DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE
BELLEVUE, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: City of Bellevue, Transportation Department

LOCATION OF PROPOSAL: City-Wide

DESCRIPTION OF PROPOSAL: City of Bellevue Transit Master Plan. The Transit Master Plan (TMP) identifies the types of policies, services, and facilities required to meet Bellevue's transit needs through 2030. Specifically, the TMP identifies Frequent Transit Network corridors that warrant speed and reliability treatments, non-motorized infrastructure enhancements, and bus stop and commuter parking investments that support efficient and effective transit operations.

FILE NUMBERS: 14-126790-LM **PLANNER:** Drew Folsom

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

☐ There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's office by 5:00 p.m. on _____.

☒ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5 p.m. on **5/22/2014**

☐ This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5:00 p.m. on _____.

This DNS may be withdrawn at any time if the proposal is modified so as to have significant adverse environmental impacts; if there is significant new information indicating a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project): or if the DNS was procured by misrepresentation or lack of material disclosure.

Matthew Jenkins for
Environmental Coordinator

5/8/2014
Date

OTHERS TO RECEIVE THIS DOCUMENT:

☒ State Department of Fish and Wildlife / Stewart.Reinbold@dfw.gov; Christa.Heller@dfw.wa.gov;
☒ State Department of Ecology, Shoreline Planner N.W. Region / Jobu461@ecy.wa.gov; sepaunit@ecy.wa.gov
☒ Army Corps of Engineers Susan.M.Powell@nws02.usace.army.mil
☒ Attorney General ecyolyef@atg.wa.gov
☒ Muckleshoot Indian Tribe Karen.Walter@muckleshoot.nsn.us; Fisheries.fileroom@muckleshoot.nsn.us

ENVIRONMENTAL CHECKLIST

3/6/2014

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call Development Services (425-452-6800) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service).

BACKGROUND INFORMATION

Property Owner: Does not apply.

Proponent: City of Bellevue, Department of Transportation

Contact Person: Franz Loewenherz

(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: City of Bellevue; 450 110th Avenue NE; Bellevue, WA 98009

Phone: (425) 452-4077

Proposal Title: Bellevue Transit Master Plan

Proposal Location: Citywide; please see Attachment 1 for a map of the Frequent Transit Network corridors.

(Street address and nearest cross street or intersection) Provide a legal description if available.

Please attach an 8 ½" x 11" vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal's scope and nature:

1. General description: The Transit Master Plan (TMP) identifies the types of policies, services, and facilities required to meet Bellevue's transit needs through 2030. Specifically, the TMP identifies Frequent Transit Network corridors that warrant speed and reliability treatments, non-motorized infrastructure enhancements, and bus stop and commuter parking investments that support efficient and effective transit operations.

2. Acreage of site: Does not apply.

3. Number of dwelling units/buildings to be demolished: Does not apply.

4. Number of dwelling units/buildings to be constructed: Does not apply.

5. Square footage of buildings to be demolished: Does not apply.

6. Square footage of buildings to be constructed: Does not apply.

7. Quantity of earth movement (in cubic yards): Does not apply.

8. Proposed land use: Does not apply.

9. Design features, including building height, number of stories and proposed exterior materials: Does not apply.

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10. Other: Does not apply.

Estimated date of completion of the proposal or timing of phasing:

The Bellevue Transportation Department anticipates submitting the Transit Master Plan (TMP) to the Bellevue City Council for approval on July 7, 2014. The TMP includes policies, programs, and projects the City intends to implement through 2030.

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

Yes. The TMP proposes numerous transit related projects throughout the City of Bellevue, which are to be implemented through 2030. In addition, the TMP will be updated on a periodic basis with input from transit agencies, regional councils, and the general public. Transit-related policies, programs, and projects will be added or expanded based on updates to the plan.

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Planning documents associated with this project are located at http://www.bellevuewa.gov/transit-plan-documents.htm. Information cited in this document is referenced in Attachments 1 through 10 of this environmental checklist.

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

This is a nonproject action and as such, the question is inapplicable. Additional environmental review will be conducted for specific projects related to the TMP as they are proposed. See Supplemental Sheet for Nonproject Actions.

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

The TMP is to be adopted by the Bellevue City Council as a City of Bellevue Resolution. Individual projects related to the TMP may require additional environmental review, government approvals, and/or permits prior to construction.

Please provide one or more of the following exhibits, if applicable to your proposal.
(Please check appropriate box(es) for exhibits submitted with your proposal):

☐ Land Use Reclassification (rezone) Map of existing and proposed zoning

☐ Preliminary Plat or Planned Unit Development
Preliminary plat map

☐ Clearing & Grading Permit
Plan of existing and proposed grading
Development plans

☐ Building Permit (or Design Review)
Site plan
Clearing & grading plan

☐ Shoreline Management Permit
Site plan

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: ☑ Flat ☑ Rolling ☑ Hilly ☐ Steep slopes ☐ Mountains ☐ Other

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This is a nonproject action and as such, the question is inapplicable.

b. **What is the steepest slope on the site (approximate percent slope)?**

This is a nonproject action and as such, the question is inapplicable.

c. **What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.**

This is a nonproject action and as such, the question is inapplicable.

d. **Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

This is a nonproject action and as such, the question is inapplicable.

e. **Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.**

This is a nonproject action and as such, the question is inapplicable.

f. **Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

This is a nonproject action and as such, the question is inapplicable.

g. **About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

This is a nonproject action and as such, the question is inapplicable.

h. **Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

This is a nonproject action and as such, the question is inapplicable.

2. **AIR**

a. **What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.**

This is a nonproject action and as such, the question is inapplicable.

b. **Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

This is a nonproject action and as such, the question is inapplicable.

c. **Proposed measures to reduce or control emissions or other impacts to the air, if any:**

This is a nonproject action and as such, the question is inapplicable.

3. **WATER**

a. **Surface**

(1) **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.**

This is a nonproject action and as such, the question is inapplicable.

(2) **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters?**

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If Yes, please describe and attach available plans.

This is a nonproject action and as such, the question is inapplicable.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

This is a nonproject action and as such, the question is inapplicable.

(4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

This is a nonproject action and as such, the question is inapplicable.

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

This is a nonproject action and as such, the question is inapplicable.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

This is a nonproject action and as such, the question is inapplicable.

b. Ground

(1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description.

This is a nonproject action and as such, the question is inapplicable.

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

This is a nonproject action and as such, the question is inapplicable.

c. Water Runoff (Including storm water)

(1) **Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

This is a nonproject action and as such, the question is inapplicable.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

This is a nonproject action and as such, the question is inapplicable.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

This is a nonproject action and as such, the question is inapplicable.

4. Plants

a. Check or circle types of vegetation found on the site:

☑ deciduous tree: alder, maple, aspen, other

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☑ evergreen tree: fir, cedar, pine, other

☑ shrubs

☑ grass

☐ pasture

☐ crop or grain

☐ wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other

☐ water plants: water lily, eelgrass, milfoil, other

☑ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

This is a nonproject action and as such, the question is inapplicable.

c. List threatened or endangered species known to be on or near the site.

This is a nonproject action and as such, the question is inapplicable.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

This is a nonproject action and as such, the question is inapplicable.

5. ANIMALS

a. Indicate birds and animals which have been observed on or near the site or are known to be on or near the site *(indicated by* **bold, underlined** *font)*:

☑ Birds: **hawk, heron, eagle, songbirds, other**:

☑ Mammals: deer, bear, elk, **beaver, other**:

☑ Fish: bass, **salmon, trout,** herring, shellfish, other:

b. List any threatened or endangered species known to be on or near the site.

This is a nonproject action and as such, the question is inapplicable.

c. Is the site part of a migration route? If so, explain.

This is a nonproject action and as such, the question is inapplicable.

d. Proposed measures to preserve or enhance wildlife, if any:

This is a nonproject action and as such, the question is inapplicable.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc.

This is a nonproject action and as such, the question is inapplicable.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally

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describe.

This is a nonproject action and as such, the question is inapplicable.

c. **What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any:**

This is a nonproject action and as such, the question is inapplicable.

7. **Environmental Health**

a. **Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.**

This is a nonproject action and as such, the question is inapplicable.

(1) **Describe special emergency services that might be required.**

This is a nonproject action and as such, the question is inapplicable.

(2) Proposed measures to reduce or control environmental health hazards, if any.

This is a nonproject action and as such, the question is inapplicable.

b. **Noise**

(1) **What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?**

This is a nonproject action and as such, the question is inapplicable.

(2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.

This is a nonproject action and as such, the question is inapplicable.

(3) Proposed measures to reduce or control noise impacts, if any:

This is a nonproject action and as such, the question is inapplicable.

8. **Land and Shoreline Use**

a. **What is the current use of the site and adjacent properties?**

This is a nonproject action and as such, the question is inapplicable.

b. **Has the site been used for agriculture? If so, describe.**

This is a nonproject action and as such, the question is inapplicable.

c. **Describe any structures on the site.**

This is a nonproject action and as such, the question is inapplicable.

d. **Will any structures be demolished? If so, what?**

This is a nonproject action and as such, the question is inapplicable.

e. **What is the current zoning classification of the site?**

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Various zoning classifications exist in the City of Bellevue. Specific information will be available at the time specific projects go through the environmental process prior to construction.

f. What is the current comprehensive plan designation of the site?

Various comprehensive plan classifications exist in the City of Bellevue. Specific information will be available at the time specific projects go through the environmental process prior to construction.

g. If applicable, what is the current shoreline master program designation of the site?

Various shoreline master program classifications exist in the City of Bellevue. Specific information will be available at the time specific projects go through the environmental process prior to construction.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Portions of the City of Bellevue have been classified as environmentally sensitive areas. Specific information will be available at the time specific projects go through the environmental process prior to construction.

i. Approximately how many people would reside or work in the completed project?

This is a nonproject action and as such, the question is inapplicable.

j. Approximately how many people would the completed project displace?

This is a nonproject action and as such, the question is inapplicable.

k. Proposed measures to avoid or reduce displacement impacts, if any:

This is a nonproject action and as such, the question is inapplicable.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Bellevue Transportation Department developed the TMP in consultation with several existing plans and considered the existing and projected land uses, described below:

- The Bellevue Comprehensive Plan – the TMP seeks to promote connections and access between centers through a variety of transportation modes.
- The Pedestrian and Bicycle Transportation Plan – the TMP recommends an approach to transit projects that is complemented by coordinated pedestrian and bicycle access and mobility investments, consistent with the policies and goals of the Pedestrian and Bicycle Transportation Plan.
- Current and Projected Land Use – Bellevue Transportation Department consulted with the Bellevue Planning and Community Development Department on current and projected zoning and land uses to help develop future ridership estimates and identify the Frequent Transit Network corridors.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

This is a nonproject action and as such, the question is inapplicable.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

This is a nonproject action and as such, the question is inapplicable.

b. What views in the immediate vicinity would be altered or obstructed?

This is a nonproject action and as such, the question is inapplicable.

c. Proposed measures to reduce or control aesthetic impacts, if any:

This is a nonproject action and as such, the question is inapplicable.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

This is a nonproject action and as such, the question is inapplicable.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

This is a nonproject action and as such, the question is inapplicable.

c. What existing off-site sources of light or glare may affect your proposal?

This is a nonproject action and as such, the question is inapplicable.

d. Proposed measures to reduce or control light or glare impacts, if any:

This is a nonproject action and as such, the question is inapplicable.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

This is a nonproject action and as such, the question is inapplicable.

b. Would the proposed project displace any existing recreational uses? If so, describe.

This is a nonproject action and as such, the question is inapplicable.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The TMP supports increased linkages to recreational opportunities and areas in Bellevue, and as such is a beneficial recreational impact.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

This is a nonproject action, applicable to sites throughout the City of Bellevue. City, State, and National Landmarks are found throughout the city.

b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural

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importance known to be on or next to the site.

This is a nonproject action and as such, the question is inapplicable.

c. **Proposed measures to reduce or control impacts, if any:**

This is a nonproject action and as such, the question is inapplicable.

14. Transportation

a. **Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.**

The TMP includes 107 transit speed and reliability projects (sixty-three discrete running way, spot improvement, or data collection projects plus forty-four transit signal priority projects) along numerous existing public roads throughout the City of Bellevue. These transit speed and reliability improvements are conceptual and the final details of design will be developed as the projects proceed further along in the implementation process. For a complete list of the maps/tables associated with these projects see Attachments 2 of this environmental checklist. For a representative project, identified as the Bellevue College Connection, see Attachment 3 of this environmental checklist.

b. **Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?**

The TMP establishes short- and long-term policies and projects that help foster a high-quality transit system that is more effective at connecting residents, employees, and visitors in Bellevue with the places they want to go. The Transit Service Vision Report identifies where and how frequently transit service will operate through 2030. For the near, mid, and long-term network maps see Attachments 4 of this environmental checklist.

c. **How many parking spaces would be completed project have? How many would the project eliminate?**

The TMP reviews commuter parking demand assessments for the I-405 and I-90 corridors; however, it stops short of determining if/where to construct additional parking spaces. The TMP predicts that if a transit network were established that is consistent with the 2030 "Growing Resources Scenario" depicted in Bellevue's Transit Service Vision Report, then there would be an undersupply of parking stalls available along I-405 and I-90. If an unlimited supply of parking were available along each of the corridors, the I-90 corridor would be short by approximately 6,300 park-and-ride stalls and the I-405 corridor would be short by approximately 4,600 stalls. For table reflecting parking demand and capacity for park-and-ride lots in 2013 and 2030 see Attachments 5 of this environmental checklist.

d. **Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).**

Project components in the TMP include the addition of transit facilities along numerous existing public roads throughout the City of Bellevue. One of the TMP project recommendations, the NE 6th Street multi-modal corridor project noted in the Bellevue Capital Investment Program and Transportation Facilities Plan (see TIP-14, CIP-R-162, and TFP-213) extends NE 6th Street 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. The facility will be designed to accommodate multiple uses, including HOV, transit, general purpose and non-motorized. Conceptual design alternatives have been completed to coordinate with WSDOT's I-405 improvements and Sound Transit's East Link route. When completed, the NE 6th extension is anticipated to reduce travel time and increase mobility options for passenger cars, transit, freight, pedestrians and bicycles.

e. **Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.**

Some of the project recommendations noted in the TMP occur in the immediate vicinity of and support Sound Transit East Link light rail transit (LRT) stations. The TMP predicts that by 2030 approximately 20% of light rail patronage (5,400 daily boardings and alightings) at East Link stations in Bellevue arises from bus transfers.

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Some of these Bellevue stations are projected to have significant bus/LRT interaction; for example, 52% of the projected boardings and alightings at the South Bellevue station are related to bus transfers. To make the most out of both transit modes, the TMP proposes effective intermodal integration at East Link stations to avoid unnecessary transfer time and have reliable connections. For future transit usage data projections see Attachments 6 of this environmental checklist.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

The City's Bellevue-Kirkland-Redmond (BKR) travel demand model estimates daily person trips to/from or internal to Bellevue will increase from 1,219,965 in 2010 to 1,750,539 in 2030. To support this growth it will be critical to integrate the provision of enhanced transit supply – described in the TMP – with a supportive land use mix together with enhanced transit passenger and walking amenities, as well as transit supportive infrastructure. For total daily weekday trip data for 2010 and 2030 see Attachment 7 of this environmental checklist.

g. Proposed measures to reduce or control transportation impacts, if any:

TMP projects are found to improve roadway efficiency. When considered at a system level, TMP projects are projected to diminish congestion levels and travel delay at the City of Bellevue's signalized intersections (see Attachment 8 of this environmental checklist). These improvements in travel time translate to societal savings of $2.5 – $4.2 million annually during the PM peak alone (see Attachment 9 of this environmental checklist). Similar benefits are found when we consider Peak-Period Person Throughput (PPPT) by mode for the corridor segments that comprise the Frequent Transit Network (FTN). For example, on Bellevue Way NE between NE 10th St and NE 32nd Pl, the 2030 projected PPPT on transit is 36 percent of all person trips, yet transit represents only 0.8 percent of all vehicle trips along this corridor. Clearly, bus service is projected to make efficient use of the roadway capacity at this and other locations in the City of Bellevue (see Attachment 10 of this environmental checklist).

15. Public Services

a. Would the project result in an increased need for the public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

This is a nonproject action and as such, the question is inapplicable.

b. Proposed measures to reduce or control direct impacts on public services, if any.

This is a nonproject action and as such, the question is inapplicable.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

This is a nonproject action and as such, the question is inapplicable.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

This is a nonproject action and as such, the question is inapplicable.

Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature provided following Supplemental Sheet for Nonproject Actions below.

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SUPPLEMENTAL SHEET FOR NONPROJECT ACTION
Continuation of the Environmental Checklist

3/10/14

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment (see Environmental Checklist, B. Environmental Elements). When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms. If you have any questions, please contact the Development Services reviewer in the Permit Center (425-452-6800) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Assistance for the hearing impaired: Dial 711 (Telecommunications Relay Service).

1. **How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?**

   The TMP itself is unlikely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise. However, the TMP is intended to guide a range of transit-related construction projects through 2030. While the construction or operation of projects proposed by the TMP have the potential to result in increased pollution, promoting increased transit use also has positive environmental implications, directly correlating to fewer cars making daily commutes, thereby reducing the use of fuel, greenhouse gas emissions, smog, and the associated impacts on public health. It is not possible at this stage to meaningfully assess these potential impacts.

   Proposed measures to avoid or reduce such increases are:

   Since the TMP itself is unlikely to increase discharge, emissions, or production of hazardous materials or noise, no mitigation measures are proposed. However, projects resulting from the TMP will have to comply with all applicable laws and regulations concerning the protection of air and water as well as the generation of hazardous materials and noise. Prior to construction, the Bellevue Department of Transportation or the lead agency will evaluate the need and types of mitigation appropriate for any anticipated adverse impacts as well as best management practices (BMPs) to reduce and control any potential discharges to water, emissions to air, release of hazardous substances, and production of noise.

2. **How would the proposal be likely to affect plants, animals, fish, or marine life?**

   The TMP itself is unlikely to affect plants, animals, fish or marine life. The TMP focuses on how existing, developed transportation corridors are utilized within the City of Bellevue, as opposed to natural or undeveloped sites. As a result, projects induced by the TMP are unlikely to affect plants, animals, fish or marine life. However, at this stage it is not possible to meaningfully assess the potential impacts of specific TMP projects.

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

   Since the TMP itself is unlikely to affect plants, animals, fish, or marine life, no mitigation measures are proposed. However, the Bellevue Department of Transportation or the lead agency will evaluate the presence of and impacts to plants, animals, fish, and marine life during the environmental review of individual TMP projects and, if necessary, develop mitigation measures to avoid or minimize any potential adverse effects.

3. **How would the proposal be likely to deplete energy or natural resources?**

   The TMP itself is unlikely to deplete energy or natural resources. In fact, the intent of the TMP is to increase the availability and use of public transit throughout Bellevue, which will reduce dependence upon private motor-vehicle trips. However, at this stage it is not possible to meaningfully assess the potential impacts of specific TMP projects.

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Proposed measures to protect or conserve energy and natural resources are:

Because the proposal is unlikely to deplete energy or natural resources, no mitigation measures are proposed. However, the Bellevue Department of Transportation or the lead agency will evaluate the potential impacts to energy and natural resources during the environmental review of individual TMP projects and, if necessary, develop mitigation measures to avoid or minimize any potential adverse effects.

4. **How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection--such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?**

The TMP itself is unlikely to affect environmentally sensitive areas or areas designated for governmental protection. The TMP focuses on how existing, developed transportation corridors are utilized within the City of Bellevue. As with any development however, projects constructed under the TMP may encounter environmentally sensitive areas or areas designated for governmental protection. While any adverse impacts are anticipated to be minimal, at this stage it is not possible to meaningfully assess the potential impacts of specific TMP projects.

Proposed measures to protect such resources or to avoid or reduce impacts are:

Since the TMP is unlikely to affect environmentally sensitive areas or areas designated for governmental protection, no mitigation measures are proposed. The Bellevue Department of Transportation or the lead agency will evaluate any impacts to sensitive or protected areas during the environmental review of individual projects and, if necessary, develop mitigation measures to avoid or minimize any potential effects.

5. **How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?**

The TMP focuses on how existing, developed transportation corridors are utilized within the City of Bellevue. Its policies and programs are consistent with those of the Bellevue Comprehensive Plan. While the TMP is not anticipated to induce land or shoreline uses incompatible with existing plans, at this stage it is not possible to meaningfully assess the potential impacts of specific TMP projects.

Proposed measures to avoid or reduce shoreline and land use impacts are:

Because the proposal is consistent with existing land uses and plans no mitigation measures are proposed. The Bellevue Department of Transportation or the lead agency will evaluate the consistency of individual TMP projects with existing land uses and plans and, if necessary, develop mitigation measures to avoid or minimize any potential effects.

6. **How would the proposal be likely to increase demands on transportation or public services and utilities?**

The TMP seeks to increase the use of public transportation through the implementation of its policies and programs. However, the increased demand will be balanced by individual TMP projects that build the capacity and efficiency of the city's public transit network. The TMP is not anticipated to result in an increased demand on the city's overall transportation network—the city's streets and highways—and may actually result in reduced demand as private vehicle trips are replaced by those on public transit and the City comes closer to meeting its mode-share goals. The TMP is not anticipated to induce greater demand on other public services or utilities; however at this stage it is not possible to meaningfully assess the potential impacts of specific TMP projects.

Proposed measures to reduce or respond to such demand(s) are:

Because the proposal is unlikely to increase demands on transportation or public services and utilities, no mitigation measures are proposed. The Bellevue Department of Transportation or the lead agency will evaluate the demand on transportation, public services, and utilities during the development and environmental review of individual TMP projects and, if necessary, develop mitigation measures to avoid or minimize any potential effects. As specific transit improvements are designed and implemented the impacts of those improvements on other travel modes will be considered.

DF 4/8/14
D4.5/6/14

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The TMP is consistent with local, state, and federal laws and requirements for the protection of the environment. As described in question A.8.I., it is consistent with the policies and goals relating to public transportation and multimodal transportation systems in the Bellevue Comprehensive Plan and the Pedestrian and Bicycle Transportation Plan. Individual TMP projects will be subject to the same laws and requirements for the protection of the environment that govern all development projects.

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature .....

Date Submitted .....3/6/2014.....

DF 4/8/14
DA 5/6/14

ENVIRONMENTAL CHECKLIST ATTACHMENTS

Bellevue Transit Master Plan

CITY OF BELLEVUE

March 2014

Transportation Department

226 EASTGATE
I'm a mormon
mormon.org

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ATTACHMENT 1

2030 FREQUENT TRANSIT NETWORK

EXCERPT FROM THE TRANSIT SPEED AND RELIABILITY REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/TransitSpeedReliabilityReport_02192014.pdf

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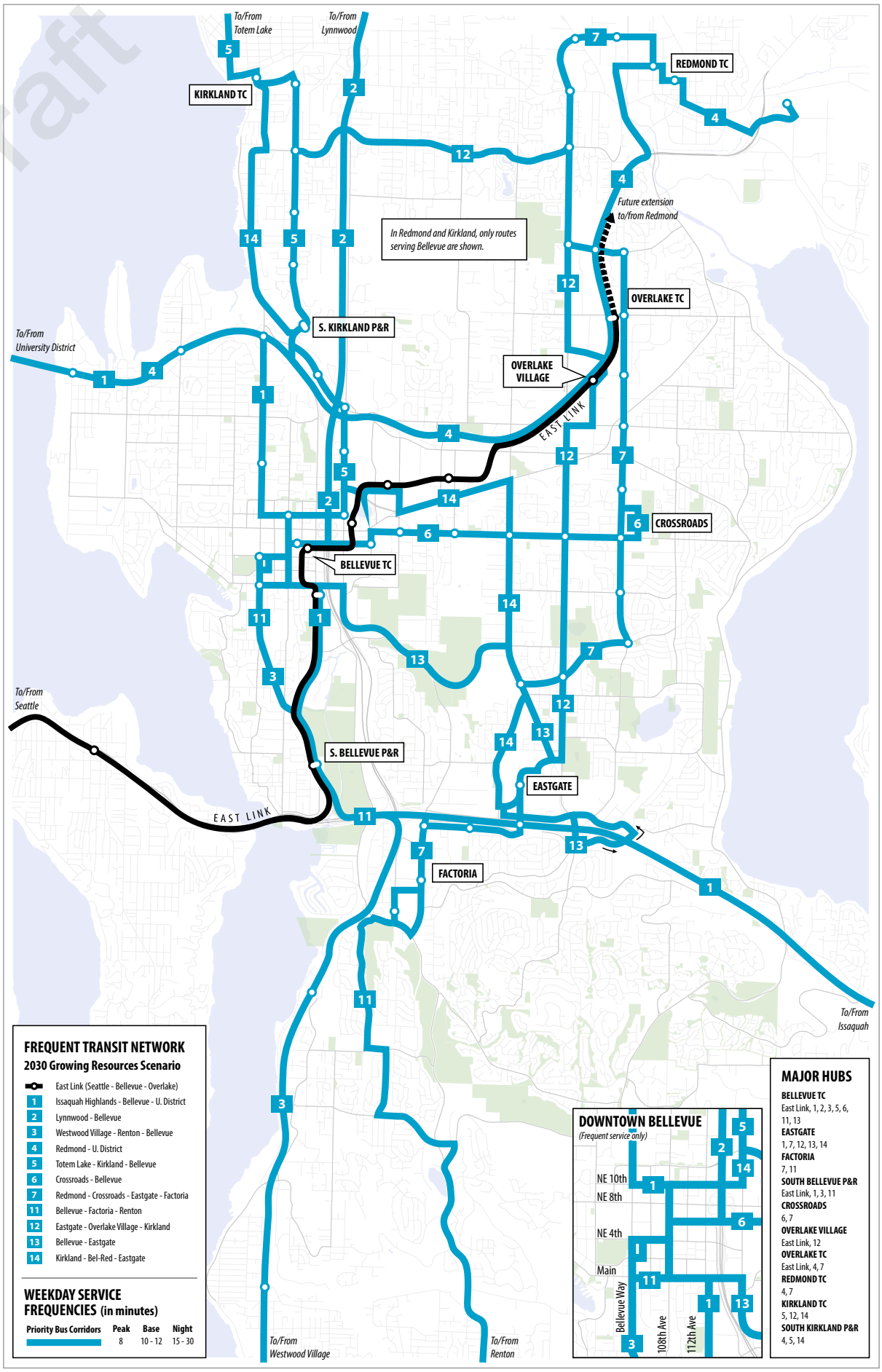

Figure 5 2030 Frequent Transit Network (FTN).

ATTACHMENT 2

PROPOSED CAPITAL IMPROVEMENT PROJECTS

EXCERPT FROM THE TRANSIT SPEED AND RELIABILITY REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/TransitSpeedReliabilityReport_02192014.pdf

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POTENTIAL IMPROVEMENTS

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This section responds to the Transportation Commission's proposed Capital-Oriented Strategy: "Invest in transit priority measures along Frequent Transit Network corridors" (October 17, 2013). It includes sixty-three discrete running way, spot improvement, or data collection projects, plus forty-two near-term transit signal priority (TSP) projects. Table 5 indicates the number of projects being considered of each type, and Figure 58 on page 57 depicts the location and/or general extent of each project.

This project list and costing was developed by TMP consultant Transpo Group with consideration given to existing data, field investigation, and input from staff and transit agency representatives. The list has undergone various stages of development, review, and refinement, and that presented here includes all of the potentially beneficial projects that have not been eliminated from consideration following preliminary screening based on exceptional technical or contextual limitations. Visualizations have been generated for some of the projects presented here to assist the communication of how a given type of project could be applied to specific situations. It must be emphasized that these visualizations are only conceptual and do not represent final designs or engineering-level detail.

As noted in other sections, the projects identified here include only intersections and roads along Frequent Transit Network (FTN) corridors, a subset of the 2030 Growing Resources scenario. The issue identification results presented in the previous section informed the development of this project list and direct attention to those locations with the most significant issues. Projects identified in past plans are also included in this list. Refinements to the list of potential improvements were informed by the service

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
TSP Projects (Near-term)	44
Tracking & Additional Study	5
Total	107

Table 6 Summary of speed and reliability projects by cost.

Estimated Project Cost	No. of Projects
No Cost (NC) These projects primarily require staff time to track, review, or revise using existing City resources and staff time.	6
Tens of Thousands ($) These projects primarily include low-cost changes like striping or signal equipment additions or modifications. These projects do not involve any physical changes.	66
Hundreds of Thousdands ($$) These projects include more significant striping or signal modification, which could include some small physical modifications to an intersection or signal. More significant projects include lane construction at intersection approaches assuming minimal land acquisition, environmental mitigation, and slope stabilization.	16
Millions ($$$) These projects include construction of new lanes through multiple intersections and/or construction of new lanes along intersections where constraints exist.	18
Not Applicable (N/A) This project highlights a need for improvement but does not recommend a specific solution. Further study of the situation will only require staff time to complete (i.e., no cost), and the cost of subsequent actions can only be estimated after the chosen solution is identified.	1
Total	107

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characteristics of bus routes, transit ridership, and bus volumes by time of day; arterial traffic volume by direction; placement of bus stops, intersection geometry, turn movement counts/capacity, and safety considerations; pedestrian and bicycle impacts; and the overall scale of improvements in terms of roadway width and right-of-way.

The cost ranges shown in Table 6 are based on a high-level review of the type and extent of projects, such as re-channelization, widening, signal modification, and sidewalk and road construction, as well as potential environmental mitigation, slope stabilization, utility modifications, or property acquisition. Projects were assigned to each cost range based on a review of the proposed project, site context, and other factors that might impact cost. These ranges are consistent with the scale of the projects, but they do not reflect detailed design or engineering.

Figure 57 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.

