutli-modal western gateway into Bellevue College on Snoqualmie River Rd. Improvements include reconstructed roadways to accommodate frequent bus service, new bus stops with shelters, and an off-street path facility for pedestrians and bicyclists.

the necessity of a project in order to implement the 2030 FTN route structure, and (3) specific guidance provided by the Transportation Commission during the Capital Element planning process.

The Bellevue College Connection (Project L27; see Figure 122 and Figure 123) provides an instructive example of a project affected by several of the refinement considerations. Though its base priority is Low because much of the 142nd Pl SE/ Snoqualmie River Rd corridor is not affected by general purpose traffic, the project's final prioritization is High because it is has an associated TFP project (TFP-252), is necessary to restructuring service between Eastgate and Bellevue College, and was identified by the Transportation Commission as being of specific interest to pursue as soon as possible. During the course of the Capital Element planning process, Sound Transit added this project to its long-range plan, making the project eligible for potential inclusion in future Sound Transit funding programs, such as the forthcoming ST3.

Other high-priority projects include four HOV lane projects (L1, L2, L3, and L4) that would be added to the right-of-way along Bellevue Way SE and 112th Ave SE (see Figure 120), a queue jump project (Q5) on 116th Ave NE for northbound buses turning west onto Northup Way (see Figure 124), and the NE 6th St HOV Extension (Project L19), which will extend the existing NE 6th St HOV direct access ramp bridge from the center of I-405 east to 120th Ave NE. Running Way Project L23 and L24 provides an example of a project that is ranked medium priority in the long-term but high-priority in the short-term (see Figure 125). Although the long-term project prioritization will serve as the primary means by which potential projects are advanced for consideration for inclusion in the Transportation Facilities Plan (TFP) and Capital Investment Program (CIP) over the twenty-year implementation period of the Transit Master Plan, projects have also been

assigned supplemental short-term priorities to assist with the identification of projects in the current budget cycle, which would advance projects for implementation in the short-term based on available city resources and grant funding eligibility.

For additional information about the individual projects being proposed, including their descriptions, the identified needs that each addresses, estimated costs, and the priorities assigned, refer to Appendix 6 on page 127. For more information about the long-term and supplemental short-term prioritization processes, refer to the *Transit Capital Vision Report*.

Figure 124 Spot Improvement Project Q5: Queue jump lane on NE 116th St for left turning, northeast-bound traffic at Northup Way. Aerial images depict roadway striping before and after lane reconfiguration. This concept maintains all general purpose travel lanes and requires no new lane construction—both suitable qualities for a potential 'quick win' project.

Figure 125 Running Way Improvement Projects L23 and L24: BAT lanes would be constructed on 156th Ave NE northbound from Northup Way to NE 24th St and southbound from city limits to NE 24th St, respectively. Aerial images depict roadway striping before and after lane reconfiguration. These concepts both maintain all existing general purpose travel lanes.

Transit Signal Priority Projects

Transit signal priority (TSP) is an operation that adjusts signal timing to expedite transit vehicle movement along a corridor. Several types of signal priority treatments are possible, with green phase extension and early green (red truncation) used most commonly. Arterials with medium levels of congestion and frequent signalized intersections are ideal for TSP, and other priority treatments are often paired with TSP to improve overall effectiveness.

The *Transit Capital Vision Report* identifies three groups of signalized intersections in Bellevue that are served by 2030 FTN routes with respect to transit signal priority: specific short-term TSP projects, potential long-term projects, and intersections eliminated from further consideration for TSP installation by early feasibility screening. The first group, indicated by green icons in Figure 127, includes forty-four near-term projects that will be pursued through 2020. These represent all signalized intersections that are served by existing Route 271 (FTN Routes 1 and 13) and the RapidRide B Line (FTN Routes 6 and 7) that were not eliminated by early feasibility screening. The cost of implementation at each intersection is preliminarily estimated to be about $15,000; a variety of location-specific factors will need to be considered to develop more precise cost estimates.

The group of potential long-term TSP projects includes an unspecified number of the remaining signalized intersections served by 2030 FTN routes, indicated by the yellow area in Figure 127. The specific projects that may be included in this group will not be identified until after 2020, after Metro has identified its anticipated capacity to expand its TSP capabilities. The final group includes twelve intersections eliminated from further consideration for TSP installation based on known signal and/or roadway limitations, such as significant congestion that TSP would seriously interfere with, causing unacceptable delays to cross traffic.

Figure 126 Transit signal priority helps to ensure that buses can move along a corridor with minimal delay incurred by red lights.

Figure 127 Potential transit signal priority (TSP) projects.

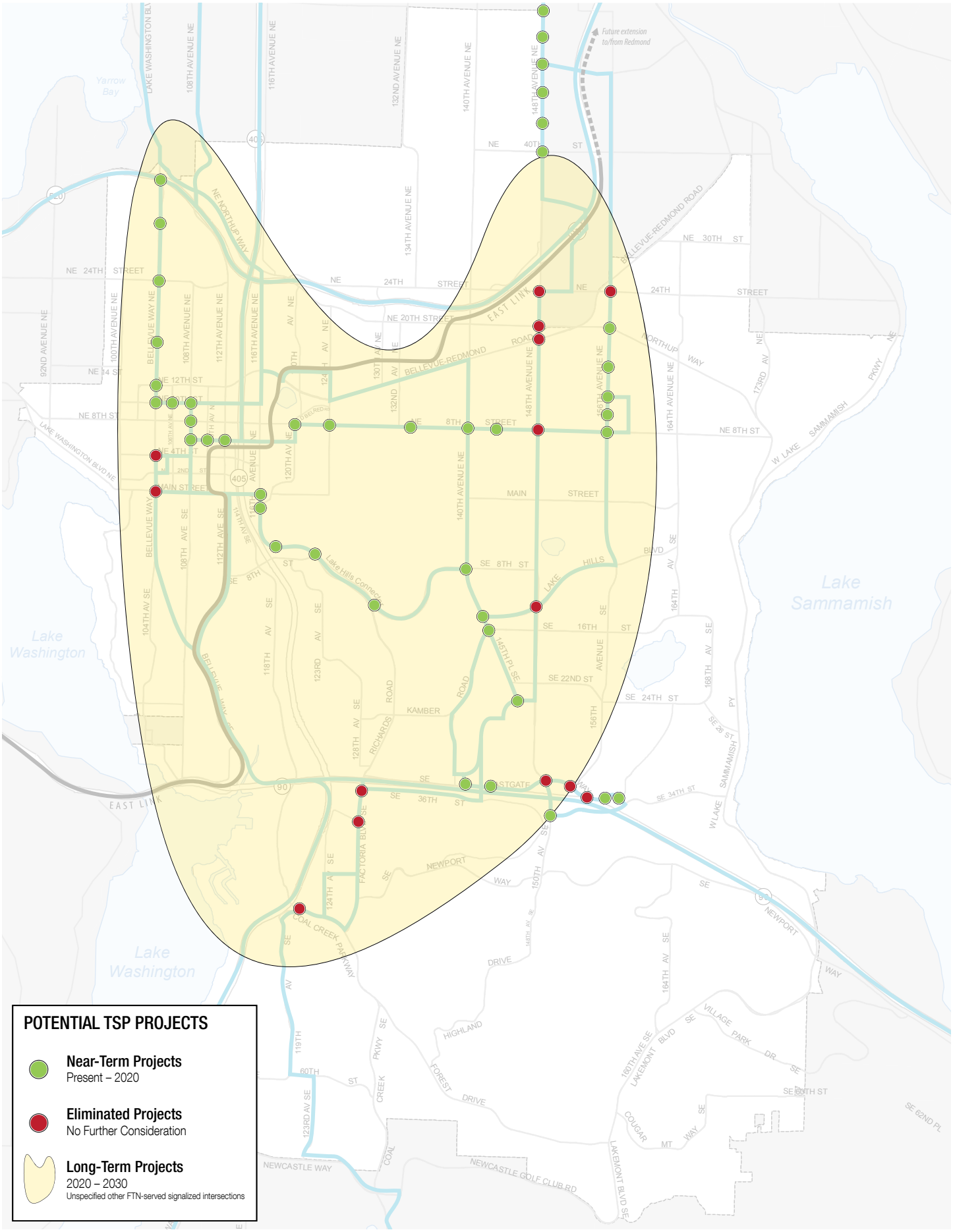


PHOTO BY John Tiscornia

SECTION 5:
APPENDICES

APPENDIX 1: GLOSSARY

Alight	Exiting a transit vehicle.
All-Day Service	Refers to transit service provided throughout the day, from morning through evening. King County Metro additionally specifies that all-day service provides connections between designated regional growth centers, manufacturing/industrial centers, and other areas of concentrated activity, and that it serves a variety of travel needs and trip purposes.
Automatic Passenger Count (APC)	An automated system that counts the number of passengers boarding and alighting a transit vehicle. The data collected from such a system is most commonly used by transit service planners to determine such things as ridership, typical vehicle loads, and the relative use of individual bus stops.
Average Daily Ridership	The average number of daily rides of a particular revenue service, typically extrapolated from sample passenger counts obtained from APC equipment.
Boarding	To get on/into a transit vehicle.
Bus Rapid Transit (BRT)	A bus rapid transit (BRT) system is a category of bus system design and operation that provides an enhanced quality of service more often associated with rail transit modes while retaining the flexibility and lower costs afforded by buses. The specific features required for a system to be considered a BRT service have not been officially defined by state or federal agencies; however, features generally considered to be central to such service include grade-separated right-of-ways, implementation of transit signal priority, peak-hour headways of less than 10 minutes, off-board fare payment, and high-quality, high capacity vehicles.
Bus Shelter	A structure or building constructed at a transit stop for the purpose of providing protection from the weather for passengers waiting for transit service. Bus shelters often also provide seating and/or schedule information for the passenger's comfort and convenience.
Bus Stop	Designated areas where passengers wait for, board, alight, and transfer between transit vehicles. Bus stops are indicated by specific signage and by curb and/or pavement markings, and they sometimes provide bus shelters.
Commute	Regular travel between home and a fixed location, such as work or school.
Cost Efficiency	The cost of providing a transit service compared to the amount of service provided. In this document, cost efficiency is expressed either as cost per platform mile or as cost per vehicle revenue hour.
Dial-a-Ride-Transit (DART)	King County Metro's Dial-a-Ride-Transit (DART) offers variable routing in certain defined service areas in King County. DART uses vans instead of standard buses to provide service off of regular fixed routes, allowing passengers to arrange a pick-up or drop-off closer to their home or destination. This provides greater flexibility to users while maintaining an appropriate level of transit service for areas not able to support regular fixed-route service by standard-size buses.
Deadhead (Miles or Hours)	The miles or hours traveled by a vehicle while not providing revenue service. This includes non-revenue travel to and from a garage, between routes, and scheduled time allocated for bus operator breaks.
Dwell Time	The amount of time that a transit vehicle spends stationary at a stop or station. Factors affecting dwell time include the time it takes for passengers to board and alight, pay fares, and a vehicle's schedule adherence, among other things.

Fixed Route	Transit service provided on a repetitive basis along a specific route according to a specified stops and time schedules.
Flyer Stop	See Freeway Station.
Freeway Station	Bus stops located on limited-access highways throughout King County that provide efficient service along major thoroughfares without requiring transit vehicles to fully exit a highway. Freeway stations are most common in suburban areas and are frequently paired with Park & Ride lots.
Frequency	How often a transit service operates, most precisely expressed by the number of trips per hour but commonly discussed in terms of headway. Higher service frequency (trips/hour) reflects better service, with buses coming more often and reducing waiting time.
Frequent Service	Service that operates every 15 minutes or better, seven days a week.
Headway	The scheduled time interval between any two revenue vehicles operating in the same direction on the same route. For example, a bus with a headway of 15 minutes is scheduled to arrive at a given stop every 15 minutes.
Interline	The transfer of a vehicle that is in operation from one route to another, generally for the purpose of improving staff or vehicle assignment efficiency. When this occurs where the termini of the routes meet, it is referred to as through routing, which provides benefits to users who would otherwise need to transfer between the two routes in addition to the operating efficiency benefits.
Load (Average or Maximum)	The number of passengers on-board a transit vehicle at any given time. Average load is a measure of how many passengers are typically on a transit vehicle during its revenue service. Maximum load is a measure of the greatest number of passengers observed on a transit vehicle over a given period of time. For the purposes of this document, maximum load actually refers to the average maximum load—that is, the average of the greatest number of passengers observed on a transit vehicle over a given period of time.
Manufacturing/ Industrial Center	An area of intensive manufacturing and/or industrial activity. Defined by the Puget Sound Regional Council's Vision 2040 plan.
Mobility Management Area (MMA)	Mobility Management Areas (MMAs) are geographic areas for which traffic is managed and congestion standards are established to help guide land development and transportation improvement decisions.
Off-board Payment	A payment system where passengers pay fares at designated ticket vending machines or smart card readers prior to boarding transit vehicles. Off-board payment systems are typically used to reduce vehicle dwell time due to slow passenger boarding and fare payment.
On-time Performance	For fixed-route service, the percentage of departures from scheduled time points that are five minutes late or better.
ORCA Card	A contactless, stored value smart card used for payment of public transport fares in the Puget Sound region. The card's name is an acronym for "One Regional Card for All," as the card is accepted as a method of payment on buses, light rail, ferries, trains, and streetcars operated by numerous regional transit agencies including King County Metro, Sound Transit, Community Transit, Pierce Transit, Kitsap Transit, Everett Transit, and Washington State Ferries.

Park-and-Ride	A parking area for automobile drivers and bicycle riders who then board transit vehicles, shuttles or carpools from these locations to reach their destinations. Park & Ride lots are designated by King County Metro and may be either expressly constructed for this purpose or loaned from other organizations or businesses, most commonly churches, that have excess parking capacity available.
Passenger Miles	A measure of service utilization that represents the cumulative sum of the distances traveled on-board a transit vehicle by each passenger using a given service.
Peak Service	Service provided during the periods of the morning (6:00-9:00) and afternoon/ evening (3:00-6:00) when demand for transportation is heaviest.
Platform Hours (or Miles)	The total scheduled time (or distance) that a transit vehicle spends between leaving from and returning to base, including both revenue service and deadhead time. Platform hours and miles are used as indicators of service efficiency or utilization through such metrics as rides per platform hour and passenger miles per platform mile.
Productivity	A measure of service efficiency comparing passengers carried to service operated. King County Metro considers productivity to be determined by two measures: rides per platform hour and passenger miles per platform mile. More generally, it is a ratio of transit service output (e.g. annual rides) to units of service input (e.g. annual platform hours).
Revenue Hour	The number of hours during which a transit vehicle is in operation and providing revenue service, including layover and recovery time but excluding deadhead time.
Revenue Mile	The number of miles operated by a transit vehicle providing revenue service, including that traveled during layover and recovery time but excluding deadhead miles.
Rides per Platform Hour	A measure of the total number of people who board a transit vehicle relative to the total number of hours that vehicle operates, including both revenue and deadhead hours. This is one of two measures considered by Metro to evaluate individual route productivity. Routes with many riders boarding the bus during each trip tend to perform well on this measure.
Service Span	The time period over which a route provides revenue service on a given day of the week. This is sometimes referred to in this document as Hours of Service.
Transfer (aka Connection)	(1) The process of a passenger changing from one transit vehicle to another, often without need for additional payment. (2) The slip of paper issued by a King County Metro vehicle operators to a passenger for the purpose of allowing the passenger to change from one transit vehicle to another without need for additional payment. Sound Transit no longer issues paper transfers, but both agencies allow passengers to use an ORCA card to transfer.
Transit Center	A transit station that functions as the convergence point for multiple routes, lines, or modes of transportation. Such facilities are designed to facilitate the flow of transit vehicles and the boarding, alighting, and transferring of passengers between those vehicles and the services they provide.
Trip	A one-way movement of an individual or vehicle between two points. The most common type, called an "unlinked passenger trip," further specifies that each time an individual transfers between vehicles or reaches an intermediary destination (e.g. stopping at a day care center en route to work), an additional unlinked trip has been made.

APPENDIX 2: TMP PROJECT PRINCIPLES

Approved by the Bellevue City Council, July 9, 2012.

The City Council envisions a fully integrated and user-friendly network of transit services for Bellevue that supports the city's growth, economic vitality, and enhanced livability, and has developed the following set of project principles to direct development of the Transit Master Plan.