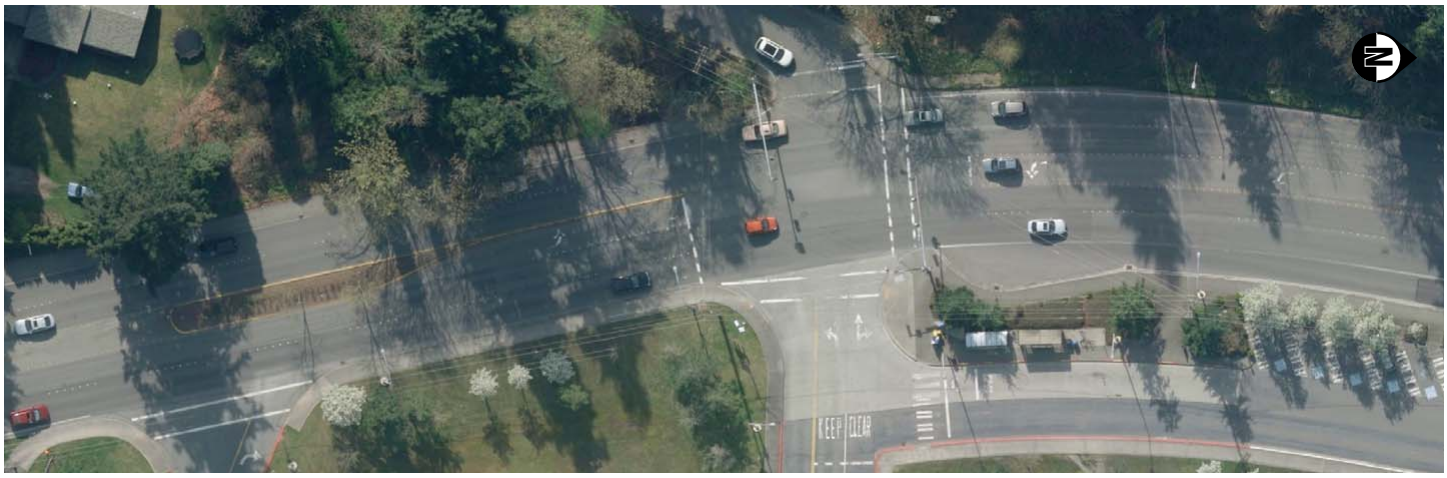
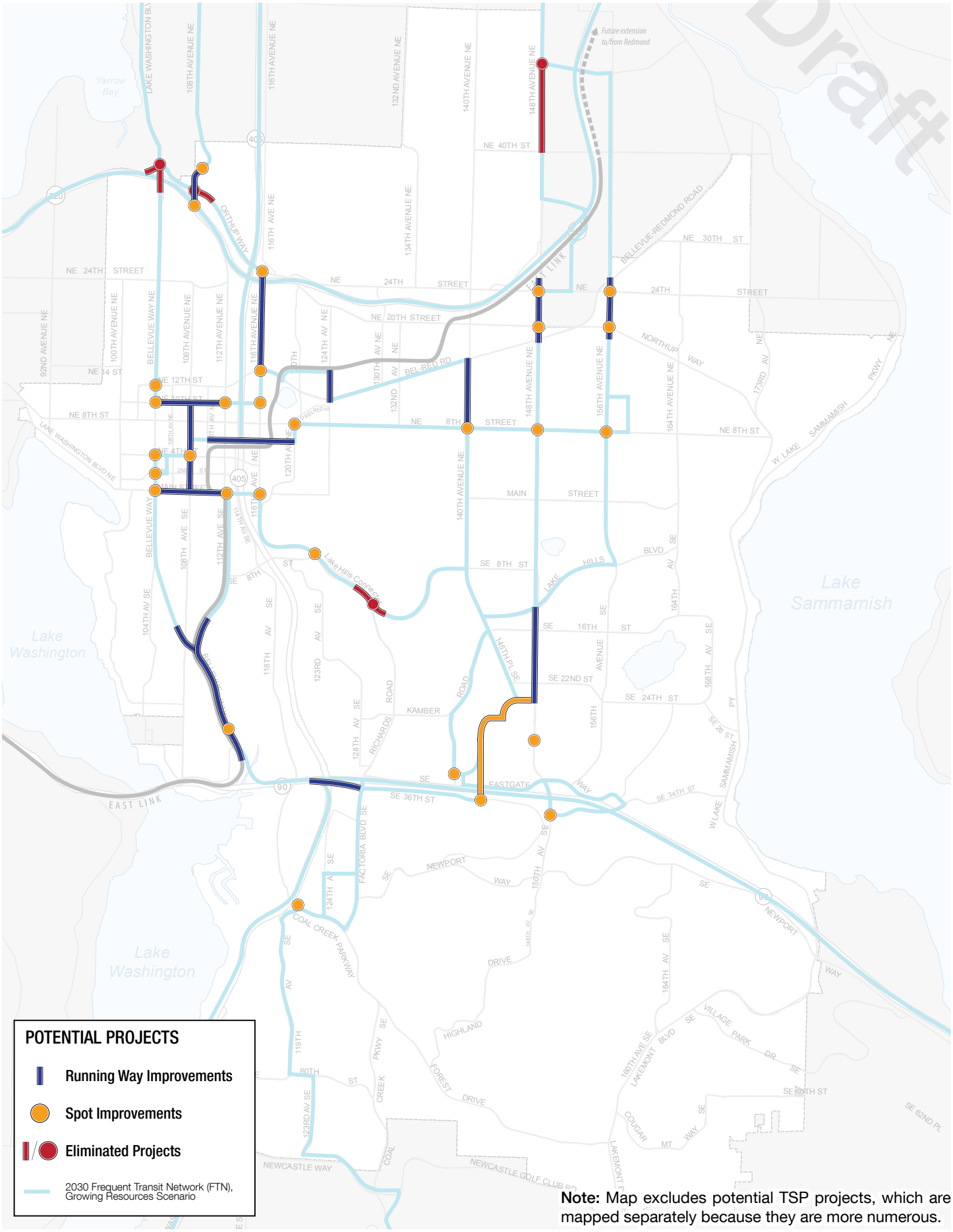


Figure 58 Potential spot and running-way improvement projects.



Note: Map excludes potential TSP projects, which are mapped separately because they are more numerous.

TRANSIT RUNNING WAY IMPROVEMENTS

Figure 59 Running Way Improvement Projects L2, L3 and L4: Median HOV lanes on Bellevue Way SE and 112th Ave SE would improve the movement of transit vehicles through this congested Y-intersection southbound to South Bellevue Park-and-Ride. This would be achieved by constructing one lane on Bellevue Way SE and constructing a new median lane on 112th Ave SE. Aerial images depict roadway striping before and after lane reconfiguration. This concept maintains all existing general purpose travel lanes.

Nineteen projects relating to transit running ways are currently being considered, including the conversion or restriction of general purpose travel lanes and the construction of new lanes for transit (see Figure 61 and Table 7 on the following pages). Potential improvements include High-Occupancy Vehicle (HOV) lanes and Business Access and Transit (BAT) lanes along several Frequent Transit Network (FTN) corridors. Some notable projects include HOV lanes along several segments of Bellevue Way SE and 112th Ave SE (see Figures 60, 62, and 63), BAT lanes and/or other speed and reliability improvements along 108th Ave NE in Downtown, HOV lanes along NE 10th St (see Appendix 5 on page A118), Main St, and the NE 6th St Extension (see Figure 63), and an upgrade of Snoqualmie River Rd through the Bellevue College campus so that it can accommodate bus traffic (see Appendix 6 on page A129).

Figure 59 depicts an early conceptual rendering of how three HOV lane projects (L2, L3, and L4) might be included in the street right-of-way along Bellevue Way SE and 112th Ave SE (see also Figure 60). These treatments are meant to improve travel time for southbound buses through this Y-intersection to the South Bellevue Park-and-Ride (see Appendix 4 on page A117 for 2030 travel time and person and vehicle throughput/volume analysis). Project L2 between the Y-intersection and the park-and-ride was included in Sound Transit's *East Link Extension Cost Savings Work Plan Findings* report in September 2012, but it has since been separated from any improvements being made for East Link by Sound Transit. This corridor ranks among those with the greatest need in the short-term and long-term based on the results of the issue identification process, but it remains a sensitive topic among some members of adjacent neighborhoods. Funding has already been secured for project L1 from the

park-and-ride south to I-90 in the 2011 Memordanum of Understanding (MOU) between the City and Sound Transit, and it will be constructed by Sound Transit as part of the East Link project.

Consistent with the Downtown Transportation Plan Update, the *Transit Service Vision Report* proposes that many key routes follow 108th Ave NE through the length of Downtown. BAT lanes and/or other speed and reliability improvements are proposed along 108th (Project L5) to accommodate the significant volume of services that will use this Downtown transit spine, which ranks among the

Figure 60 Running Way Improvement Projects L2: A southbound median HOV lane on Bellevue Way SE would improve the speed and reliability of transit vehicles between 112th Ave SE to South Bellevue Park-and-Ride. This would be achieved by constructing one lane on Bellevue Way SE, thereby maintaining all existing general purpose travel lanes. Aerial images depict roadway striping before and after construction.

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Figure 61 Map of potential transit running way projects.

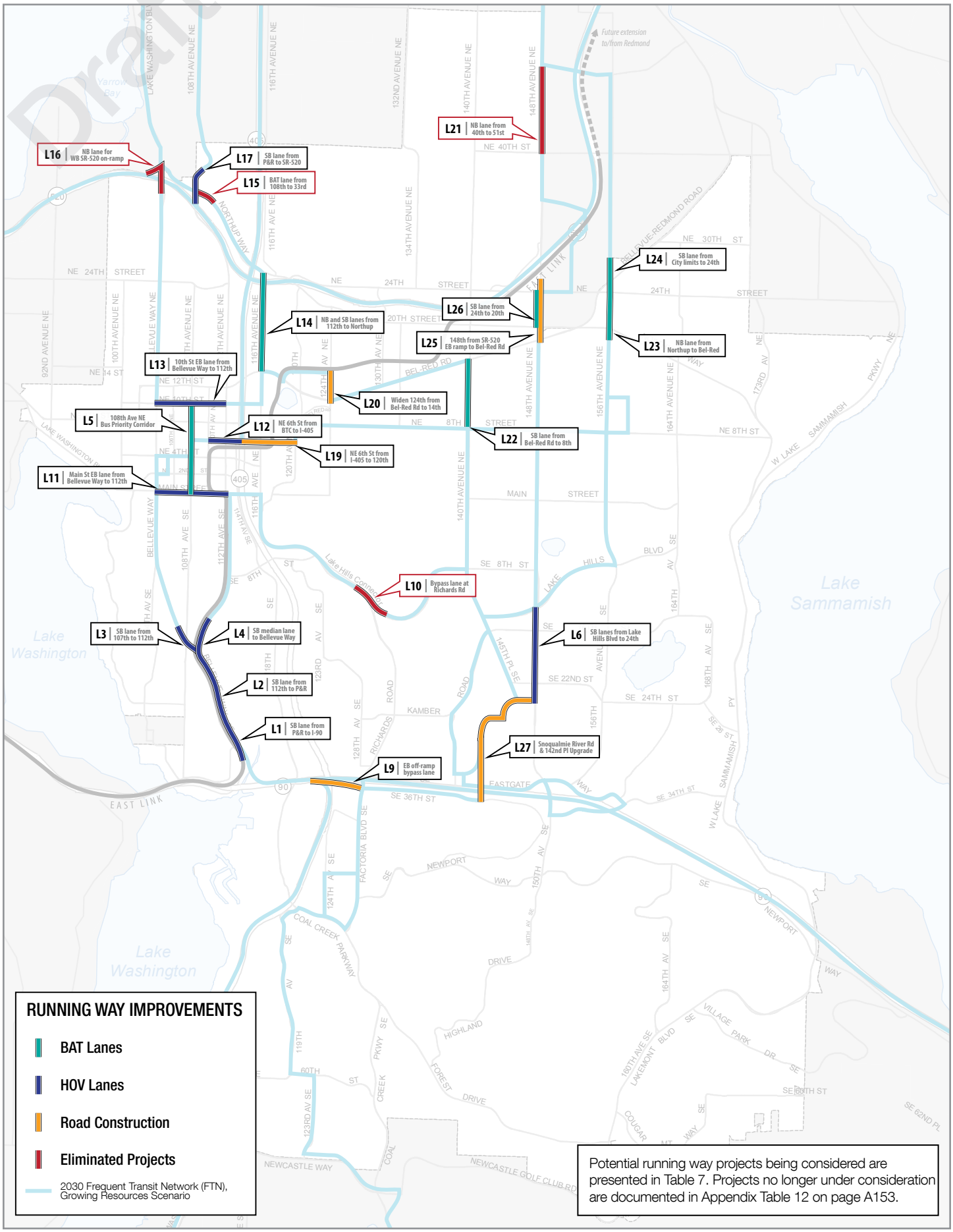

Table 7 Potential transit running way projects.

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.	$$$
L2	Bellevue Way SE HOV Lane - South Bellevue P&R Extension	Lane Construction	1, 3, 11	~3 / 3-4 / 5-6	Construct a southbound HOV lane on Bellevue Way SE between South Bellevue Park and Ride and Y intersection with 112th Ave.	17–24	23	Previously noted in Bellevue plans. See TIP-55 and TFP-242.	$$$
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.	$$$
L4	112th Ave SE HOV Lane	Lane Construction	1	8 / 10-15 / 30	Construct a southbound median HOV Lane on 112th Ave SE from Bellevue Way SE to slightly beyond end of intersection queue.	13	19	Addresses operator feedback, 2030 LOS of E and 2030 queuing. See TFP-242. Property impacts on the west side of Bellevue Way SE at the intersection with 112th Ave SE.	$$$
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 .	$$
L6	148th Ave SE Improvements - Bellevue College	Lane Construction	12	8 / 10 / 15	Construct a southbound HOV lane and transit queue jump lanes and install TSP on 148th Ave SE between Lake Hills Blvd and SE 24th St.	7–15	8–9	Previously noted in the Bellevue Transit Plan. See TIP-66.	$$$
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.	$$$
L11	Main St HOV Lane	Lane Restriction	1, 13	4 / 5-8 / 15-20	Convert one eastbound general purpose lane to a PM peak-only HOV lane on Main St from Bellevue Way NE to 112th Ave NE.	9–11	23–24	Addresses 2030 intersection LOS of E/F at multiple intersections as well as significant queuing issues.	$$
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.	$$
L14	NE 116th Ave NE BAT Lanes	Lane Restrictions	5, 14	4 / 5 / ~8	Modify the channelization to allow BAT lanes between NE 12th St and Northup Way when approaching intersections and/or implement other speed and reliability treatments.	17	24	Addresses LOS of F and long intersection queues at north end of corridor. Very frequent service on corridor.	$$
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.	$$$
L19	NE 6th St Extension	Road Extension	2, 6	4 / 5-8 / 15-20	Conduct a pre-design analysis for the extension of NE 6th St from its current terminus in the median of I-405 to the east over the northbound lanes of I-405 and 116th Ave NE to a new intersection with 120th Ave NE. Evaluate for additional transit improvements.	17	15	Addresses delay associated with signalized turns. Previously noted in the Bellevue Capital Investment Program and Transportation Facilities Plan. See TIP-14, CIP R-162, and TFP-211.	$
L20	124th Ave NE - Bel-Red Road to NE 14th Street	Road Upgrade	14	8 / 10 / 15	Complete a preliminary design for the widening (to 5 lanes) of 124th Ave NE from Bel-Red Rd to NE 14th St. Coordinate with PW-R-166. Evaluate for additional transit improvements.	3	14	Addresses delay associated with signalized turns. Previously noted in the Bellevue Capital Investment Program and Transportation Facilities Plan. See TIP-18, CIP R-169, and TFP-213.	$
L22	140th Ave NE BAT Lane	Lane Construction	14	8 / 10 / 15	Construct a southbound BAT lane from Bel-Red Rd to NE 8th St.	9	16	Addresses future LOS of F as well as significant queuing.	$$$
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.	$$$
L24	156th Ave NE BAT Lane - Southbound	Lane Construction	7	8 / 10 / 15	Construct a southbound BAT lane from City Limits to just south of NE 24th St.	15–17	16–18	Addresses future LOS and queue length issues at multiple intersections.	$$$

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 7 continued.

ID	Project	Type	FTN Service		Project Description	Composite Scores		Project Need	Potential Issues
			Routes	Frequency (Peak/Base/Night)		Short-Term	Long-Term		
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.	$$$
L26	148th Ave NE BAT Lane - Overlake	Lane Construction/ Restriction	12	8 / 10 / 15	Modify the channelization to allow BAT lanes on 148th Ave NE between NE 24th St and NE 20th St.	11–13	15–18	Addresses future LOS of F for multiple intersections.	$$
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 relocation 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.	$$$

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

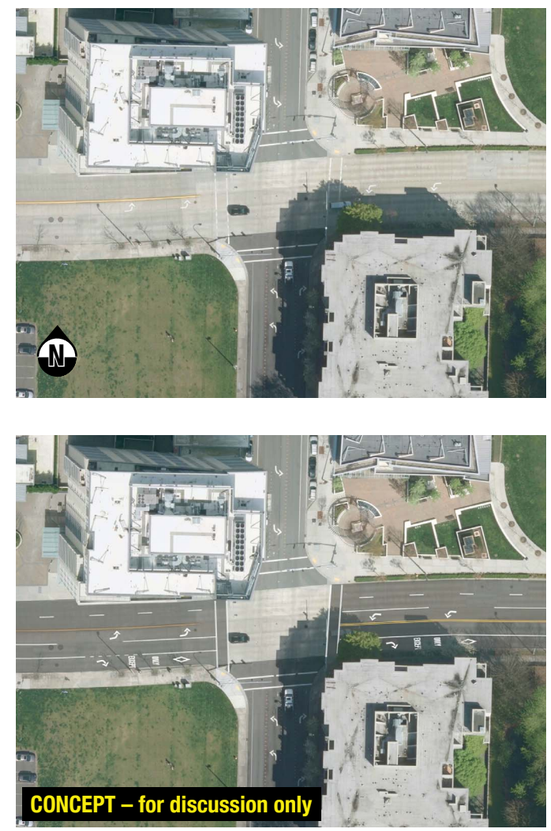

Figure 62 Running Way Improvement Project L13: PM peak-only HOV lane on NE 10th St for eastbound buses between Bellevue Way NE and NE 112th St. Aerial images depict roadway striping before and after lane reconfiguration.

corridors with the greatest long-term needs for speed and reliability investments based on projected ridership, bus volumes, approach delay, and queue length (see Appendix 3 page A98). As a complement to the 108th corridor improvements, eastbound HOV lanes are being considered along NE 10th St (see Figure 62) and Main St between Bellevue Way and 112th Ave NE to address approach delay and queue length issues, as well as high bus volumes and projected ridership. Both HOV projects would convert an existing travel lane during PM peak hours only. See Appendix 5 on page A118 for the results of a Vissim micro-simulation traffic model analysis of these Downtown HOV lane projects.

Another important project assumed by the *Transit Service Vision Report* to be complete by 2030 is the NE 6th St HOV Extension, which is already included in Bellevue's Capital Investment Program (Project L19; see Figure 63). This project will extend the existing NE 6th St HOV direct access ramp bridge from the center of I-405 east to 120th Ave NE. This would make it possible to remove all transit services from NE 8th St west of 120th Ave NE, thereby bypassing multiple intersections with long approach queues, delays, and

poor level-of-service (LOS) associated with general purpose traffic entering and exiting I-405.

Projects L23 and L24, both pictured in Figure 64, provide examples of how BAT lanes would be implemented in Bellevue, in this case on 156th Ave NE. Project L23 is a northbound BAT lane that extends from just south of Northup Way to just north of NE 24th St, while Project L24 is a southbound BAT lane extending from the city limits to just south of NE 24th St. Both of these projects involve the construction of an additional lane to address long queue lengths and an LOS of 'E' and 'F' at multiple intersections along this segment in 2030. Because these projects are BAT lanes, the additional road capacity would primarily benefit transit, but by providing right-turn access to businesses for general purpose traffic, these projects would also benefit private vehicles by moving turning vehicles out of the general purpose travel lanes.

Another project specifically noted by the *Transit Service Vision Report*—and previously proposed by the *Eastgate/I-90 Transportation Strategies Report*—is an upgrade of Snoqualmie River Rd, which is a central factor in increasing service frequency and reliability through Bellevue College. This project (L27) involves improving the roadway surface to be capable of supporting very frequent bus service, new bus stops, and associated pedestrian and bicycle facilities. Without this improvement, long route deviations would continue to be required to serve both Bellevue College and the Eastgate Park-and-Ride, resulting in an unreasonable waste of limited transit resources and a likely need to reconsider the route structure in the Eastgate area. See Appendix 6 on page A129 for a preliminary design concept to improve circulation to and through the campus for transit, pedestrians, and bicyclists.

Also being considered is a unique roadway project that would relocate a portion of the Mountains to Sound Greenway Trail and expand the I-90 eastbound off-ramp roadway to two lanes (Project L9; see

Figure 63 Running Way Improvement Project L19: Artist rendering of East Link LRT integrated with the NE 6th St HOV Extension.

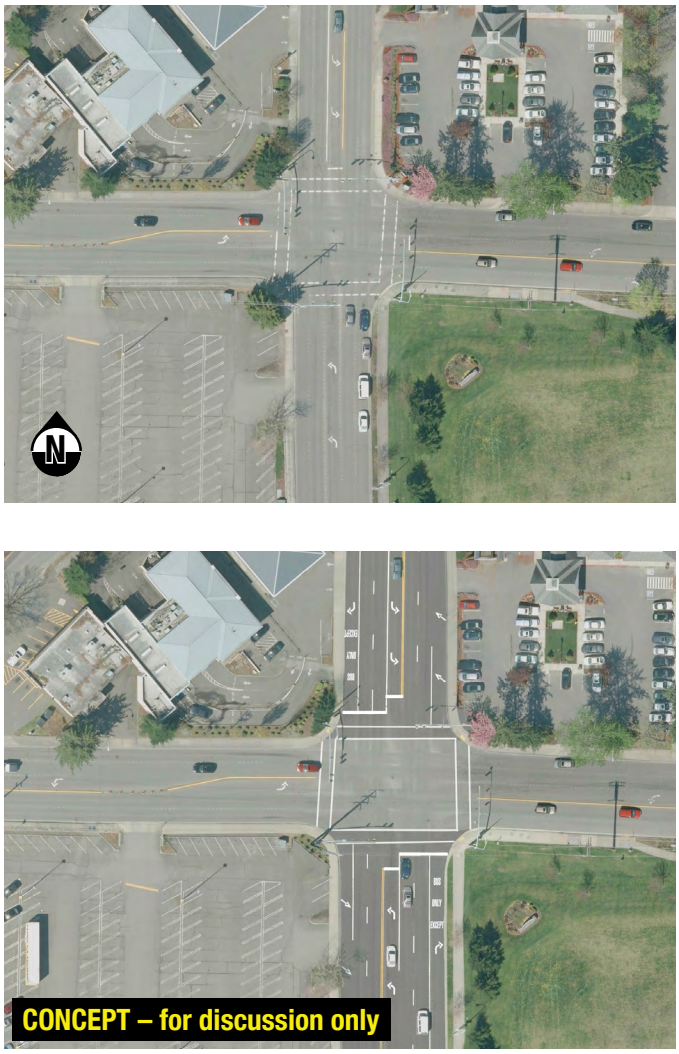

Figure 64 Running Way Improvement Projects L23 and L24: BAT lanes would be constructed on 156th Ave NE northbound from Northup Way to NE 24th St and southbound from city limits to NE 24th St, respectively. Aerial images depict roadway striping before and after lane reconfiguration. These concepts both maintain all existing general purpose travel lanes.

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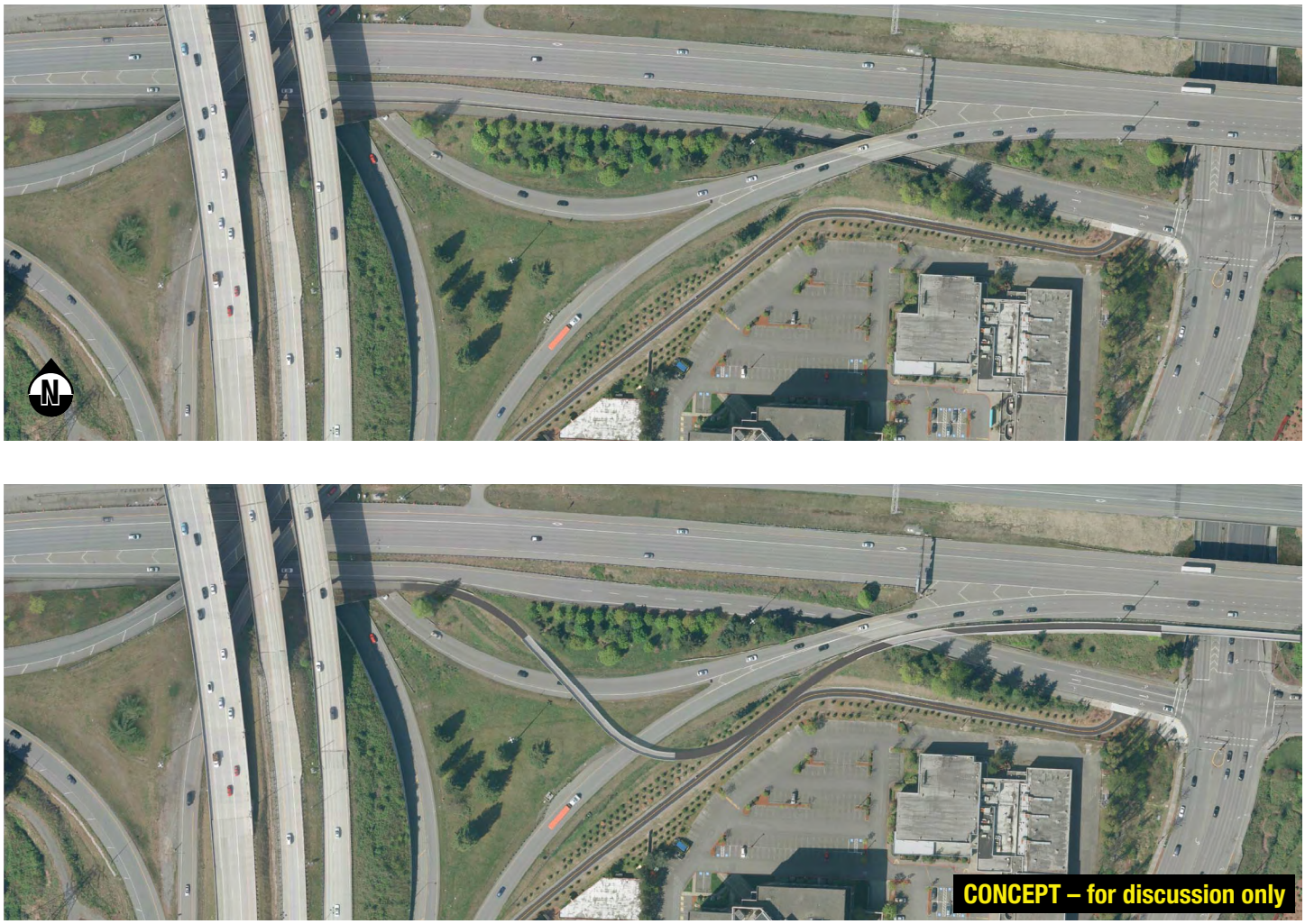
Figure 65). Presently, the off-ramp diverges from one lane to three in the short distance between the underpass and the intersection with Factoria Blvd, causing long queues, signal operation issues, and a PM peak LOS of 'E'. Widening the existing bridge to accommodate both an additional lane and the trail would be expensive, but the existing pavement width passing under the bridge is sufficiently wide to accommodate two vehicular travel lanes if the trail is relocated. The concept design shown in Figure 65 considers constructing a bridge for the trail that spans both I-405 ramps to I-90 eastbound, which also facilitates a direct connection from the Greenway Trail to the existing Factoria Trail before continuing east adjacent to I-90. This would improve the Greenway Trail while simultaneously alleviating delays to transit and general purpose traffic exiting I-90 eastbound to Factoria. As such, funding for Project L9 could be pursued in coordination with the ongoing Mountains to Sound Greenway Trail project (TFP-243). Further study is required to determine how to best utilize the additional lane to the benefit of transit and other road users.

Although the Transit Priority Toolbox (pages 15 through 29) includes improvements that afford transit greater operational exclusivity—treatments like bus-only lanes and transit-only streets—no such projects are included in this list.

Figure 65 Running Way Improvement Project L9: The eastbound I-90 off-ramp would be widened from one lane to two by relocating the Mountains to Sound Greenway Trail. This project would help reduce signal and queuing delay caused by the signal at Factoria Blvd, helping both transit and general purpose traffic.



SPOT IMPROVEMENTS

Thirty-nine spot improvement projects are currently being considered, including sixteen queue jump lanes, thirteen intersection or roadway improvement projects, and ten signalization improvement projects. Intersection and roadway projects relate primarily to turning movements and include improvements to turn radii and the construction of new turning lanes. Signalization improvements relate primarily to adjusting signal timing to increase the amount of green time allocated to movements operated by FTN routes, but they also include some turn restrictions on general purpose traffic during peak hours and improvements to the responsiveness of existing TSP controllers.

Queue Jumps

Queue jumps can be implemented in one of three basic configurations, as shown in Figure 68. Which variant is pursued for any given project depends primarily on the amount of right-of-way available on the near and far sides of the intersection. Queue jumps require either a complimentary lane on the far-side of the intersection (right diagram) or TSP treatment to allow buses to advance through the intersection before general purpose traffic (left and center diagrams). Where permitted by the amount of right-of-way available, it is operationally preferable to use a designated queue jump lane with an advance green signal, as shown by the left and right diagrams. The alternative depicted by the center diagram involves restriction of the right lane so that only transit vehicles can continue through the intersection; for general purpose traffic, it becomes a right-turn only lane. This latter configuration is less desirable both because it removes a through-lane from general purpose traffic and because of the potential for buses to be caught behind a queue of right-turning vehicles, reducing the benefit afforded to transit by the queue jump.

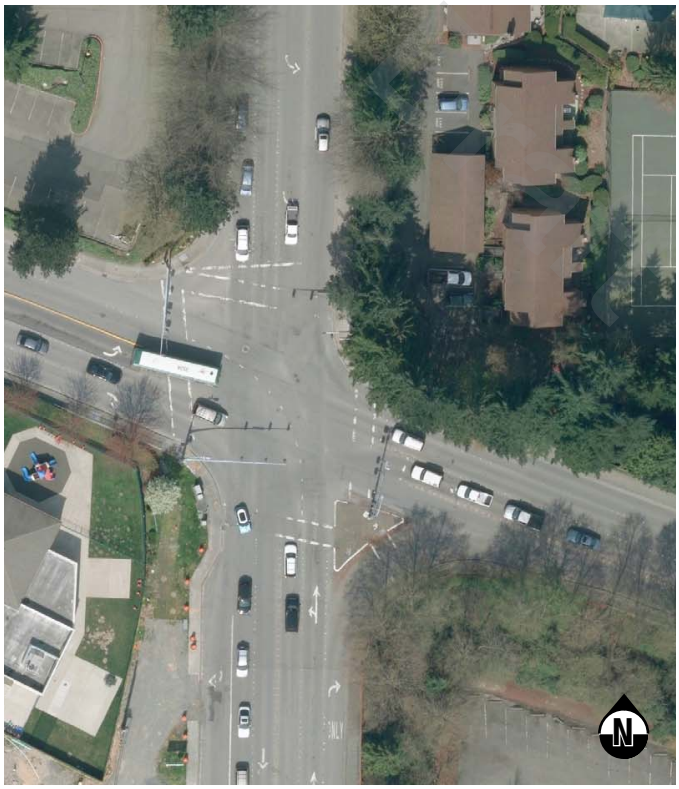


Figure 66 Running Way Improvement Project L17: Construction of a southbound HOV lane on 108th Ave NE between South Kirkland Park-and-Ride and SR-520. Aerial images depict roadway striping before and after lane reconfiguration. This concept adds one lane to the north approach relative to the WSDOT intersection reconfiguration currently being implemented. A northbound queue jump lane was also previously being considered at this intersection (see Project Q4 on page A155), but it is no longer being considered because it cannot be accommodated by WSDOT's plans.

Figure 67 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.

Although the conceptual visualizations presented here reflect one of these three configurations, this does not imply that there is only one way to implement a queue jump at a given location. Specific queue jump configurations have not yet been determined for any of the potential projects, but the conceptual renderings indicate one possibility. As queue jump projects are advanced through feasibility screening and project prioritzation, potential design strategies will be assessed based on signal operations, right-of-way availability, and constructability restrictions.