1. Support planned growth and development in Bellevue with a bold transit vision that encourages long-term ridership growth.	The dynamic nature of Bellevue's economic expansion requires a bold transit vision supported by practical, achievable strategies in the near term that set a solid foundation for longer term improvements through 2030. The Transit Master Plan should identify, evaluate, and prioritize transit investments that are responsive to a range of financial scenarios (cuts/status-quo/aspirational) and attune to different time horizons (near/mid/long term).
2. Engage community stakeholders in setting the priorities for transit delivery.	A comprehensive public engagement strategy should result in meaningful input on transit services and facilities from a range of stakeholders including residents, businesses, major institutions, neighboring cities, transportation agencies, and others (e.g., community associations, Network on Aging, Bellevue School District, Bellevue College, Chamber of Commerce, Bellevue Downtown Association). Special attention will be required to enlist the participation of "under-represented" communities such as immigrants, low-income and non-native English speakers.
3. Determine where and how transit investments can deliver the greatest degree of mobility and access possible for all populations.	The Transit Master Plan should look to the future and be compatible with Bellevue's land use and transportation plans and the challenges and opportunities of changing demographics, land use characteristics, and travel patterns. Following consultations with the community, demand forecasting, and a review of industry best practices and emerging technologies, this initiative will identify the steps required to create a public transportation system that is easy to use by all people in Bellevue for trips within Bellevue and to regional destinations.
4. Incorporate other transit-related efforts (both bus and light rail) underway in Bellevue and within the region.	The Transit Master Plan should incorporate local and regional transportation projects and plans that have been approved and/or implemented since the Bellevue Transit Plan was adopted in 2003. Transportation system changes include East Link, SR 520 expansion and tolling, and improvements to I-90 and I-405. Planning changes include the updated Bel-Red Subarea Plan, the Wilburton Subarea Plan and the Eastgate/I-90 Land Use and Transportation Project. Through coordination with local and regional transportation plans, the Transit Master Plan should outline a strategy to leverage the investment in public transportation projects to the benefit of Bellevue residents and businesses.
5. Identify partnership opportunities to further extend transit service and infrastructure.	While transit infrastructure is typically funded through large capital funding programs, other less traditional funding mechanisms can be utilized to pay for improvements vital to support transit communities and/or achieve higher transit ridership. The Transit Master Plan should undertake an analysis of partnership opportunities that the City might want to consider with other government organizations (e.g., Bellevue School District, Bellevue College, Metro, Sound Transit), human service agencies, and private corporations, to improve transit service delivery in Bellevue. This analysis will explore alternatives to traditional transit service delivery.
6. Develop measures of effectiveness to evaluate transit investments and to track plan progress.	The Bellevue Comprehensive Plan presently includes the following metrics/benchmarks related to transit: (i) mode split targets within each of the City's Mobility Management Areas [Table TR.1 – Area Mobility Targets]; (2) transit service frequency improvement targets between Downtown, Overlake, Crossroads, Eastgate, and Factoria [TR.8 – 10 Year Transit Vision]; and, (3) guidance found in 44 transit-supportive policies. The Transit Master Plan will revisit these metrics, and where necessary, propose modifications to better reflect present and future conditions.

APPENDIX 3: TRANSIT MASTER PLAN DOCUMENT LIBRARY

Service Element Documents

Bellevue Transit Network Profile – This volume comprehensively documents all bus routes that served Bellevue between Fall 2010 and Fall 2011, which are examined both individually and in relation to the overall network operated. Each route profile includes route descriptions, connection opportunities, Fall 2010 performance measures, Metro's service level assessment results, recent and planned future route revisions, and route maps color-coded according to the destinations served to facilitate future analysis. This document serves as the baseline for considering transit performance in Bellevue, reflecting the system as it operated prior to and immediately following King County Metro's major Eastside service restructure in October 2011.

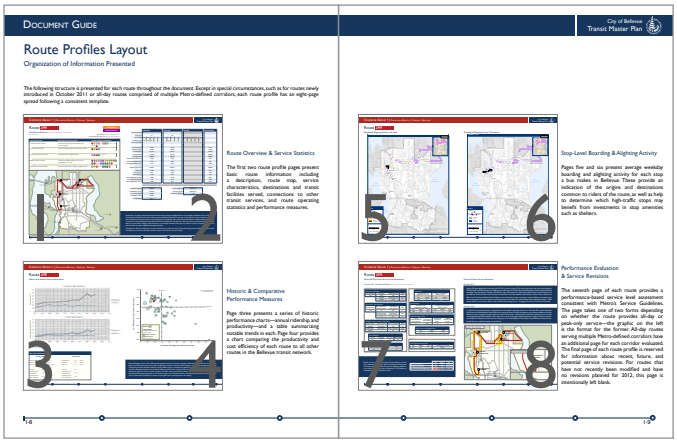


Figure 128 These pages from the *Bellevue Transit Network Profile* depict the layout of each route profile contained in the document.

Transit Improvement Survey Summary Report – The Bellevue Transit Improvement Survey (TIS) was administered online between February and March of 2012, during which time it was completed by more than 4,200 respondents. The *TIS Summary Report* summarizes the results obtained, profiling Bellevue's current transit market, the perceptions of transit service in Bellevue by the public, and the priorities of the public for improving service and addressing potential future budget shortfalls. The document provides a comprehensive examination of multiple choice responses by user type (current-, former-, and non-riders), trip purpose (work, school, shopping, social/recreation, and special events), and various demographic characteristics, and also categorizes the several thousand write-in responses that were submitted by theme.

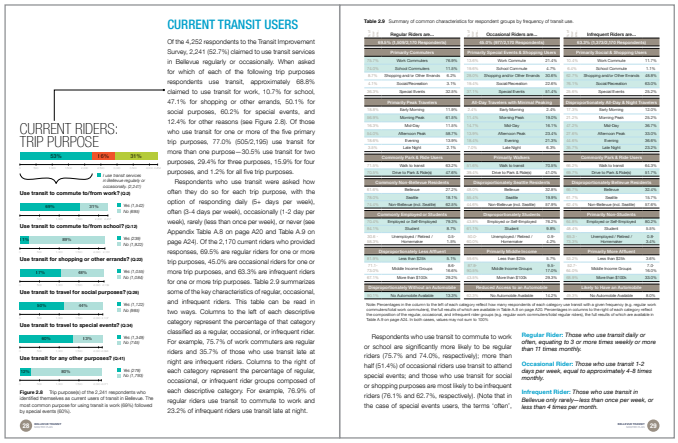


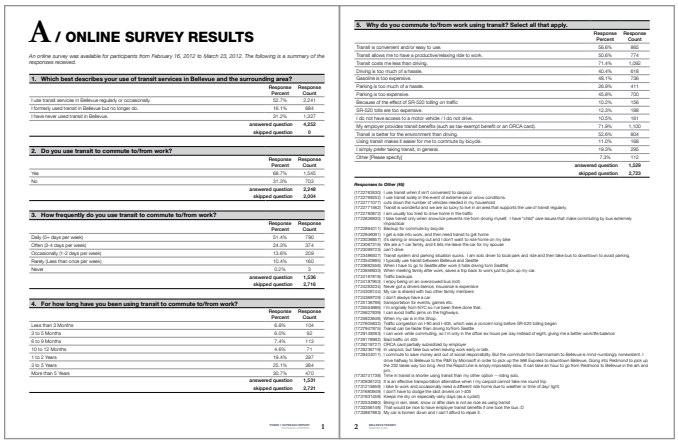
Figure 129 These pages from the *TIS Summary Report* describe common characteristics of current users of transit in Bellevue.

Phase 1 Outreach Report: Technical Appendix – This document serves as the technical appendix to the *TIS Summary Report*, presenting the complete results of the Transit Improvement Survey exactly as submitted by survey respondents without analysis, categorization, or any potential source of bias.

Transit Master Plan Forum Report – The Transit Master Plan Forum was an outreach event held on September 18, 2012. This document summarizes the major themes expressed by Mayor Conrad Lee, Councilmember Kevin Wallace, and the twenty-four members of the Transportation, Planning, Arts, and Human Services Commissions and the Parks and Community Services Board who were in attendance. All of Bellevue's board and commission members were invited to the event for the purposes of broadening the TMP's outreach and refining Council's adopted Project Principles into actionable priorities to guide development of the transit service vision.

Bellevue Transit Status Report – This report details the service and infrastructure improvements completed since the adoption of the 2003 Bellevue Transit Plan and highlights transit usage levels and unmet needs in Bellevue that will be taken into account in the TMP process. The document serves as a brief precursor to the more comprehensive *Existing and Future Conditions Report*.

Transit Network Profile: 2011-12 Update – An update to the *Bellevue Transit Network Profile*, this volume comprehensively documents all bus routes that served Bellevue between Fall 2011 and Spring 2012. Performance statistics are presented for both service periods to facilitate consideration of how transit performance changed in the months following the October 2011 service restructure. This update also introduced the segmentation of route performance statistics by time of day.



A / ONLINE SURVEY RESULTS

An online survey was available for participants from February 16, 2012 to March 23, 2012. The following is a summary of the responses received.

1. Which best describes your use of transit services in Bellevue and the surrounding area?	Response Percent	Response Count
I use transit services in Bellevue regularly or occasionally.	68.7%	2,241
I formerly used transit in Bellevue but no longer do.	16.1%	684
I have never used transit in Bellevue.	31.3%	1,327
answered question		4,252
skipped question		0

2. Do you use transit to commute to/from work?	Response Percent	Response Count
Yes	68.7%	1,545
No	31.3%	703
answered question		2,248
skipped question		2,004

3. How frequently do you use transit to commute to/from work?	Response Percent	Response Count
Daily (5+ days per week)	51.4%	790
Often (3-4 days per week)	24.3%	374
Occasionally (1-2 days per week)	13.6%	209
Rarely (Less than once per week)	10.4%	160
Never	0.3%	3
answered question		1,536
skipped question		2,716

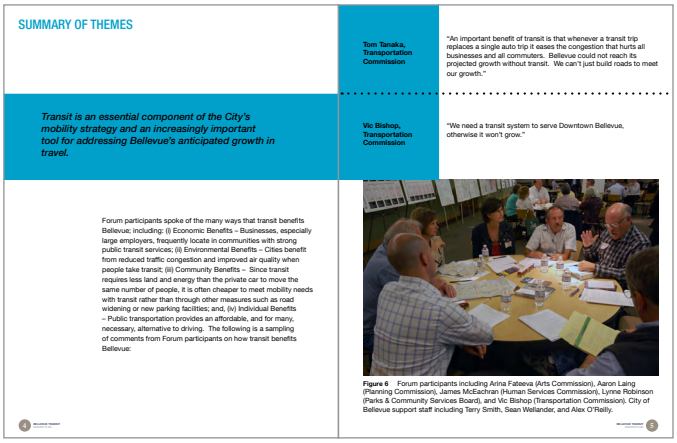
4. For how long have you been using transit to commute to/from work?	Response Percent	Response Count
Less than 3 Months	6.8%	104
3 to 6 Months	6.0%	92
6 to 9 Months	7.4%	113
10 to 12 Months	4.6%	71
1 to 2 Years	19.4%	297
3 to 5 Years	25.1%	384
More than 5 Years	30.7%	470
answered question		1,531
skipped question		2,721

5. Why do you commute to/from work using transit? Select all that apply.	Response Percent	Response Count
Transit is convenient and/or easy to use.	56.6%	860
Transit allows me to have a productive/relaxing ride to work.	50.8%	774
Transit costs me less than driving.	71.4%	1,092
Driving is too much of a hassle.	40.4%	618
Gasoline is too expensive.	48.1%	736
Parking is too much of a hassle.	26.9%	411
Parking is too expensive.	45.8%	700
Because of the effect of SR-520 tolling on traffic	10.3%	158
SR-520 tolls are too expensive.	12.3%	188
I do not have access to a motor vehicle / I do not drive.	10.5%	161
My employer provides transit benefits (such as tax-exempt benefit or an ORCA card).	71.9%	1,100
Transit is better for the environment than driving.	52.6%	804
Using transit makes it easier for me to commute by bicycle.	11.0%	168
I simply prefer taking transit, in general.	19.3%	295
Other [Please specify]	7.3%	112
answered question		1,529
skipped question		2,723

Responses to Other (#5)

(1722782600) I use transit when it isn't convenient to carpool.
(1722785002) I use transit solely in the event of extreme ice or snow conditions.
(1722773177) Lists down the number of vehicles needed in my household
(1722771980) Transit is wonderful and we are so lucky to live in an area that supports the use of transit regularly.
(1722780870) I am usually too tired to drive home in the traffic.
(1722829605) Transit only when extreme/rare elements me from driving myself. I have "child" clear issues that make commuting by bus extremely impractical.
(1722864071) Backup for commuter by bicycle
(1722863 [illegible]) Transit is a backup for my car-pooled transit to get home
(1722829667) It's raining or snowing out and I don't want to ride home on my bike
(1722835135) We are a 1 car family, and it lets me leave the car for my spouse
(1722839723) can't drive
(1722829607) Transit system and parking situation sucks. I am sick driven to local park and ride and then take bus to downtown to avoid parking.
(1722829 [illegible]) Transit is a backup for my car-pooled transit to get home
(1722842666) When I have to go to Seattle after work (I hate driving to/in Seattle)
(1722866802) When meeting family after work, saves a trip back to work just to pick up my car.
(1722829 [illegible]) Backup for commuter
(1722873878) I enjoy being on an overcrowded bus (not)
(1722832252) Never got a drivers licence, insurance is expensive
(1722833142) My car is shared with two other family members
(1722869729) I don't always have a car
(1722829 [illegible]) Transit is cheaper than gas/wear etc.
(1722842666) I originally from NYC so I've been there done that.
(1722827608) I can avoid traffic jams on the highways.
(1722829 [illegible]) Backup for commuter
(1722829667) Traffic congestion on I-90 and I-405, which was a concern long before SR-520 tolling began.
(1722827670) Transit can be faster than driving to/from Seattle
(1722818 [illegible]) I can work while commuting, so I'm only in the office six hours per day instead of eight, giving me a better work/life balance
(1722 [illegible]) Backtraffic on 405
(1722 [illegible]) Free ride is partially subsidized by employer
(1722827 [illegible]) In vanpool, but take bus when leaving work early or late.
(1722832071) I commute to save money and out of social responsibility. But the commute from Sammamish to Bellevue is mind-numbingly nonexistent. I have to drive to the park and ride, then take the bus to work. Sammamish is a bedroom community with no jobs. Bellevue is a bedroom community for people who work in the 520 corridor. Bellevue is a big city. And the Bellevue park & ride is simply impossible. It can take an hour to go from Redmond to Bellevue in the am and pm.
(1722727178) Time in transit is shorter using transit than my other option — riding solo.
(1722826120) It is an effective transportation alternative when I my carpool cannot take me round trip.
(1722829 [illegible]) Transit is a backup for my car-pooled transit to get home due to weather or time of day/ light.
(1722829608) I don't have to dodge the dial! drivers on I-405
(1722831268) Keeps me dry on especially rainy days (as a cyclist)
(1722829 [illegible]) Transit is a backup for my car-pooled transit to get home using transit
(1722834108) That would be nice, to have employer transit benefits if one took the bus :D
(1722867863) My car is broken down and I can't afford to repair it.

Figure 130 These pages from the *Outreach Report: Technical Appendix* show the multiple-choice results and write-in responses to questions 1 through 5 of the Transit Improvement Survey.



SUMMARY OF THEMES

Transit is an essential component of the City's mobility strategy and an increasingly important tool for addressing Bellevue's anticipated growth in travel.

Forum participants spoke of the many ways that transit benefits Bellevue; including: (i) Economic Benefits – Businesses, especially large employers, frequently locate in communities with strong public transit services; (ii) Environmental Benefits – Cities benefit from reduced traffic congestion and improved air quality when people take transit; (iii) Community Benefits – Since transit requires less land and energy than the private car to move the same number of people, it is often cheaper to meet mobility needs with transit rather than through other measures such as road widening or new parking facilities; and, (iv) Individual Benefits – Public transportation provides an affordable, and for many, necessary, alternative to driving. The following is a sampling of comments from Forum participants on how transit benefits Bellevue:

Tom Tanaka, Transportation Commission

"An important benefit of transit is that whenever a transit trip replaces a single auto trip it eases the congestion that hurts all businesses and all commuters. Bellevue could not reach its projected growth without transit. We can't just build roads to meet our growth."

Vic Bishop, Transportation Commission

"We need a transit system to serve Downtown Bellevue, otherwise it won't grow."

Figure 6 Forum participants including Arina Fateeva (Arts Commission), Aaron Laing (Planning Commission), James McEachran (Human Services Commission), Lynne Robinson (Parks & Community Services Board), and Vic Bishop (Transportation Commission). City of Bellevue support staff including Terry Smith, Sean Wellander, and Alex O'Reilly.

Figure 131 One of the themes expressed by TMP Forum participants: "Transit is an essential component of the City's mobility strategy..."

STATUS REPORT

On June 2, 2003 the Bellevue City Council adopted the Bellevue Transit Plan (see Figure 1). The 2003 Plan was a major step forward in articulating what improvements are needed in transit service and capital investments throughout Bellevue and served as an important reference document for collaborations with the City's transit service providers. The service and capital partnerships resulting from this vision have enhanced transit's role in Bellevue.

INFRASTRUCTURE IMPROVEMENTS

Since the adoption of the 2003 Bellevue Transit Plan, hundreds of millions of dollars in HOV access ramps, transit centers, park-and-ride lots, and speed and reliability projects were completed in Bellevue in support of transit operations. Figure 2 on page 4 reflects the array of transit capital projects completed since 2003 including:

- Bellevue Transit Center – In 2003, Sound Transit expanded the Bellevue Transit Center to include ten bus bays, shelter improvements and rider amenities. Additional bus stops and roadway improvements on 108th Avenue NE, 106th Avenue NE and east of the transit center on Northeast Sixth Street have improved transit and traffic flow in downtown Bellevue and enable more than 100 buses during peak periods to move efficiently through the transit center. *Total funding: $16 million.*

BELLEVUE TRANSIT PLAN

Figure 1 The Bellevue Transit Master Plan builds on the successes of the City's 2003 Transit Plan by positioning the City to leverage partnerships with regional transit agencies to enhance the existing bus system.