Some notable queue jump projects being considered include one on 116th Ave NE for northbound buses turning west (left) onto Northup Way (see Figure 67) and two for nothbound traffic on Bellevue Way NE—one at Main St and another at NE 12th St. A potential queue jump for northbound buses on 108th Ave NE at Northup Way, considered in the *Draft Capital Element Background Report (Volume 1: Speed and Reliability)*, was removed from the project list due to space constraints created by the SR-520 Bridge Replacement and HOV Project (see Appendix 7 page A155).

Intersection & Roadway Improvements

All but one of the potential intersection and roadway improvement projects deal with improving turn radii to better accommodate buses or adding new turn lanes to increase traffic flow and help buses pass through intersections more reliably in a single signal cycle. The only project that does not fall into these two categories (R14) simply seeks to improve the clarity of the existing channelization on NE 10th St. No negative impacts to general purpose traffic are anticipated from these improvements, as any right-of-way adjustments are lane additions, not conversions, and are not restricted to use by HOVs or buses.

Signalization Improvements

Signalization improvements relate primarily to extending the length of green phases associated with troublesome transit turning movements, either by adjusting normal signal timings or improving existing TSP controller responsiveness. New TSP implementation projects are categorized separately and are addressed in the following section. Two city-wide projects are also being considered—one to upgrade any non-SCATS traffic signals to that system, and another to coordinate with Metro to establish standards for TSP equipment and software.

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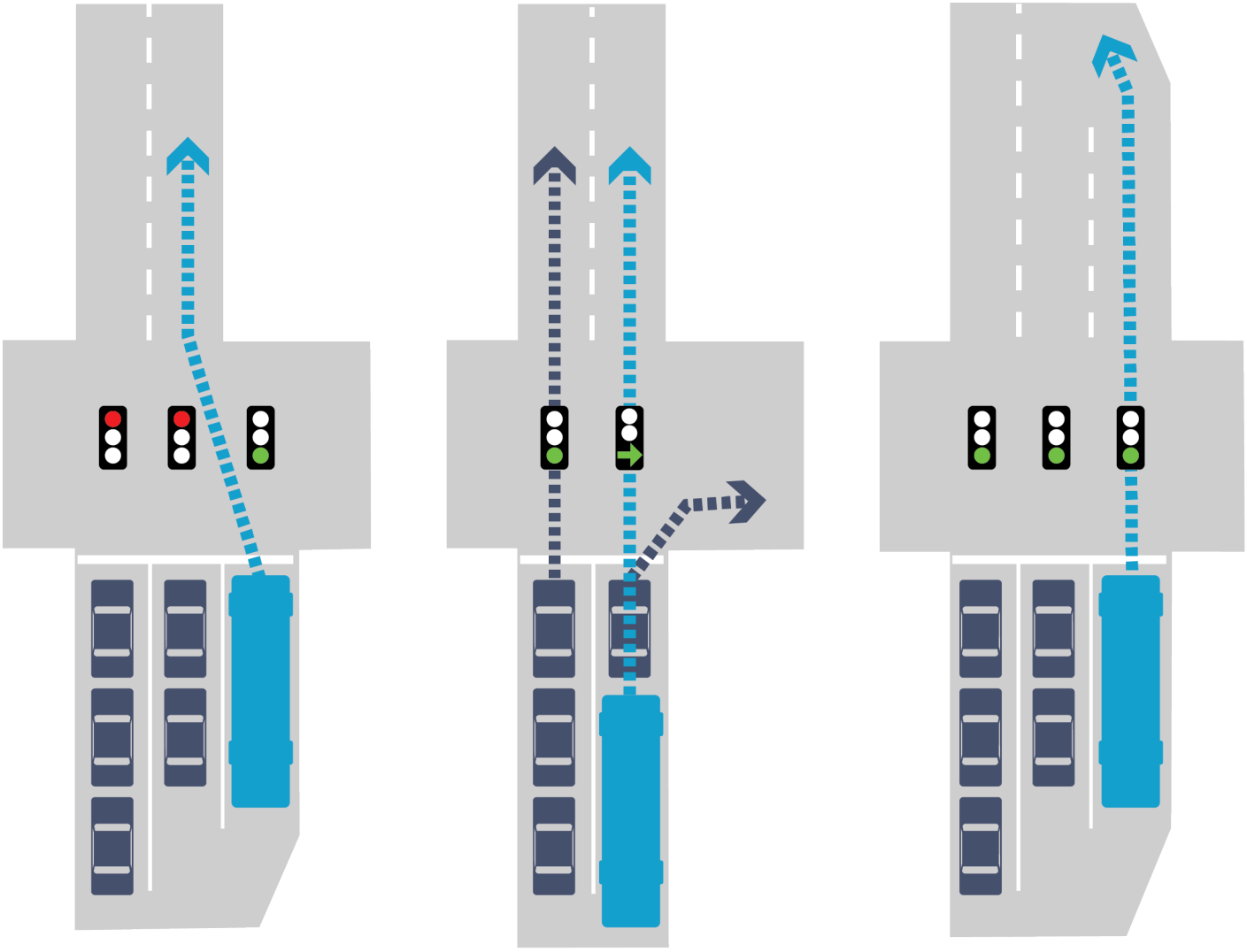
Figure 68 Various configurations of queue jump lanes.



Queue Jump through Advanced Green Signal

Queue Jump through Transit Vehicle Exception

Queue Jump through Transit Receiving/Merge Lane

Figure 69 Potential spot improvement projects.

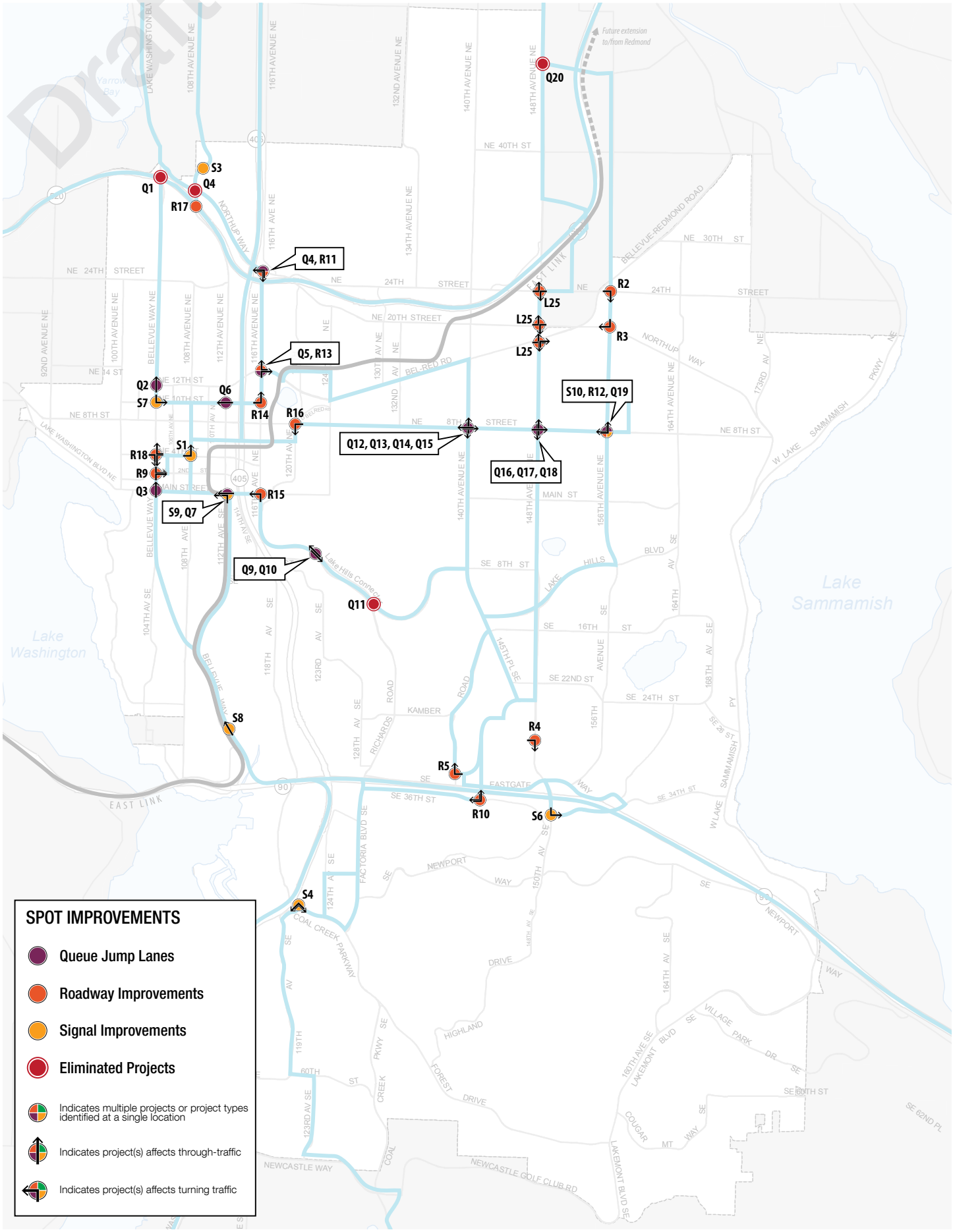


Table 8 Potential queue jump, intersection, roadway, and signalization projects.

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	$
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.	$
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	$
Q5	116th Ave NE and NE 12th St - Southbound	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	$
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.	$
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.	$
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.	$$
Q10	Lake Hills Connector and SE 8th St - Westbound	Queue Jump	13	8 / 10 / 15	Add a queue jump to the westbound approach in a newly constructed queue jump lane.	14	16	Addresses future intersection LOS of E.	$$
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.	$
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.	$
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.	$$$
Q15	NE 8th Street and 140th Ave NE - Southbound	Queue Jump	6, 14	4 / 5 / ~8	Add a queue jump to the southbound approach in the right-turn only lane.	9	16	Addresses future intersection LOS and significant queuing issues.	$
Q16	NE 8th St and 148th Ave NE - Eastbound	Queue Jump	6, 12	4 / 5 / ~8	Add a queue jump to the eastbound approach in the right-turn only lane.	19	15	Addresses operator comments. Right turn volumes might be too high to make this viable.	$
Q17	NE 8th St and 148th Ave NE - Northbound	Queue Jump	6, 12	4 / 5 / ~8	Add a queue jump to the northbound approach in the right-turn only lane.	20	14	Addresses operator comments.	$
Q18	NE 8th St and 148th Ave NE - Southbound	Queue Jump	6, 12	4 / 5 / ~8	Add a queue jump to the southbound approach in the right-turn only lane.	20	19	Addresses operator comments.	$
Q19	NE 8th St and 156th Ave NE (NB)	Queue Jump	6, 7	4 / 5 / ~8	Modify channelization to allow a queue jump.	21	14		$
Intersection and Roadway Improvements									
R2	156th Ave NE and NE 24th St Turn Radii	Turn Radii	7	8 / 10 / 15	Improve the turn radius for the eastbound right turn on 156th Ave NE at NE 24th St.	N/A	N/A	Previously noted in the Eastgate/I-90 Land Use and Transportation Project.	$$
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.	$$
R4	Landerholm Circle and 148th SE Radii Improvements	Turn Radii	7, 13	4 / 5 / ~8	Improve the turn radius for the eastbound right turn on 148th Ave SE at Landerholm Circle.	N/A	N/A	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis.	$$
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.	$$
R9	NE 2nd St and Bellevue Way NE Turn Improvement	Road Upgrade	3, 5, 6	~3 / 3-4 / 5-6	Add a northbound right-turn lane and a second southbound left turn lane.	15–17	15	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis.	$$$
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.	$$$
R11	Northup Way and NE 116th St Turn Improvement	Turn Lanes	5, 14	4 / 5 / ~8	Add an eastbound to southbound right turn lane.	16	24	Addresses future intersection LOS of F with queuing issues, high bus frequency.	$$

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 8 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.)									
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.	$$
R13	NE 12th St and 116th Ave NE Turn Lane	Turn Lanes	5, 14	4 / 5 / ~8	Add a westbound to northbound right turn lane.	15	16	Addresses future intersection LOS of E and queuing issues.	$$
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.	$
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.	$$$
R16	NE 8th St and 120th Ave NE Turn Lane	Turn Lane	6	8 / 10 / 15	Add a second westbound to southbound turn lane and restrict to HOV and transit.	16	16	Addresses existing left turn queuing issues.	$$
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.	$$$
Signalization Improvements									
Citywide-S1	Traffic Computer System Upgrade	ITS	NA	NA	Citywide replacement of traffic signal and software to upgrade to SCATS traffic system.	N/A	N/A	SCATS implementation has shown to reduce travel times across, which will generally result in improved speed and reliability of transit service.	NC
Citywide-S2	Controller Equipment and Software Standards	Standards	NA	NA	Coordinate with King County Metro on equipment and software TSP standards for all new signal controllers.	N/A	N/A	Ensures TSP treatments can be easily implemented in the future with existing equipment and software	NC
S1	NE 4th St and 108th Ave Turn Improvement	Turn Improvement	3, 6	4 / 5-8 / 15-20	Improve the eastbound left turn level-of-service (LOS) for transit through increased time allocation or TSP. Explore strategies to reduce southbound right turn delays caused by pedestrians.	26	18	Addresses top operator comment location.	$
S3	South Kirkland P&R Signalizations	Signalization	4, 5, 14	~3 / 3-4 / 5-6	Signalize 108th Ave NE at the South Kirkland Park-and-Ride entrance.	16	13–14	Previously noted in the Bellevue Transit Plan and Bellevue Transit Improvement Analysis	$$
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.	$
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.	$
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	$
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	$
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.	$
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.	$$$

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

TRANSIT SIGNAL PRIORITY

Draft

Potential transit signal priority (TSP) projects were initially being considered at all signalized intersections through which 2030 Frequent Transit Network (FTN) routes will operate. Following the completion of early feasibility screening, potential transit signal priority (TSP) projects were then divided into three groups. The first group, shown in Table 9 on page 73, 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 have not been eliminated by early feasibility screening. While TSP has already been deployed on some intersections served by the B Line, near-term projects along NE 8th St, 156th Ave NE, and 148th Ave NE would complete implementation associated with that route.

A cost estimate is not provided for near-term TSP projects in Table 9 because the cost of implementation at each intersection is estimated to be $15,000. TSP costs for each intersection were estimated based on approximate costs provided by King County Metro. These estimates do not include capital or operational costs of communication, nor do they include signal controller, cabinet, or foundation upgrades. More detailed analysis of the communication, cabinet, controller, and signal upgrades necessary for TSP implementation is required for more detailed cost estimates to be developed.

The second group of projects (see Appendix Table 13 on page A154) are those that have been eliminated from further consideration following 'fatal flaw' early feasibility screening. Twelve intersections for which potential signal projects were identified have been eliminated based on known signal and/or roadway limitations, and two additional intersections were removed by project consultants. Generally, the intersections with 'fatal flaws' identified are those that

Figure 70 Potential transit signal priority (TSP) projects.

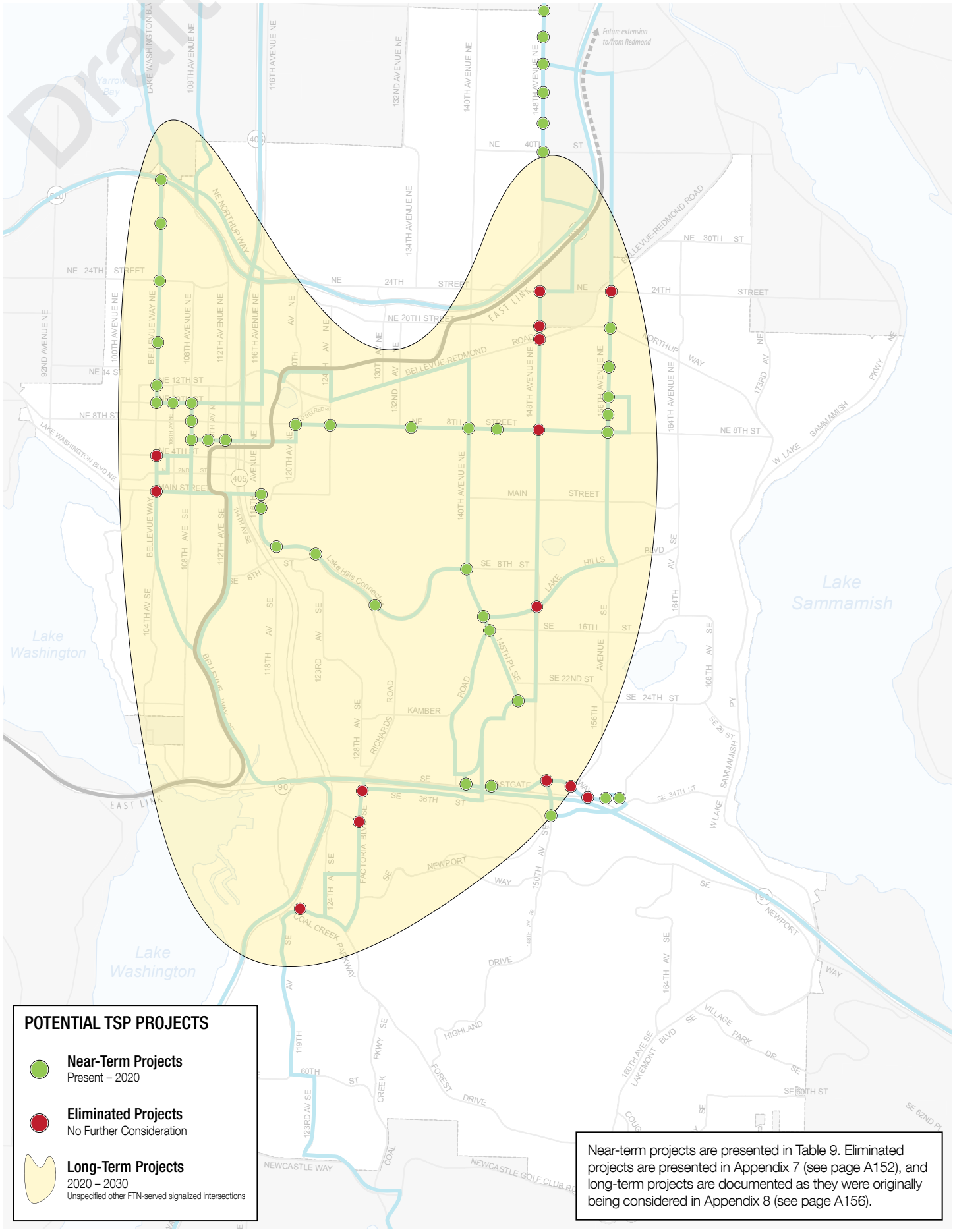


Table 9 Potential near-term transit signal priority (TSP) projects.

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_3	148th Ave NE & NE 5600 Block	Northbound, Southbound	9–19	14–21	7, 12			
NA_4	148th Ave NE & NE 46th St	Northbound, Southbound	21–23	21	12		X	

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

have such significant congestion—often in all travel directions—that the use of signal pre-emption for transit would seriously interfere with signal phasing and cause unacceptable delays to cross traffic. For example, the intersections of 148th Ave NE/NE 20th St and Factoria Blvd/SE 36th St both experience substantial congestion due to nearby freeway interchanges, making TSP implementation untenable there.

The final group of potential TSP projects are those that may be pursued between 2020–2030. This group includes an unspecified number of the remaining signalized intersections served by 2030 FTN routes, indicated in Figure 70 by a yellow area covering much of the city (see Appendix 8 on page A156). If transit efficiency and reliability were the only two considerations necessary in determining where TSP should be deployed—that is, if cost were no object, impacts to other travel modes were deemed insignificant, and no technical limitations existed on where TSP could be deployed—then TSP might reasonably be pursued at all or most of these signals. However, this is of course not the case, as all of these other factors are also critical considerations in determining where transit priority can and should be implemented. Therefore, 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.

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TRACKING & FURTHER STUDY

In addition to the physical infrastructure improvement projects proposed, five projects dealing with performance tracking and further study have also been identified (Table 10). Though less visible than the 'brick-and-mortar' running way and spot improvement projects, and less immediately impactful to transit operations than transit signal priority projects, these tracking and study projects would provide valuable opportunities for the City to ensure that its investments in transit priority are functioning as intended and providing the greatest return on investment possible.

The tracking and study projects include two targeted projects and three city-wide projects. Project L12 would track the volumes of traffic between Bellevue Transit Center and the NE 6th St direct-access ramp to I-405 to ensure that speed and reliability do not decline over time, and Project R17 would study how speed and reliability could be improved for westbound buses from SR-520 to the South Kirkland Park-and-Ride. Citywide-R1 would track the adequacy of turn pocket lengths along FTN corridors and adjust signal timing as needed. Citywide-S3 and Citywide-S4 both deal with TSP performance. The former would develop TSP performance standards and track the resulting measures to ensure that TSP systems are functional and optimized, while the latter project would conduct a before-and-after study of the benefits provided to transit by TSP at selected intersections, as well as its impacts on general purpose traffic. None of these projects have associated capital costs, and Project R17 is the lone project whose cost was identified as 'N/A' (see Table 6 on page 55).

Table 10 Tracking projects and studies.

ID	Project	Type	FTN Service		Composite Scores		Project Description	Project Need
			Routes	Frequency (Peak/Base/Night)	Short-Term	Long-Term		
L12	NE 6th St Bus Priority Corridor	Tracking	1, 2, 3, 5, 6, 11, 13	~1 / 1-2 / ~2	24–28	23	Highlight transit priority over general purpose and HOV traffic on NE 6th St from BTC to I-405 direct access ramps. Track general purpose and HOV volumes to ensure they do not result in degradation of speed and reliably below existing levels, and take steps to mitigate growing HOV volumes if needed.	Addresses very high bus volumes between BTC and I-405.
Citywide-R1	Transit Turn Priority	Tracking	NA	NA	N/A	N/A	Monitor right and left turn pockets used by Frequent Transit Network (FTN) routes for level-of-service and adequacy of pocket length. Use signal timing work to prioritize these movements to ensure fast and reliable transit service.	Turning moments at major intersections with long signal cycles can have a significant impact on the speed and reliability of routes.
R17	SR-520 and 108th Ave NE Exit Transit Priority	Study	4	8 / 10-15 / 30	30	23	Improve the speed and reliability of SR-520 westbound buses to South Kirkland Park-and-Ride through signal operations, striping, or construction of bus facilities.	Addresses 2010 and 2030 intersection LOS of E and F.
Citywide-S3	TSP Performance Tracking and Optimization	Tracking	NA	NA	N/A	N/A	Develop TSP performance standards in coordination with King County Metro. Track performance and ensure that TSP is operational and optimized.	Develop shared goals of successful TSP implementation between the City of Bellevue and King County Metro.
Citywide-S4	TSP Before and After Study	Study	NA	NA	N/A	N/A	Complete a before and after study at select intersections to assess the benefits of TSP to transit and the impacts on general purpose traffic. Use person throughput and person delay as performance measures.	Provides a local example of the benefits and impacts on TSP implementation for staff and policy makers.

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ATTACHMENT 3

BELLEVUE COLLEGE CONNECTION

EXCERPT FROM THE TRANSIT SPEED AND RELIABILITY REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/TransitSpeedReliabilityReport_02192014.pdf

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APPENDIX 6: BELLEVUE COLLEGE CONNECTION –
142ND PL SE / SNOQUALMIE RIVER RD MULTIMODAL TRANSPORTATION CORRIDOR

Draft

One of the more significant projects included in this report is the Bellevue College Connection Multimodal Transportation Corridor (Running Way Project L27), which is located between the intersection of 142nd Pl SE and SE 36th St on the south end and SE 24th St and Kelsey Creek Rd on the north end. The corridor spans the length of the 142nd Pl SE Bridge from SE 36th St to SE 32nd St, continues north along Snoqualmie River Rd to its intersection with Kelsey Creek Rd, and proceeds north to SE 24th St (see Appendix Figure 16 on page A130). This multimodal corridor as proposed and reflected in the preliminary designs presented here is intended to support pedestrians, bicyclists, and transit users.

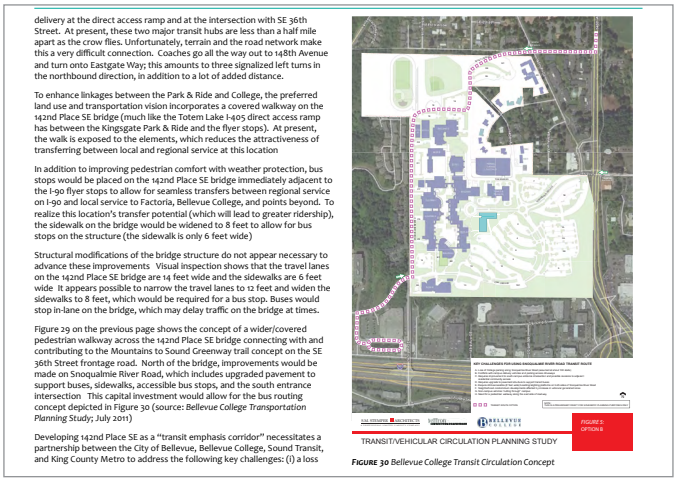
This project was previously highlighted in the *Transportation Strategies Report*, part of the *Eastgate/I-90 Lane Use and Transportation Project* completed in 2012 (see Appendix Figure 15). That report outines a vision that will guide public and private actions, investments, and capital project priorities to improve mobility for all travel modes in the Eastgate/I-90 corridor. Potential improvements advanced by the plan are oriented toward finding the best transportation solutions for the area that are affordable, supported by the community, and can be implemented in a reasonable time frame. The list includes projects that would improve traffic flow at critical intersections, enhance the pedestrian/bicycle environment, and increase the attractiveness of transit as a travel option. One of the transit improvements proposed is the development of 142nd Pl SE as a transit emphasis corridor, including upgrading Snoqualmie River Rd to support buses and accessible bus stops. This project has since been adopted into the *2013-2024 Transportation Facilities Plan* (TFP-252).

Transportation Strategies Report

Eastgate/I-90 Land Use & Transportation Project

CITY OF BELLEVUE
January 2012

Department of Transportation
Department of Planning and Community Development



delivery at the direct access ramp and at the intersection with SE 36th Street. At present, these two major transit hubs are less than a half mile apart as the crow flies. Unfortunately, terrain and the road network make this a very difficult connection. Coaches go all the way out to 148th Avenue and turn onto Eastgate Way; this amounts to three signalized left turns in the northbound direction, in addition to a lot of added distance.

To enhance linkages between the Park & Ride and College, the preferred land use and transportation vision incorporates a covered walkway on the 142nd Place SE bridge (much like the Totem Lake I-405 direct access ramp has between the Kingsgate Park & Ride and the flyer stops). At present, the walk is exposed to the elements, which reduces the attractiveness of transferring between local and regional service at this location

In addition to improving pedestrian comfort with weather protection, bus stops would be placed on the 142nd Place SE bridge immediately adjacent to the I-90 flyer stops to allow for seamless transfers between regional service on I-90 and local service to Factoria, Bellevue College, and points beyond. To realize this location's transfer potential (which will lead to greater ridership), the sidewalk on the bridge would be widened to 8 feet to allow for bus stops on the structure (the sidewalk is only 6 feet wide)

Structural modifications of the bridge structure do not appear necessary to advance these improvements Visual inspection shows that the travel lanes on the 142nd Place SE bridge are 14 feet wide and the sidewalks are 6 feet wide It appears possible to narrow the travel lanes to 12 feet and widen the sidewalks to 8 feet, which would be required for a bus stop. Buses would stop in-lane on the bridge, which may delay traffic on the bridge at times.

Figure 29 on the previous page shows the concept of a wider/covered pedestrian walkway across the 142nd Place SE bridge connecting with and contributing to the Mountains to Sound Greenway trail concept on the SE 36th Street frontage road. North of the bridge, improvements would be made on Snoqualmie River Road, which includes upgraded pavement to support buses, sidewalks, accessible bus stops, and the south entrance intersection This capital investment would allow for the bus routing concept depicted in Figure 30 (source: *Bellevue College Transportation Planning Study*; July 2011)

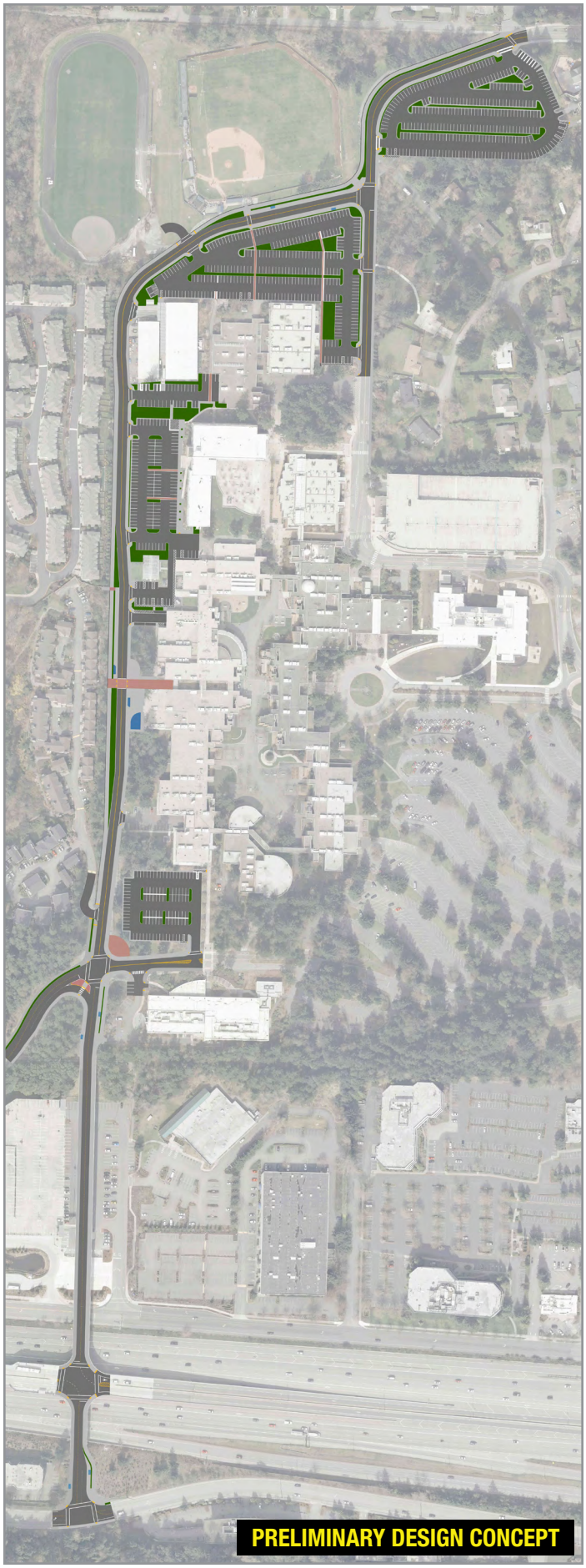
Developing 142nd Place SE as a "transit emphasis corridor" necessitates a partnership between the City of Bellevue, Bellevue College, Sound Transit, and King County Metro to address the following key challenges: (1) a loss

TRANSIT/VEHICULAR CIRCULATION PLANNING STUDY

FIGURE 30 Bellevue College Transit Circulation Concept

Appendix Figure 15 Revised transit routing around Bellevue College along Snoqualmie River Rd, as presented in the *Eastgate/I-90 Transportation Strategies Report*, adopted in January 2012.