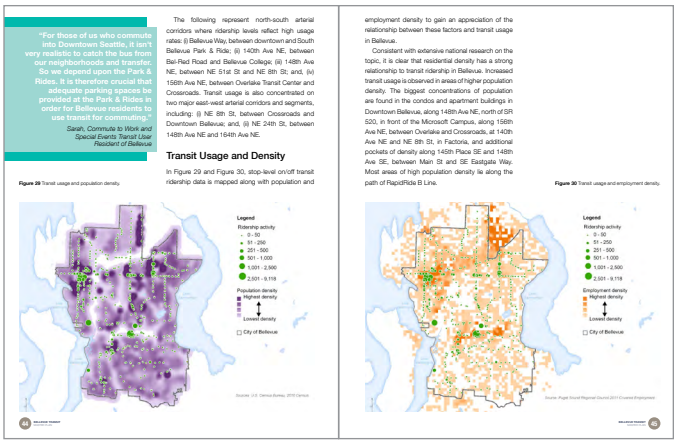
Eastgate Park & Ride Expansion | I-90 Two-Way Transit HOV | Eastgate Direct Access Ramp

Bellevue Transit Center | RapidRide B Line | Access Downtown

Figure 2 Looking to the future, these capital projects in support of transit will be dwarfed by the upcoming investment in the East Link light rail extension from Seattle to Bellevue.

- Eastgate Park & Ride – In 2004, King County expanded the Eastgate Park & Ride from a 696 stall facility to a structured complex that can accommodate 1,646 vehicles. In spite of the large number of parking spaces, the Eastgate Park and Ride is already at capacity with a utilization ratio of 97 percent (Second Quarter 2012). *Total funding: $27 million.*
- Bellevue HOV Access Project (Access Downtown) – Completed in 2005, the Bellevue Access HOV project makes it easier to travel in an out of downtown Bellevue from the freeway. The project provides a new interchange on I-405 at Northeast Sixth Street for buses and carpools, giving buses direct access to the expanded Bellevue Transit Center. It improves freeway interchanges at NE 4, NE 8, and SE 8 streets including improvements to nearby city street intersections. *Total funding: $144 million.*
- Eastgate Transit Access Ramps – WSDOT and Sound Transit partnered in 2006 to complete the Eastgate Transit Access to connect the existing 142nd Place SE bridge to the I-90 HOV lanes. The addition of two ramps (one on the east and one on

Figure 132 These pages from the *Transit Status Report* describe infrastructure improvements made since adoption of the 2003 *Bellevue Transit Plan.*



"For those of us who commute into Downtown Seattle, it isn't very realistic to catch the bus from our neighborhoods and transfer. So we depend upon the Park & Rides. It is therefore crucial that adequate parking spaces be provided at the Park & Rides in order for Bellevue residents to use transit for commuting."

Sarah, Commute to Work and Special Events Transit User Resident of Bellevue

The following represent north-south arterial corridors where ridership levels reflect high usage rates: (i) Bellevue Way, between downtown and South Bellevue Park & Ride; (ii) 140th Ave NE, between Bel-Red Road and Bellevue College; (iii) 148th Ave NE, between NE 51st St and NE 8th St; and, (iv) 156th Ave NE, between Overlake Transit Center and Crossroads. Transit usage is also concentrated on two major east-west arterial corridors and segments, including: (i) NE 8th St, between Crossroads and Downtown Bellevue; and, (ii) NE 24th St, between 148th Ave NE and 164th Ave NE.

Transit Usage and Density

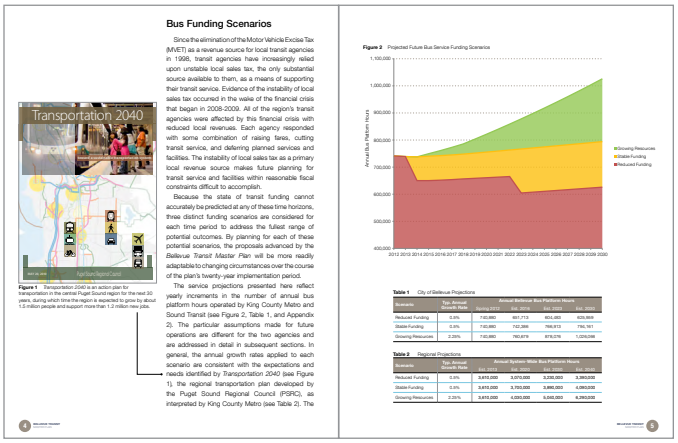
In Figure 29 and Figure 30, stop-level on/off transit ridership data is mapped along with population and employment density to gain an appreciation of the relationship between these factors and transit usage in Bellevue.

Consistent with extensive national research on the topic, it is clear that residential density has a strong relationship to transit ridership in Bellevue. Increased transit usage is observed in areas of higher population density. The biggest concentrations of population are found in the condos and apartment buildings in Downtown Bellevue, along 148th Ave NE, north of SR 520, in front of the Microsoft Campus, along 156th Ave NE, between Overlake and Crossroads, at 140th Ave NE and NE 8th St, in Factoria, and additional pockets of density along 145th Place SE and 148th Ave SE, between Main St and SE Eastgate Way. Most areas of high population density lie along the path of RapidRide B Line.

Figure 29 Transit usage and population density.

Figure 30 Transit usage and employment density.

Figure 135 These maps from the *Existing and Future Conditions Report* show how transit ridership relates to population and employment density in Bellevue.



Bus Funding Scenarios

Since the elimination of the Motor Vehicle Excise Tax (MVET) as a revenue source for local transit agencies in 1998, transit agencies have increasingly relied upon unstable local sales tax, the only substantial source available to them, as a means of supporting their transit service. Evidence of the instability of local sales tax occurred in the wake of the financial crisis that began in 2008-2009. All of the region's transit agencies were affected by this financial crisis with reduced local revenues. Each agency responded with some combination of raising fares, cutting transit service, and deferring planned services and facilities. The instability of local sales tax as a primary local revenue source makes future planning for transit service and facilities within reasonable fiscal constraints difficult to accomplish.

Because the state of transit funding cannot accurately be predicted at any of these time horizons, three distinct funding scenarios are considered for each time period to address the fullest range of potential outcomes. By planning for each of these potential scenarios, the proposals advanced by the *Bellevue Transit Master Plan* will be more readily adaptable to changing circumstances over the course of the plan's twenty-year implementation period.

The service projections presented here reflect yearly increments in the number of annual bus platform hours operated by King County Metro and Sound Transit (see Figure 2, Table 1, and Appendix 2). The particular assumptions made for future operations are different for the two agencies and are addressed in detail in subsequent sections. In general, the annual growth rates applied to each scenario are consistent with the expectations and needs identified by *Transportation 2040* (see Figure 1), the regional transportation plan developed by the Puget Sound Regional Council (PSRC), as interpreted by King County Metro (see Table 2). The

Figure 1 *Transportation 2040* is an action plan for transportation in the central Puget Sound region for the next 30 years, during which time the region is expected to grow by about 1.5 million people and support more than 1.2 million new jobs.

Figure 2 Projected Future Bus Service Funding Scenarios

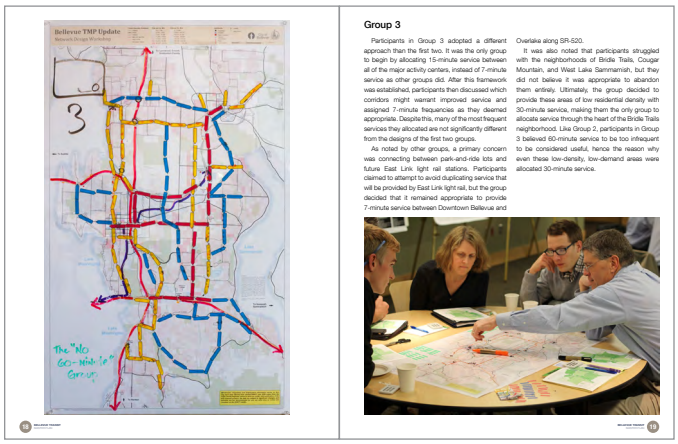
Table 1 City of Bellevue Projections

Scenario	Typ. Annual Growth Rate	Annual Bellevue Bus Platform Hours			
		Spring 2012	Dec. 2016	Dec. 2023	Dec. 2030
Reduced Funding	0.5%	740,880	691,713	654,083	623,968
Stable Funding	0.9%	740,880	742,288	769,913	796,761
Growing Resources	2.35%	740,880	790,879	879,276	1,029,338

Table 2 Regional Projections

Scenario	Typ. Annual Growth Rate	Annual System Wide Bus Platform Hours			
		Jan. 2012	Jan. 2016	Jan. 2023	Jan. 2030
Reduced Funding	0.9%	3,610,000	3,070,000	3,230,000	3,360,000
Stable Funding	2.5%	3,610,000	3,700,000	3,990,000	4,090,000
Growing Resources	2.35%	3,610,000	4,050,000	5,040,000	6,290,000

Figure 133 These pages from the *Funding Scenarios Report* depict the projected number of annual platform hours operated under each of the three funding scenarios between 2012 and 2030.



Group 3

Participants in Group 3 adopted a different approach than the first two. It was the only group to begin by allocating 15-minute service between all of the major activity centers, instead of 7-minute service as other groups did. After this framework was established, participants then discussed which corridors might warrant improved service and assigned 7-minute frequencies as they deemed appropriate. Despite this, many of the most frequent services they allocated are not significantly different from the designs of the first two groups.

As noted by other groups, a primary concern was connecting between park-and-ride lots and future East Link light rail stations. Participants claimed to attempt to avoid duplicating service that will be provided by East Link light rail, but the group decided that it remained appropriate to provide 7-minute service between Downtown Bellevue and Overlake along SR-520.

It was also noted that participants struggled with the neighborhoods of Bridle Trails, Cougar Mountain, and West Lake Sammamish, but they did not believe it was appropriate to abandon them entirely. Ultimately, the group decided to provide these areas of low residential density with 30-minute service, making them the only group to allocate service through the heart of the Bridle Trails neighborhood. Like Group 2, participants in Group 3 believed 60-minute service to be too infrequent to be considered useful, hence the reason why even these low-density, low-demand areas were allocated 30-minute service.

Figure 134 One of six networks developed at the Transit Network Design Workshop, this one by Group 3 attempts to balance frequent high-ridership and infrequent coverage services.

Existing and Future Conditions Report – Drawing from several of the reports noted above, the *Existing and Future Conditions Report* summarizes the major findings related to current transit operations and performance, priorities expressed by the public about this network, projected growth in population, employment, and ridership, and anticipated changes resulting from the introduction of East Link light rail and various planned and potential investments in local street and transit infrastructure.

Funding Scenarios Report – Developed through informal conversations with officials from King County Metro and Sound Transit and consultation of published reports by these agencies and the Puget Sound Regional Council's Transportation 2040, the *Funding Scenarios Report* describes the three bus funding scenarios that are considered in the TMP and defines the assumptions that were made to arrive at these results.

Transit Network Design Workshop Report – The Transit Network Design Workshop was an outreach event held on January 31, 2013. Various transit officials, board and commission members, and other local stakeholders were invited to take part in the workshop, where they were asked to further articulate priorities for transit services in and around Bellevue, and to brainstorm what corridors should be prioritized in the 2030 network and what frequency of service should be allocated to each. This report documents the six networks created by workshop participants, a summary of the common themes and notable differences identified by project consultant Jarrett Walker, and the service priorities identified by participants during audience polling.

Market Driven Strategies Report – This report identifies the framework within which the transit service vision was ultimately developed, including six essential qualities embodied by the service vision—known as "Abundant Access"—and the six market-driven strategies endorsed by the TMP to achieve this vision. These strategies represent the course advocated when confronted with the various fundamental tradeoffs inherent in the provision of transit service, which were developed by reflecting to the extent possible the body of input and assortment of guidance obtained through the various efforts described in the aforementioned reports.

1 **Focus on diversity of ridership and trip purpose.**
Great transit networks arise from designing services that are useful to the broadest and most diverse possible spectrum of user groups and trip purposes. By way of example, Route 240 that links Downtown Bellevue to Renton (via Newcastle, Factoria and Eastgate Park & Ride) is an example of a productive service (i.e., 22 boardings/platform hour and a cost/boarding of $5.52) catering to workers, students, and multiple other user groups. Given these diverse attributes, it is understandable why twelve more trips were added to this route in Spring 2012.[1] This high performing route stands in stark contrast to Route 925, a former DART shuttle van operation serving Newport Hills, Newcastle, and Factoria. This highly specialized route lacked the appeal for a broad user group with diverse travel patterns. For this reason, in October 2011, Route 925 was eliminated due to poor performance (i.e., 1 boarding/platform hour and a cost/boarding of $135). Except as required by the Americans with Disabilities Act, we will resist designing specialized services for specialized user groups, and seek instead to design versatile services that many different people find useful for many kinds of trips.

1. In 2009, WSDOT awarded King County Metro Regional Mobility Grant funds to increase Route 240 service frequency. This grant expires in June 2013, necessitating a 4,600 annualized platform hour reduction to Route 240.

2 **Create a civilized experience.**
It is sometimes suggested that transit agencies should develop higher-quality services for high-end markets, possibly with lower crowding, particularly nice seating, and so on. Luxury services at high price points should generally be left to the private sector so that transit can focus on creating an attractive product at an appropriate price point for the widest possible spectrum of the population. The idea that everyone should have a seat during peak hours, for example, may be important for very long commutes but is not practical for shorter trips around Bellevue during busy times.

3 **Make connections easy and attractive.**
A transit network is more than the sum of its parts. The usefulness of the network lies in the way all the parts work together, not just how they function individually. A single transit line may be useful for some trips, but it has more value when it is well connected with all the other lines; a passenger can travel along one line but also to anywhere those connecting lines go. The only way to efficiently serve multi-centered cities like Bellevue is with routes that are frequent and that make it easy to connect from one route to another at attractive and safe connection facilities. These improved connections contribute to greater coverage and more direct and shorter journeys. The transit network should be managed to take into account how all the parts—Link light rail, RapidRide lines, and bus routes—work together to enable people to reach more destinations in less time.

Figure 136 These pages from the *Market Driven Strategies Report* explain three of the six strategies advanced by the "Abundant Access" service vision.

Transit Service Vision Report – This report represents the culmination of the Service Element planning process. In addition to summarizing the service planning process, which was based on guidance obtained from the City Council, the public, local transit service providers, and other stakeholders, this document presents route-level recommendations that are responsive to three financial scenarios (reduced, stable, and growing resources) and attune to three time horizons (2015, 2022, and 2030). The 2030 Frequent Transit Network (FTN), comprised of the core services included in the most abundant scenario (2030 Growing Resources), will serve the vast majority of all ridership in Bellevue. The FTN is therefore used as the basis for the transit-supportive infrastructure planning completed in the Capital Element.

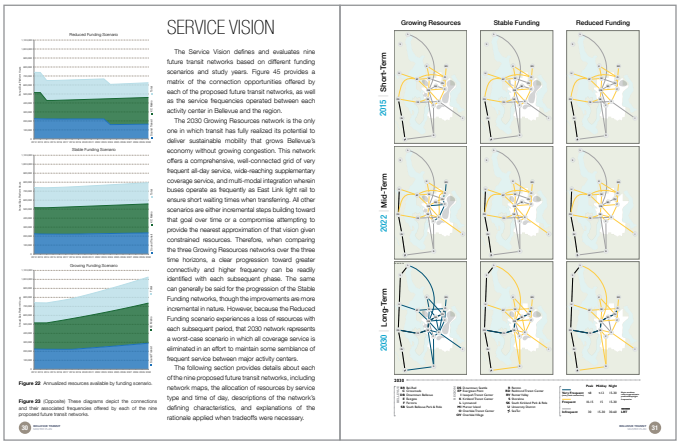


Figure 137 These pages from the Transit Service Vision Report present the nine future transit networks proposed for Bellevue, consistent with the three funding scenarios depicted in the charts on the left and the three time horizons considered by the TMP (2015, 2022, and 2030).

Capital Element Documents

Coach Operator Outreach Report – Transportation Department staff worked with King County Metro to develop and administer a short voluntary survey to obtain input from Metro coach operators on matters that compromise the efficiency of transit operations in Bellevue. Operators were asked to provide feedback related to five broad categories: locations with safety issues, intersections that take multiple green lights to pass through, intersections or corridors where signal timing could be improved, locations where operators have difficulty turning or changing lanes, and locations where other delays occur. Responses to the survey helped to inform the identification of potential speed and reliability improvements.

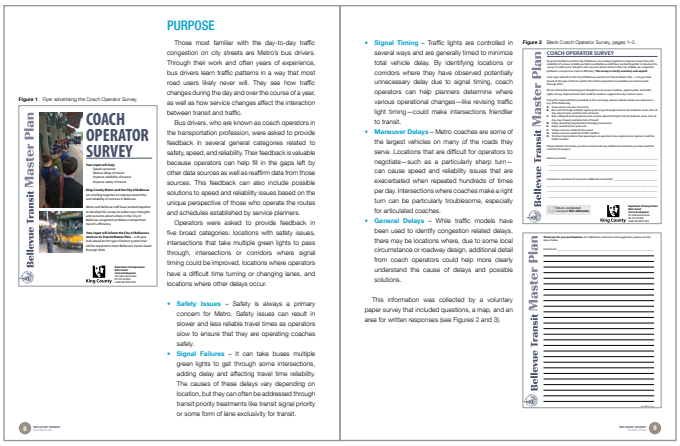


Figure 138 These pages from the *Coach Operator Outreach Report* depict the flyer and survey distributed to Metro bases in Bellevue and the topics operators were asked to address.

Capital and Policy Workshop Report – On September 6, 2013, the City of Bellevue invited transit officials, boards and commissions members, and other local stakeholders to a discussion about the appropriate degree to which transit should be given priority over other modes—if at all—and in which situations. This was considered in terms of the language used in City policies and in relation to transit priority treatment typologies along specific transit corridors. This report summarizes the topics addressed at the workshop, including the presentation given by City staff, the treatment options that were then being studied by project consultants, and the feedback provided by those in attendance, including the main themes expressed during discussion and the results of keypad polling exercises.