Appendix Figure 16 Full extents of the Bellevue College Connection: 142nd Pl SE / Snoqualmie River Rd Multimodal Transportation Corridor.

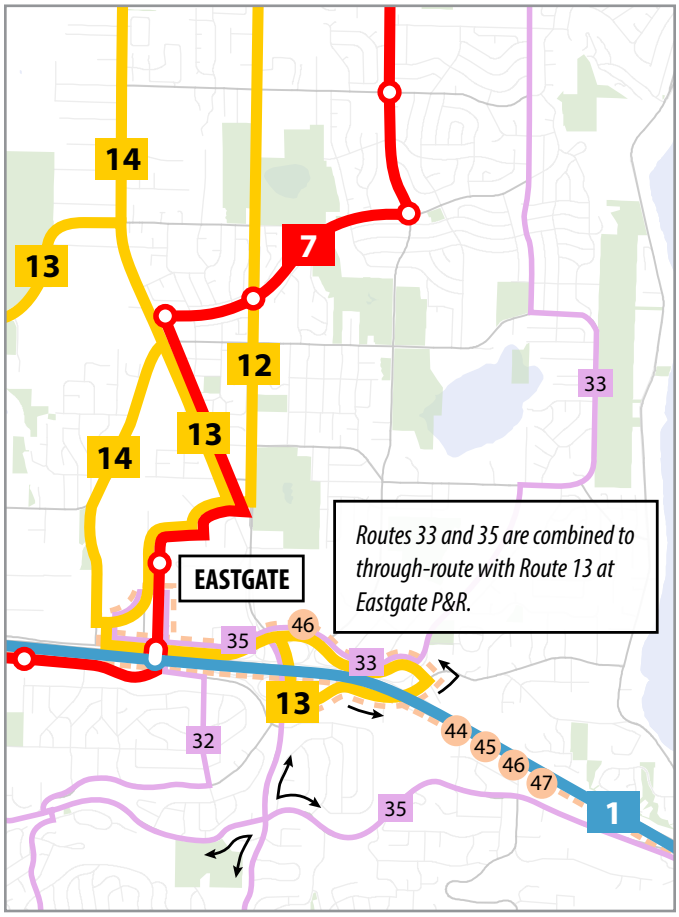


This corridor is especially significant to the Transit Master Plan because it improves the efficiency of transit operations to the Eastgate Park-and-Ride while maintaining direct frequent service to the Bellevue College campus. As described in the *Transit Service Vision Report*, the layout of Bellevue College currently presents a major obstacle to efficient service, and it also creates a conflict between the goal of serving the college well and the goal of providing efficient north-south service connecting Crossroads and Overlake to Eastgate and Factoria. The key is to put Bellevue College "on the way" between Eastgate and Crossroads; currently, Bellevue College is a time-consuming cul-de-sac that discourages all north-south ridership across the eastside of Bellevue. Eastgate will continue to grow more important as a regional connection site, so it must be possible to serve both the campus and Eastgate with a minimal amount of deviation.

As shown in Appendix Figure 17, the 2030 Growing Resources scenario envisions three FTN routes operating along the 142nd Pl SE/Snoqualmie River Rd Multimodal Transportation Corridor: Frequent Rapid Route 7 and Frequent Local Routes 12 and 13. The design of the Bellevue College Connection thus suggests two main types of linear segments along the corridor based on the location of transit, pedestrian, and bicycle traffic flows and the width of travel lanes:

- Snoqualmie River Rd/Kelsey Creek Rd
- 142nd Pl SE Bridge

All three FTN routes traverse the Snoqualmie River Rd/Kelsey Creek Rd segment. At the SE 32nd St intersection, Routes 12FL and 13FL continue southwest to the Eastgate Park-and-Ride, providing connections to Frequent Local Route 14, Coverage Routes 32, 33, and 35, and Peak-Only Route 46. Route 7FR continues south to the Eastgate Freeway Station, providing connections to Frequent Express Route 1, Coverage Route 32, and several Peak-Only routes serving Downtown Seattle and Issaquah (see Appendix Figure 18 on page A133).



WEEKDAY ALL-DAY 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* (Express & Local)	*Peak frequencies vary by route		

Appendix Figure 17 Routes operating along the 142nd Pl SE/Snoqualmie River Rd Multimodal Transportation Corridor and in Eastgate and vicinity, as proposed by the 2030 Growing Resources scenario in the *Transit Service Vision Report*.

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Snoqualmie River Rd / Kelsey Creek Rd

Pedestrian flow is logically oriented on the north and east sides of Snoqualmie River Rd around campus structures. A sidewalk is recommended to provide direct access to campus, with widths varying from 6-10 feet depending on the volume of pedestrian flow and the locations of the bus zones. To minimize conflict points between pedestrians and driveways, bicycle traffic is moved west of the road to a 10-foot-wide two-way path, with multiple points of access to the college provided. Two 12-foot-wide travel lanes are provided, one for each direction. General purpose vehicular traffic may be restricted along Snoqualmie River Rd to facilitate better transit operation and access for delivery trucks. A sound wall along Snoqualmie River Rd west of the bicycle facility is designed to minimize noise generated by traffic for the neighboring condominium developments.

142nd Pl SE Bridge

The 142nd Pl SE Bridge currently has two 14-foot-wide travel lanes (one for each direction) and 6-foot-wide sidewalks on both sides. No bicycle facility is provided, making riding over the bridge uncomfortable for most riders. There is significant pedestrian traffic on the west side of the 142nd Pl SE Bridge, mainly to/from the Eastgate Park-and-Ride and Eastgate Freeway Station. Due to pedestrian volumes, an 8-foot-wide sidewalk is recommended on the west side of the road. The east side of the road is identified as a suitable location for an independent bicycle facility, providing a direct connection to the Mountains to Sound Greenway at the northeast corner of SE 36th St and 142nd Pl SE. A 10-foot-wide, two-way, elevated bicycle facility is thus recommended on the east side of the road. These non-motorized facilities leave 22 feet for general purpose travel lanes, which at 11-feet per lane satisfies the minimum width criteria to support transit operations.

Corridor Sub-segments

Within these two main linear segments, multiple sub-segments warrant specific design consideration:

Segment 1: Kelsey Creek Rd/SE 24th St to Kelsey Creek Rd/Snoqualmie River Rd

Segment 2: Snoqualmie River Rd/Kelsey Creek Rd to Delivery Zone

Segment 3: Delivery Zone to Greenhouse

Segment 4: Bellevue College Transit Center on Snoqualmie River Road

Segment 5: 142nd Pl SE/SE 32nd St

Segment 6: South of 142nd Pl SE/SE 32nd St to 142nd Pl SE north of I-90 Direct Access Ramp

Segment 7: 142nd Pl SE/I-90 Direct Access Ramp to 142nd Pl SE/SE 36th St

Each of these corridor sub-segments is addressed individually on the following pages.

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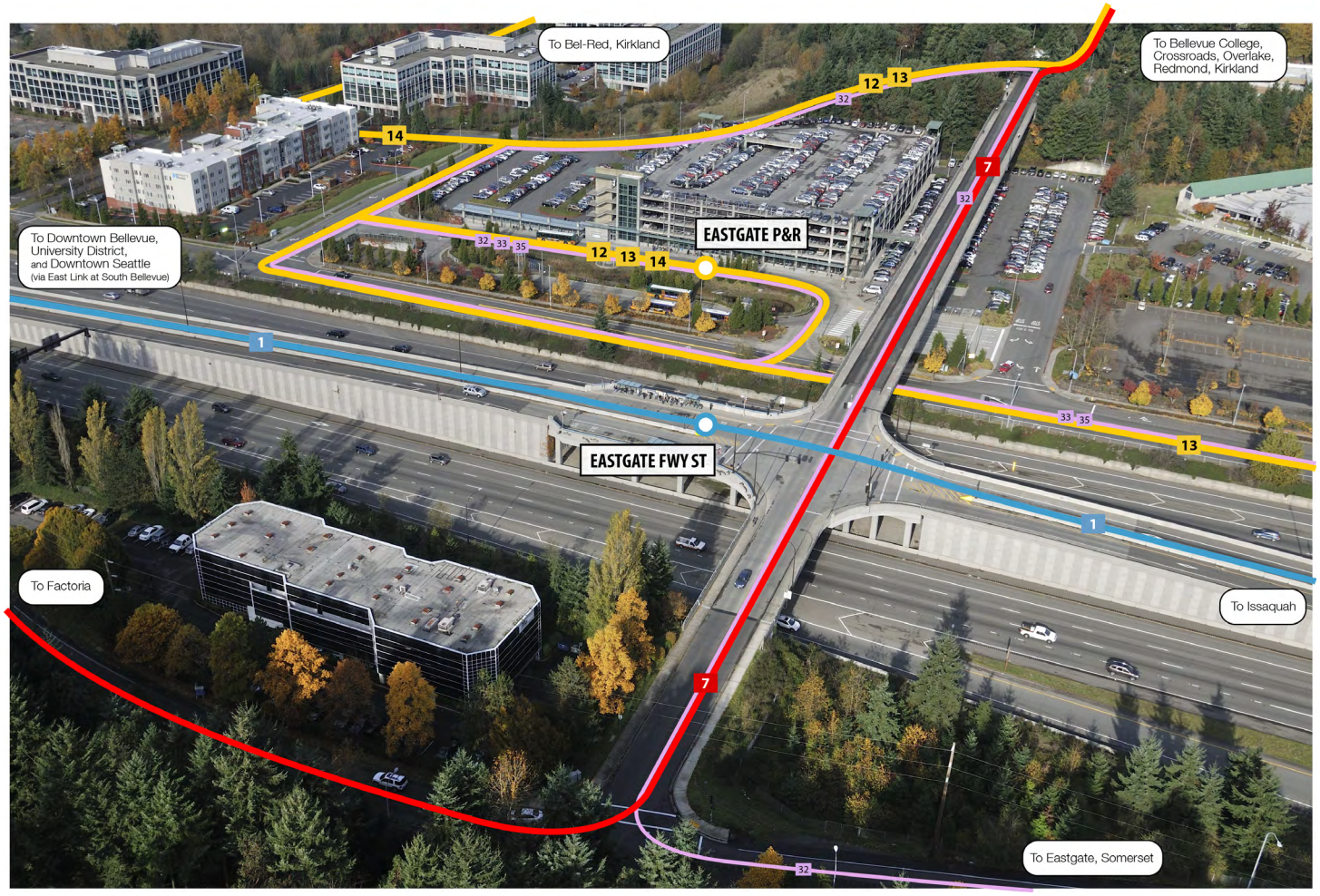
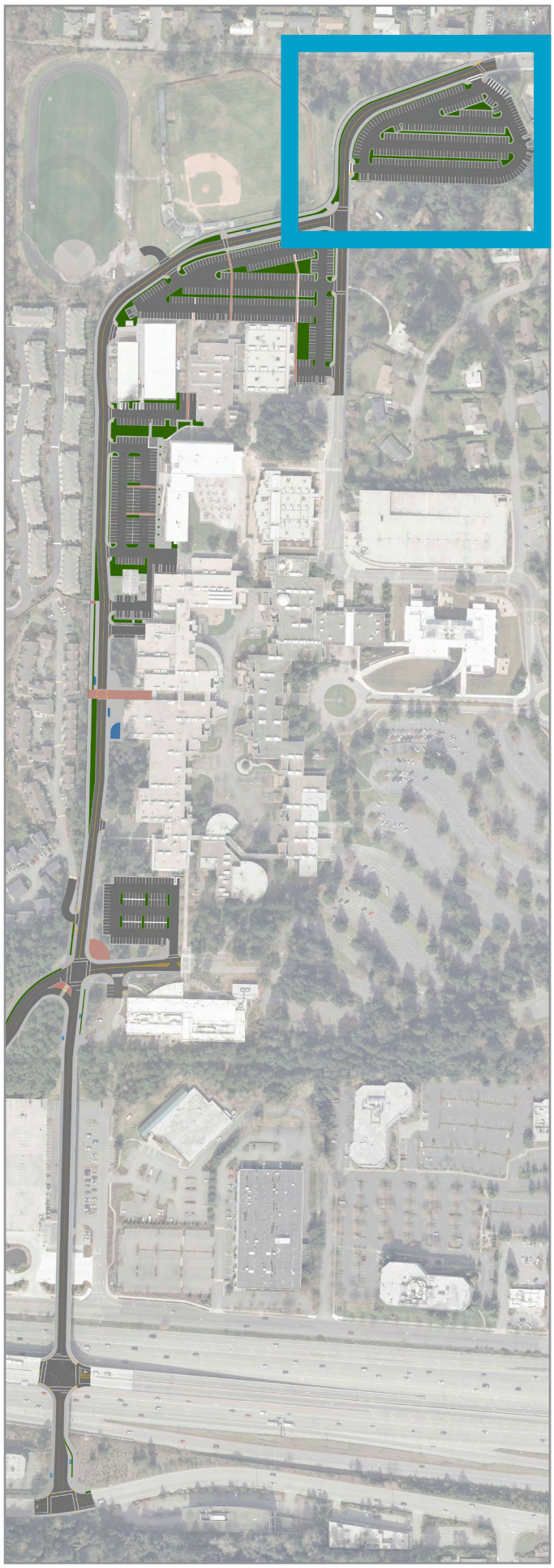
Appendix Figure 18 Transit services at the Eastgate Park-and-Ride and Eastgate Freeway Station in 2030 based on the Growing Resources network. Frequent connections are available to Bellevue College, Crossroads, Downtown Bellevue, Factoria, Issaquah, Overlake, Redmond, and Kirkland.





Segment 1

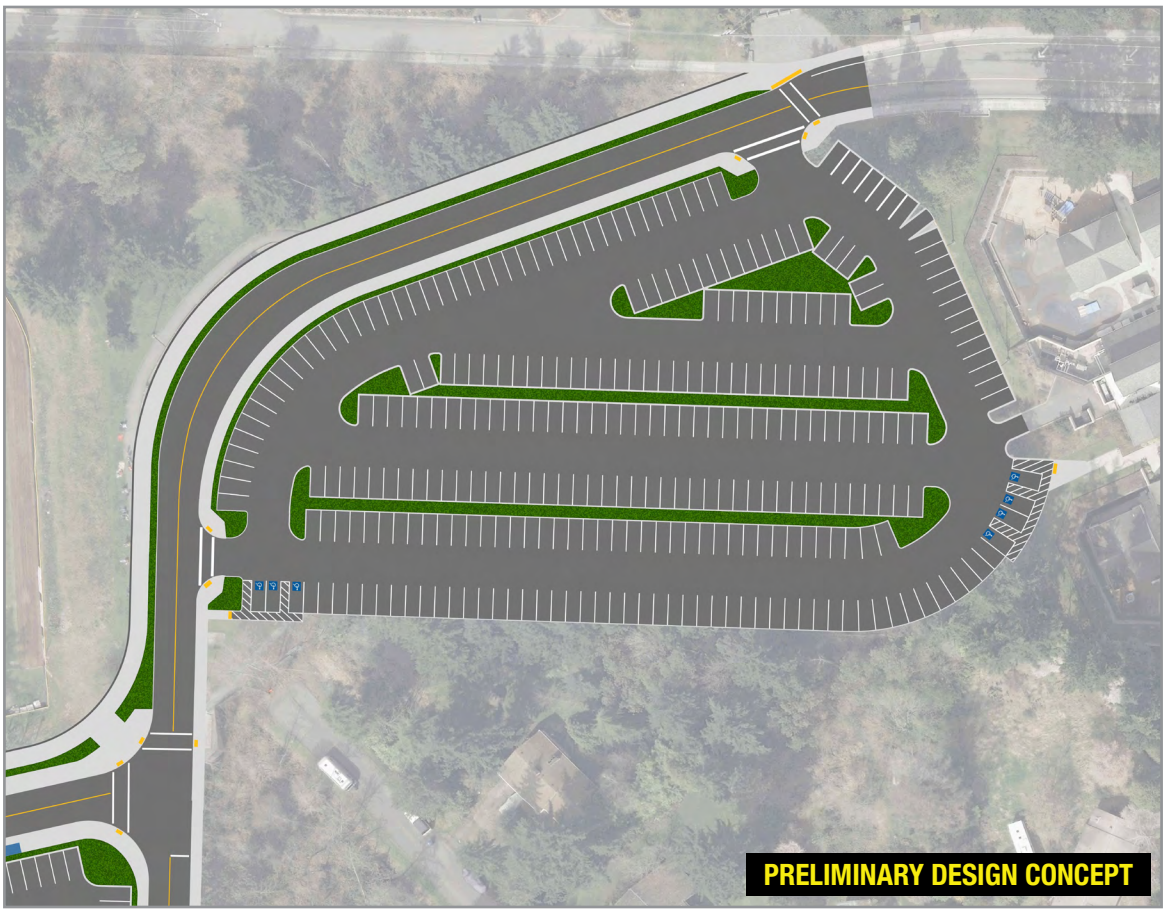
Kelsey Creek Rd/SE 24th St to Kelsey Creek Rd/Snoqualmie River Rd

A 6-foot wide sidewalk is proposed for the south and southeast side of the road. The parking lot is redesigned with only two driveways to reduce the number of the conflict points between pedestrians, transit, and general purpose traffic. The new parking lot design increases the number of stalls by 74, from 227 to 301 stalls (see Appendix Table 11 on page A151).

West of the intersection of Kelsey Creek Rd and SE 24th St, a two-way bicycle facility will be constructed on the north side of the road. East of this intersection, bicycle lanes will be provided in the shoulders of both sides of the road. Bicycle users will transition between these facilities at the SE 24th St intersection, such that bicyclists traveling westbound on SE 24th St would continue directly onto the two-way bicycle facility, while those traveling northeastbound from the campus would cross the street from the new bicycle path and continue along SE 24th St on the south side of the road. Bicyclists also have access to campus at the northwest corner of Snoqualmie River Rd and Kelsey Creek Rd.

Existing:

Proposed:



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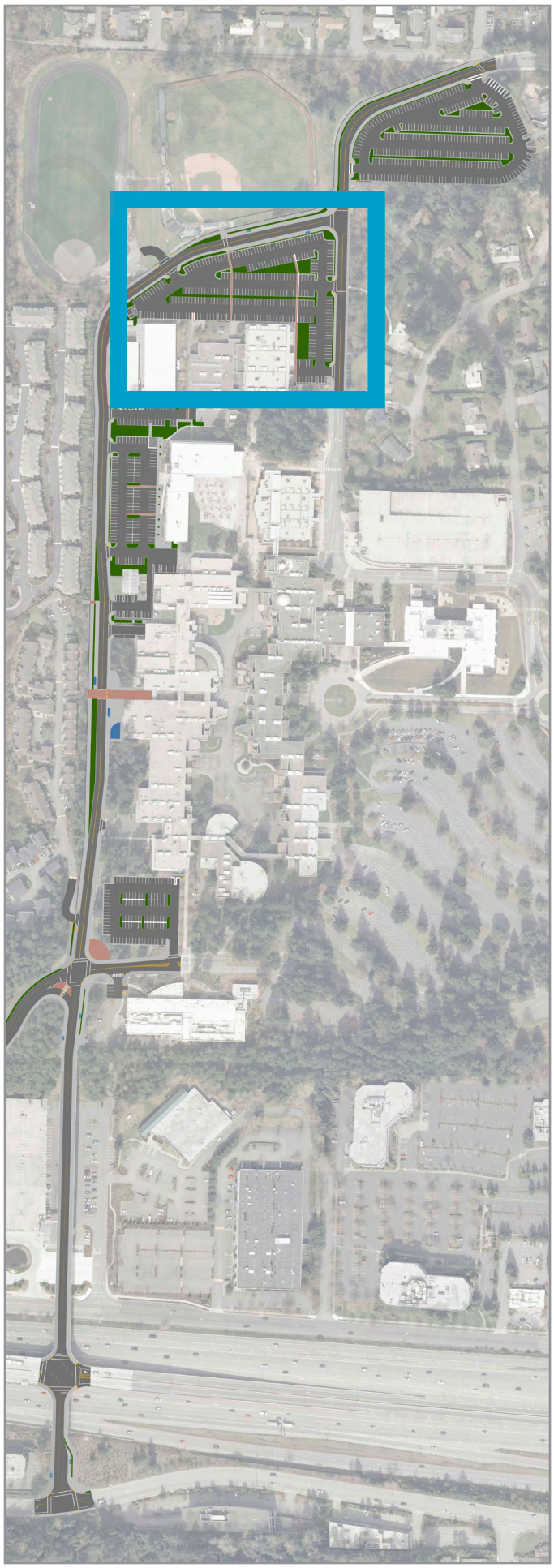


Segment 2

Snoqualmie River Rd/Kelsey Creek Rd to Delivery Zone

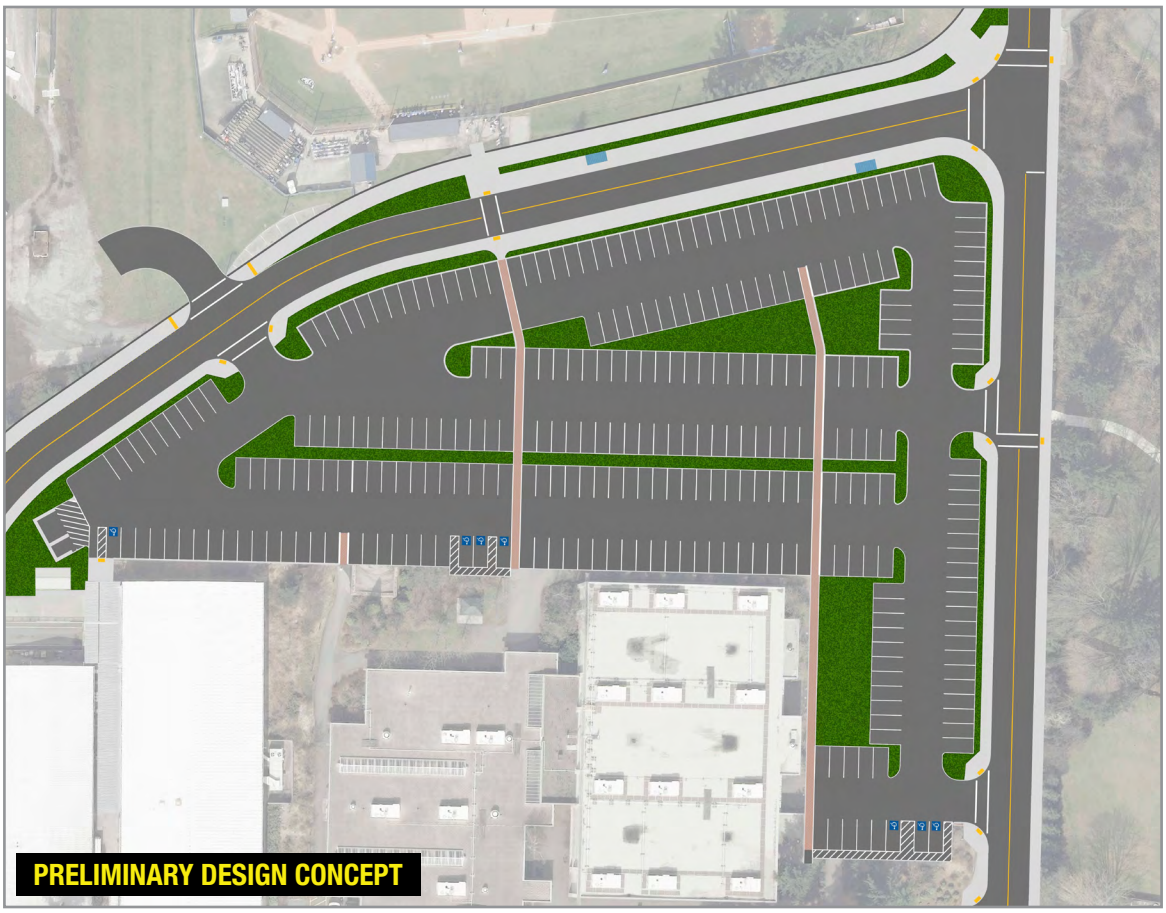
This segment is realigned and shifted north next to the athletic fields to reduce the number of potential conflicts between pedestrians, bicyclists, transit, general purpose traffic, and parking lot users. Parking lot traffic is focused on one side of Kelsey Creek Rd, compared to the current configuration that includes driveways on both sides. This also creates a single parking lot that is larger than the multiple separate existing lots, which allows for a design that maximizes parking capacity. This redesign adds 93 more stalls, increasing the number of stalls in this segment from 203 to 296 (see Appendix Table 11 on page A151).

Another advantage of moving the road north is that it increases the turning radius between Snoqualmie River Rd and Kelsey Creek Rd, which will improve transit operations. Bus zones are located between the intersection of Snoqualmie River Rd/Kelsey Creek Rd and the pedestrian crossing to the athletic fields, as this is the longest distance without driveways or pedestrian crossings (about 300 feet). Ten-foot-wide sidewalks are provided on the north and south sides of Snoqualmie River Rd for the westbound (southbound) and eastbound (northbound) bus zones, respectively.

Two pedestrian crossing corridors are provided through the parking lot to facilitate pedestrian movement perpendicular to the parking aisles. Pedestrian access from the gymnasium buildings to the baseball fields remains at almost the same place as its current location. Ideally, to minimize the number of conflicts with bicyclists, it would be combined with the athletic fields' driveway, and the driveway would be moved slightly north from its current location. The bicycle facility is separated from the westbound (southbound) bus zone by a 4-foot-wide planter strip to avoid conflicts with pedestrians. Bicyclists have access to campus and to transit at that bus platform.

Existing:

Proposed:



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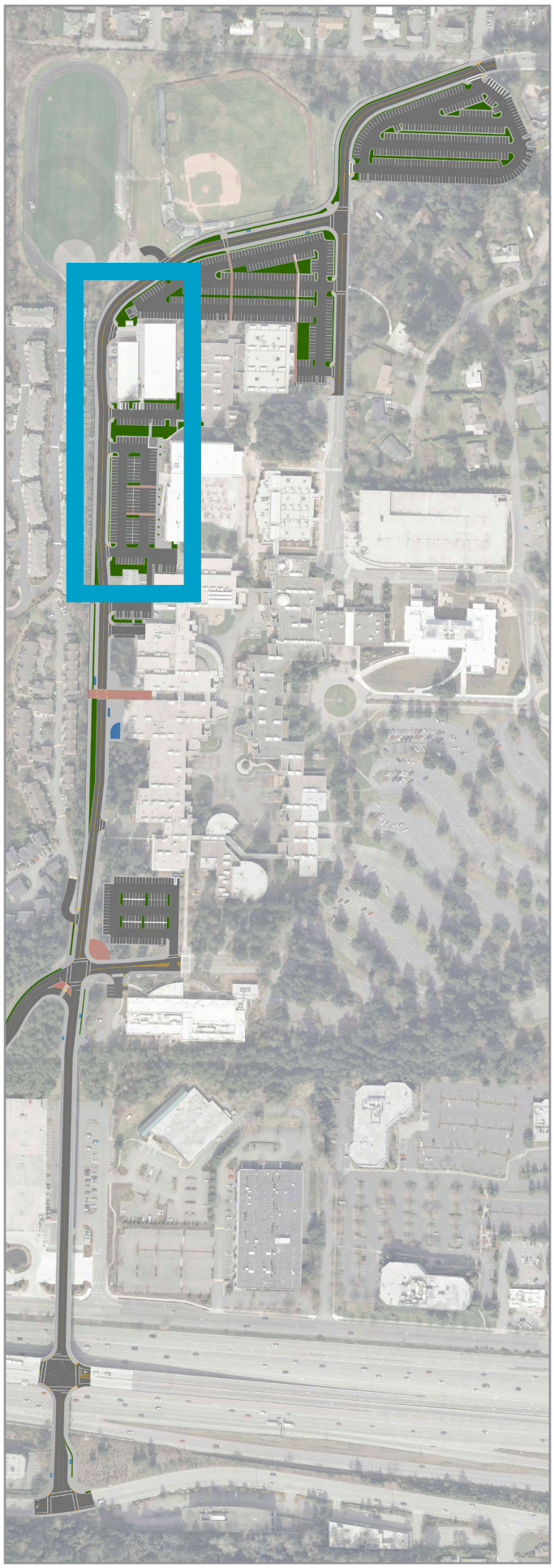


Segment 3

Delivery Zone to Greenhouse

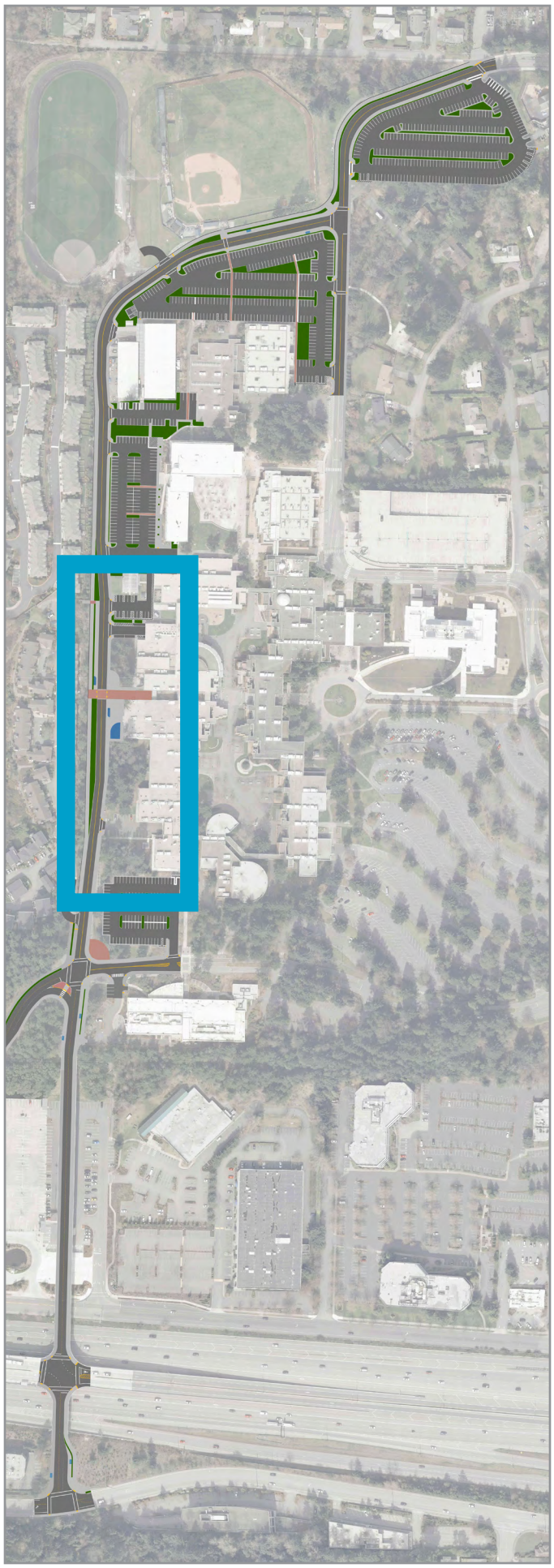
The primary consideration for the Bellevue College delivery zone is preserving the road width to accommodate delivery truck operations. Study of this area resulted in two options for preserving the road width: (1) moving the bicycle facility west of the roadway, or (2) using a mountable curb. While both scenarios have advantages and disadvantages, this design gives preference to the independent bicycle facility west of the roadway. Although this is a more expensive design due to easement and topology, it is much safer and more comfortable for bicyclists, and they would not be required to stop and wait while deliveries take place.