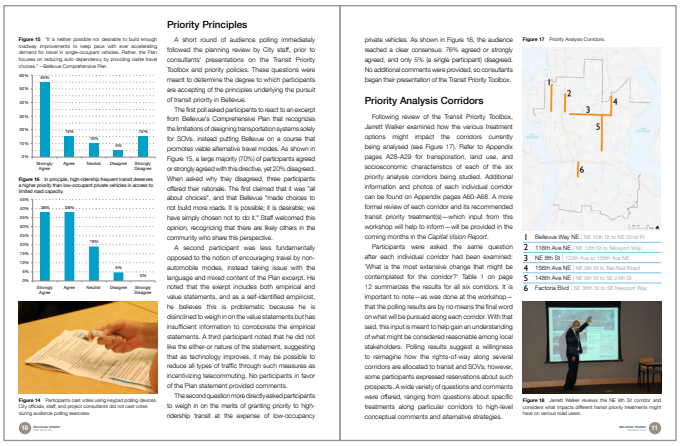
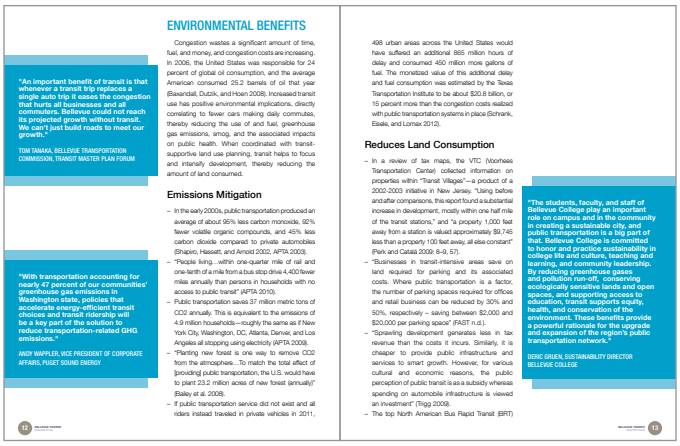


Figure 139 These pages from the *Capital & Policy Workshop Report* summarize some of the policy topics addressed by keypad polling and describe the framework of the corridor-based discussion of potential speed and reliability treatment options.

Measures of Effectiveness Report – This report details the qualitative and quantitative metrics that will be used to help monitor the progress of implementation of the Transit Master Plan. Refer to Appendix 7 beginning on page 132, where this report is reproduced nearly in its entirety.

Benefits of Transit Report – This report seeks to build support for the promotion of and investment in transit services and its associated infrastructure by connecting the benefits provided by transit to wider community objectives. In doing so, it attempts to lend clarity to the discussion between municipal and transit planners, private developers, homeowners and renters, employers and employees, and other stakeholders in Bellevue by providing a common understanding of what outcomes high-quality transit can be expected to facilitate. The outcomes are discussed in four sections: benefits to the economy, environment, community, and individuals. By providing a summary of the recent available literature on the subject, this report explains how transit can play a role in realizing the vision for Bellevue that is promoted in the city's Comprehensive Plan.



ENVIRONMENTAL BENEFITS

"An important benefit of transit is that whenever a transit trip replaces a single auto trip it eases the congestion that hurts all businesses and all commuters. Bellevue could not reach its projected growth without transit. We can't just build roads to meet our growth."

TOM TAMAKA, BELLEVUE TRANSPORTATION COMMISSION, TRANSIT MASTER PLAN FORUM

"With transportation accounting for nearly 47 percent of our communities' greenhouse gas emissions in Washington state, policies that accelerate energy-efficient transit choices and transit ridership will be a key part of the solution to reduce transportation-related GHG emissions."

ANDY WAPPLER, VICE PRESIDENT OF CORPORATE AFFAIRS, PUGET SOUND ENERGY

Congestion wastes a significant amount of time, fuel, and money, and congestion costs are increasing. In 2006, the United States was responsible for 24 percent of global oil consumption, and the average American consumed 25.2 barrels of oil that year (Bassandat, Dutzik, and Hoen 2008). Increased transit use has positive environmental implications, directly correlating to fewer cars making daily commutes, thereby reducing the use of and fuel, greenhouse gas emissions, smog, and the associated impacts on public health. When coordinated with transit-supportive land use planning, transit helps to focus and intensify development, thereby reducing the amount of land consumed.

Emissions Mitigation

- In the early 2000s, public transportation produced an average of about 95% less carbon monoxide, 92% fewer volatile organic compounds, and 45% less carbon dioxide compared to private automobiles (Shapiro, Hassett, and Arnold 2002, APTA 2003).
- "People living...within one-quarter mile of rail and one-tenth of a mile from a bus stop drive 4,400 fewer miles annually than persons in households with no access to public transit" (APTA 2010).
- Public transportation saves 37 million metric tons of CO_2 annually. This is equivalent to the emissions of 4.9 million households—roughly the same as if New York City, Washington, DC, Atlanta, Denver, and Los Angeles all stopping using electricity (APTA 2009).
- "Planting new forest is one way to remove CO_2 from the atmosphere...To match the total effect of [providing] public transportation, the U.S. would have to plant 23.2 million acres of new forest (annually)" (Bailey et al. 2008).
- If public transportation service did not exist and all riders instead traveled in private vehicles in 2011, 498 urban areas across the United States would have suffered an additional 865 million hours of delay and consumed 450 million more gallons of fuel. The monetized value of this additional delay and fuel consumption was estimated by the Texas Transportation Institute to be about $20.8 billion, or 15 percent more than the congestion costs realized with public transportation systems in place (Schrank, Eisele, and Lomax 2012).

Reduces Land Consumption

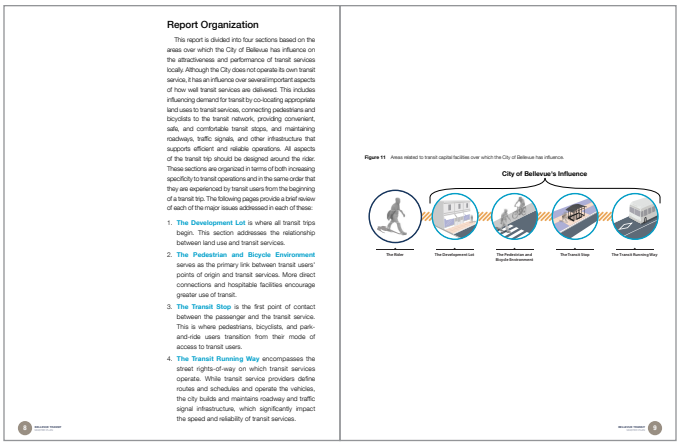
- In a review of tax maps, the VTC (Voorhees Transportation Center) collected information on properties within "Transit Villages"—a product of a 2002-2003 initiative in New Jersey. "Using before and after comparisons, this report found a substantial increase in development, mostly within one half mile of the transit stations," and "a property 1,000 feet away from a station is valued approximately $9,746 less than a property 100 feet away, all else constant" (Park and Cataldi 2009: 8–9, 57).
- "Businesses in transit-intensive areas save on land required for parking and its associated costs. Where public transportation is a factor, the number of parking spaces required for offices and retail business can be reduced by 30% and 50%, respectively – saving between $2,000 and $20,000 per parking space" (FAST n.d.).
- "Sprawling development generates less in tax revenue than the costs it incurs. Similarly, it is cheaper to provide public infrastructure and services to smart growth. However, for various cultural and economic reasons, the public perception of public transit is as a subsidy whereas spending on automobile infrastructure is viewed an investment" (Trigg 2009).
- The top North American Bus Rapid Transit (BRT)

"The students, faculty, and staff of Bellevue College play an important role on campus and in the community in creating a sustainable city, and public transportation is a big part of that. Bellevue College is committed to honor and practice sustainability in college life and culture, teaching and learning, and community leadership. By reducing greenhouse gases and pollution run-off, conserving ecologically sensitive lands and open spaces, and supporting access to education, transit supports equity, health, and conservation of the environment. These benefits provide a powerful rationale for the upgrade and expansion of the region's public transportation network."

DERIC GRUEN, SUSTAINABILITY DIRECTOR BELLEVUE COLLEGE

Figure 140 These pages from the *Benefits of Transit Report* present some of the findings from a literature review related to the environmental benefits associated with transit, including emissions mitigation and reduced land consumption, as well as quotes from local stakeholders addressing related issues.

Transit Capital Vision Report – This report represents the culmination of the Capital Element planning process. Building on the networks proposed in the *Transit Service Vision Report*, the Capital Vision addresses the variety of means through which the City can positively affect the operation and user experience of transit services within Bellevue, with particular emphasis on the various types of infrastructure that support productive, accessible, efficient transit services. In addition to documenting the analytical processes undertaken, the report proposes more than 100 roadway and intersection projects that would improve transit speed and reliability, recommends more than 40 intersections for near-term transit signal priority investments, and identifies investments in the pedestrian and bicycle access network, bus stops, and park-and-ride facilities, all with a focus on helping the City realize its proposed 2030 Frequent Transit Network (FTN).



Report Organization

This report is divided into four sections based on the areas over which the City of Bellevue has influence on the attractiveness and performance of transit services locally. Although the City does not operate its own transit service, it has an influence over several important aspects of how well transit services are delivered. This includes influencing demand for transit by co-locating appropriate land uses to transit services, connecting pedestrians and bicyclists to the transit network, providing convenient, safe, and comfortable transit stops, and maintaining roadways, traffic signals, and other infrastructure that supports efficient and reliable operations. All aspects of the transit trip should be designed around the rider. These sections are organized in terms of both increasing specificity to transit operations and in the same order that they are experienced by transit users from the beginning of a transit trip. The following pages provide a brief review of each of the major issues addressed in each of these:

1. **The Development Lot** is where all transit trips begin. This section addresses the relationship between land use and transit services.
2. **The Pedestrian and Bicycle Environment** serves as the primary link between transit users' points of origin and transit services. More direct connections and hospitable facilities encourage greater use of transit.
3. **The Transit Stop** is the first point of contact between the passenger and the transit service. This is where pedestrians, bicyclists, and park-and-ride users transition from their mode of access to transit users.
4. **The Transit Running Way** encompasses the street rights-of-way on which transit services operate. While transit service providers define routes and schedules and operate the vehicles, the city builds and maintains roadway and traffic signal infrastructure, which significantly impact the speed and reliability of transit services.

Figure 11 Areas related to transit capital facilities over which the City of Bellevue has influence.

City of Bellevue's Influence

The Rider | The Development Lot | The Pedestrian and Bicycle Environment | The Transit Stop | The Transit Running Way

Figure 141 These pages from the Transit Capital Vision Report describe the four sections into which the report is divided, reflecting the four areas over which the City has direct influence on the quality of transit operations locally: the development lot, the pedestrian and bicycle environment, the transit stop, and the transit running way.

APPENDIX 4: SERVICE VISION RESOURCE ALLOCATION

Table 6 Allocation of resources in 2030 by service type and funding scenario.

Service Type	2030 Growing		2030 Stable		2030 Reduced	
	Plat Hrs	%	Plat Hrs	%	Plat Hrs	%
Frequent Express	261,050	26%	228,011	29%	228,368	37%
Frequent Rapid	169,605	17%	95,243	12%	91,377	15%
Frequent Local	272,817	27%	220,585	28%	183,283	30%
Coverage (Standard Local)	171,940	17%	124,879	16%	0	0%
Peak-only	145,715	14%	116,632	15%	116,632	19%
Contingency reserve	4,939	0.5%	8,812	1.4%	5,479	0.6%
Total	1,021,127		785,349		619,660	

Table 7 Allocation of resources in 2022 by service type and funding scenario

Service Type	2022 Growing		2022 Stable		2022 Reduced	
	Plat Hrs	%	Plat Hrs	%	Plat Hrs	%
Frequent Express	213,324	25%	197,847	26%	197,847	31%
Frequent Rapid	88,332	10%	57,199	8%	57,199	9%
Frequent Local	115,197	14%	117,364	16%	120,855	19%
Infrequent Express	94,292	11%	94,292	13%	94,292	15%
Infreq. Local (Future Frequent)	44,472	5%	44,933	6%	16,531	3%
Infreq. Local (Coverage)	147,632	18%	120,456	16%	42,641	7%
Peak-only	140,202	17%	120,238	16%	115,954	18%
Contingency reserve	15,303		10,768		19,877	
Total	843,451		752,329		645,318	

Table 8 Allocation of resources in 2015 by service type and funding scenario

Service Type	2015 Growing		2015 Stable		2015 Reduced	
	Plat Hrs	%	Plat Hrs	%	Plat Hrs	%
Frequent Express	145,989	20%	145,989	20%	80,979	13%
Frequent Rapid	67,933	9%	67,933	9%	55,236	9%
Frequent Local	79,499	11%	79,499	11%	130,882	20%
Infreq. Express	92,430	12%	92,430	13%	92,430	14%
Infreq. Local (Future Frequent)	45,975	6%	45,975	6%	55,882	9%
Infreq. Local (Coverage)	138,167	19%	128,556	18%	88,737	14%
Peak Express	173,541	23%	173,541	24%	142,217	22%
Contingency reserve						
Total	743,535		733,924		646,362	

APPENDIX 5: 2014–2015 PROPOSED METRO SERVICE CUTS

Figure 142 2014–2015 proposed Metro peak-only route deletions and revisions.

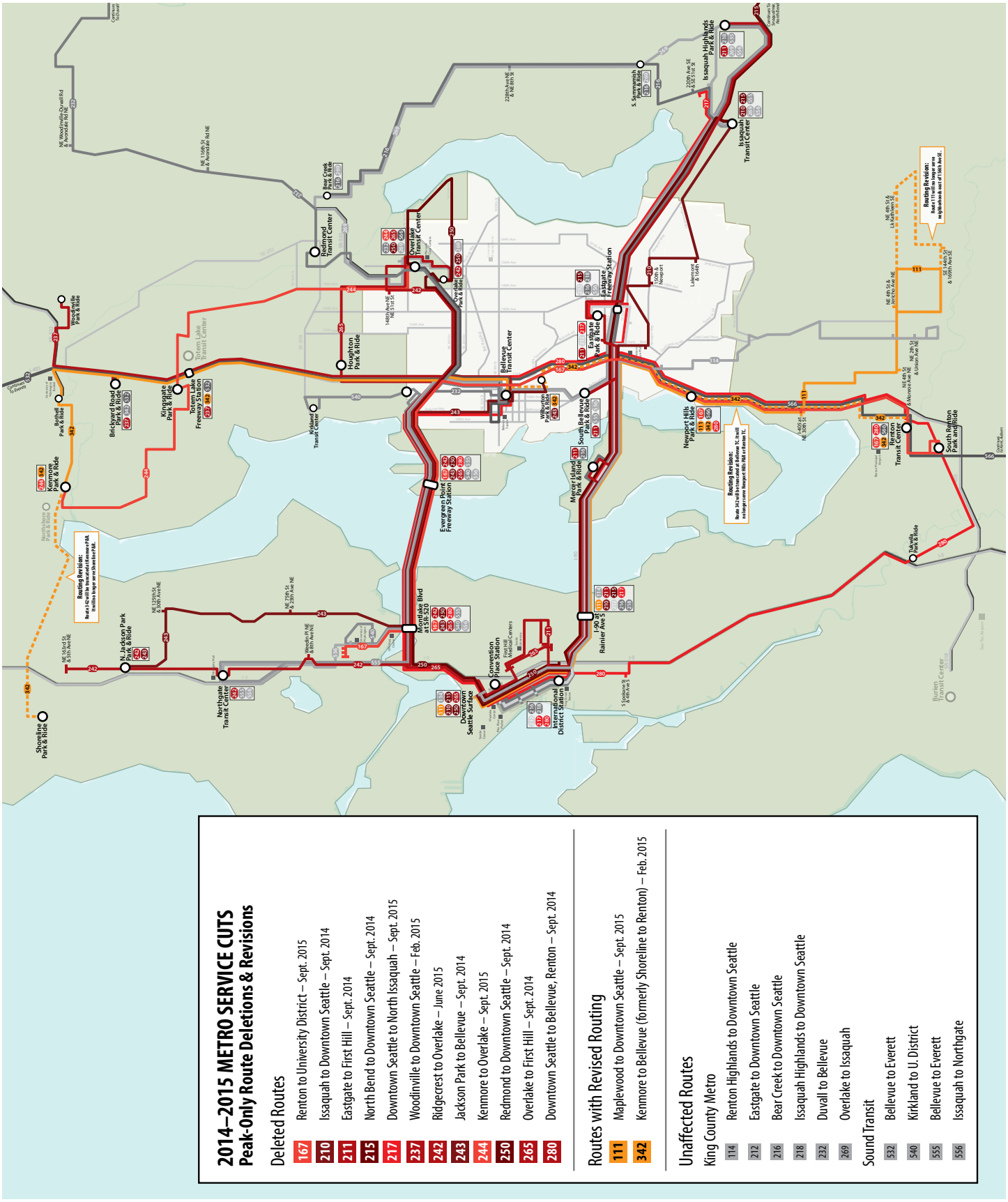


Figure 143 2014–2015 proposed Metro all-day route frequency reductions.