A 6-foot-wide sidewalk provided on the east side of the road, east of the current travel lanes, would be sufficient to support the light pedestrian traffic in this area. Transit vehicles will need to stop and wait for delivery trucks to enter or exit the delivery zone.

With these changes to the roadway and non-motorized facilities, the redesigned parking lot cannot maintain all of the existing stalls in this segment. The number of stalls decreases from 173 to 156, a loss of 17 stalls. However, the parking lot just north of this location (see Segment 2) is close and gains 93 additional stalls, which compensates for the loss realized in this segment (see Appendix Table 11 on page A151).

Existing:

Proposed:



Segment 4

Bellevue College Transit Center on Snoqualmie River Road

This segment includes the primary transit access point to the Bellevue College campus. Bus zones for the Bellevue College Transit Center will be aligned with the campus' main east-west axis, as requested by Bellevue College staff. The pedestrian plaza on the east side of the road may be designed to include a café and magazine kiosk, and a covered area could be provided for tables and chairs.

A 10-foot-wide (minimum requirement) platform area is recommended to accommodate both bus shelters and ADA requirements. Pedestrians cross Snoqualmie River Rd to/from the southbound bus zone at a 24-foot-wide pedestrian crossing area. This design scenario recommends locating bus zones on the near-side of the pedestrian crossing. Although far-side zones would allow buses to leave sooner and reduce dwell times, such a configuration would ultimately encourage unsafe passing, and there are other factors that also support near-side zones. For example, if far-side zones are pursued, two driveways will need to be eliminated—one for the existing handicap parking and one used by delivery trucks. This design preserves the location of the pedestrian access from the neighboring condominium complexes at the north end of the southbound platform. Ideally, it would align with the pedestrian crossing area to reduce the number of conflict points bewteen pedestrians and bicyclists. The bicycle facility west of the southbound zone is separated from the bus platform by a 4-foot-wide planter strip to avoid conflicts with pedestrians. The 24-foot-wide pedestrian crossing extends to the bicycle facility to provide bicyclists access to transit and the campus.

This redesigned roadway eliminates 92 parking stalls along Snoqualmie River Rd (see Appendix Table 11 on page A151). A new parking lot could not be built without significant tree canopy loss.

Existing:

Proposed:

Segment 5

142nd Pl SE/SE 32nd St

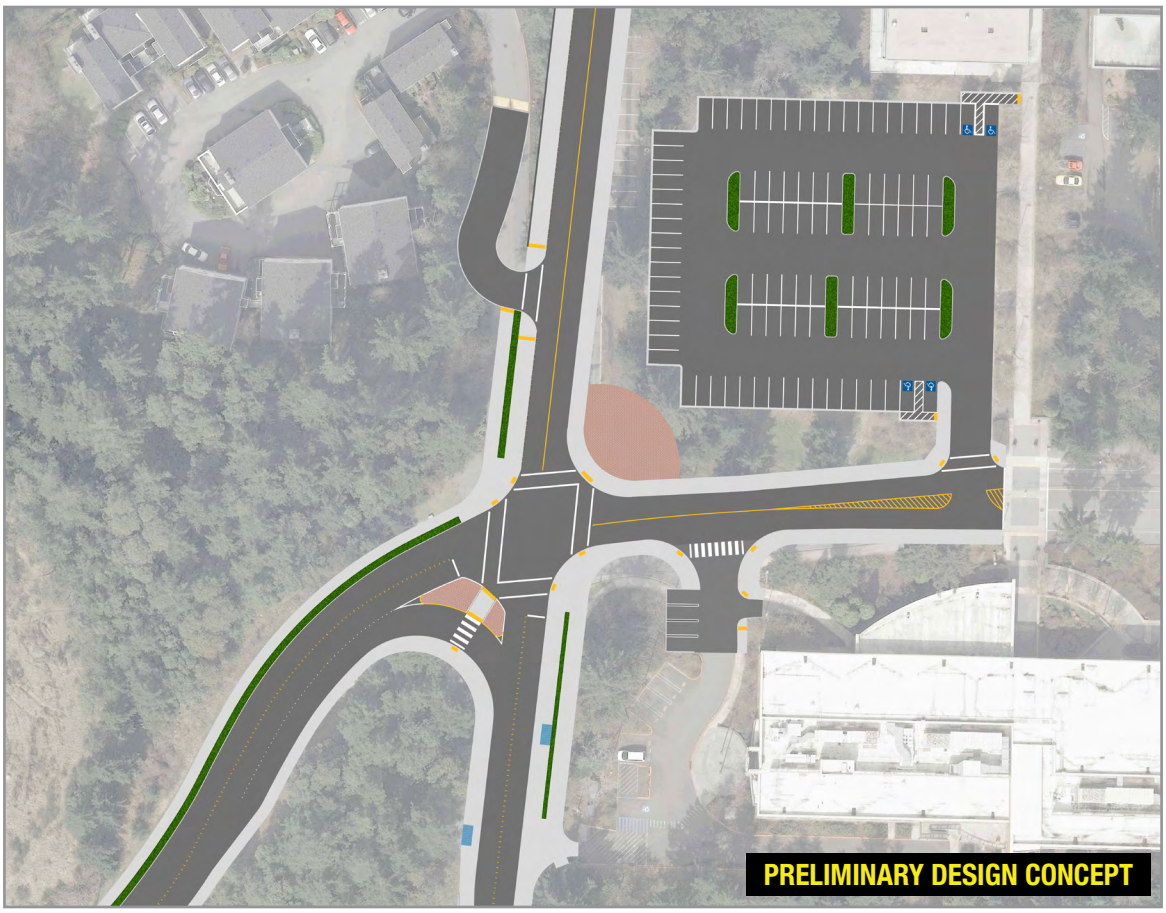
This intersection would undergo significant changes under this preliminary proposed design concept. Currently effectively a five-leg intersection, the realignment of Snoqualmie River Rd would result in a four-leg intersection. Access to the condominium developments along 142nd Pl SE north of SE 32nd St would be provided from Snoqualmie River Rd, instead of directly from the primary intersection. The alignment of Coal Creek Rd would be moved slightly to the north to accommodate a 45-foot turn radius for buses traveling northbound on 142nd Pl SE and continuing westbound on SE 32nd St.

Several bus routes will pass through this intersection, including Routes 7FR, 12FL, and 13FL, and Coverage Route 32. Transit movements will thus consist of north-south travel from 142nd Pl SE to Snoqualmie River Rd (Route 7FR), northbound-to-westbound and eastbound-to-southbound turns between 142nd Pl SE and SE 32nd St (Route 32), and eastbound-to-northbound and southbound-to-westbound turns between SE 32nd St and Snoqualmie River Rd (Routes 12FL and 13FL). The rest of the vehicular traffic consists of private vehicles and delivery trucks to and from the condominium complexes and college campus.

Pedestrian traffic at the intersection comes from Bellevue College (sidewalks on the east side of Snoqualmie River Rd and on the north and south sides of Coal Creek Rd), 142nd Pl SE (sidewalks on the east and west sides of 142nd Pl SE, connecting to the Eastgate Park-and-Ride and northbound bus zone platform), the condominium complex (northwest of the intersection), SE 32nd St, and from the bus zones. Transit shares the road with other traffic west and south of the intersection, but a restriction may be necessary on general purpose traffic along Snoqualmie River Rd north of the condominium complex access road.

Existing:

Proposed:



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A pair of bus zones already exists on the south leg of the intersection of 142nd Pl SE and SE 32nd St. To better align with the modified intersection, and to facilitate two-door operation, the northbound zone is moved slightly further north. This eliminates transit conflicts with bicyclists using the bicycle facility on the east side of 142nd Pl SE and pedestrians using the pedestrian trail from the lower elevation.

To balance transit access and speed, and to limit the number of potential conflicts between modes, King County Metro recommends only a pair of bus zones on the south leg of the intersection—one for north- and westbound buses and a second for southbound buses. That would mean that buses traveling eastbound on SE 32nd St and continuing northbound on Snoqualmie River Rd (Routes 12FL and 13FL) would not make a stop at the intersection, instead continuing to the Bellevue College Transit Center. Limiting bus zones to only the south leg of the intersection offers more flexibility in addressing access to the condominium complex and the crossing of the bicycle path. The pair of zones on the south leg of 142nd Pl SE can and should remain in-lane stops. Traffic coming from the Bellevue College campus should be minor, as should the LOS for the intersection's west approach. Dwell times are expected to be nominal. King County Metro does not recommend construction of an additional general purpose travel lane. North of the 142nd Pl SE bridge structure, the width of travel lanes would be increased from 11 to 12 feet to facilitate bus operations.

Pedestrian traffic changes sides at the intersection, from the west side of the road on 142nd Pl SE to the east side of the road on Snoqualmie River Rd. Sidewalks remain 8-feet wide except for at the bus zones, where the sidewalk width increases to 10 feet. A new 8-foot-wide sidewalk is designed on the north side of Coal Creek Rd between the intersection and the pedestrian crossing on Coal Creek Rd, approximately 250 feet east of the intersection.

Pedestrian access to the condominium development consists of an 8-foot-wide sidewalk to the west of and separated from the new bicycle facility by a 4-foot-wide planter strip.

Bicycle traffic also changes sides at the intersection. South of the intersection, it runs along the west side of 142nd Pl SE, has a direct access to the northbound bus zone, and then shifts east of the zone, separated by a 2.5-foot-wide planter strip. A 4-foot-wide planter strip is recommended and may be found to be feasible in later design stages. Bicycle traffic using this intersection will come mainly from the new bicycle facility proposed for the east side of 142nd Pl SE, which connects to the Mountains to Sound Greenway Trail, and from the new bicycle facility proposed for the west side of Snoqualmie River Rd.

The northeast corner of this intersection would be designed as a campus gateway that includes the Bellevue College logo. Landscaping could include a water element and/or a cut-thru crossing, which would benefit pedestrians traveling between Snoqualmie River Rd and Coal Creek Rd. The parking lot northeast of the intersection helps to compensate for the 28 parking stalls lost along Snoqualmie River Rd, increasing the number of stalls in this segment from 77 to 105 (see Appendix Table 11 on page A151).

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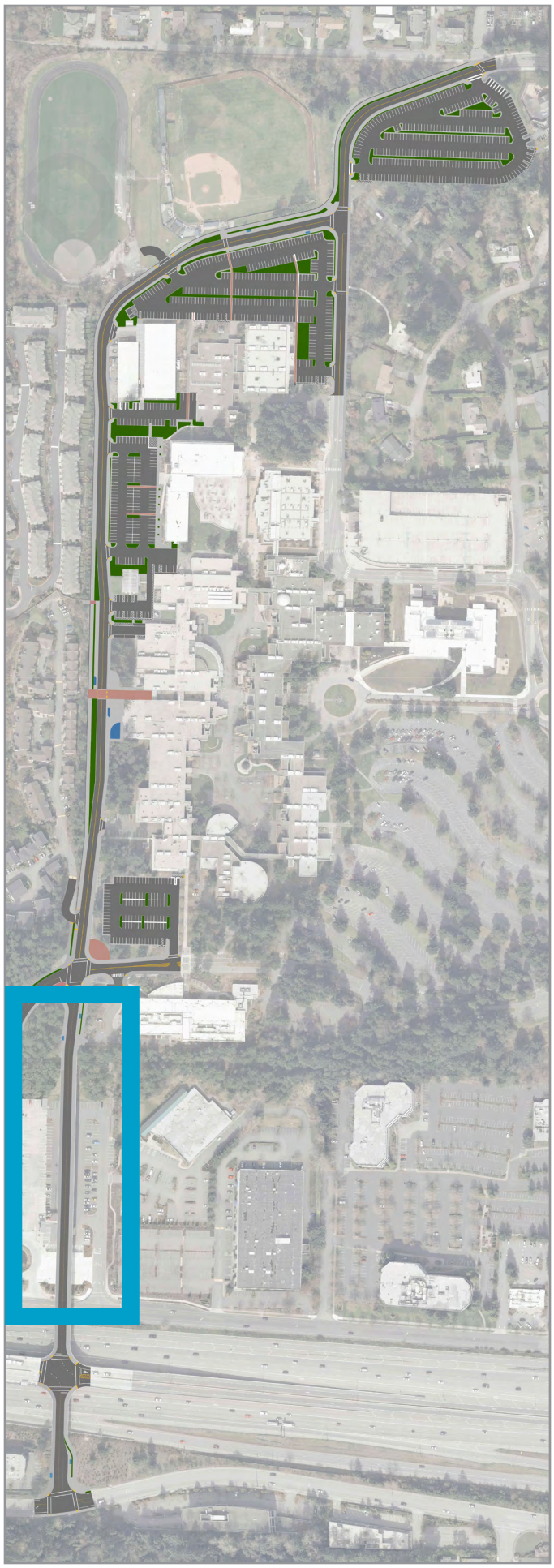

Segment 6

South of 142nd Pl SE/SE 32nd St to North of 142nd Pl SE/I-90 Direct Access Ramp

Consistent with recommendations in the *Eastgate/I-90 Transportation Strategies Report*, this preliminary design concept proposes modifications to the 142nd Pl SE Bridge that would improve the walking and bicycling experience there. There is significant pedestrian traffic on the west side of 142nd Pl SE Bridge, mainly to/from the Eastgate Park-and-Ride and Eastgate Freeway Station. Due to pedestrian volumes, an 8-foot-wide sidewalk is recommended on the west side of the road. The east side of the road is identified as a suitable location for an independent bicycle facility, providing a direct connection to the Mountains to Sound Greenway at the northeast corner of SE 36th St and 142nd Pl SE. A 10-foot-wide, two-way, elevated bicycle facility is thus recommended on the east side of the road. These non-motorized facilities leave 22 feet for general purpose travel lanes, which at 11-feet per lane satisfies the minimum width criteria to support transit operations.

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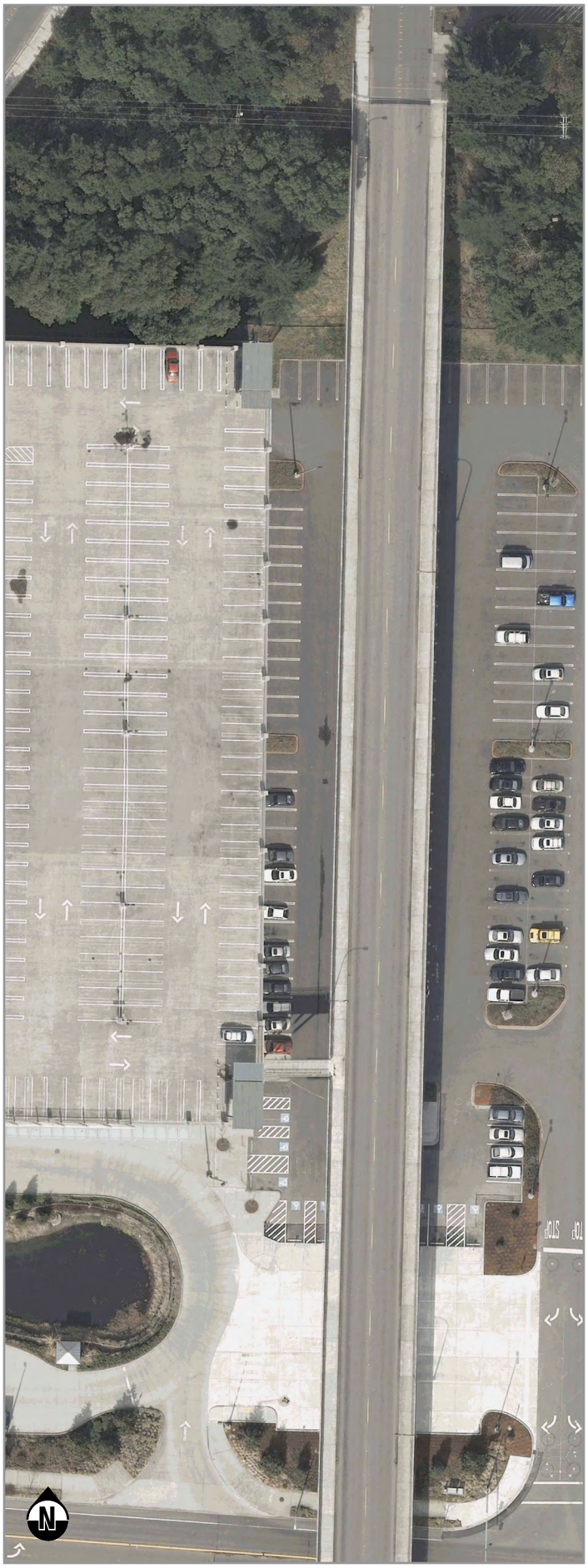

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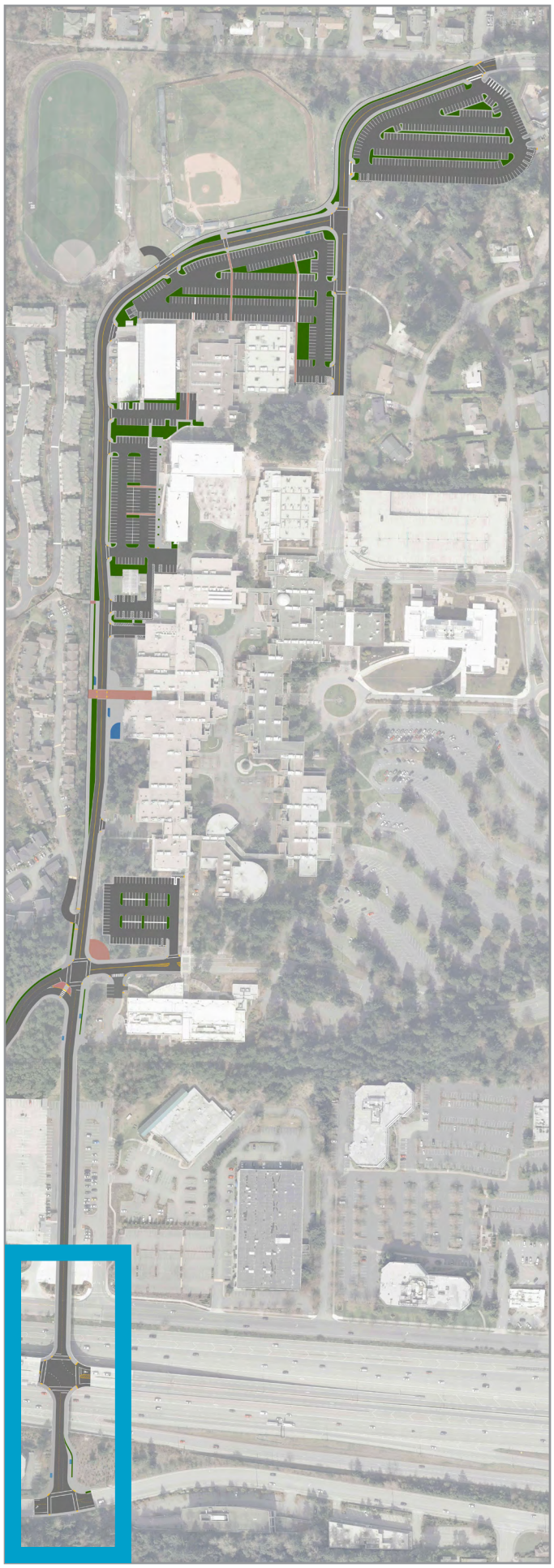


Segment 7

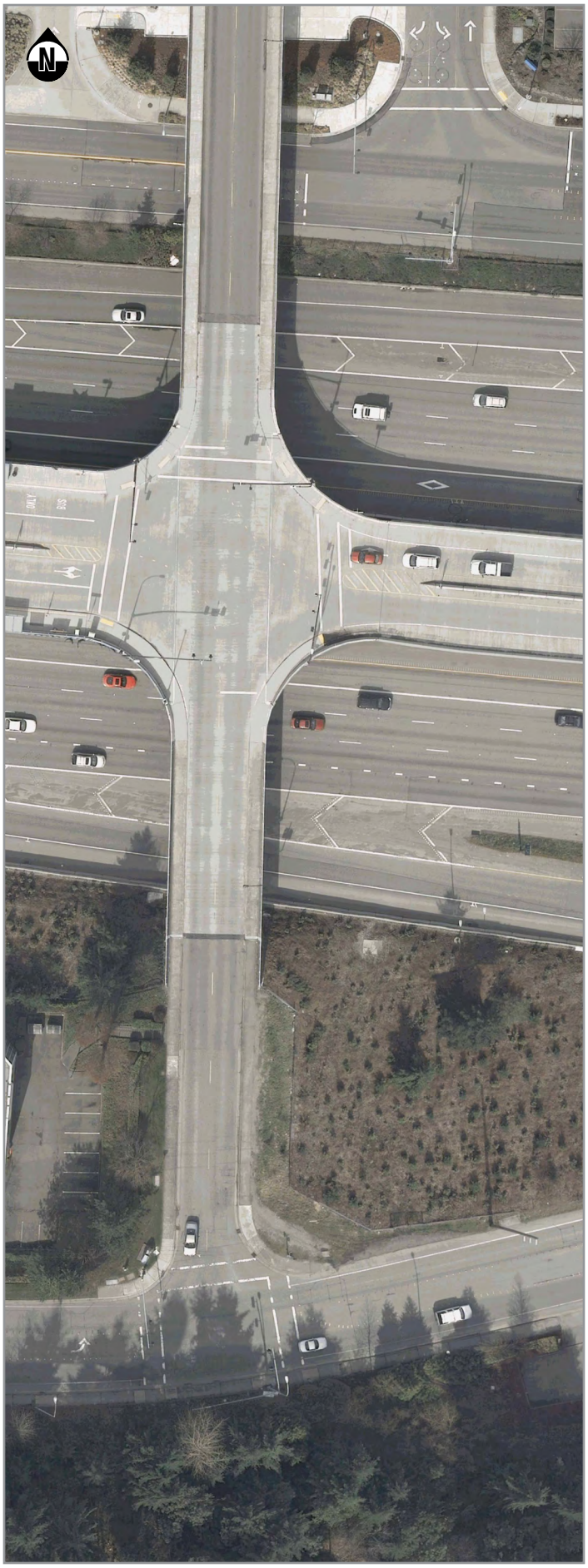
142nd Pl SE/I-90 Direct Access Ramp to 142nd Pl SE/SE 36th St

Users of the 142nd Pl SE/SE 36th St intersection include pedestrians, bicyclists, transit, and general purpose traffic. Bus movements through the intersection include Route 7FR, which travels southbound-to-westbound and eastbound-to-northbound, and Coverage Route 32, which travels southbound-to-eastbound and westbound-to-northbound. South of the 142nd Pl bridge structure, the travel lane width increases from 11 to 12 feet to facilitate bus operations.

A pair of bus zones is recommended on both sides of 142nd Pl SE just north of SE 36th St—one for northbound and one for southbound buses. These stops serve as a transfer point for transit users connecting from Route 7FR or 32 to routes serving the Eastgate Freeway Station, located 300 feet north of the intersection. The southbound bus zone is in the only southbound lane of travel, so a bus pullout is not practical at this location, as buses turning eastbound onto SE 36th St would not be allowed to make the turn. A pullout lane is designed for the northbound bus zone, allowing other traffic to pass while a bus is stopped at the zone. Additionally, the improved 40-foot turn radius will allow a bus to start from its own lane of travel and finish within the receiving lane without encroaching on opposing traffic.

Because bus zones are located on both sides of 142nd Pl SE just north of SE 36th St, 10-foot-wide sidewalks are provided to comply with criteria for bus zone platform width. Transit users going to the northbound bus zone would cross to the west side of 142nd Pl SE at SE 36th St, not at the I-90 Direct Access Ramp intersection. Pedestrians and bicyclists using the intersection come from the Mountains to Sound Greenway Trail, SE 36th St, 142nd Pl SE, and from the bus zones.

Existing:



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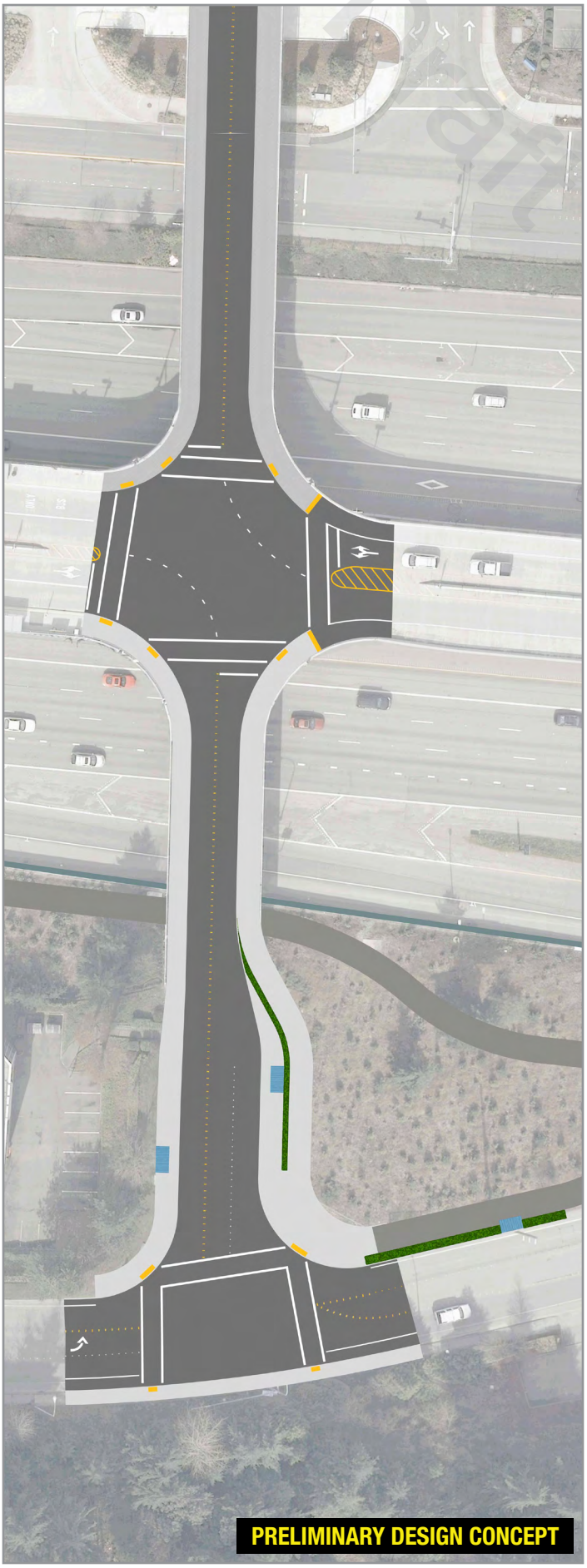

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A 10-foot-wide two-way bicycle facility begins at the Mountains to Sound Greenway Trail on the east side of 142nd Pl SE, east of the northbound bus zone, separated from the zone by a 2.5-foot-wide planter strip. A 4-foot-wide horizontal separation between the bicycle facility and the bus zone is recommended; however, a wider planter strip would require a wider and thus more expensive bridge structure, especially given the existing slope of the site. Later design stages may consider a wider planter strip or a vertical separation instead. Bicyclists would cross to the west side of 142nd Pl SE at SE 36th St or at the I-90 Direct Access Ramp.

Next Steps

The preliminary design concept for the Bellevue College Connection: 142nd Pl SE/Snoqualmie River Rd Multimodal Transportation Corridor presented here represents the result of several months of coordination between the staffs at the City of Bellevue, Bellevue College, and King County Metro. This design was developed to account for the facility dimension requirements for each of the various modes and to comply with ADA requirements, but it should not be construed as a final engineering-level design, nor have the various stakeholders officially endorsed this proposal at the time of this report's publication.

Discussion with Bellevue College is ongoing and will continue, and final design decisions will be made in close coordination with the College in the coming months and years. The *Transit Service Vision Report* assumes the completion of this project prior to 2022, as the mid-term transit networks are designed to utilize this facility. However, the implementation timeline for this project will be determined as the process advances into later design stages.

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Appendix Table 11 Impacts of the Multimodal Transportation Corridor preliminary design concept on parking stalls by segment.

	Segment 1 Kelsey Creek Rd/ SE 24th St to Kelsey Creek Rd/Snoqualmie River Rd	Segment 2 Snoqualmie River Rd/ Kelsey Creek Rd to Delivery Zone	Segment 3 Delivery Zone to Greenhouse	Segment 4 Bellevue College Transit Center on Snoqualmie River Road	Segment 5 142nd Pl SE/SE 32nd St	Total
Proposed	301	296	156	16	105	**874**
Current	227	203	173	108	77	**788**
Difference	+74	+93	-17	-92	+28	**+86**

Note: Segments 6 and 7 correspond to the 142nd Pl SE Bridge, which currently does not and will not include any parking.

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ATTACHMENT 4

FUTURE TRANSIT NETWORKS

EXCERPT FROM THE TRANSIT SERVICE VISION REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/Transit_Service_Vision_10092013.pdf

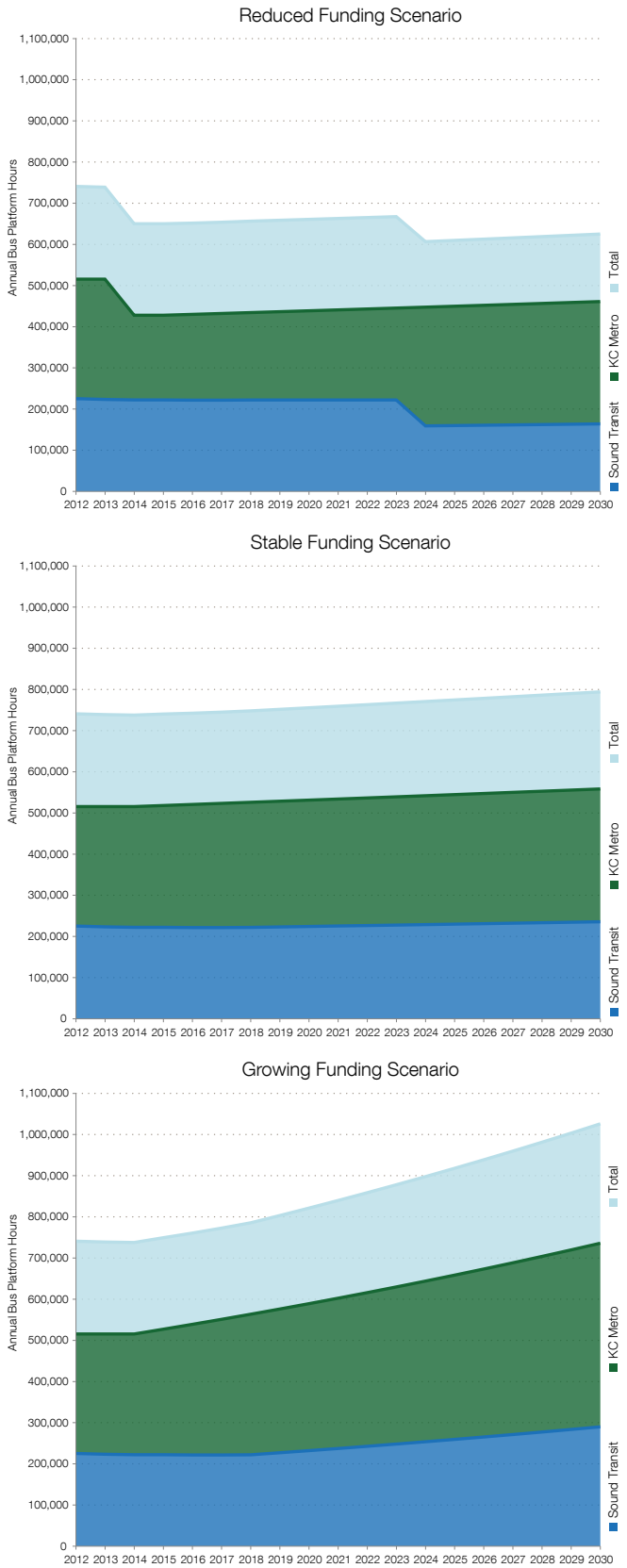


Figure 22 Annualized resources available by funding scenario.

Figure 23 (Opposite) These diagrams depict the connections and their associated frequencies offered by each of the nine proposed future transit networks.

SERVICE VISION

The Service Vision defines and evaluates nine future transit networks based on different funding scenarios and study years. Figure 45 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 region.

The 2030 Growing Resources network is the only one in which transit has fully realized its potential to deliver sustainable mobility that grows Bellevue's economy without growing congestion. This network offers a comprehensive, well-connected grid 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 readily 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, that 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.

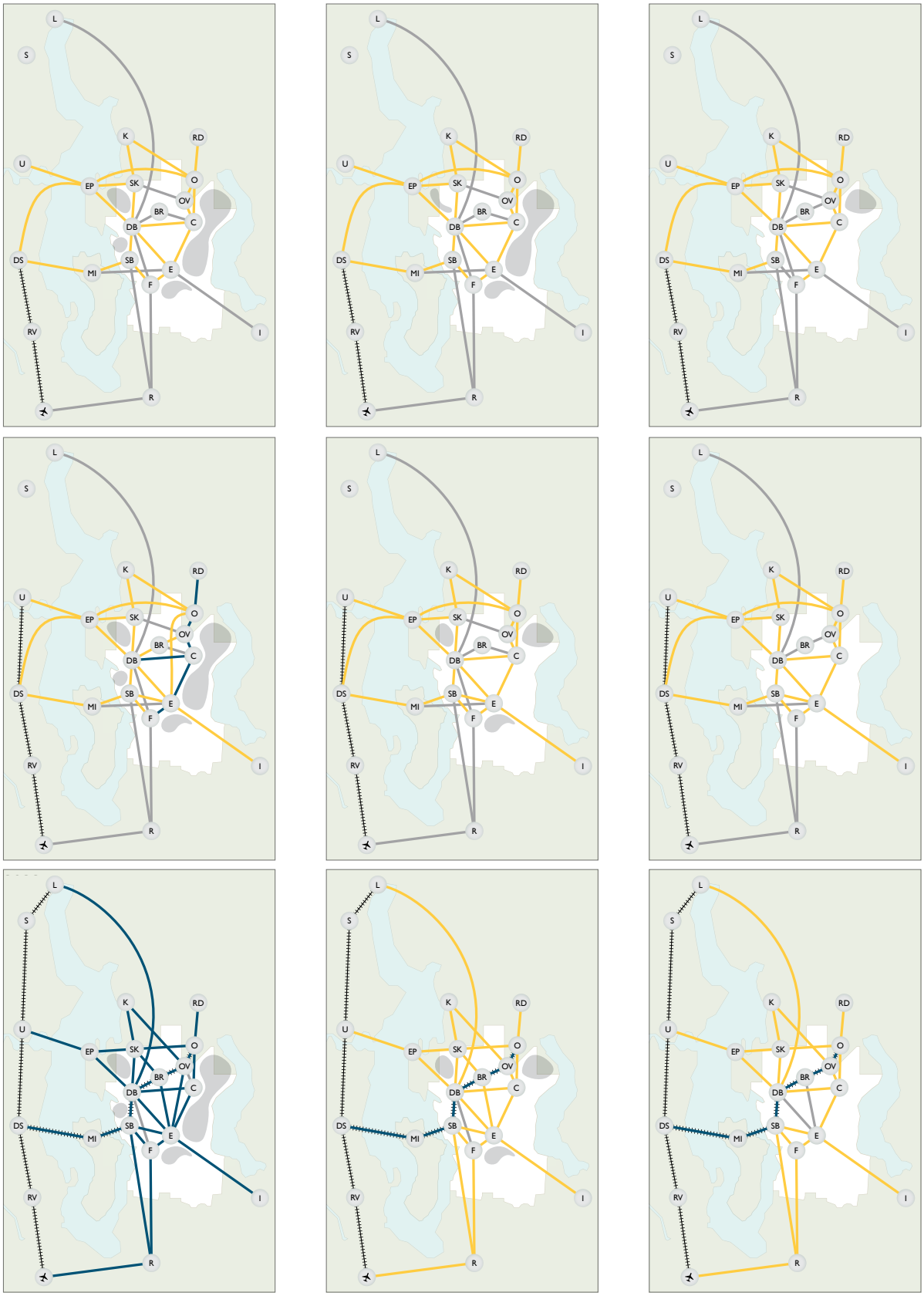
The following section provides details about each of the nine proposed future transit networks, including network maps, the allocation of resources by service type and time of day, descriptions of the network's defining characteristics, and explanations of the rationale applied when tradeoffs were necessary.

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

ROUTE PROFILES

The following pages provide a detailed examination of every route proposed for the various future transit networks presented in the Service Vision. Routes are grouped by time horizon, beginning with the long-term networks. Each profile includes the route's purpose and description, turning movements and major stops served, and estimated operating statistics, including service span, frequency, headways by time of day, and daily and annualized platform and revenue hours allocated.

LONG-TERM NETWORKS

Route		Description	Growing	Stable	Reduced	Page
1	FX	Issaquah Highlands - Eastgate - Bellevue - U. District	X	X	X	80
2	FX	Lynnwood - Bellevue	X	X	X	82
3	FX	Bellevue - Renton - Sea-Tac Airport - Westwood Village	X	X	X	84
5	FR	Totem Lake - Kirkland - Bellevue	X	X	X	86
6	FR	Bellevue - Crossroads	X			88
7	FR	Redmond - Overlake - Crossroads - Eastgate - Factoria	X			90
8	FR	Redmond - Crossroads - Bellevue		X	X	92
11	FL	Bellevue - Factoria - Renton	X	X	X	94
12	FL	Eastgate - Overlake - Kirkland	X	X	X	96
13	FL	Eastgate - Bellevue	X	X	X	98
14	FL	Kirkland - Bel-Red - Eastgate	X	X		100
15	FL	Bellevue - Bel-Red - Eastgate			X	102
16	FL	Kirkland - Bellevue			X	104
31	C	Yarrow Point - Bellevue - South Bellevue	X			106
32	C	Yarrow Point - Bellevue - Factoria - Eastgate	X	X		108
33	C	Education Hill - Redmond - Overlake - Crossroads - Eastgate	X			110
34	C	Crossroads - Bel-Red - Bellevue	X			112
35	C	Issaquah - Eastgate	X	X		114
36	C	Education Hill - Redmond - Overlake - Bel-Red - Bellevue		X		116
41	PK	Lake Kathleen - South Bellevue	X	X	X	118
43	PK	Eastgate - Seattle	X	X	X	120
44	PK	North Bend - Issaquah - Eastgate - Seattle	X			122
45	PK	Bear Creek - Sammamish - Eastgate - Seattle	X			124
46	PK	Seattle - Eastgate - North Issaquah	X	X	X	126
47	PK	Issaquah Highlands - Eastgate - Seattle	X			128
48	PK	Duvall - Redmond - Overlake	X	X	X	130
49	PK	Kenmore - Kingsgate - Overlake	X			132
50	PK	Kirkland - Seattle	X	X	X	134
52	PK	Issaquah - Sammamish - Overlake	X	X	X	136
53	PK	Shoreline - Bothell - Bellevue	X	X	X	138
54	PK	Everett - Bellevue	X	X	X	140
55	PK	Auburn - Kent - Renton - Bellevue	X	X	X	142
56	PK	Kent - Bellevue	X	X	X	144

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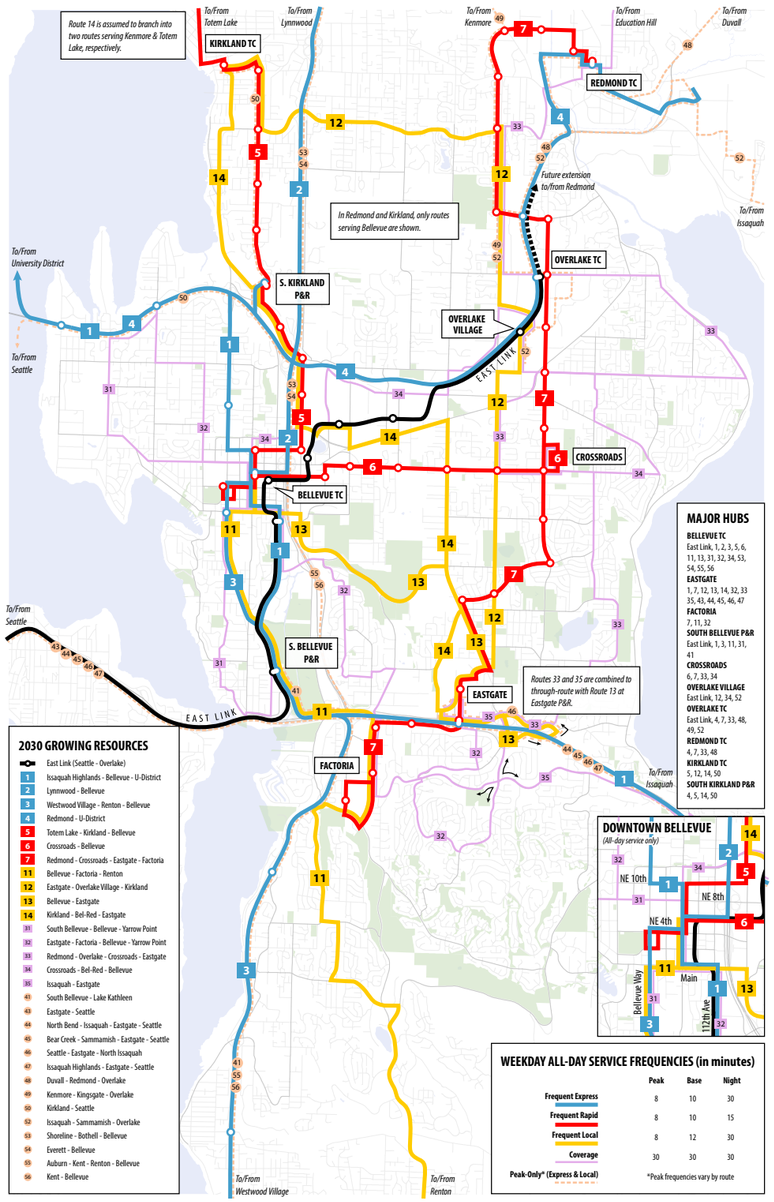
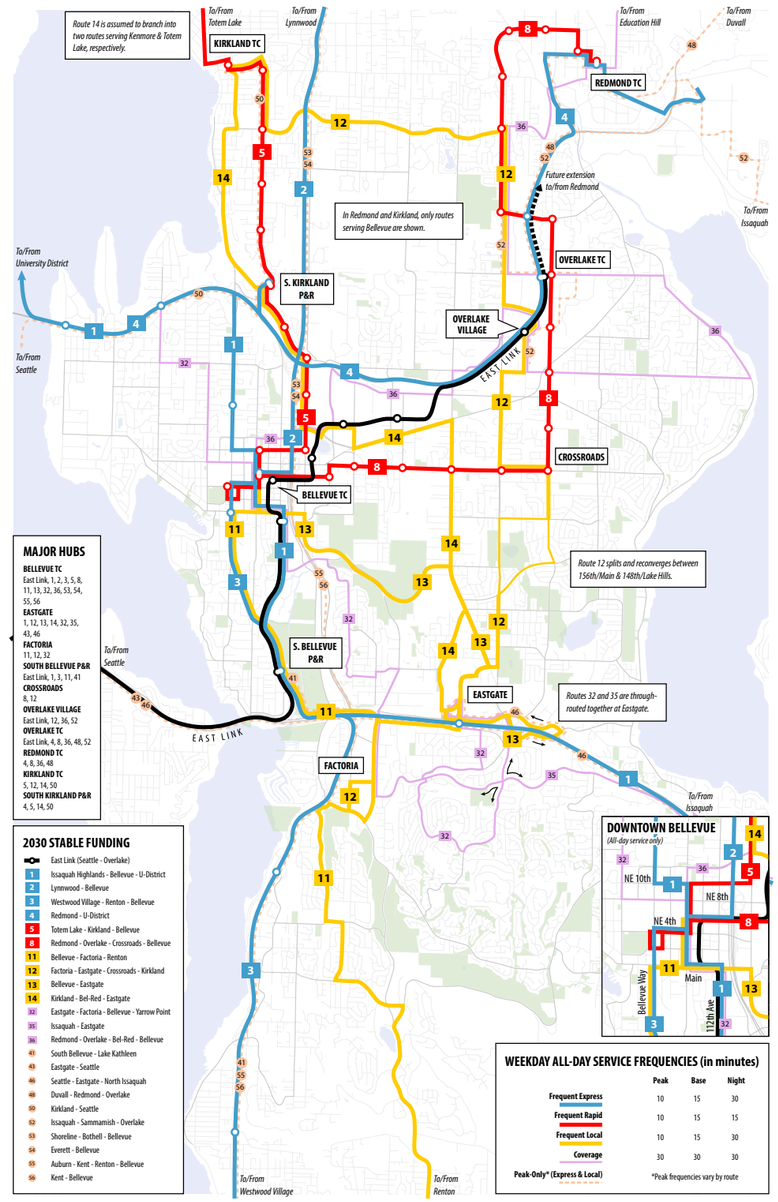
2030 | Growing Resources



2030 | Stable Funding



2030 | Reduced Funding

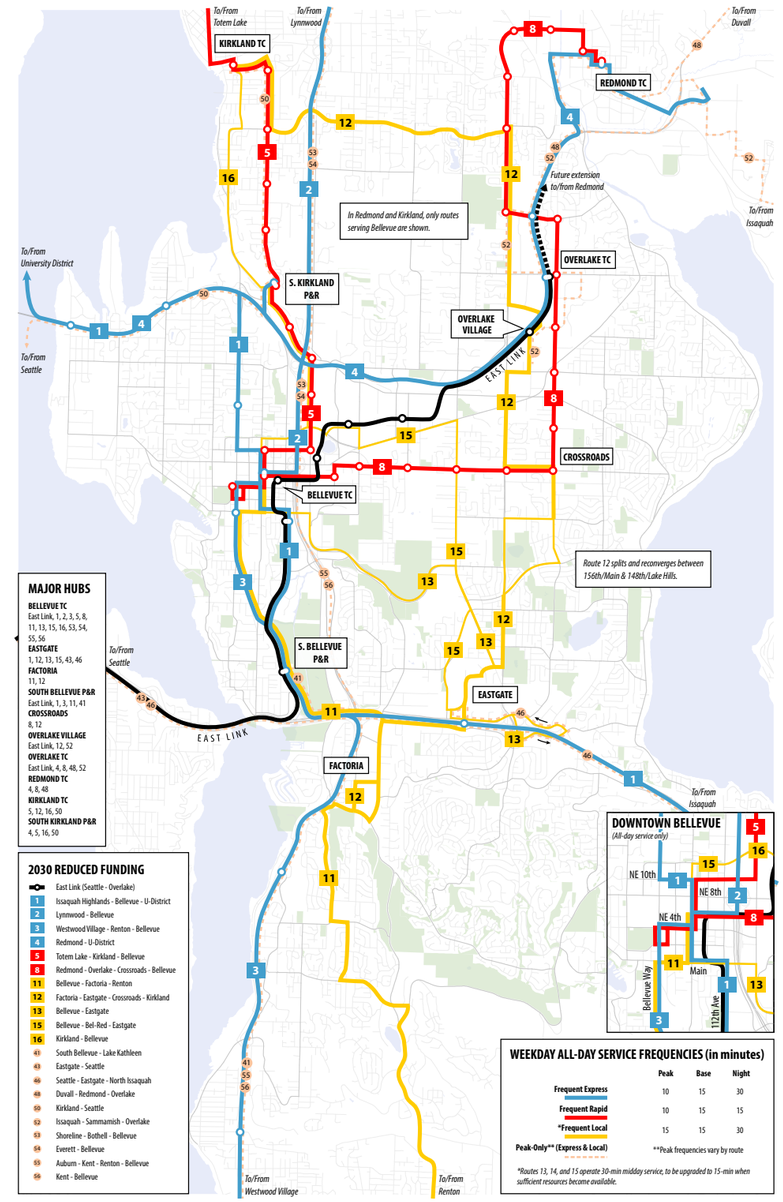


Figure 41 2030 Proposed Network Maps.

MID-TERM NETWORKS

Route		Description	Growing	Stable	Reduced	Page
1	FX	Issaquah Highlands - Eastgate - Bellevue - U. District	X	X	X	152
1a	*FX*	*Issaquah Highlands - Eastgate*	*X*	*X*	*X*	*154*
1b	*FX*	*Eastgate - Bellevue - U. District*	*X*	*X*	*X*	*155*
2	FX	Totem Lake - Kirkland - Seattle	X	X	X	156
3	FX	Bel-Red - Bellevue - Mercer Island - Seattle	X	X	X	158
5	FR	Redmond - Overlake - Crossroads - Bellevue		X	X	160
6	FR	Crossroads - Bellevue	X			162
7	FR	Redmond - Crossroads - Eastgate - Factoria	X			164
11	FL / C	Renton - Factoria - Bellevue	X	X	X	166
11a	*FL*	*Renton - Factoria*	*X*	*X*	*X*	*168*
11b	*C*	*Factoria - Bellevue*	*X*	*X*	*X*	*169*
12	FL	Kirkland - Crossroads - Eastgate	X	X	X	170
13	FL	Eastgate - Bellevue	X	X	X	172
14	FL	Kirkland - Bellevue			X	174
21	X	Lynnwood - Bellevue	X	X	X	176
22	X	Issaquah - Seattle	X	X	X	178
23	X	Westwood Village - Renton - Bellevue	X	X	X	180
31	C	Overlake - South Kirkland - Yarrow Point - Bellevue - South Bellevue	X			182
32	C	Yarrow Point - Bellevue - Factoria - Somerset - Eastgate	X	X		184
33	C	Kenmore - Kirkland - Bellevue	X	X		186
34	C	Totem Lake - Kirkland - Bellevue	X	X		188
35	C	Issaquah - Eastgate	X	X		190
36	C	Ed. Hill - Redmond - Overlake - Crossroads - East Bellevue - Eastgate	X			192
37	C	Crossroads - Bel-Red - Bellevue	X	X		194
38	C	Overlake - South Kirkland - Yarrow Point - Bellevue		X		196
39	C	Education Hill - Redmond - Crossroads - Eastgate		X		198
40	C	Overlake - Crossroads - Eastgate			X	200
41	C	Overlake - Bel-Red - Bellevue			X	202
51	PK	Lake Kathleen - Seattle	X	X	X	204
52	PK	Renton Highlands - Seattle	X	X		206
53	PK	Renton - University District	X	X	X	208
54	PK	Eastgate - Seattle	X	X	X	210
55	PK	North Bend - Issaquah - Eastgate - Seattle	X			212
56	PK	Bear Creek - Sammamish - Eastgate - Seattle	X			214
57	PK	Seattle - Eastgate - North Issaquah	X	X	X	216
58	PK	Issaquah Highlands - Seattle	X	X	X	218
59	PK	Duvall - Redmond - Overlake - Bellevue	X	X	X	220
60	PK	Overlake - Houghton - Seattle	X			222
61	PK	Issaquah - Sammamish - Overlake	X	X	X	224
62	PK	Shoreline - Bothell - Bellevue	X	X	X	226
63	PK	Everett - Bellevue	X	X	X	228
64	PK	Auburn - Kent - Renton - Bellevue - Overlake	X	X	X	230
65	PK	Kent - Bellevue - Overlake	X	X	X	232

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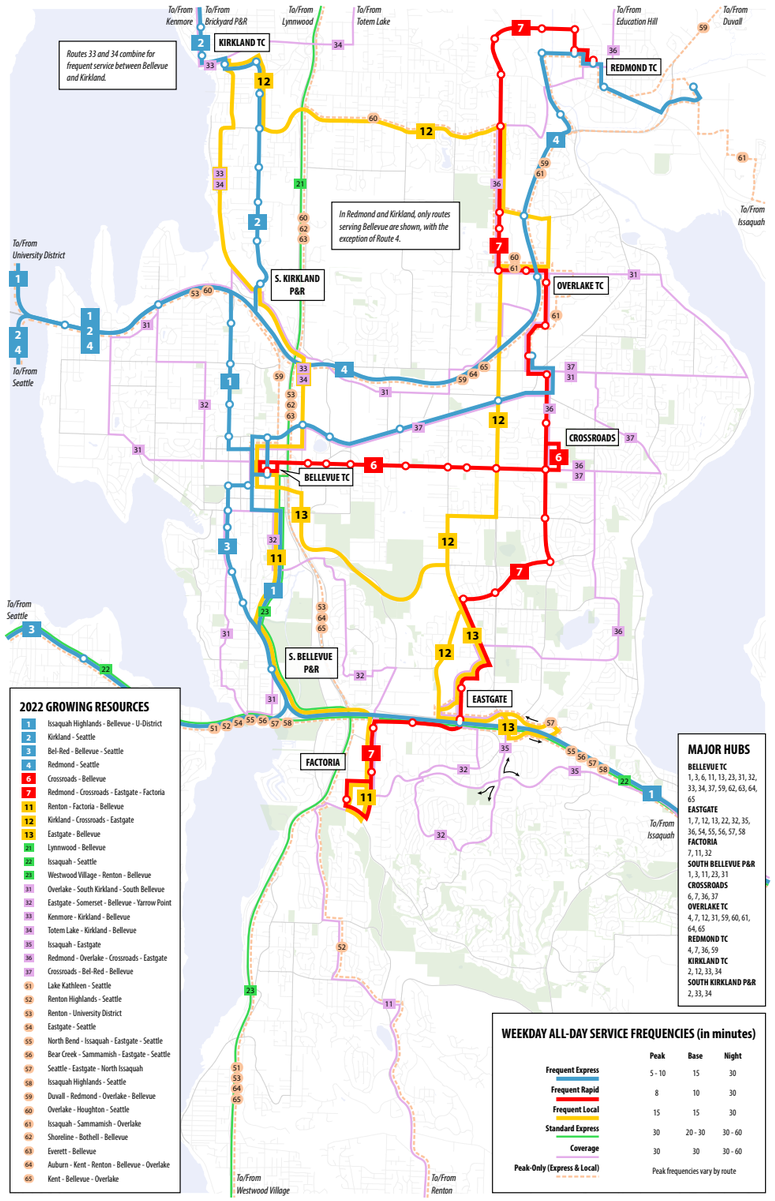
2022 | Growing Resources



2022 GROWING RESOURCES

- 1 Issaquah Highlands - Bellevue - U-District
- 2 Kirkland - Seattle
- 3 Bel-Red - Bellevue - Seattle
- 4 Redmond - Seattle
- 6 Crossroads - Bellevue
- 7 Redmond - Crossroads - Eastgate - Factoria
- 11 Renton - Factoria - Bellevue
- 12 Kirkland - Crossroads - Eastgate
- 13 Eastgate - Bellevue
- 21 Lynnwood - Bellevue
- 22 Issaquah - Seattle
- 23 Westwood Village - Renton - Bellevue
- 31 Overlake - South Kirkland - South Bellevue
- 32 Eastgate - Somerset - Bellevue - Yarrow Point
- 33 Kenmore - Kirkland - Bellevue
- 34 Totem Lake - Kirkland - Bellevue
- 35 Issaquah - Eastgate
- 36 Redmond - Overlake - Crossroads - Eastgate
- 37 Crossroads - Bel-Red - Bellevue
- 51 Lake Kathleen - Seattle
- 52 Renton Highlands - Seattle
- 53 Renton - University District
- 54 Eastgate - Seattle
- 55 North Bend - Issaquah - Eastgate - Seattle
- 56 Bear Creek - Sammamish - Eastgate - Seattle
- 57 Seattle - Eastgate - North Issaquah
- 58 Issaquah Highlands - Seattle
- 59 Duvall - Redmond - Overlake - Bellevue
- 60 Overlake - Houghton - Seattle
- 61 Issaquah - Sammamish - Overlake
- 62 Shoreline - Bothell - Bellevue
- 63 Everett - Bellevue
- 64 Auburn - Kent - Renton - Bellevue - Overlake
- 65 Kent - Bellevue - Overlake

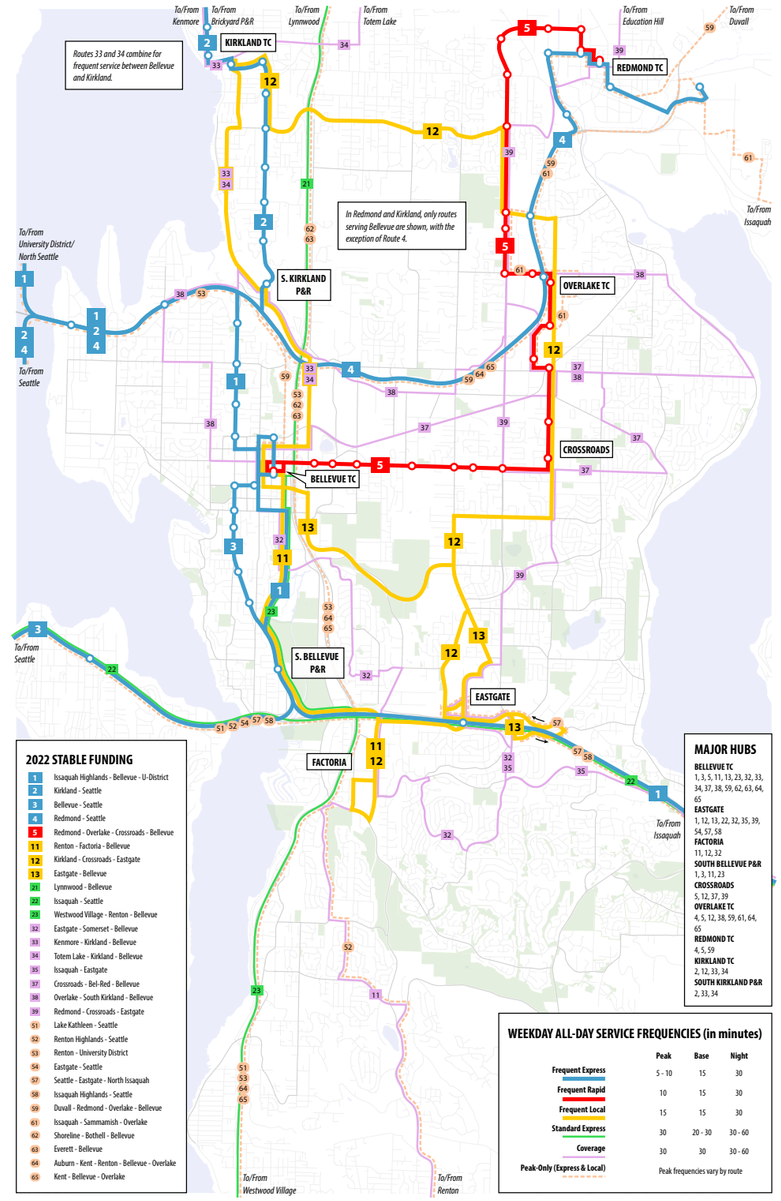
MAJOR HUBS

BELLEVUE TC
1, 3, 6, 11, 13, 23, 31, 32, 33, 34, 37, 59, 62, 63, 64, 65
EASTGATE
1, 7, 12, 13, 22, 32, 35, 36, 54, 55, 56, 57, 58
FACTORIA
7, 11, 32
SOUTH BELLEVUE P&R
1, 3, 11, 23, 31
CROSSROADS
6, 7, 36, 37
OVERLAKE TC
4, 7, 12, 31, 59, 60, 61, 64, 65
REDMOND TC
4, 7, 36, 59
KIRKLAND TC
2, 12, 33, 34
SOUTH KIRKLAND P&R
2, 33, 34

WEEKDAY ALL-DAY SERVICE FREQUENCIES (in minutes)

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

2022 | Stable Funding



2022 STABLE FUNDING

- 1 Issaquah Highlands - Bellevue - U-District
- 2 Kirkland - Seattle
- 3 Bellevue - Seattle
- 4 Redmond - Seattle
- 5 Redmond - Overlake - Crossroads - Bellevue
- 11 Renton - Factoria - Bellevue
- 12 Kirkland - Crossroads - Eastgate
- 13 Eastgate - Bellevue
- 21 Lynnwood - Bellevue
- 22 Issaquah - Seattle
- 23 Westwood Village - Renton - Bellevue
- 32 Eastgate - Somerset - Bellevue
- 33 Kenmore - Kirkland - Bellevue
- 34 Totem Lake - Kirkland - Bellevue
- 35 Issaquah - Eastgate
- 37 Crossroads - Bel-Red - Bellevue
- 38 Overlake - South Kirkland - Bellevue
- 39 Redmond - Crossroads - Eastgate
- 51 Lake Kathleen - Seattle
- 52 Renton Highlands - Seattle
- 53 Renton - University District
- 54 Eastgate - Seattle
- 57 Seattle - Eastgate - North Issaquah
- 58 Issaquah Highlands - Seattle
- 59 Duvall - Redmond - Overlake - Bellevue
- 61 Issaquah - Sammamish - Overlake
- 62 Shoreline - Bothell - Bellevue
- 63 Everett - Bellevue
- 64 Auburn - Kent - Renton - Bellevue - Overlake
- 65 Kent - Bellevue - Overlake