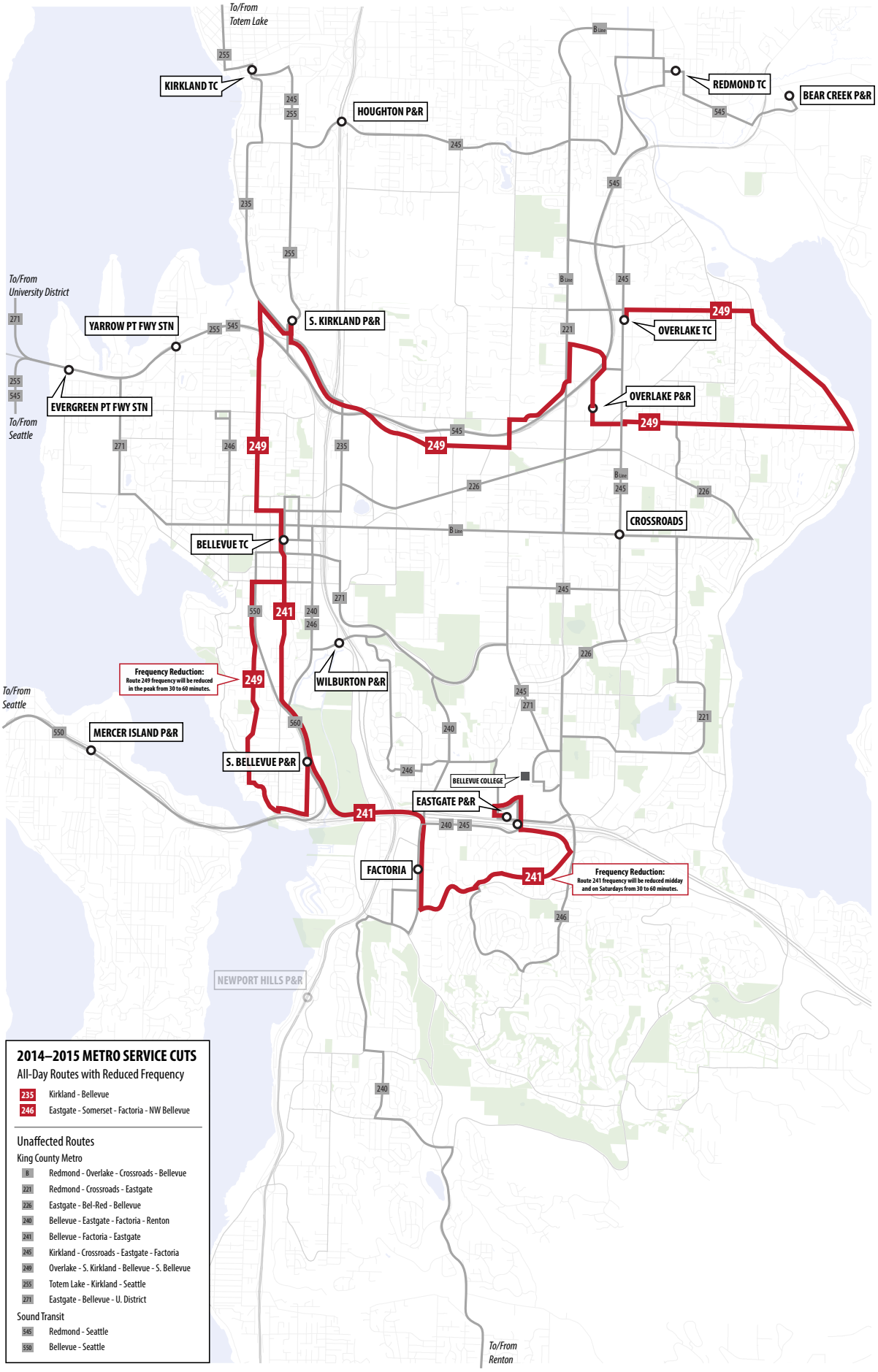


Figure 144 2014–2015 proposed Metro all-day route coverage reductions.

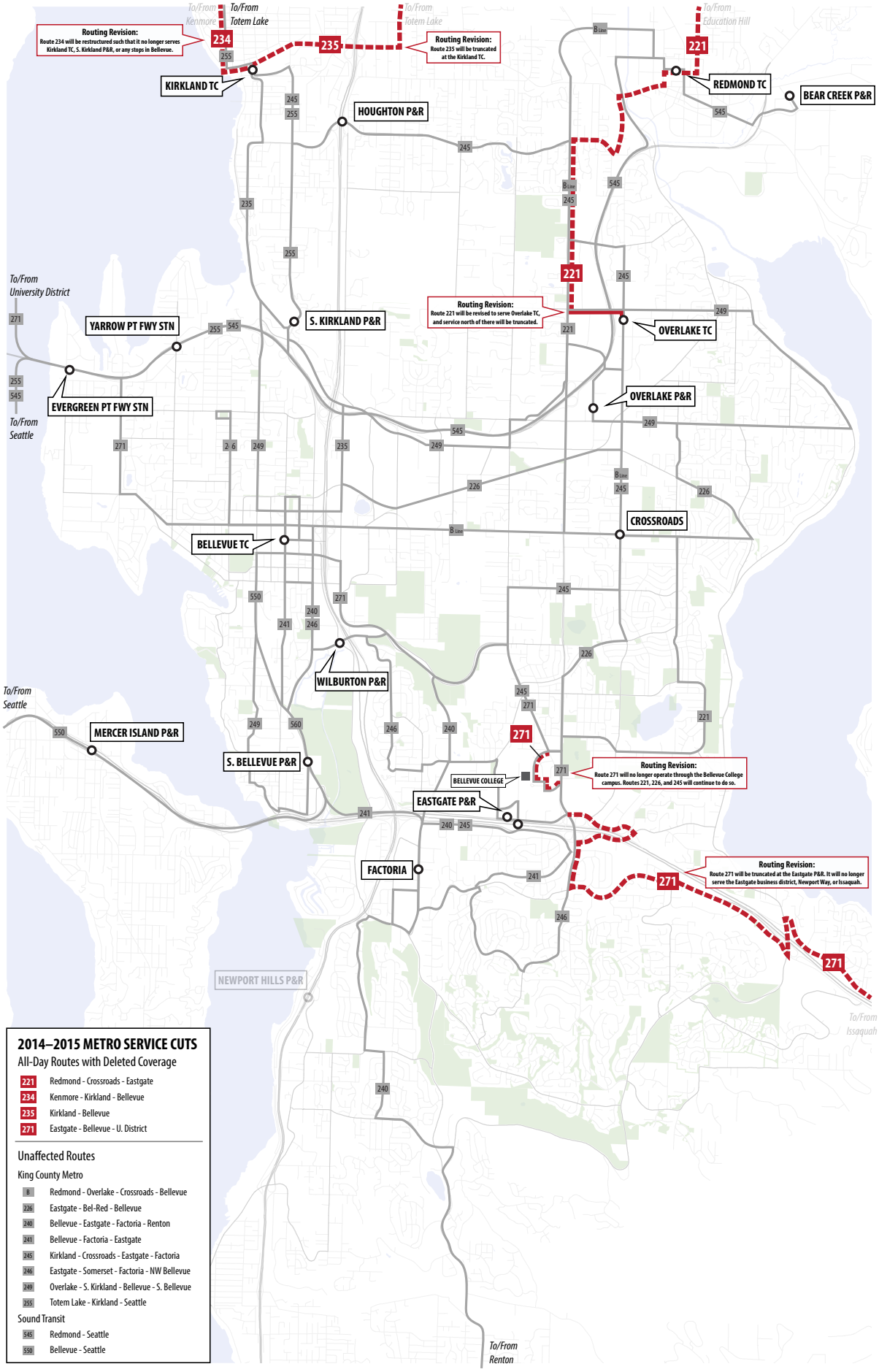
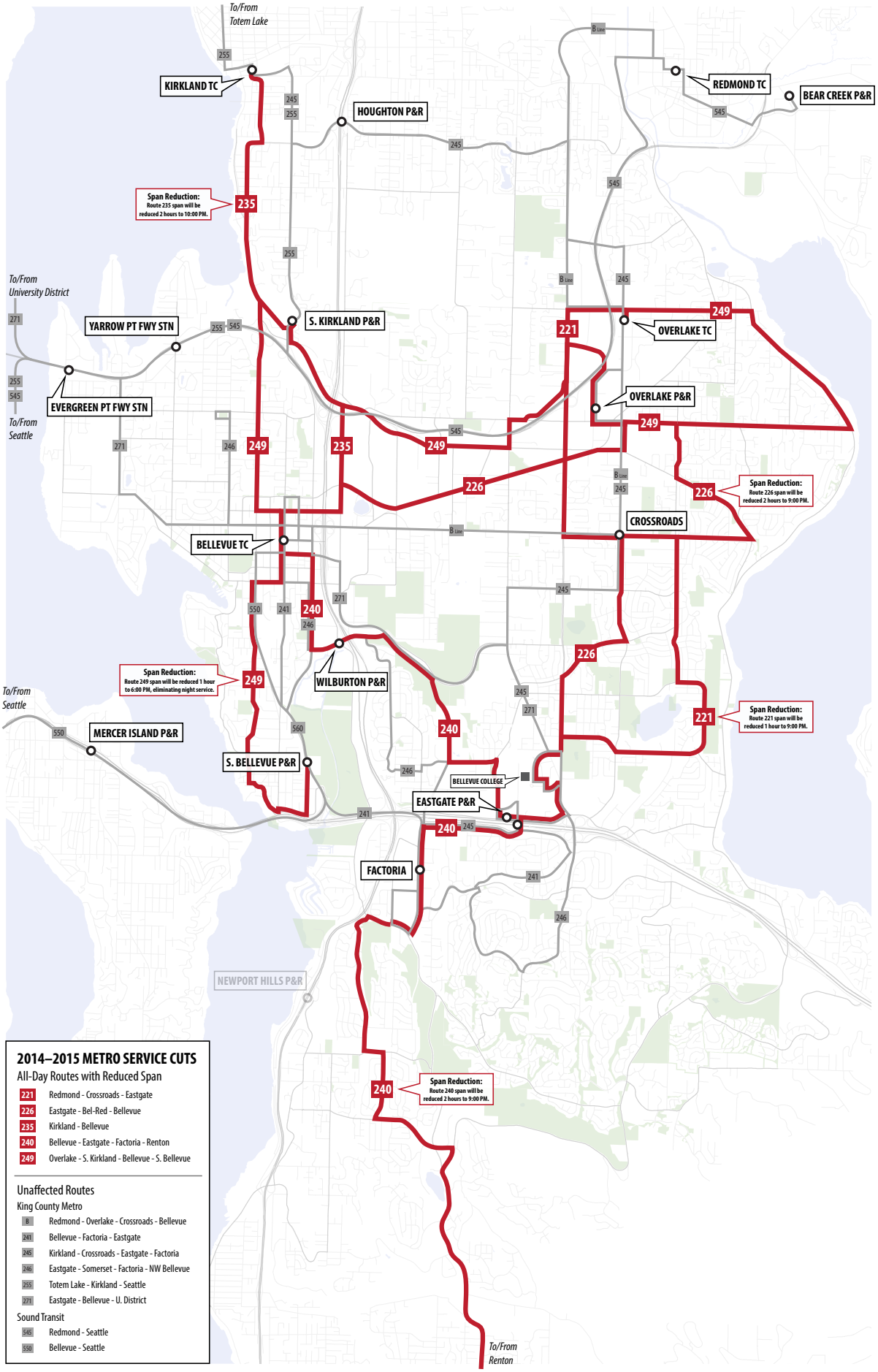


Figure 145 2014–2015 proposed Metro all-day route span reductions.



APPENDIX 6: CAPITAL VISION PROJECT LISTS

Table 9 Potential transit running way projects.

ID	Project	Type	FTN Service		Project Description	Composite Scores		Project Need / Potential Issues	Cost Range
			Routes	Frequency (Peak/Base/Night)		Short-Term	Long-Term		
L1	Bellevue Way SE HOV Lane - South Bellevue P&R	Lane Construction	1, 3, 11	~3 / 3-4 / 5-6	Construct a southbound HOV Lane on Bellevue Way SE between South Bellevue Park-and-Ride and I-90.	19	22	Previously noted in multiple plans including East Link Cost Saving Negotiations, Bellevue Transit Plan, Bellevue Transit Improvement Analysis, and Transportation Facilities Plan. See TIP-54 and TFP-242.	$$$ Millions
L2	Bellevue Way SE HOV Lane - South Bellevue P&R Extension	Lane Construction	1, 3, 11	~3 / 3-4 / 5-6	Construct a southbound HOV lane on Bellevue Way SE between South Bellevue Park and Ride and Y intersection with 112th Ave.	17–24	23	Previously noted in Bellevue plans. See TIP-55 and TFP-242.	$$$ Millions
L3	Bellevue Way SE HOV Lane - 112th Ave SE Extension	Lane Conversion/ Restriction	3, 11	4 / 5-8 / 15-20	Construct a southbound median HOV Lane on Bellevue Way SE from 112th Ave SE to approximately 107th Ave SE.	13–15	16–22	Addresses operator feedback, 2030 LOS of E and 2030 queuing, and frequent service. Property impacts on the west side of Bellevue Way SE at the intersection with 112th Ave SE.	$$$ Millions
L4	112th Ave SE HOV Lane	Lane Construction	1	8 / 10-15 / 30	Construct a southbound median HOV Lane on 112th Ave SE from Bellevue Way SE to slightly beyond end of intersection queue.	13	19	Addresses operator feedback, 2030 LOS of E and 2030 queuing. See TFP-242. Property impacts on the west side of Bellevue Way SE at the intersection with 112th Ave SE.	$$$ Millions
L5	108th Ave NE Transit Corridor	Lane Restrictions	1, 2, 3, 5, 6, 11, 13	~1 / 1-2 / ~2	Convert existing lanes along 108th Ave NE into BAT lanes and/ or implement other speed and reliability treatments as identified by the Downtown Transportation Plan Update from NE 10th St to Main St.	16–27	19–23	Very high bus volumes, revised circulation patterns, increased bus layover needs, and higher passenger boarding/alighting volumes will require additional transit capacity. Previously noted in several plans including the Downtown Transportation Plan Update, Bellevue Transit Plan, and Bellevue Transit Improvement Analysis. See TIP-51 and TFP-230 .	$$ Hundreds of Thousands
L6	148th Ave SE Improvements - Bellevue College	Lane Construction	12	8 / 10 / 15	Construct a southbound HOV lane and transit queue jump lanes and install TSP on 148th Ave SE between Lake Hills Blvd and SE 24th St.	7–15	8–9	Previously noted in the Bellevue Transit Plan. See TIP-66.	$$$ Millions
L9	I-90 Factoria Blvd Exit Expansion	General Purpose Lane Construction	11	8 / 10 / 15	In coordination with the Mountains to Sound Greenway, relocate the current trail undercrossing of the ramp between northbound I-405 and eastbound I-90 to a new bridge south of the existing undercrossing, and add a second off-ramp lane to the current ramp undercrossing. Evaluate how to best stripe the off-ramp lanes to ensure reliable transit operations.	22	16	Addresses 2010 intersection LOS of E and queuing issues. Could be funded in coordination with TIP-35, CIP W/B-78, and TFP-243.	$$$ Millions
L11	Main St HOV Lane	Lane Restriction	1, 13	4 / 5-8 / 15-20	Convert one eastbound general purpose lane to a PM peak-only HOV lane on Main St from Bellevue Way NE to 112th Ave NE.	9–11	23–24	Addresses 2030 intersection LOS of E/F at multiple intersections as well as significant queuing issues.	$$ Hundreds of Thousands
L13	NE 10th St HOV Lane	Lane Restrictions	5	8 / 10 / 15	Convert one eastbound general purpose lane to a PM peak-only HOV lane on NE 10th St from Bellevue Way NE to 112th Ave NE.	9–16	17–19	Addresses LOS of E at one intersection and long queues at multiple intersections in 2030.	$$ Hundreds of Thousands
L14	NE 116th Ave NE BAT Lanes	Lane Restrictions	5, 14	4 / 5 / ~8	Modify the channelization to allow BAT lanes between NE 12th St and Northup Way when approaching intersections and/or implement other speed and reliability treatments.	17	24	Addresses LOS of F and long intersection queues at north end of corridor. Very frequent service on corridor.	$$ Hundreds of Thousands
L17	108th Ave HOV Lanes	Lane Construction	4, 5, 14	~3 / 3-4 / 5-6	Construct a southbound lane for SR-520 westbound traffic and restrict the second lane for SR-520 eastbound and HOV traffic between the SR-520 direct access ramps and the South Kirkland Park-and-Ride.	16–30	14–23	Addresses current and future LOS issues (E and F respectively Very frequent service on this segment. This project represents an expansion by one lane of the intersection's north approach relative to the reconfiguration project currently being implemented by WSDOT as part of the SR-520 Bridge Replacement and HOV Program. Further analysis is required prior to the advancement of this project to ensure effective coordination with the changes currently being made.	$$$ Millions
L19	NE 6th St Extension	Road Extension	2, 6	4 / 5-8 / 15-20	Conduct a pre-design analysis for the extension of NE 6th St from its current terminus in the median of I-405 to the east over the northbound lanes of I-405 and 116th Ave NE to a new intersection with 120th Ave NE. Evaluate for additional transit improvements.	17	15	Addresses delay associated with signalized turns. Previously noted in the Bellevue Capital Investment Program and Transportation Facilities Plan. See TIP-14, CIP R-162, and TFP-211.	$ Tens of Thousands

Table 9 continued.