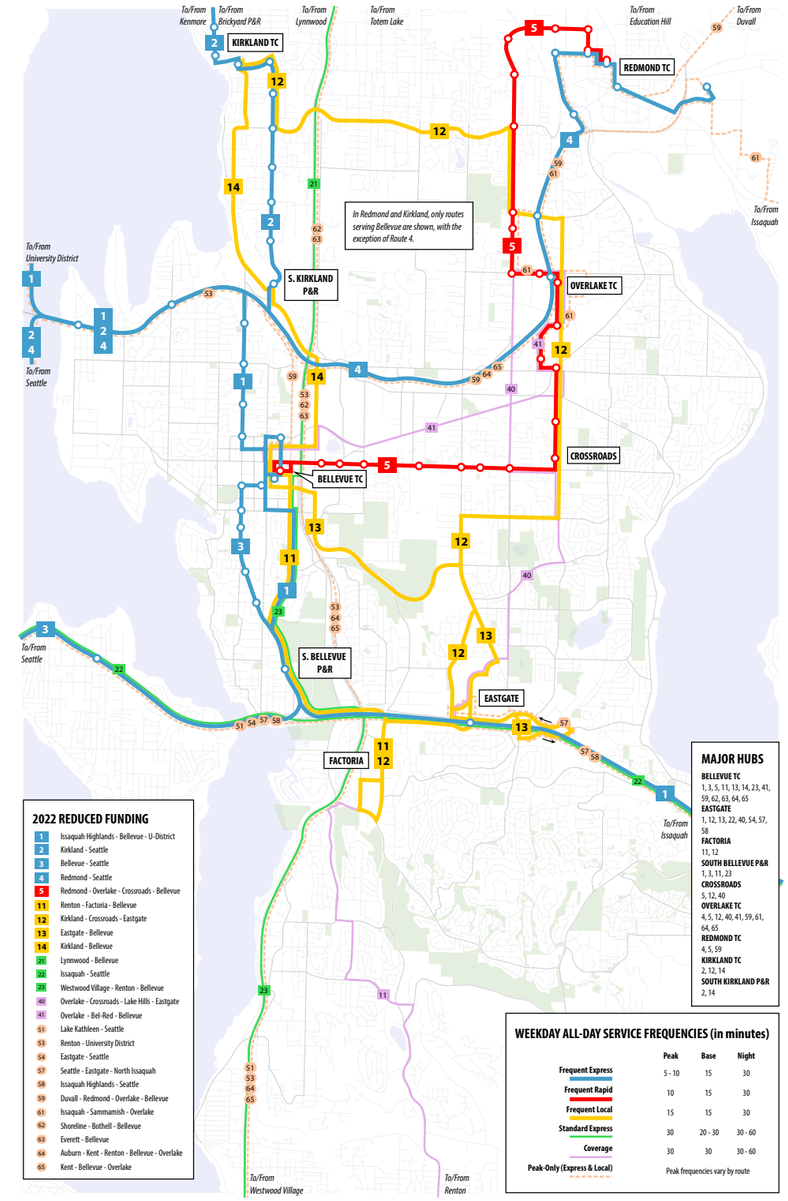
MAJOR HUBS

BELLEVUE TC
1, 3, 5, 11, 13, 23, 32, 33, 34, 37, 38, 59, 62, 63, 64, 65
EASTGATE
1, 12, 13, 22, 32, 35, 39, 54, 57, 58
FACTORIA
11, 12, 32
SOUTH BELLEVUE P&R
1, 3, 11, 23
CROSSROADS
5, 12, 37, 39
OVERLAKE TC
4, 5, 12, 38, 59, 61, 64, 65
REDMOND TC
4, 5, 59
KIRKLAND TC
2, 12, 33, 34
SOUTH KIRKLAND P&R
2, 33, 34

WEEKDAY ALL-DAY SERVICE FREQUENCIES (in minutes)

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

2022 | Reduced Funding



2022 REDUCED FUNDING

- 1 Issaquah Highlands - Bellevue - U-District
- 2 Kirkland - Seattle
- 3 Bellevue - Seattle
- 4 Redmond - Seattle
- 5 Redmond - Overlake - Crossroads - Bellevue
- 11 Renton - Factoria - Bellevue
- 12 Kirkland - Crossroads - Eastgate
- 13 Eastgate - Bellevue
- 14 Kirkland - Bellevue
- 21 Lynnwood - Bellevue
- 22 Issaquah - Seattle
- 23 Westwood Village - Renton - Bellevue
- 40 Overlake - Crossroads - Lake Hills - Eastgate
- 41 Overlake - Bel-Red - Bellevue
- 51 Lake Kathleen - Seattle
- 53 Renton - University District
- 54 Eastgate - Seattle
- 57 Seattle - Eastgate - North Issaquah
- 58 Issaquah Highlands - Seattle
- 59 Duvall - Redmond - Overlake - Bellevue
- 61 Issaquah - Sammamish - Overlake
- 62 Shoreline - Bothell - Bellevue
- 63 Everett - Bellevue
- 64 Auburn - Kent - Renton - Bellevue - Overlake
- 65 Kent - Bellevue - Overlake

MAJOR HUBS

BELLEVUE TC
1, 3, 5, 11, 13, 14, 23, 41, 59, 62, 63, 64, 65
EASTGATE
1, 12, 13, 22, 40, 54, 57, 58
FACTORIA
11, 12
SOUTH BELLEVUE P&R
1, 3, 11, 23
CROSSROADS
5, 12, 40
OVERLAKE TC
4, 5, 12, 40, 41, 59, 61, 64, 65
REDMOND TC
4, 5, 59
KIRKLAND TC
2, 12, 14
SOUTH KIRKLAND P&R
2, 14

WEEKDAY ALL-DAY SERVICE FREQUENCIES (in minutes)

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

Figure 42 2022 Proposed Network Maps.

SHORT-TERM NETWORKS

Route		Description	Growing	Stable	Reduced	Page
255	FX	Brickyard - Totem Lake - Kirkland - Seattle	X	X	X	238
271	FX / FL	Eastgate - Bellevue - U. District	X	X	X	240
550	FX	Bellevue - Seattle	X	X	X	242
B Line	FR	Redmond - Overlake - Crossroads - Bellevue	X	X	X	244
240	FL / C	Bellevue - Factoria - Renton	X	X	X	246
240a	*FL / C*	*Bellevue - Factoria*	*X*	*X*	*X*	*248*
240b	*C*	*Factoria - Renton*	*X*	*X*	*X*	*249*
245	FL	Kirkland - Crossroads - Eastgate - Factoria	X	X	X	250
535	X	Lynnwood - Bellevue	X	X	X	252
554	X	Issaquah Highlands - Seattle	X	X	X	254
560	X	Bellevue - Renton - Westwood Village	X	X	X	256
221	C	Redmond - Crossroads - East Bellevue - Eastgate	X	X	X	258
226	C	Eastgate - Crossroads - Bel-Red - Bellevue	X	X	X	260
234	C	Kenmore - Kirkland - Bellevue	X	X	X	262
235	C	Totem Lake - Kirkland - Bellevue	X	X	X	264
241	C	Factoria - Woodridge - Bellevue			X	266
246	C	Yarrow Point - Bellevue - Factoria - Somerset - Eastgate	X	X		268
249	C	Overlake - South Kirkland - Medina - Bellevue - South Bellevue	X	X	X	270
272	C	Issaquah - Eastgate - Bellevue	X	X		272
111	PK	Lake Kathleen - Seattle	X	X	X	274
114	PK	Renton Highlands - Seattle	X	X		276
167	PK	Renton - U. District	X	X	X	278
212	PK	Eastgate - Seattle	X	X	X	280
215	PK	North Bend - Issaquah - Eastgate - Seattle	X	X		282
216	PK	Bear Creek - Sammamish - Eastgate - Seattle	X	X		284
217	PK	Seattle - Eastgate - North Issaquah	X	X	X	286
218	PK	Issaquah Highlands - Seattle	X	X	X	288
232	PK	Duvall - Redmond - Overlake - Bellevue	X	X	X	290
237	PK	Woodinville - Totem Lake - Bellevue	X	X		292
242	PK	Ridgecrest - Northgate - Overlake	X	X	X	294
243	PK	Jackson Park - Lake City - Bellevue	X	X		296
250	PK	Overlake - Seattle	X	X		298
265	PK	Overlake - Houghton - Seattle	X	X		300
269	PK	Issaquah - Sammamish - Overlake	X	X	X	302
342	PK	Shoreline - Bothell - Bellevue	X	X	X	304
532	PK	Everett - Bellevue	X	X	X	306
540	PK	U. District - Kirkland	X	X	X	308
555	PK	Issaquah Highlands - Bellevue - Northgate	X	X	X	310
556	PK	Issaquah Highlands - Bellevue - U. District - Northgate	X	X	X	312
566	PK	Auburn - Kent - Renton - Bellevue - Overlake	X	X	X	314
567	PK	Kent - Bellevue - Overlake	X	X	X	316

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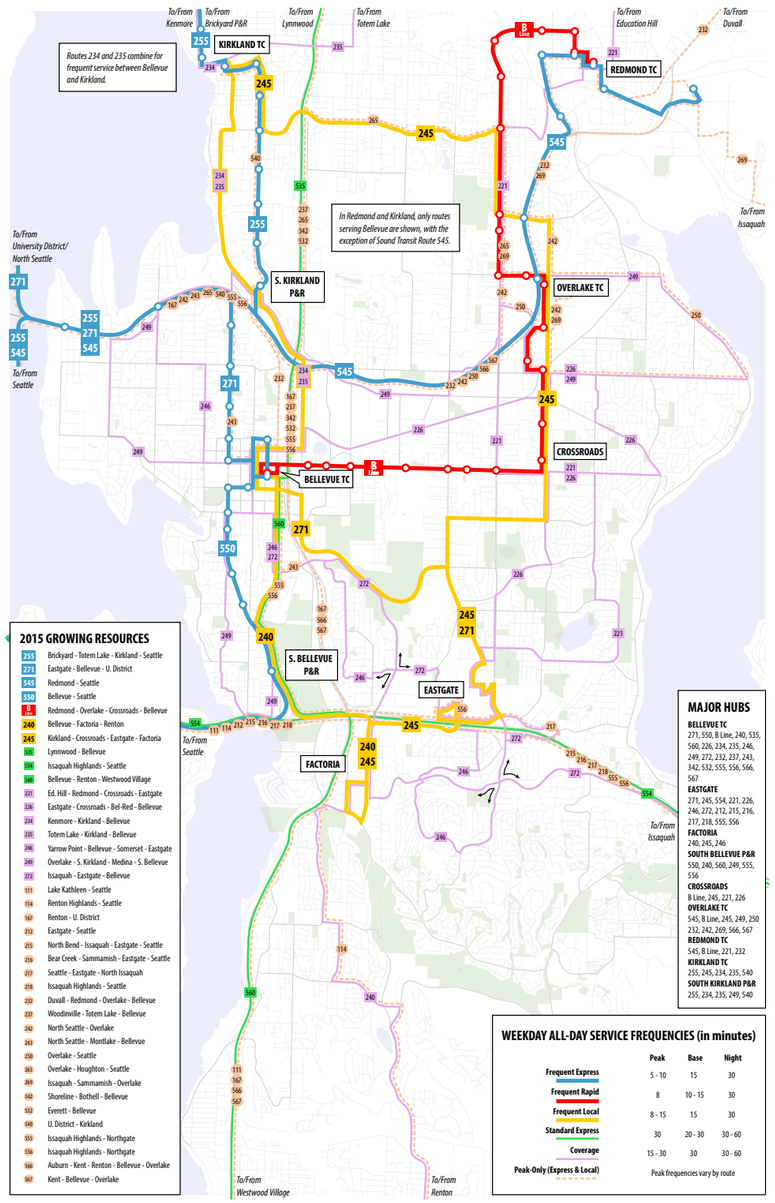
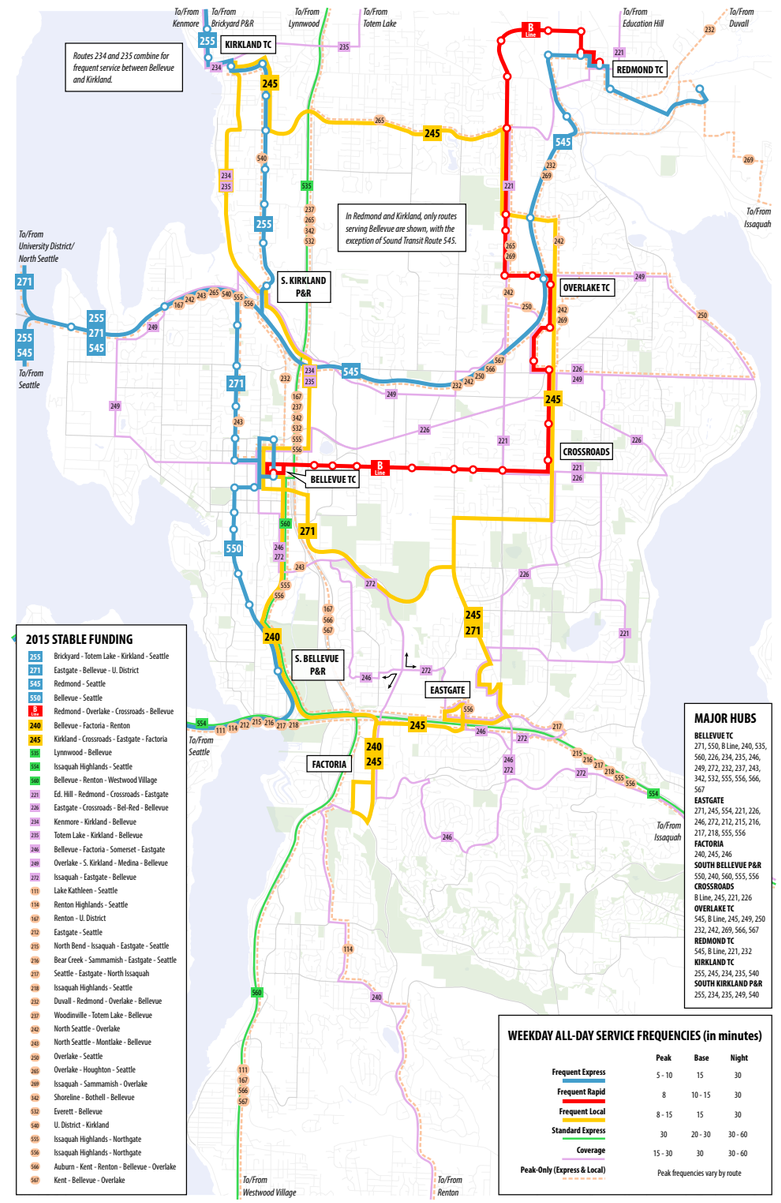
2015 | Growing Resources



2015 | Stable Funding



2015 | Reduced Funding

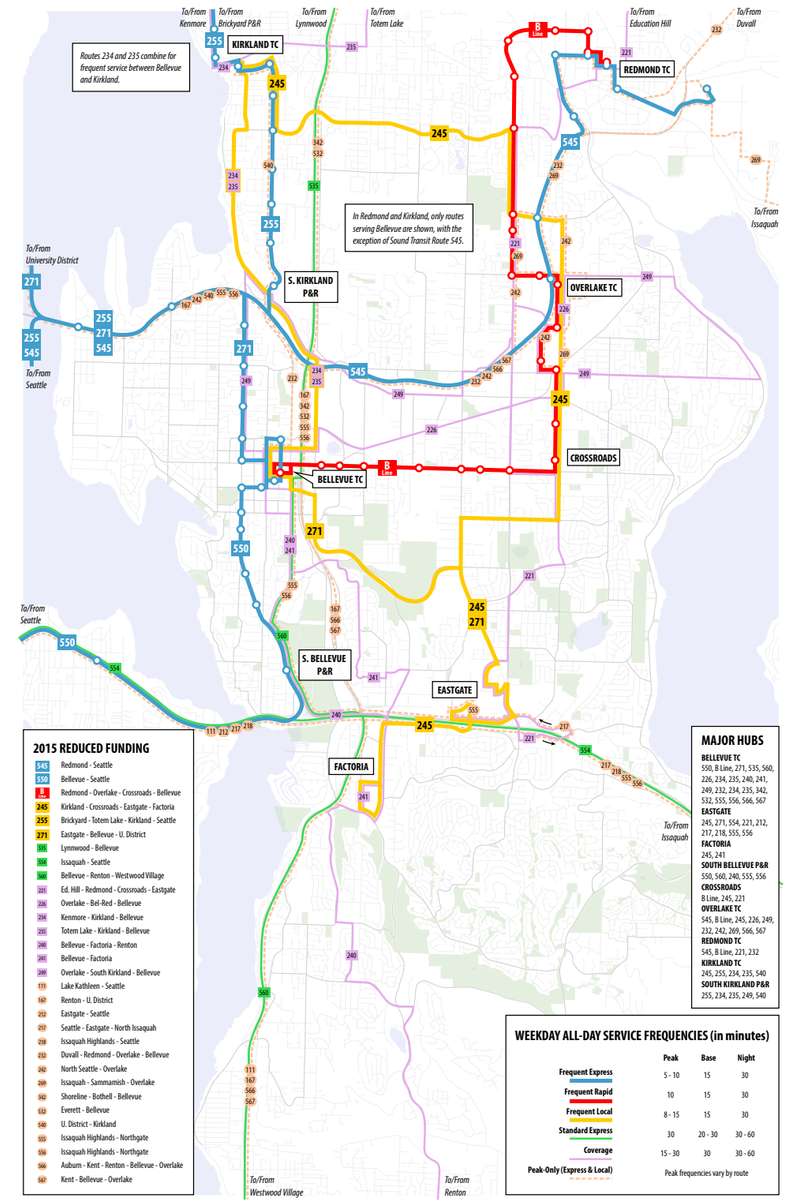


Figure 43 2015 Proposed Network Maps.

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ATTACHMENT 5

2013 AND 2030 PARKING DEMAND AND CAPACITY

EXCERPT FROM THE COMMUTER PARKING NEEDS ANALYSIS REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/2014_2_26_commuterpkg_ver1.pdf

Appendix 6 Summary of parking demand and capacity for park-and-ride lots in 2013 and 2030.

Park-and-Ride Facility	BKR SAZ	2013 Capacity and Use[1]		Oversupply or Shortage in 2013	2030 Capacity and Demand[2]			Oversupply or Shortage in 2030	
		Lot Capacity	Use		Projected Capacity	Constrained Demand[3]	Unconstrained Demand[3,4]	Based on Constrained Demand	Based on Unconstrained Demand
I-90 Lots									
Mercer Island	681	447	447	0	498	520	888	-22	-390
South Bellevue	686	519	555	-36	1,400	1,461	4,291	-61	-2,891
Eastgate	688	1,614	1,452	162	1,614	1,686	4,457	-72	-2,843
Issaquah	680	819	776	43	1,016	1,061	1,504	-45	-488
Issaquah Highlands	779	1,010	968	42	1,010	1,055	719	-45	291
Preston	789	53	38	15	53	55	42	-2	11
Total		**4,462**	**4,236**	**226**	**5,591**	**5,838**	**11,901**	**-247**	**-6,310**
I-405 Lots									
Kenmore	703	603	601	2	618	642	1,227	-24	-609
Bothell	705	220	215	5	220	229	409	-9	-189
Woodinville	706	438	240	198	438	456	493	-18	-55
Brickyard	701	443	362	81	443	462	993	-19	-550
Kingsgate	700	502	507	-5	502	524	1,029	-22	-527
SR 908 / Kirkland Way	813	20	17	3	20	21	18	-1	2
Houghton	694	470	203	267	470	491	406	-21	64
Redmond	696	377	375	2	385	403	814	-18	-429
Bear Creek	699	283	308	-25	283	296	609	-13	-326
Evergreen Point	690	31	38	-7	51	53	26	-2	25
S Kirkland	692	783	304	479	727	760	1,756	-33	-1,029
NE 40th / Overlake TC	832	222	222	0	369	386	1,186	-17	-817
Overlake	693	203	76	127	203	212	546	-9	-343
Wilburton	687	186	143	43	186	194	303	-8	-117
Newport Hills	683	275	218	57	275	254	53	21	222
Renton	679	150	148	2	128	133	46	-5	82
Total		**5,206**	**3,977**	**1,229**	**5,318**	**5,516**	**9,914**	**-198**	**-4,596**

1. 2013 Capacity and Use are from the King County Metro Transit, Park-and-Ride Utilization Report, Third Quarter 2013.
2. Capacity and Demand figures for 2030 are projected from Bellevue's BKR model (MP30r6.2).
3. 2030 Demand assumes TMP "Growing Resources Scenario". Demand forecast is based on future service assumptions and BKR model transit ridership growth rates.
4. In addition to the above assumptions, the 2030 Unconstrained Demand places no limitations on the total number of parking stalls available.

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ATTACHMENT 6

FUTURE TRANSIT USE & BUS/RAIL INTEGRATION

EXCERPT FROM THE EXISTING AND FUTURE CONDITIONS REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/0813_Existing_Conditions_Report.pdf

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FUTURE TRANSIT USAGE

Approved by Puget Sound-area voters in 2008 the Sound Transit East Link Project will bring light rail transit (LRT) to Bellevue with service starting in 2023 (see Figure 53). LRT is expected to address the most significant transit ridership market for Bellevue; in 2012, four of the top ten highest-ridership bus routes (212, 255, 554, and 550) 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 rethink the current bus network in Bellevue.

The East Link Bus/Rail Integration Plan, created by Sound Transit and King County Metro staff in 2007, and then updated in 2010, serves as a "best guess" prediction of how the bus network will be operating in

Figure 53 East Link will give riders a fast, frequent and reliable connection from the Eastside's biggest population and employment centers to Downtown Seattle. Ten stations will serve Seattle, Mercer Island, Bellevue, Bel-Red and Overlake in Redmond.

East Link Light Rail
Project to be built

Stations
- Station

Route Profile
- At-Grade
- Elevated
- Tunnel
- Retained Cut / Fill
- Future Downtown Redmond Extension*

* The Board also identified a route for a further extension to Downtown Redmond in the future that was not funded in the Sound Transit 2 ballot measure.

Central Link Light Rail
- Central Link Alignment and Station
- University Link Under Construction
- Final Design

(December 2011)

the future with East Link LRT. The primary emphasis of this future network will be to reduce/eliminate bus routes (e.g. route 550) whose service will be replaced by East Link and to shift resources into routes that strengthen bus connectivity with the six LRT stations in Bellevue (South Bellevue, East Main, Bellevue Transit Center, Hospital Station, 120th Station, and 130th Station). The City's BKR travel demand model platform (MP30r6.2) accounts for the transit routing and headway assumptions found in the 2010 East Link Bus/Rail Integration Plan.

The bus network will continue to provide coverage for the broader reaches when East Link begins service. The BKR travel demand model estimates that 136,000 average weekday boardings and alightings will take place on transit in Bellevue in 2030 (see Figure 54). Of these, an estimated 28,000 average weekday boardings and alightings will take place at the six LRT stations in Bellevue. The majority of transit usage in 2030, 108,000 average weekday boardings and alightings, is projected to take place on Bellevue's bus network. This represents a 133% increase over Spring 2012 bus usage in Bellevue (see Figure 55 on page 76).

"When the [East] Link Light Rail is completeld, 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, All-Around Transit User
Resident of Bellevue

Transit riders in the future will access LRT stations in Bellevue on foot, by bicycle, in buses or shuttles, and in carpools and single occupant vehicles. BKR travel demand model estimates that by 2030 approximately 20% of light rail patronage (5,400 daily boardings and alightings) at East Link stations in Bellevue arises from bus transfers. Some of these Bellevue stations are projected to have significant bus/LRT interaction; for example, 52% of the projected boardings and alightings at the South Bellevue station are related to bus transfers (note: South Bellevue is one of only two Bellevue LRT stations with auto parking). To make the most out of both transit modes, effective intermodal integration must be present at East Link stations to avoid unnecessary transfer time and have reliable connections.

As indicated in the service availability section of this report, many areas of Bellevue presently lack 15 minute bus frequencies throughout most parts of the weekday If not addressed, this situation could result in poorly timed bus/rail connections at LRT stations in Bellevue. In 2030, East Link light

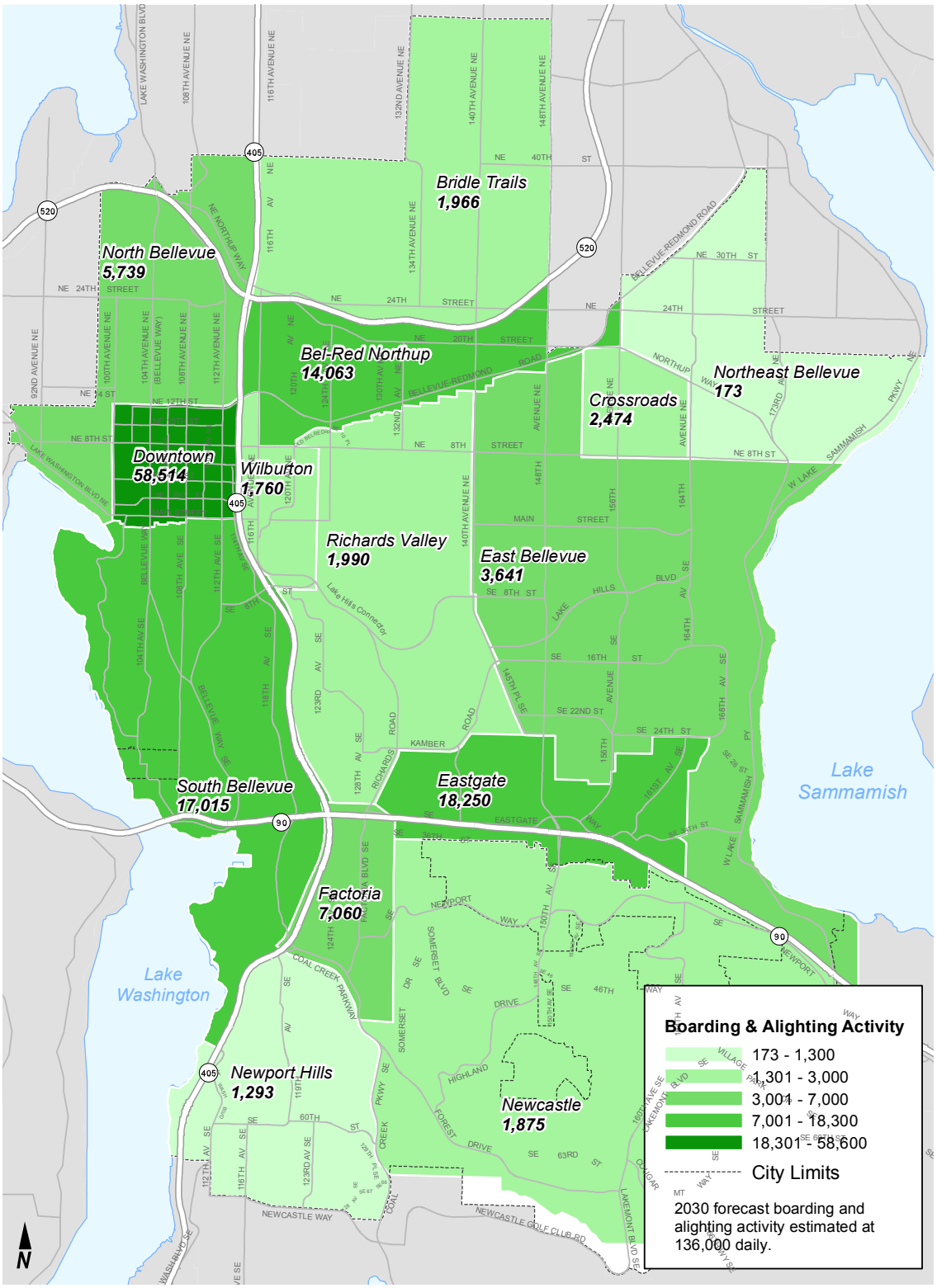
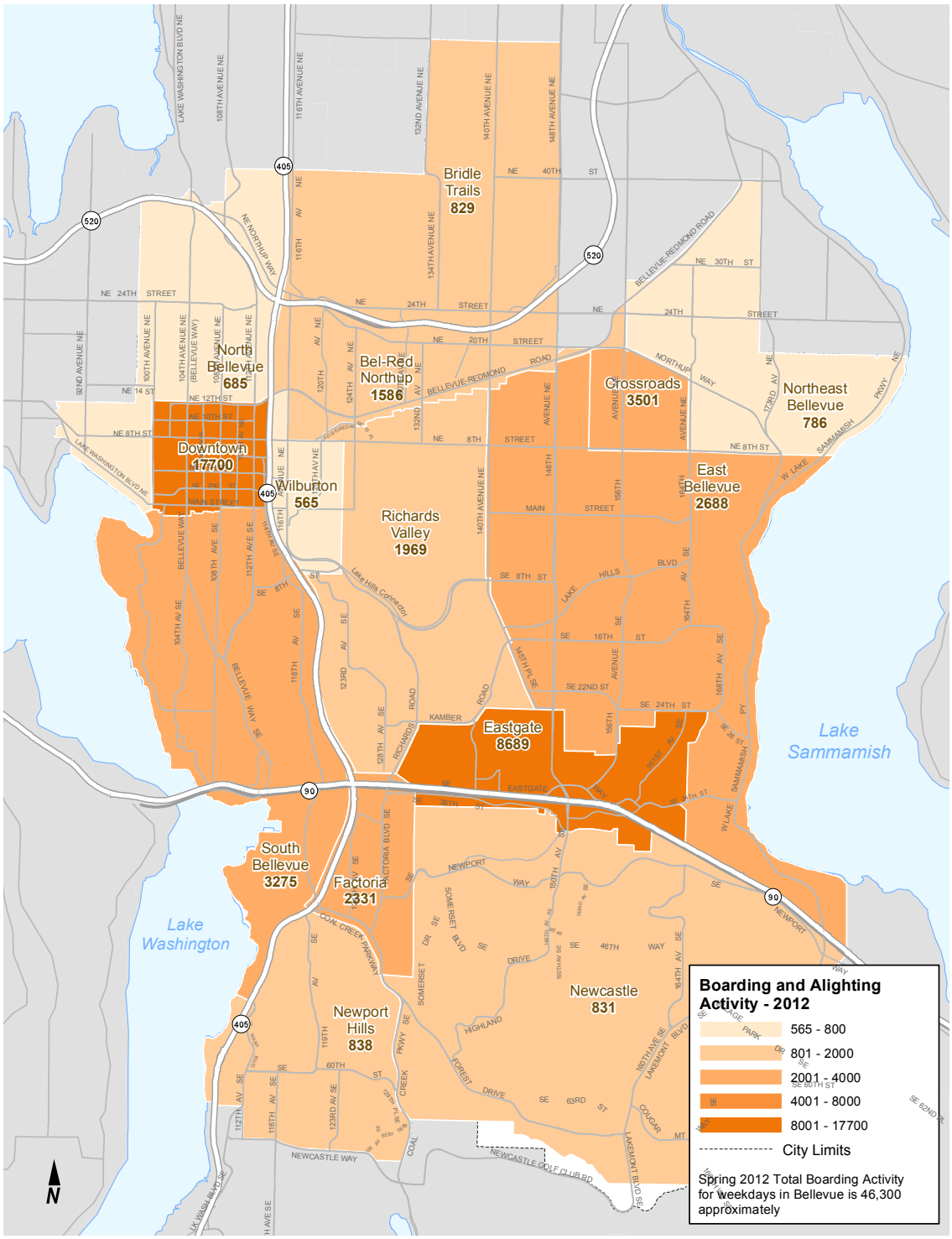


Figure 54 Transit usage by Mobility Management Area (2030 forecast) is derived from BKR model platform MP30r6.2 with transit routes defined in the 2010 East Link Bus/Rail Integration Plan.