ID	Project	Type	FTN Service		Project Description	Composite Scores		Project Need	Potential Issues
			Routes	Frequency (Peak/Base/Night)		Short-Term	Long-Term		
L20	124th Ave NE - Bel-Red Road to NE 14th Street	Road Upgrade	14	8 / 10 / 15	Complete a preliminary design for the widening (to 5 lanes) of 124th Ave NE from Bel-Red Rd to NE 14th St. Coordinate with PW-R-166. Evaluate for additional transit improvements.	3	14	Addresses delay associated with signalized turns. Previously noted in the Bellevue Capital Investment Program and Transportation Facilities Plan. See TIP-18, CIP R-169, and TFP-213.	$ Tens of Thousands
L22	140th Ave NE BAT Lane	Lane Construction	14	8 / 10 / 15	Construct a southbound BAT lane from Bel-Red Rd to NE 8th St.	9	16	Addresses future LOS of F as well as significant queuing.	$$$ Millions
L23	156th Ave NE BAT Lane - Northbound	Lane Construction	7	8 / 10 / 15	Construct a northbound BAT lane from south of Northup Way to just north of NE 24th St.	17–27	17–18	Addresses future LOS and queue length issues at multiple intersections.	$$$ Millions
L24	156th Ave NE BAT Lane - Southbound	Lane Construction	7	8 / 10 / 15	Construct a southbound BAT lane from City Limits to just south of NE 24th St.	15–17	16–18	Addresses future LOS and queue length issues at multiple intersections.	$$$ Millions
L25	148th Avenue NE Master Plan Improvements	Road Upgrade	12	8 / 10 / 15	Construct the following: – A third NB through lane on 148th Ave NE from 350 ft south of Bel-Red Rd to the SR-520 eastbound on-ramp; – NB right turn lane and EB/WB dual left turn lanes at 148th Ave NE/Bel-Red Rd; – EB/WB dual left-turn lanes at NE 20th St/148th Ave NE; – Extend NB and WB right turn lanes at NE 24th St/148th Ave NE; – EB and WB dual left-turn lanes at NE 24th St/148th Ave NE; – Configure the NB three-lane approach on 148th Ave NE at the SR-520 eastbound on-ramp to right-turn only.	11–13	15–18	Investigate how improvements can be implemented to prioritize HOV and transit. Previously noted in the Transportation Facilities Plan. See TIP-61 and TFP-250.	$$$ Millions
L26	148th Ave NE BAT Lane - Overlake	Lane Construction/ Restriction	12	8 / 10 / 15	Modify the channelization to allow BAT lanes on 148th Ave NE between NE 24th St and NE 20th St.	11–13	15–18	Addresses future LOS of F for multiple intersections.	$$ Hundreds of Thousands
L27	Bellevue College Connection: 142nd Pl SE/ Snoqualmie River Road Multimodal Corridor	Road Upgrade	14	8 / 10 / 15	Upgrade the Snoqualmie River Rd roadway surface and facilities to support very frequent transit service. Includes stronger road surface, sidewalks, bicycle facilities, bus stops, and parking re-location components. Non-motorized improvements to the NE 142nd Pl SE bridge are also included.	15–19	7–19	Previously noted in the Eastgate/I-90 Land Use and Transportation Project. See TIP-63 and TFP-252.	$$$ Millions

Table 10 Potential queue jump, intersection, roadway, and signalization projects.

ID	Project	Type	FTN Service		Project Description	Composite Scores		Project Need / Potential Issues	Cost Range
			Routes	Frequency (Peak/Base/Night)		Short-Term	Long-Term		
Queue Jump Lanes									
Q2	Bellevue Way and NE 12th St - Northbound	Queue Jump	1	8 / 10-15 / 30	Add a queue jump to the northbound right turn lane.	13	14	High frequency transit service	$ Tens of Thousands
Q3	Bellevue Way and Main St - Northbound	Queue Jump	3, 11	4 / 5-8 / 15-20	Modify channelization to allow a northbound queue jump.	24	18	Addresses operator comments and high bus volumes. Uses existing facilities to prioritize transit.	$ Tens of Thousands
Q4	Northup Way and 116th Ave NE - Northbound	Queue Jump	2, 5, 14	2-3 / 3-4 / 8-10	Add a northbound to westbound queue jump lane.	17	24	Addresses future LOS and queuing issues, and very high bus volumes	$ Tens of Thousands
Q5	116th Ave NE and NE 12th St - Northbound	Queue Jump	5, 14	4 / 5 / ~8	Add a queue jump without a far side lane to the northbound approach in the right-turn only lane.	17	24	Addresses high bus volumes	$ Tens of Thousands
Q6	NE 10th St and 112th Ave NE - Westbound	Queue Jump	5	8 / 10 / 15	Add a queue jump to the westbound approach in the right-turn only lane.	11	15	Addresses future intersection LOS of E.	$ Tens of Thousands
Q7	Main St and 112th Ave NE - Westbound	Queue Jump	1, 13	4 / 5-8 / 15-20	Add a queue jump to the westbound approach in the right-turn only lane.	11	24	Addresses future intersection LOS of F and significant queuing.	$ Tens of Thousands
Q9	Lake Hills Connector and SE 8th St - Eastbound	Queue Jump	13	8 / 10 / 15	Add a queue jump to the eastbound approach in the right-turn only lane.	16	16	Addresses future intersection LOS of E and significant queuing.	$$ Hundreds of Thousands
Q10	Lake Hills Connector and SE 8th St - Westbound	Queue Jump	13	8 / 10 / 15	Add a queue jump to the westbound approach in a newly constructed queue jump lane.	14	16	Addresses future intersection LOS of E.	$$ Hundreds of Thousands
Q12	NE 8th Street and 140th Ave NE - Eastbound	Queue Jump	6	8 / 10 / 15	Add a queue jump to the eastbound approach in the right-turn only lane.	15	18	Addresses future intersection LOS of E and queuing.	$ Tens of Thousands
Q13	NE 8th Street and 140th Ave NE - Northbound	Queue Jump	6, 14	4 / 5 / ~8	Add a queue jump to the northbound approach in a newly constructed queue jump lane.	9	16	Addresses future intersection LOS of E.	$ Tens of Thousands
Q14	NE 8th Street and 140th Ave NE - Westbound	Queue Jump	6, 14	4 / 5 / ~8	Add a queue jump to the westbound approach in a newly constructed queue jump lane.	17	17	Addresses future intersection LOS of E.	$$$ Millions
Q15	NE 8th Street and 140th Ave NE - Southbound	Queue Jump	6, 14	4 / 5 / ~8	Add a queue jump to the southbound approach in the right-turn only lane.	9	16	Addresses future intersection LOS and significant queuing issues.	$ Tens of Thousands
Q16	NE 8th St and 148th Ave NE - Eastbound	Queue Jump	6, 12	4 / 5 / ~8	Add a queue jump to the eastbound approach in the right-turn only lane.	19	15	Addresses operator comments. Right turn volumes might be too high to make this viable.	$ Tens of Thousands
Q17	NE 8th St and 148th Ave NE - Northbound	Queue Jump	6, 12	4 / 5 / ~8	Add a queue jump to the northbound approach in the right-turn only lane.	20	14	Addresses operator comments.	$ Tens of Thousands
Q18	NE 8th St and 148th Ave NE - Southbound	Queue Jump	6, 12	4 / 5 / ~8	Add a queue jump to the southbound approach in the right-turn only lane.	20	19	Addresses operator comments.	$ Tens of Thousands
Q19	NE 8th St and 156th Ave NE (NB)	Queue Jump	6, 7	4 / 5 / ~8	Modify channelization to allow a queue jump.	21	14		$ Tens of Thousands
Intersection and Roadway Improvements									
R2	156th Ave NE and NE 24th St Turn Radii	Turn Radii	7	8 / 10 / 15	Improve the turn radius for the eastbound right turn on 156th Ave NE at NE 24th St.	N/A	N/A	Previously noted in the Eastgate/I-90 Land Use and Transportation Project.	$$ Hundreds of Thousands
R3	Northrup Way and 156th Ave NE Turn Radii	Turn Radii	7	8 / 10 / 15	Improve the turn radius for the southbound right turn on Northup Way at 156th Ave NE.	27	17	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis.	$$ Hundreds of Thousands
R4	Landerholm Circle and 148th SE Radii Improvements	Turn Radii	7, 13	4 / 5 / ~8	Improve the turn radius for the eastbound right turn on 148th Ave SE at Landerholm Circle.	N/A	N/A	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis.	$$ Hundreds of Thousands
R5	SE 32nd St and 139th Ave SE Radii Improvement	Turn Radii	14	8 / 10 / 15	Improve the turn radius for the westbound right turn on 139th Ave SE at SE 32nd St.	7	8	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis.	$$ Hundreds of Thousands
R9	NE 2nd St and Bellevue Way NE Turn Improvement	Road Upgrade	3, 5, 6	~3 / 3-4 / 5-6	Add a northbound right-turn lane and a second southbound left turn lane.	15–17	15	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis.	$$$ Millions
R10	SE 36th St and 142nd Ave SE	Turn Lanes	7	8 / 10 / 15	Improve eastbound to northbound and southbound to westbound turn movement through construction of southbound right turn lane and northbound bus stop pullout.	11–19	13–19	Previously noted in the Eastgate/I-90 Land Use and Transportation Project.	$$$ Millions

Table 10 continued.

ID	Project	Type	FTN Service		Project Description	Composite Scores		Project Need	Cost Range
			Routes	Frequency (Peak/Base/Night)		Short-Term	Long-Term		
Intersection and Roadway Improvements (cont.)									
R11	Northup Way and NE 116th St Turn Improvement	Turn Lanes	5, 14	4 / 5 / ~8	Add an eastbound to southbound right turn lane.	16	24	Addresses future intersection LOS of F with queuing issues, high bus frequency.	$$ Hundreds of Thousands
R12	NE 8th St and 156th Ave NE Turn Radii	Turn Radii	6, 7	4 / 5 / ~8	Improve the southbound to westbound turn radius.	21	14	Addresses operator comment.	$$ Hundreds of Thousands
R13	NE 12th St and 116th Ave NE Turn Lane	Turn Lanes	5, 14	4 / 5 / ~8	Add a westbound to northbound right turn lane.	15	16	Addresses future intersection LOS of E and queuing issues.	$$ Hundreds of Thousands
R14	NE 10th St and 116th Ave NE Channelization	Channelization	5	8 / 10 / 15	Clarify channelization of the eastbound approach such that right lane feeds into curb right-turn only lane and first left-turn only lane.	18	13	Prioritizes lane with transit at closely spaced intersection.	$ Tens of Thousands
R15	116th Ave SE and Main St Turn Lane	Turn Lanes	13	8 / 10 / 15	Add a second northbound to westbound turn lane. Time of day ITS solutions might eliminate the need for lane construction.	10	13	Addresses existing left turn queuing issues.	$$$ Millions
R16	NE 8th St and 120th Ave NE Turn Lane	Turn Lane	6	8 / 10 / 15	Add a second westbound to southbound turn lane and restrict to HOV and transit.	16	16	Addresses existing left turn queuing issues.	$$ Hundreds of Thousands
R18	NE 4th St and Bellevue Way Turn Improvement	Turn Improvement	3, 5, 6	~3 / 3-4 / 5-6	Add a southbound right turn lane, a westbound right turn lane, and dual westbound left turn lanes.	21	17	Previously noted in the Transportation Facilities Plan. See TIP-48 and TFP-222.	$$$ Millions
Signalization Improvements									
City-wide-S1	Traffic Computer System Upgrade	ITS	NA	NA	Citywide replacement of traffic signal and software to upgrade to SCATS traffic system.	N/A	N/A	SCATS implementation has shown to reduce travel times, which will generally result in improved speed and reliability of transit service.	NC
City-wide-S2	Controller Equipment and Software Standards	Standards	NA	NA	Coordinate with King County Metro on equipment and software TSP standards for all new signal controllers.	N/A	N/A	Ensures TSP treatments can be easily implemented in the future with existing equipment and software	NC
S1	NE 4th St and 108th Ave Turn Improvement	Turn Improvement	3, 6	4 / 5-8 / 15-20	Improve the eastbound left turn level-of-service (LOS) for transit through increased time allocation or TSP. Explore strategies to reduce southbound right turn delays caused by pedestrians.	26	18	Addresses top operator comment location.	$ Tens of Thousands
S3	South Kirkland P&R Signalizations	Signalization	4, 5, 14	~3 / 3-4 / 5-6	Signalize 108th Ave NE at the South Kirkland Park-and-Ride entrance.	16	13–14	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis	$$ Hundreds of Thousands
S4	Coal Creek Pkwy SE and 119th Ave SE Turn Improvement	Turn Improvement	11	8 / 10 / 15	Improve the westbound to southbound and northbound to eastbound turn movements through timing prioritization and TSP.	13–17	19–20	Addresses future intersection LOS of F and queuing issues.	$ Tens of Thousands
S6	SE 37th St and 150th Ave SE Turn Restriction	Turn Restriction	13	8 / 10 / 15	Restrict southbound to eastbound turns during PM peak hours to HOV and transit to reduce volumes and ensure that eastbound SE 37th St is not blocked by queuing traffic from I-90 eastbound.	14	14	Addresses existing and future LOS of E and F.	$ Tens of Thousands
S7	Bellevue Way and NE 10th St Turn Improvement	Turn Improvement	1	4 / 5 / 15	Improve the southbound to eastbound turn movement through signal timing prioritization and TSP. Improve the westbound to northbound movement through conversion of the right through lane to a right-turn only lane.	13	14	Reduces intersection signal delay	$ Tens of Thousands
S8	Bellevue Way and South Bellevue Park and Ride TSP Improvement	TSP Improvement	1, 3, 11	~3 / 3-4 / 5-6	Improve the responsiveness of northbound TSP operations.	19	22	Addresses multiple operator comments that northbound TSP was not responsive enough	$ Tens of Thousands
S9	112th Ave NE and NE Main St Turn Improvement	Turn Improvement	1, 13	4 / 5-8 / 15-20	Improve the northbound to westbound turn movement through timing prioritization and TSP.	14	20	Addresses future intersection LOS of F.	$ Tens of Thousands
S10	NE 8th St and 156th Ave NE Turn Improvement	Turn Improvement	6, 7	4 / 5 / ~8	Improve the eastbound to northbound left turn through timing prioritization and TSP. If improvements are inadequate, consider construction of a second left turn lane.	24	17	Addresses multiple operator comments.	$$$ Millions

Note: These projects are conceptual and the final details of design will be developed as the projects proceed further along in the implementation process.

Table 11 Potential near-term transit signal priority (TSP) projects.

Intersection ID	Cross Streets	Direction(s)	Approach Composite Scores		FTN Route(s)	Previous TSP Priority	Related TMP Project	Related TFP Project
			Short-Term	Long-Term				
5	Bellevue Way NE & NE 12th Ave	Northbound, Southbound	7–13	13–14	1			
6	Bellevue Way NE & NE 10th Ave	Southbound, Westbound	9–13	14–17	1		X	
21	NE 8th St & 108th Ave NE	Northbound, Southbound	27	23	1, 5		X	X
33	NE 8th St & 120th Ave NE	Northbound, Westbound	16–17	14–16	6		X	X
35	NE 8th St & 124th Ave NE	Eastbound, Westbound	10–16	12–16	6	X		
41	NE 8th St & 140th Ave NE	Eastbound, Westbound, Northbound, Southbound	9–17	16–18	6, 14		X	
43	Lake Hills Connector & 140th Ave SE	Eastbound, Northbound, Southbound	11–16	11–16	13, 14			X
43	Lake Hills Connector & SE 8th St	Northbound, Southbound	12–16	12–16	13, 14			X
44	Lake Hills Blvd & 145th Pl SE	Eastbound, Northbound, Southbound	11–16	11–16	7, 13, 14			X
45	Kamber Rd & 145th Pl SE	Northeastbound, Northwestbound, Southeastbound	3–17	10–18	7, 13, 14			X
46	NE 8th St & 143rd Ave NE	Eastbound, Westbound	17–19	15–17	6	X		
54	SE 24th St & 145th Pl SE	Eastbound, Southbound	17–19	12–18	7, 12, 13			
62	156th Ave NE & Northup Way	Northbound, Southbound	21–27	14–17	7		X	
63	NE 8th St & 156th Ave NE	Eastbound, Westbound, Northbound, Southbound	15–24	9–17	6, 12		X	
66	156th Ave NE & NE 15th St	Northbound, Southbound	12–14	8–9	6, 7			
67	156th Ave NE & NE 10th St	Northbound, Southbound	17–21	9–14	7			
69	Bellevue Way NE & NE 24th Ave	Northbound, Southbound	7–9	11–12	1			
70	156th Ave NE & NE 13th Way	Northbound, Southbound	12–14	8–9	7			
73	Main St & 116th Ave	Eastbound, Northbound	5–10	13–18	13		X	
79	148th Ave NE & NE 40th St	Northbound, Southbound	13–23	18–21	12		X	
91	SE Eastgate Way & 160th Ave SE	Westbound	10	9	13			
92	SE Eastgate Way & 161st Ave SE	Westbound	6	7	13			
107	NE 6th St & 112th Ave NE	Eastbound, Westbound	24–28	23	2, 6		X	
124	NE 6th St & 110th Ave NE	Eastbound, Westbound	27–32	20–21	2, 6		X	
126	NE 6th St & 108th Ave NE	Northbound, Southbound, Westbound	26–32	18–23	1, 2, 5, 6		X	X
131	116th Ave SE & SE 1st St	Northbound, Southbound	10–12	11–13	13			
134	Lake Hills Connector & Richards Rd	Eastbound, Westbound	12–14	14–16	13		X	
136	Bellevue Way NE & 2900 Block Crosswalk	Northbound, Southbound	7	12–15	1			
137	Bellevue Way NE & 1700 Block Crosswalk	Northbound, Southbound	7–9	11–13	1			
154	NE 10th St & 106th Ave NE	Eastbound, Westbound	9	17–19	1		X	
190	NE 10th St & 108th Ave NE	Eastbound, Northbound, Westbound	9–27	19–23	1, 5		X	X
213	Bellevue Way NE & SR-520 SPUI	Northbound, Eastbound	7	15	1		X	
227	150th Ave SE & SE 37th St	Southbound	14	14	13		X	
249	148th Ave NE & NE 51st St	Northbound, Southbound, Westbound	19–21	21	7, 12		X	
272	SE Eastgate Way & 139th Ave SE	Eastbound, Westbound, Southbound	7–26	12–14	13, 14	X		
287	148th Ave NE & NE 60th St	Northbound, Southbound	9	14	7, 12			
288	NE 8th St & 13300 Block Crosswalk	Eastbound, Westbound	10–15	12–18	6			
299	NE 8th St & 158th Ave NE	Eastbound, Westbound	5–15	5–14	6			
319	SE Eastgate Way & 140th Ave SE	Eastbound, Southbound, Westbound	17	12–15	7, 13, 14	X		
NA_1	Lake Hills Connector & I-405 NB off-ramp	Eastbound, Westbound	12–16	11–16	13			
NA_2	SE Eastgate Way & Eastgate P&R Entrance	Westbound, Eastbound	19–26	13–14	13			
NA_3	148th Ave NE & NE 4200 Block	Northbound, Southbound	13–23	18–21	12		X	
NA_4	148th Ave NE & NE 5600 Block	Northbound, Southbound	9–19	14–21	7, 12			
NA_5	148th Ave NE & NE 46th St	Northbound, Southbound	21–23	21	12		X	

Unfold for full-size map

APPENDIX 7: MEASURES OF EFFECTIVENESS (MOEs)

Measures of effectiveness are qualitative and quantitative metrics that provide information about the performance of individual projects or the progress of implementation of the TMP. They can also help to identify and prioritize potential projects that advance the "Abundant Access" service vision and realize the 2030 Frequent Transit Network (FTN).

To achieve a comprehensive understanding of the extent to which a project or plan is successful, MOEs should relate to a variety of different qualities associated with transit operation and service that may be affected by the proposed projects. Further, although being considered in the context of a transit plan, it is important that the MOEs used consider the impacts to every mode of travel, as projects that benefit one mode often do so at the expense of others. MOEs should therefore consider four types of travel modes—transit, private vehicles, pedestrians, and bicyclists—and this plan additionally proposes the consideration of people generally, regardless of their mode of travel. MOEs can also describe outcomes geographically: at a specific intersection or location, along a corridor, or for mobility management areas (MMAs) or the city as a whole.

The following pages outline the Transportation Department's proposed approach to monitoring the four MOEs identified, which builds on both Bellevue's existing framework for transportation assessment and national best practices.

Existing Metrics

King County Metro uses a variety of metrics to track the performance of the routes that it operates, which are defined in Metro's *Service Guidelines*, originally adopted in July 2011 in conjunction with the agency's *Strategic Plan for Public Transportation 2011-2021*.

Metro's purpose in establishing these guidelines is to provide all-day and peak-hour service networks that support regional growth plans, respond to existing ridership demand, provide productive and efficient service, ensure social equity, and provide geographic value through a network of connections between major urban and activity centers.

The performance measures established follow from these goals and are applied to different service types and at different scales. Not every measure is considered for every route or at every scale; for example, some measures are considered only for corridors that serve all-day needs, while peak-only services are assessed using different measures. The Guidelines establish three analytical processes for assessing route performance: the first addresses route productivity by considering the measures rides per platform hour and passenger miles per platform mile, the second addresses service quality by examining passenger loads and schedule reliability, and the third assesses the level of service provided by individual routes according to the type of service they provide—all-day or peak-only. The analysis process for all-day routes includes consideration of performance measures associated with land use, social equity, and geographic value, as well as the passenger load, cost recovery, and demand for late-night service at the suggested level of service. The need to operate peak-only routes is assessed via measures of travel time and passenger load relative to the peak routes' all-day alternatives.

Refer to the Measures of Effectiveness Report for a more thorough review of Metro's service guidelines. Although the City will continue to monitor Metro's assessment of these measures, these measures relate exclusively to the allocation of service, not the evaluation of plan progress or potential projects.

Figure 146 The King County Metro *Strategic Plan for Public Transportation 2011-2021* and *2013 Service Guidelines Report*.

Table 12 Metro guidelines for service adjustment.

Guideline	Measures
Productivity	Rides per platform hour Passenger miles per platform mile
Passenger Loads	Load factor
Schedule Reliability	On-time performance Headway adherence Lateness
All-Day and Peak Networks	Current service relative to All-Day and Peak Networks

King County Metro uses the above guidelines when adding or reducing service and in the ongoing development and management of transit service.

PROPOSED MEASURES

The Transportation Commission prepared the following four measures of effectiveness (MOE) on October 17, 2013 for monitoring progress in achieving Bellevue's transit service vision:

1. Measure service availability on Bellevue's Frequent Transit Network corridors.
2. Measure transit usage in Bellevue's Mobility Management Areas.
3. Measure person throughput by mode on Bellevue's Frequent Transit Network corridors.
4. Measure travel time savings resulting from speed and reliability improvements on Bellevue's Frequent Transit Network corridors.

By providing a sense of the quality of transit service in Bellevue, these metrics can serve as a tool for communicating the City's need for transit service delivery and capital improvements to the public, King County Metro, Sound Transit, and other elected leaders. These measures can be organized into the following performance categories:

- **Service Availability:** ease of use for various kinds of transit trips;
- **Transit Usage:** passenger satisfaction with the quality of transit service provided;
- **Person Throughput:** transit's role in managing roadway capacity and operations; and,
- **Travel Time:** how long it takes to make a trip by transit in comparison with another mode.

With the exception of the transit usage MOE, which will be reported twice annually, the other metrics will be produced on a five-year reporting cycle. In the intervening years, Bellevue staff will monitor King County Metro's Strategic Plan and Service Guidelines, which established a system of operations performance standards and network evaluation based on measures of productivity, social equity, and geographic value.

Service Availability

The first MOE—"measure service availability on Bellevue's Frequent Transit Network corridors"—will help the Transportation Department determine whether transit service is a viable option for a given trip in Bellevue. Where, how often, and when transit service is provided are all important factors in one's decision to use transit. In transit planning terms, these qualities are known as accessibility (or service coverage), service frequency, and service span, respectively. From the user's perspective, service frequency determines how many times per hour a user has access to transit at a given location, assuming that location is within an acceptable walking distance (measured by service coverage) and service is provided at the times the user wishes to travel (measured by service span). The following spatial and temporal attributes—when considered together—provide an assessment of transit service availability.

Route Frequency

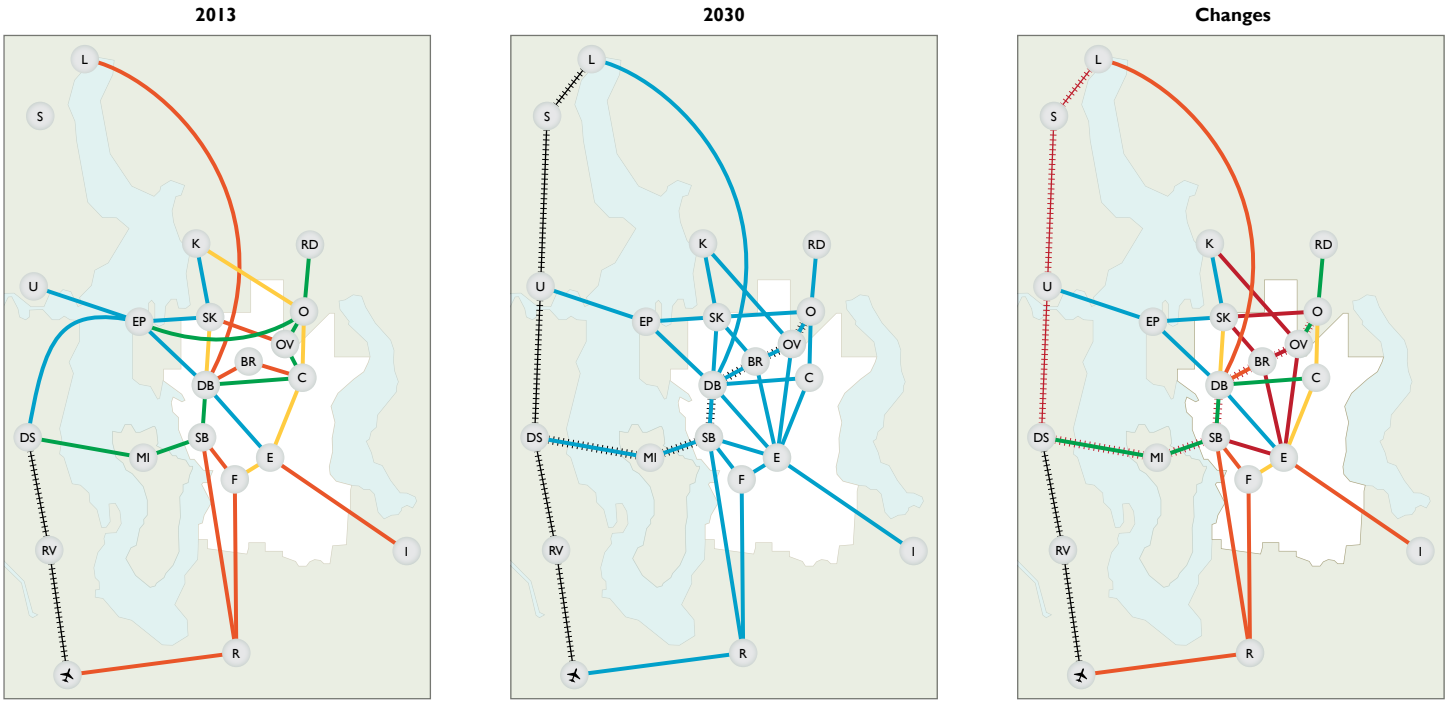
Transit frequency is the number of transit vehicles scheduled to serve a given stop during one hour. Frequency was reported as the top factor influencing overall trip satisfaction in the *Bellevue Transit Improvement Survey*. The more frequent the transit service, the shorter the wait time when a bus is missed or when the exact schedule is not known before arriving at a bus stop, and the greater the flexibility that customers have in selecting travel times. The longer the service headway (the time between successive buses), the more inconvenient transit becomes, both because passengers have to plan their trip around bus schedules and because they incur more unproductive time during their trip.

Research suggests that 30-minute service frequency is considered to be unattractive to discretionary riders—those with access to an automobile who choose to use transit—while

15-minute service in the peak periods is considered a significant threshold to making transit a competitive alternative to driving. This threshold mainly relates to the amount of time people are willing to wait if they just miss a bus. With a 30-minute wait until the next bus, most people with a car available will not risk having to wait that long and will thus not attempt to take the bus at all.

Assessing route frequency involves determining whether each portion of the FTN achieves the headway thresholds for frequent service defined in the *Transit Service Vision Report*. Staff will develop a table and map reflecting the percentage of FTN corridor segments operating at these target headways. Figure 148 reflects the route segments along 2030 FTN corridors and the upgrades in service headways required to achieve 2030 target frequencies. *Route segment* refers to a portion of an FTN route that is bounded by an intersection with another route on both sides. This method avoids consideration of the transit network in terms of the block-by-block approach promoted by the *Highway Capacity Manual*. Figure 147 reflects the connections between major local and regional centers served by FTN routes and indicates which require upgrades to achieve 2030 FTN-level service. Both figures depict only those segments and connections operated by FTN routes—infrequent all-day services are not shown.

Figure 147 Progress toward 2030 FTN by frequency of service connections between major centers.



Legend

BELLEVUE

- **BR** Bel-Red
- **C** Crossroads
- **DB** Downtown Bellevue
- **E** Eastgate
- **F** Factoria
- **SB** S. Bellevue Park & Ride

REGION

- **DS** Downtown Seattle
- **EP** Evergreen Point
- **I** Issaquah Transit Center
- **K** Kirkland Transit Center
- **L** Lynnwood
- **MI** Mercer Island
- **O** Overlake Transit Center
- **OV** Overlake Village
- **R** Renton
- **RD** Redmond Transit Center
- **RV** Rainier Valley
- **S** Shoreline
- **SK** S. Kirkland Park & Ride
- **U** University District
- SeaTac

	Peak	Midday	Night
Very Frequent (every train connection)	8	10-15	15-30
Light Rail Transit	8	10	15

Note: numbers reflect approximate peak/midday/night frequencies.

2013 - 2030 FTN Upgrades Required

- 8 **No Upgrade Needed** - 2030 FTN-Level Service
- 10 **Upgrade by 2 min.** - Existing Very Frequent Service
- 15 **Upgrade by 7 min.** - Existing Frequent Service
- 30 **Upgrade by 20+ minutes** - Existing All-Day Service
- N **New Service** - No Existing Service at any Frequency

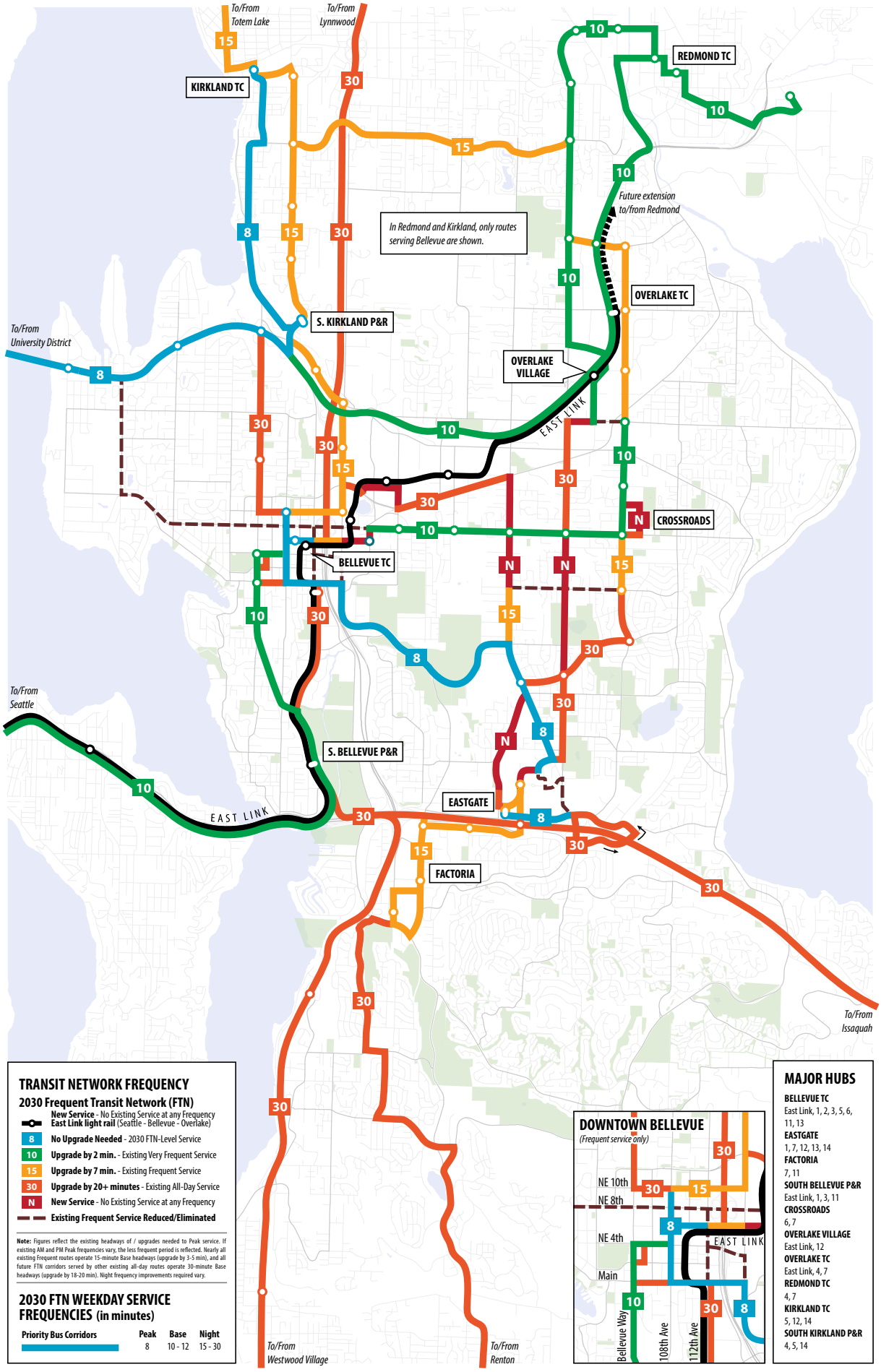


Figure 148 Headway upgrades required from 2013 network to achieve the 2030 Frequent Transit Network.

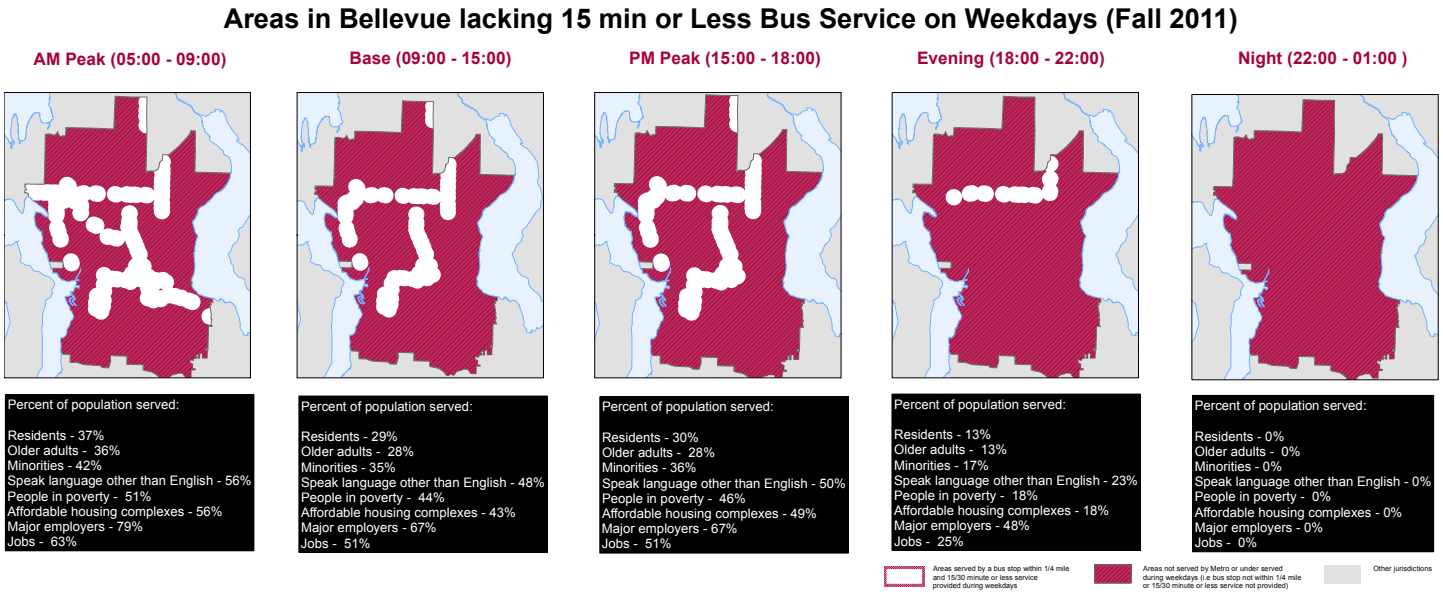
Route Coverage

The presence or absence of transit service near one's origin and destination is a key factor in one's choice to use transit. Route coverage is a measure of the area within a reasonable walking distance of transit service. When combined with service frequency and span data, route coverage helps identify the number of opportunities people have to access transit from different locations.

The calculation of the transit route coverage area is performed through the use of a geographic information system (GIS) using the following data: (i) bus stop locations from King County Metro's GIS database, and (ii) demographic data (population and jobs) from the U.S. Census Bureau. Bellevue's GIS software buffering feature is then used to outline on a map all of the area within one-quarter mile of an FTN bus stop. The one-quarter mile buffer is consistent with industry literature that most passengers (75–80% on average) walk one-quarter mile or less to bus stops. At an average walking speed of 3 mph, this is equivalent to a maximum walking time of about 5 minutes.

In conducting this analysis, Transportation Department staff will assess how many Bellevue residents and employees are provided frequent bus service by day of week (weekday and weekend) and time of day (AM peak, base, PM peak, evening, and night). Broadening the route coverage analysis to consider service span helps to refine this assessment of service availability to potential users. If transit service is not provided at the time of day a potential passenger needs to take a trip, it does not matter where (coverage) or how often (frequency) transit service is provided during the rest of the day. Some potential transit riders choose not to use transit services because particular services are unavailable for their anticipated return trips or because they cannot be certain about the time of their return trips and need to be certain that they do not get stranded. Figure 149 reflects areas in Bellevue lacking 15-minute bus service on weekdays and weekends, respectively, based on Fall 2011 data.

Figure 149 Weekday level of service coverage, Fall 2011.



Transit Usage

The second MOE—"measure transit usage in Bellevue's Mobility Management Areas"—will help the Transportation Department track passenger satisfaction with the quality of transit service provided in Bellevue. The transit usage calculation is performed with a geographic information system (GIS) using the following data: (i) average weekday stop-level usage data (ons/offs) on bus routes operating in Bellevue, and (ii) Bellevue's GIS shapefile of the 14 Mobility Management Areas (MMA) of the city. Tracking transit usage occurs twice annually, reflecting average weekday stop-level on/off data from the Spring and Fall service changes.

Increased usage of transit is correlated to the numerous service and capital investments that have been made over this period to improve travel options in Bellevue. Public transportation ridership in Bellevue has grown steadily since the adoption of the 2003 Transit Plan; average weekday transit ridership in Bellevue rose from 25,300 (in 2004) to 50,300 (in 2012)—a 99 percent increase.

Person Throughput

The third MOE—"measure person throughput by mode on Bellevue's Frequent Transit Network corridors"—will assist the Transportation Department in tracking transit's contributions to improved mobility on Bellevue's street network. Historically, arterial street performance has been based mostly on outcomes for vehicles rather than people. In classical highway engineering, the goal is maximizing "vehicle throughput," expressed by letter grades that reflect an intersection's level of service (LOS). Vehicle throughput is based on the volume-to-capacity (V/C) ratio, which divides the total number of vehicles at a given intersection by the capacity of that intersection to handle cars. The V/C ratio regards each vehicle as equally important regardless of how many people it carries.

There is a growing recognition in the transportation industry that metrics that focus solely on vehicle

throughput are unable to adequately capture the human and social costs of lost time and money. That is, vehicles do not lose time, but people do. In order to improve automobile LOS at a given intersection, for example, traffic engineers may inadvertently favor a reliance on vehicle-oriented solutions that unintentionally limit other investment choices. The result of these actions may be that the intersection can handle more vehicles but fewer people. In the long-term, as the city grows, managing the transportation system with an exclusive focus on auto congestion paradoxically results in more auto congestion than an approach that considers all modes.

The *Transit Capacity and Quality of Service Manual Third Edition* defines person capacity as: "The maximum number of people that can be carried past a given location during a given time period under specified operating conditions; without unreasonable delay, hazard, or restriction; and with reasonable certainty." Person throughput—a function of the mix of vehicles in the traffic stream, including the number and occupancy of each type of vehicle—recognizes the difference between a single bus containing 40 people and a pair of cars that occupy the same space but contain only 2 people. A commitment to measure person throughput is found at every level of government in Washington State. Because transportation impacts do not stop at local boundaries, coordination between jurisdictions is important—indeed, it is recognized by Bellevue's *Comprehensive Plan* as being "absolutely necessary". It is therefore instructive to consider how state and regional entities address the subject of person throughput.

Bellevue's person throughput calculation is performed with the Bellevue-Kirkland-Redmond (BKR) travel demand model. Inputs to the four-step model used in travel demand forecasting are current land use, the current transportation system, forecast changes in households, employment, and transportation system improvements, and the fraction

of trips made during the peak period. The travel demand model compares demand for travel to the supply of the roadway system within the project area. Travel demand is derived from population and employment, while the supply side of the equation is the roadway system on which travel occurs.

The BKR model produces Peak-Period Person Throughput (PPPT) by mode for the corridor segments that comprise the Frequent Transit Network (FTN) defined in the *Transit Service Vision Report*. The PPPT metric takes into account average vehicle occupancy of personal vehicles and public transportation. By measuring performance during peak periods, PPPT focuses attention on the time period when the transportation system is most stressed. The public easily understands peak-period performance, as it impacts many travelers through the daily commute, and improvements to system performance during peak periods are visible and appreciated.

As reflected in Figure 150, BKR model data facilitates a comparison of PPPT values for both transit and personal vehicles along FTN corridor segments. In the case of Bellevue Way SE between SE 8th Street and 113th Avenue SE, the 2030 projected PPPT on transit is 44 percent of all person trips. When considered from a vehicle throughput perspective, transit represents only 1.1 percent of all vehicle trips along this FTN corridor segment. Clearly, bus service is projected to make efficient use of the roadway capacity in this corridor.

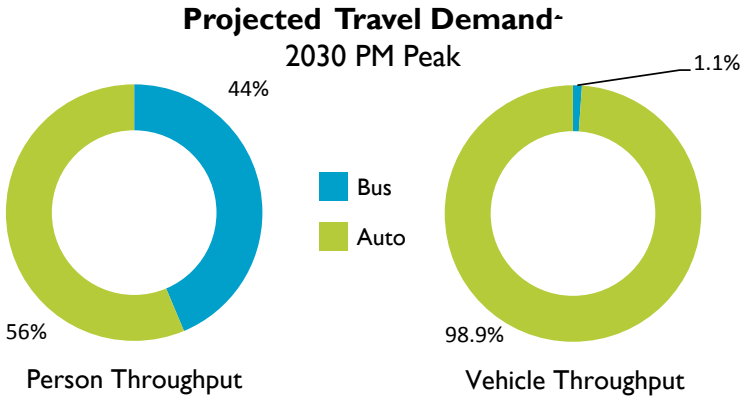
Although the example provided is for projected 2030 conditions, BKR travel demand model outputs can also be generated for current conditions. Bellevue is able to aggregate prior year annual bus ridership data for each of the FTN corridors. This data is then compared to auto volume and person trips found in the base year model.

Figure 150 2030 PM peak projected travel demand along Bellevue Way SE between SE 8th St and 113th Ave SE.

Bellevue Way SE

SE 8th St to 113th Ave SE

Buses[1]	36
Total Vehicles[1]	3,230
Percent Transit[1]	1.1%
Person Trips – Transit[1]	3,363
Person Trips – Total[1]	7,705
Percent Transit[1]	44%



[1] Based on City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).

Travel Time

The fourth MOE—"measure travel time savings resulting from speed and reliability improvements on Bellevue's Frequent Transit Network corridors"—will assist the Transportation Department in tracking the improvements realized by transit priority investments and help identify FTN service connections where ridership gains and operating cost savings might be realized from proposed transit priority measures. The *Transit Capacity and Quality of Service Manual Third Edition* notes that travel time is a useful metric for assessing transit performance because "travel time directly impacts the number of transit vehicles needed to operate on a route at a given headway and the impact of location-specific transit preferential treatments and operational strategies will typically be expressed as a travel time saved per location," and also because "ridership elasticity factors... exist for average speed, allowing the impact of speed improvements on ridership to be estimated."

According to respondents of the *Bellevue Transit Improvement Survey*, improving bus speed and reliability by investing in roadway and traffic signal infrastructure is the highest priority for municipal investment in transit. Attracting ridership is of course important to transit operators, but speed also impacts the cost of operating a route. The number of transit vehicles required to operate a service at a given frequency depends on the route's cycle time (the time required to make a round-trip on the route), plus driver layover time, and any additional schedule recovery time required beyond layover time. The cycle time (in minutes) divided by the headway (in minutes per vehicle) gives the required number of vehicles to serve the route. If a route's cycle time can be reduced sufficiently to reduce the required number of vehicles, cost savings result. Alternatively, the saved vehicle can be used to increase frequency on this or another route with no net change in operating costs.

Bellevue's travel time MOE is considered in terms

of two metrics: one assesses operating speeds in absolute terms and compares observed speeds to service vision targets, and the other expresses transit travel time in relative terms compared to automobile travel time. Together, these two measures provide a comprehensive understanding of the degree of mobility offered by transit service as it relates both to operations and users. The first metric calculates the average operating speed of all routes comprising each FTN service type—Frequent Express (FX), Frequent Rapid (FR), and Frequent Local (FL)—for each period of the day. These values are then compared to the target operating speeds established in the *Transit Service Vision Report* for 2022 and 2030. Congestion on local roads is projected to worsen as time progresses, hence the estimated operating speeds for FR and FL services are expected to decline between 2022 and 2030. By contrast, the average speeds of Express services increase by 2030 because Route 550—currently the slowest of the Express services—will be discontinued after it is replaced by East Link light rail. Although the general trend is toward declining speeds over time, observed operating speeds in 2012 are not uniformly faster than the estimated speeds for future years. For example, Rapid service is estimated to be 10% faster than Local service in future years per guidance received from Metro, but Bellevue's only existing Rapid route (B Line) does not presently achieve such a speed premium over the average of all local all-day services. If observed speeds in 2022 and 2030 are ultimately found to be slower than the estimated targets, this may have implications for the amount of transit service operated in Bellevue.

Stated simply: time is money. Slower service means less service unless Bellevue can secure additional resources (in terms of annual platform hours operated within the city) from local transit agencies. This is because slower operating speeds result in longer

cycle times, which if sufficiently longer than planned will require additional vehicles to provide the same level of service. If additional resources cannot be secured to offset the difference, service frequency or span may need to be reduced to remain within the annual platform hour budget. The importance of achieving the targeted operating speeds therefore cannot be overstated, as these estimates play a central role in determining how much service can be operated given a particular budget.

The second measure assessing travel time is a ratio obtained by dividing transit travel time by auto travel time. A Transit/Auto (T/A) ratio greater than 1.0 reflects transit travel times that exceed auto travel times. As a general rule of thumb, T/A ratios of 2.0 or above are considered not competitive to trips by auto and are therefore less likely to attract ridership. Figure 151 reflects PM peak transit travel times, auto times, and T/A ratios from Downtown Bellevue to various local and regional destinations. Additional details about this methodology—derived from manually tabulating travel times obtained from Google Maps—are reflected in the *Bellevue Transit/Auto Travel Time Analysis Report*, in which transit travel times were compared to the time it would take to reach the same destination at the same time of day by car.

Travel times used to calculate the T/A ratio on Bellevue's FTN corridors can be obtained from a variety of sources, including those shown at left. Whichever source is selected, it should be used as the basis for both transit and auto travel times. When travel times are estimated, rather than measured directly, a sample of estimates should be compared against existing conditions to verify the reasonableness of the estimates and, if necessary, develop correction factors for them.

Potential sources for travel time data:

- Field data, from auto travel time runs and transit automatic vehicle location (AVL) data;
- Estimates of auto and transit speeds from the Highway Capacity Manual or simulation;
- Online mapping tools like Google Maps, which can provide estimates of auto and transit travel times, including the effects of recurring traffic congestion; or
- BKR travel demand model, for origin-destination trips.

Figure 151 Weekday level of service coverage, Fall 2011.

ACTIVITY CENTERS

A1 Downtown Bellevue

A2 to Crossroads
KCM 240
Transit Time: 15 min
Auto Time: 15 min
T/A Ratio: ***1.0***

A3 to Overlake
KCM Rapid Ride B
Transit Time: 16 min
Auto Time: 12 min
T/A Ratio: ***1.33***

A4 to Factoria
KCM 241
Transit Time: 13 min
Auto Time: 13 min
T/A Ratio: ***1.0***

A5 to Eastgate P&R
KCM 240
Transit Time: 16 min
Auto Time: 15 min
T/A Ratio: ***1.07***

NEIGHBORHOODS

N1 to Bridle Trails
KCM Rapid Ride B
Transit Time: 30 min
Auto Time: 13 min
T/A Ratio: ***2.31***

N2 to Richards Valley
KCM 246
Transit Time: 8 min
Auto Time: 9 min
T/A Ratio: ***0.89***

N3 to Somerset
KCM 246
Transit Time: 20 min
Auto Time: 17 min
T/A Ratio: ***1.18***

N4 to Northwest Bellevue
KCM 249
Transit Time: 8 min
Auto Time: 5 min
T/A Ratio: ***1.6***

N5 to Northeast Bellevue
KCM 226
Transit Time: 21 min
Auto Time: 13 min
T/A Ratio: ***1.62***

NEIGHBORHOODS

N6 to East Bellevue
KCM 226
Transit Time: 30 min
Auto Time: 14 min
T/A Ratio: ***2.14***

N7 to Southwest Bellevue
KCM 249
Transit Time: 8 min
Auto Time: 8 min
T/A Ratio: ***1.0***

N8 to Wilburton
KCM Rapid Ride B
Transit Time: 20 min
Auto Time: 10 min
T/A Ratio: ***2.0***

NEIGHBORHOODS

N9 to Newport Hills
KCM 240
Transit Time: 32 min
Auto Time: 14 min
T/A Ratio: ***2.29***

N10 to Eastgate
KCM 246
Transit Time: 29 min
Auto Time: 14 min
T/A Ratio: ***2.07***

N11 to Newcastle
KCM 271, KCM 210
Transit Time: 52 min
Auto Time: 19 min
T/A Ratio: ***2.74***

REGIONAL CENTERS

R1 to Downtown Seattle
ST 550
Transit Time: 35 min
Auto Time: 30 min
T/A Ratio: ***1.17***

R2 to UW Medical Center
KCM 271
Transit Time: 28 min
Auto Time: 18 min
T/A Ratio: ***1.56***

R3 to Redmond
KCM 232
Transit Time: 23 min
Auto Time: 22 min
T/A Ratio: ***1.05***

R4 to Kirkland
KCM 234
Transit Time: 25 min
Auto Time: 21 min
T/A Ratio: ***1.19***

R5 to Issaquah
ST 556
Transit Time: 29 min
Auto Time: 20 min
T/A Ratio: ***1.45***

R6 to Renton
ST 556
Transit Time: 29 min
Auto Time: 31 min
T/A Ratio: ***0.94***

REGIONAL CENTERS

R7 to SeaTac Airport
ST 560
Transit Time: 49 min
Auto Time: 36 min
T/A Ratio: ***1.36***

R8 to Bothell
ST 535
Transit Time: 31 min
Auto Time: 35 min
T/A Ratio: ***0.89***

R9 to Lynnwood
ST 535
Transit Time: 56 min
Auto Time: 43 min
T/A Ratio: ***1.3***

R10 to Everett
ST 532
Transit Time: 59 min
Auto Time: 59 min
T/A Ratio: ***1.0***

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PHOTO BY Guy de Gouville

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Bellevue Transit
Master Plan

FOR MORE INFORMATION:

Visit the project website:
http://www.ci.bellevue.wa.us/bellevue-transit-plan.htm

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