Note: Transit usage projections for Bellevue MMAs that border other jurisdictions may have modest irregularities; boardings/alightings may either be attributed to the adjacent jurisdiction (when they should be attributed to Bellevue stops) or captured in Bellevue (when they should be attributed to stops in the adjacent jurisdiction). For example, the transit usage statistic is expected to be higher in the Northesast Bellevue MMA; stops within the MMA are likely attributed to Redmond. Similarly, the transit usage statistic in the North Bellevue MMA is likely lower than what is reflected in the 2030 projection map because South Kirkland Park & Ride boardings/ alightings are captured in this statistic. Although a portions of the South Kirkland Park & Ride is within Bellevue; in previous MMA transit usage maps boardings/alightings at this site have been attributed to Kirkland. In the final analysis, these modest differences in transit usage attribution are not material relative total transit usage projections].

rail lines are expected to operate at between seven and fifteen minute frequencies on weekdays. If bus service frequencies in Bellevue are not improved to match these East Link frequencies it could leave passengers transferring between LRT and bus with lengthy wait times. Given the importance of out-of-vehicle times on travel choices, service frequency connectivity between the bus and rail system at

Figure 55 Transit usage by Mobility Management Area (Spring 2012).



East Link stations is a factor in overall transportation network effectiveness.

Service span coordination would also facilitate bus/rail connections at LRT stations in Bellevue. By 2030, East Link is projected to operate from 5:00 AM till 1:00 AM. Today, ten routes (B Line, 235, 240, 245, 255, 271, 550, 554, and 560) in Bellevue offer night service (22:00 – 1:00); however, only three of these routes (B Line 271, and 550) operate every 30 minutes, the rest operate every 60 minutes. A best practice for consideration is offered by the Toronto Transit Commission which operates all bus routes on the same service span as the subway. In Toronto, as long as you board a subway train then you are guaranteed you will be able to take a bus to your final destination. As East Link construction proceeds, increased coordination on a more detailed bus/rail integration strategy should take place between agencies providing the service.

Transit agencies nationwide recognize that bus service connectivity (both frequency and span of operations) with new rail lines is critical to effective network operations. In Minnesota, the Metro Transit is presently involved in a significant restructuring of its bus network to better "feed" its light rail service (the Green Line) when it opens in 2014. The primary emphasis of the *Central Corridor Transit Service Study* is to reduce service on bus routes whose service will be replaced by METRO Green Line trains and to shift those resources into improved coverage, frequency and hours of service on bus routes connecting with rail. Improving the frequency of service will improve the reliability of the routes and connections between routes. Agencies in Minnesota are working together to ensure that bus frequencies are compatible with those of the METRO Green Line to provide reliable and consistent connections.

While enhancing bus service frequencies and span of service to facilitate bus/LRT integration can open up new opportunities for ridership, the decision to

"Infrequent service means a 30 minute wait time if you miss your connection from Seattle."

David, Commute to Work Transit User
Resident of Bellevue

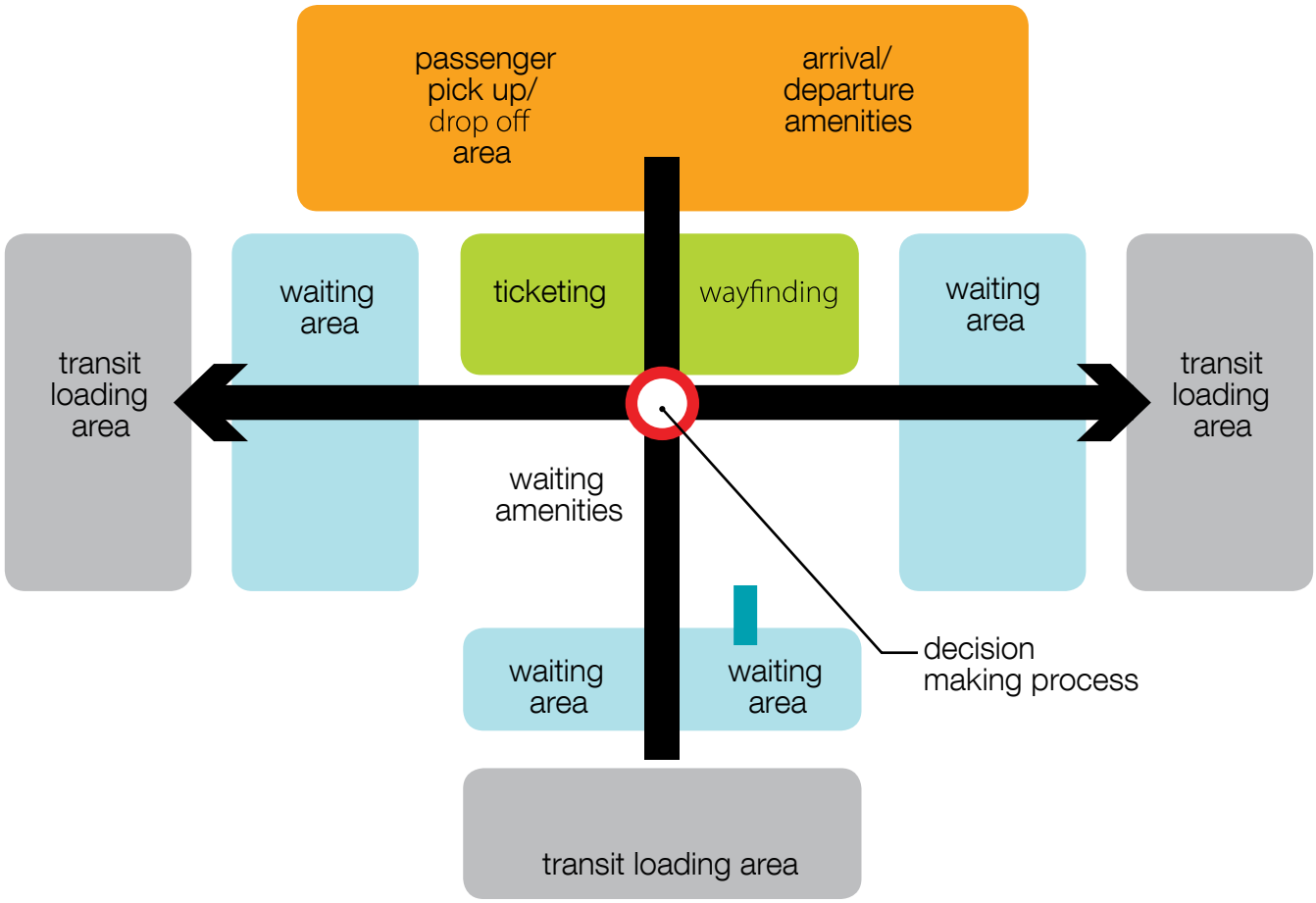
Table 10 Daily transit usage percentages on Bellevue's arterials in 2010 and 2030 for each of the transit passenger per day arterial categories evaluated.

Category (Pax/Day)	Corridor Characteristics	
	2010	2030
1 – 2,000	71%	45%
2,000 – 6,999	24%	33%
7,000 – 14,999	5%	15%
15,000 or more	0%	7%

provide improved bus service to areas where ridership may be low must be weighed against the cost of providing transit service elsewhere in the network. Figure 57 and Figure 58 on page 80 reflect daily transit usage patterns on Bellevue's arterials, for both 2010 and 2030 conditions respectively. Table 10 summarizes the information in these figures showing the percentage increase anticipated in each of the transit passenger per day arterial categories evaluated. To minimize the cost of creating timed-transfers between bus and LRT, it is essential that bus service enhancements be carefully phased so that they do not draw resources away from more profitable routes.

The design and quality of bus/rail connections at East Link stations will also have a significant influence on overall transit use in Bellevue. To gain maximum efficiency, transfers must be seamless and coordinated (see Figure 56). Convenient transfers from light rail stations to the bus network can

Figure 56 A rational progression of facilities with clear and direct routes that take passengers from their arrival point to their mode of transit with few decision-making points will help people to find their way around the station quickly and easily.



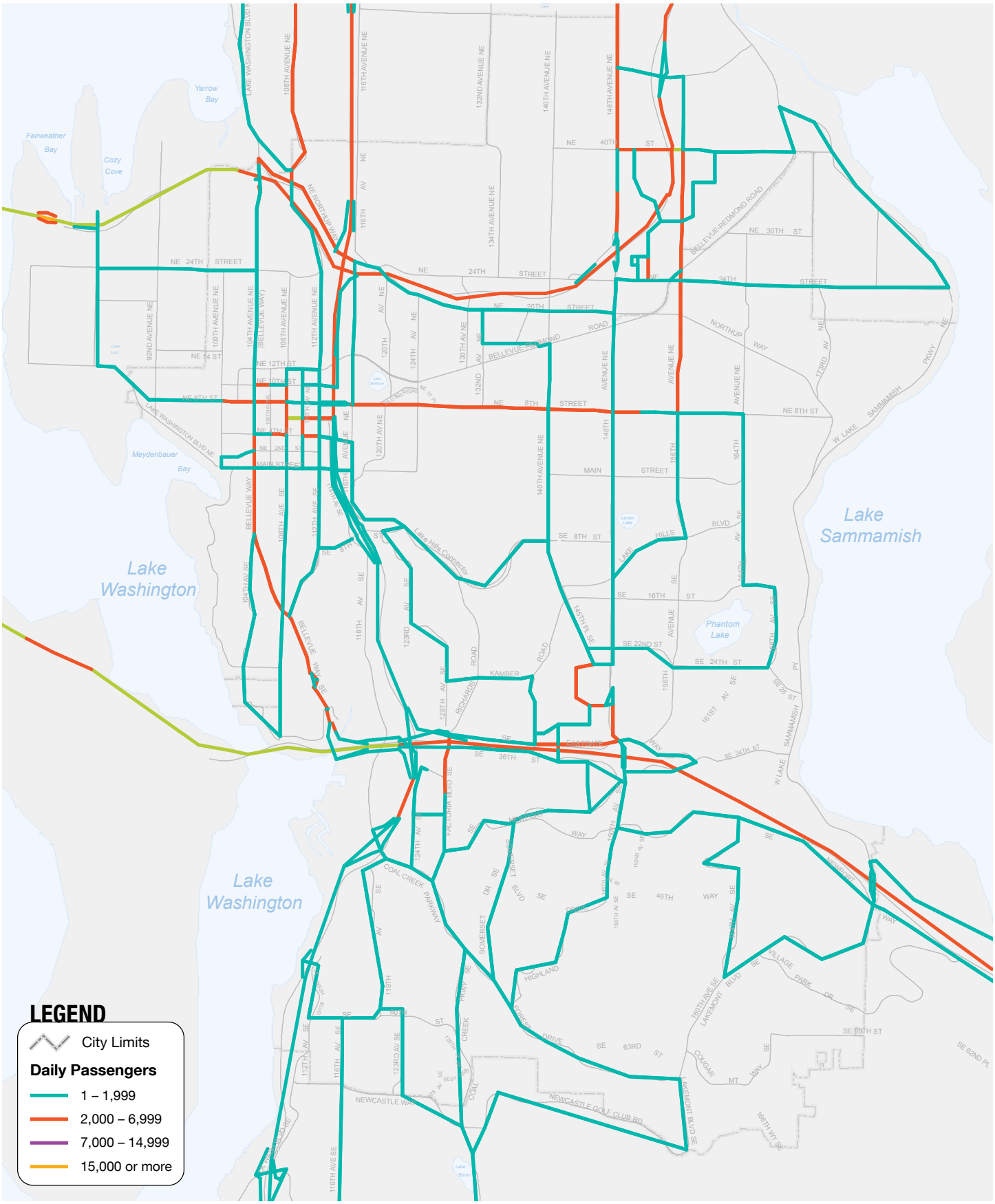


Figure 57 Daily transit usage patterns on Bellevue's arterials in 2010 by transit passenger per day arterial categories.

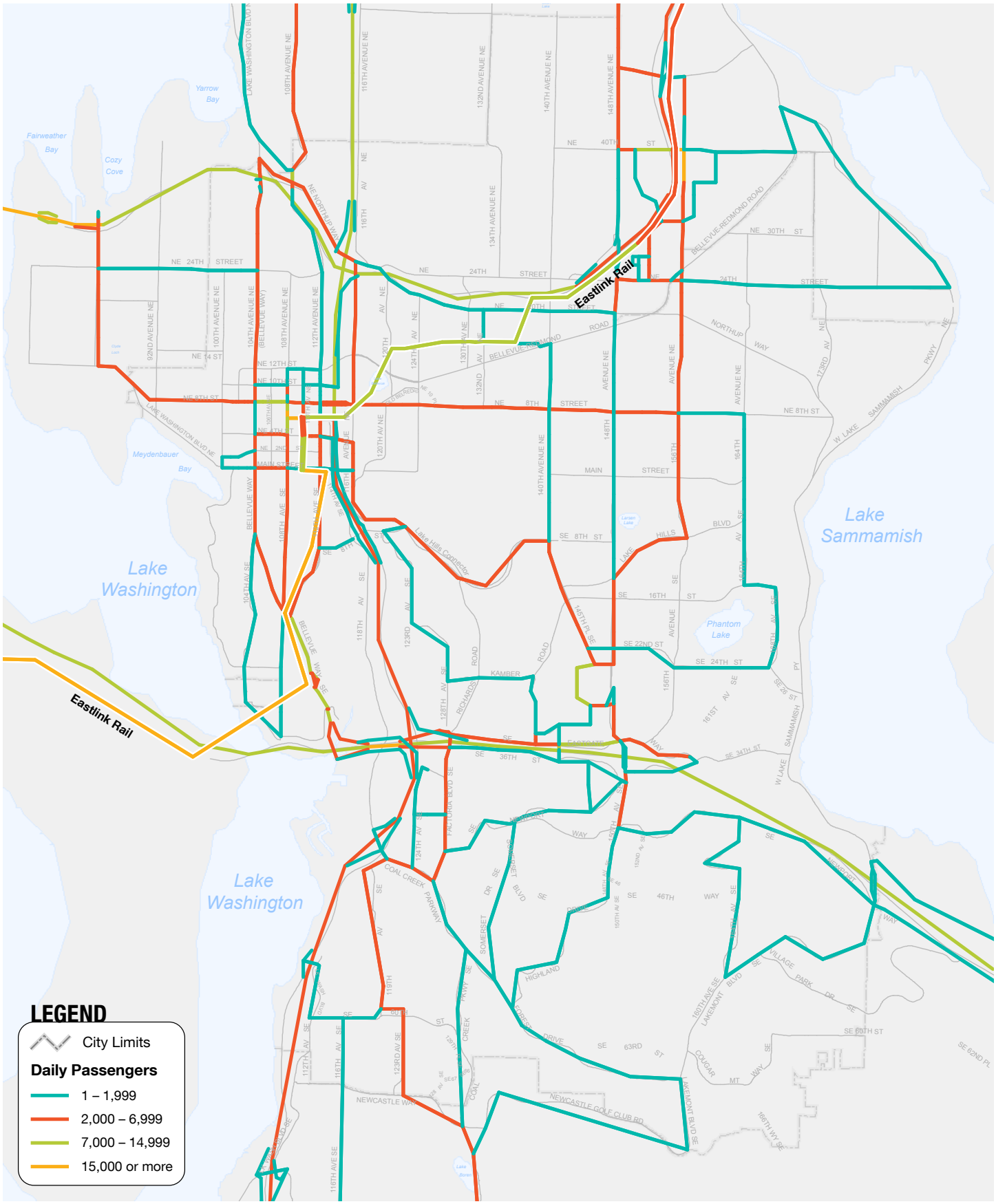


Figure 58 Daily transit usage patterns on Bellevue's arterials in 2030 by transit passenger per day arterial categories (derived from BKR model platform MP30r6.2 with transit routes defined in the 2010 East Link Bus/Rail Integration Plan).

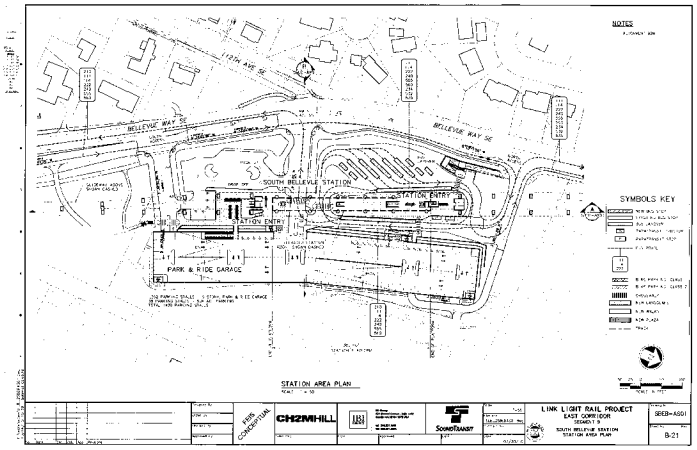
effectively extend the reach of the regional transit system by providing the crucial "last mile" connection to the ultimate destination (see Figure 59).

In anticipation of East Link, the Bellevue City Council established a Light Rail Best Practices Committee in 2007 to review "best practices" for implementing light rail in other North American cities and apply those "lessons learned" to Bellevue. The outcomes of this effort is the *Light Rail Best Practices Project (Final Committee Report)* which articulates the City's standards and expectations for the design, construction, and operation of light rail within the city of Bellevue.

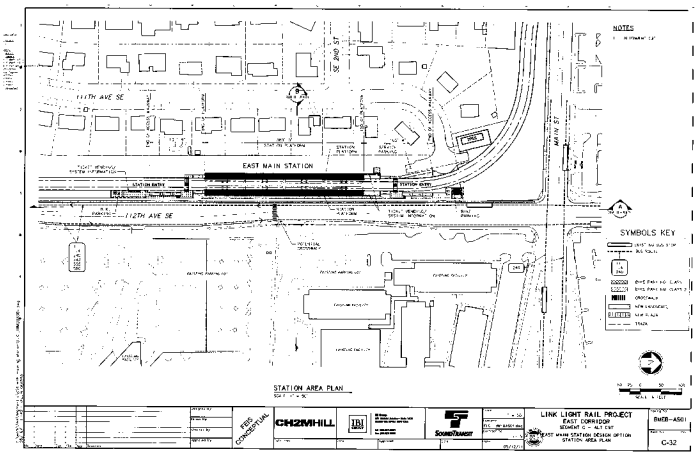
The Light Rail Best Practices Report acknowledges that a "complementary bus transit system that delivers riders to the light rail system provides a backup to service interruptions, can reduce parking need at light rail stations, and can introduce more activity to stations." In recognition of these access considerations, the Bellevue City Council adopted the following Comprehensive Plan policy language: "Provide reliable access to the system for Bellevue residents in cooperation with local and regional transit providers, by ensuring that adequate existing and new park and ride lot capacity, neighborhood bus connections and local and regional express bus services are available." (Policy TR-75.27)

Figure 60 on page 82 reflects bus/rail integration assumptions at Bellevue's stations. Table 11 on page 83 documents the assumed number of bus stops, bays, and layover spaces; para-transit stops and layover spaces; and, passenger drop-off zones. All of these assumptions will be considered in the Transit Service Vision Report which will assess the sufficiency of service routing and scheduling assumptions and planned bus accommodations at East Link stations and identify opportunities to enhance service delivery and the rider experience when transferring between the local and regional transit network at East Link stations in Bellevue.

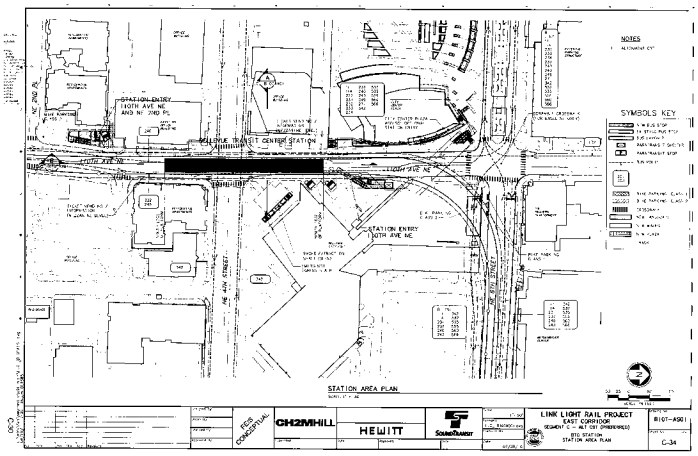
Figure 59 Bus stops in close proximity to light rail stations with short, direct pedestrian crossings make transit and pedestrian connections safe and convenient.



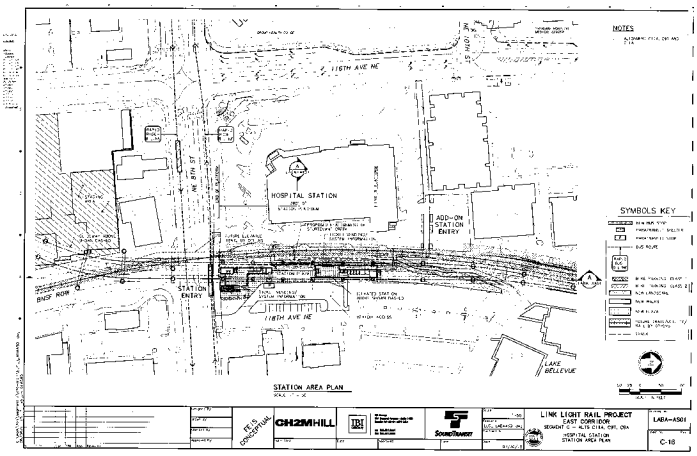
SOUTH BELLEVUE PARK & RIDE



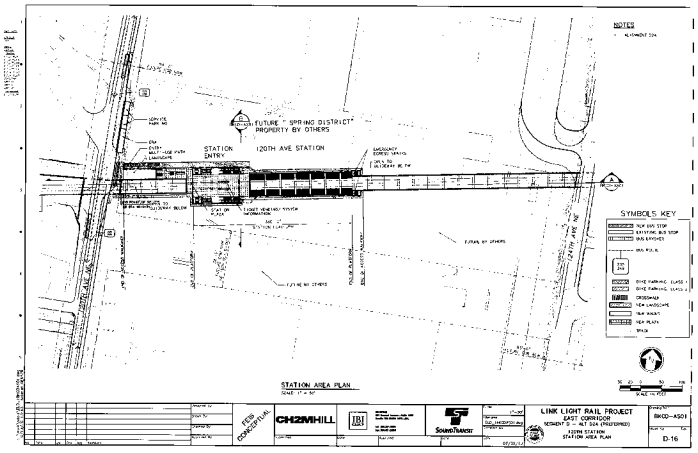
EAST MAIN STATION



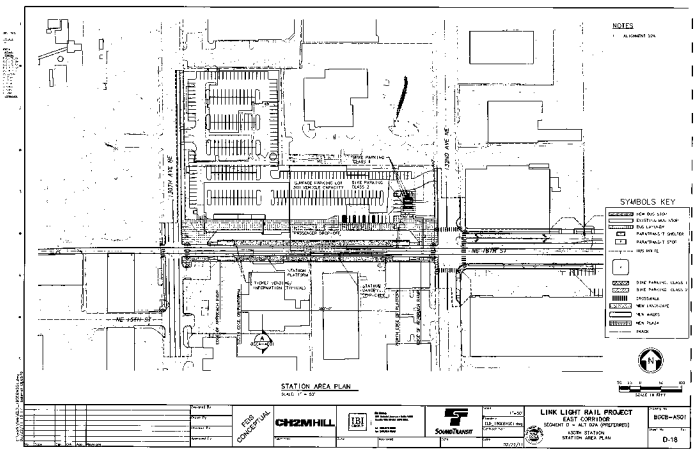
BELLEVUE TRANSIT CENTER



HOSPITAL STATION



120TH STATION



130TH STATION

Figure 60 Bus/rail integration assumptions at Bellevue's stations.

Table 11 Assumed number of bus stops, bays, and layover spaces; para-transit stops and layover spaces; and, passenger drop-off zones.

Station	Page #	Bus		Paratransit		Passenger Drop off	Notes
		Bus Stops or Bays	*Layover Spaces*	*Stop*	*Layover Spaces*		
South Bellevue (Park & Ride)	B-21	2 x 180' spaces for bus stops/bays.	5	2	5	Yes – designated off street "kiss and ride" parking spaces.	Number of bus bays has not been specified at this stage.
East Main	C-32	3 – southbound on 112th Ave SE, northbound on 112th Ave NE, north of Main St; westbound on Main St, west of 112th Ave. Eastbound stop on Main St east of 112th shown on plan has been eliminated due to Route #246 reroute.	None	None – paratransit accommodated at South Bellevue and Bellevue Transit Center.	None	Yes – not shown but expected to have northbound and southbound pullouts on 112th Ave SE adjacent to station.	Location of pullouts for passenger drop off will be decided during final design.
Bellevue Transit Center	C-34	12 bus bays (including 2 on-street at 110th Ave NE/NE 6th St) – same as existing layout. Total includes 1 paratransit bay that currently is also used as a drop-off point for incoming routes.	None shown – currently some layover at bays during off-peak hours.	None shown – existing transit center has 1 paratransit stop.	None	None	C9T station plan shown as outlined in City/Sound Transit MOU – an optimized version of this layout and an alternative with platforms outside of tunnel adjacent to NE 6th St are being evaluated.
Hospital	C-16	2 (on-street) RapidRide – westbound adjacent to station plaza. Eastbound RapidRide stop on south side of NE 8th St.	None	1	None	Yes – off-street vehicle access area to accommodate passenger drop off needs.	Future BNSF regional trail to include a grade separated crossing of NE 8th St adjacent to station that will improve access to eastbound RapidRide stop.
120th Ave NE	D-16	2 (on-street) – northbound stop shown with pull out. No existing bus service on 120th Ave NE.	None	None – paratransit accommodated at Hospital Station and Overlake Transit Center.	None	None shown – early concept by developer (Wright Runstad) had a drop off area along new NE 15th St south of light rail platforms.	Final station design is subject to an agreement between Sound Transit and the Spring District developer.
130th Ave NE (Park & Ride)	D-18	None – no existing bus serves station site, no new service anticipated.	None	None – paratransit accommodated at Hospital Station and Overlake Transit Center.	None	Potential drop-off area on street. Located to be determined during final design.	City's long term plan is to construct NE 16th St so that the station is in the median.

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ATTACHMENT 7

FUTURE TRAVEL MARKETS

EXCERPT FROM THE EXISTING AND FUTURE CONDITIONS REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/0813_Existing_Conditions_Report.pdf

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FUTURE TRAVEL MARKETS

Consistent with City Council direction, the Bellevue Transit Master Plan aims to "determine where and how transit investments can deliver the greatest degree of mobility and access possible for all populations" (Transit Master Plan, *2012 Bellevue Council Principle*). 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 (see Figure 45). The following reflects some of the comments from Bellevue Board and Commission members at the Forum on this topic:

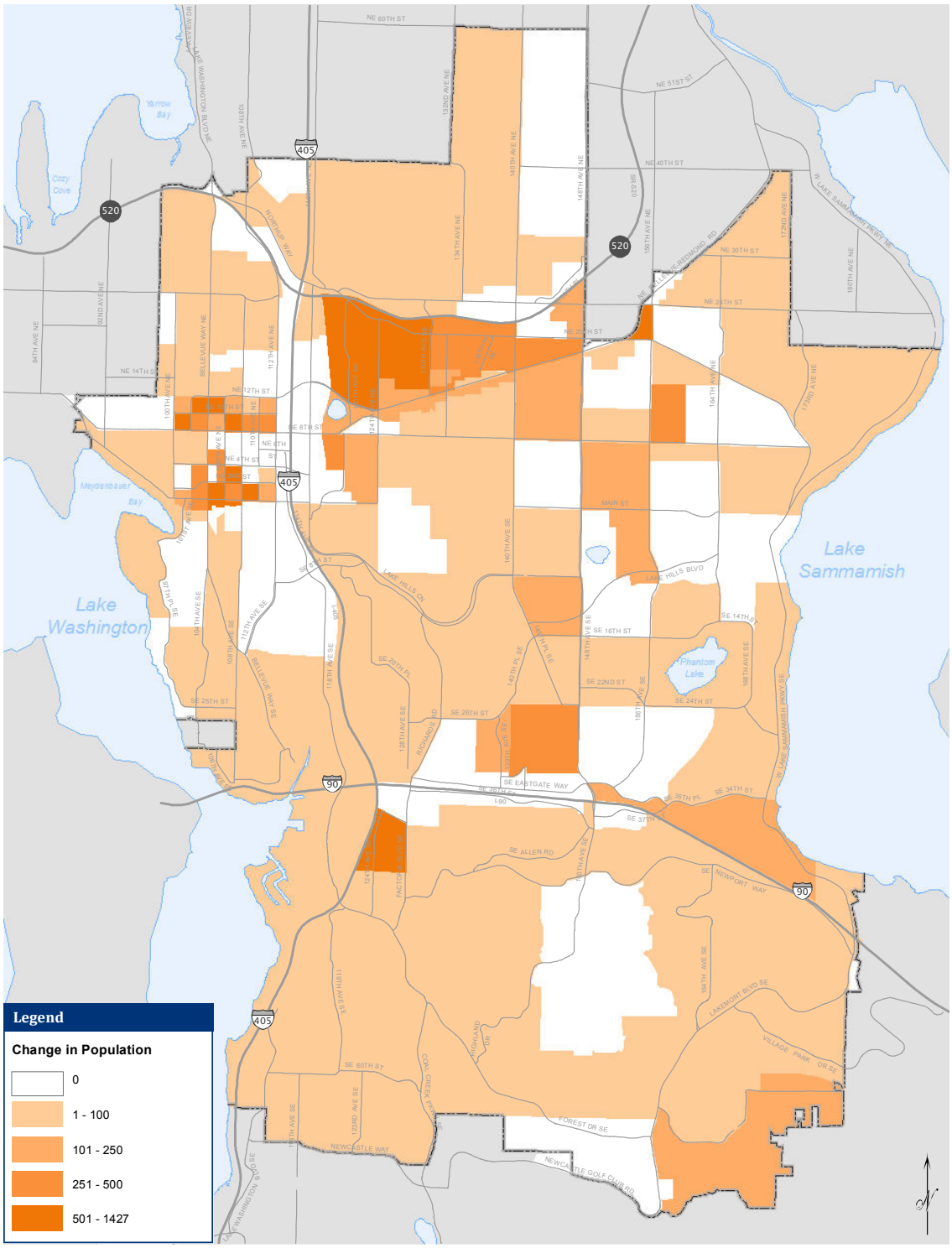
- "An important benefit of transit is that whenever a transit trip replaces a single auto trip it eases the congestion that hurts all businesses and all commuters. Bellevue could not reach its projected growth without transit. We can't just build roads to meet our growth." – *Tom Tanaka, Transportation Commission*
- "Transit draws businesses to Bellevue; for instance, the B-Line has created ease of movement from Microsoft's Main Campus to downtown. The B-Line is better than the Shuttle. It runs more often and is bigger." – *Mark Van Hollebeke, Parks & Community Services Board*
- "For some people transit is the only source or option for transportation." – *John Bruels, Human Services Commission*

Figure 45 Bellevue Board and Commission members who participated in the Transit Master Plan Forum on September 18, 2012 agreed that "Transit is an essential component of the City's mobility strategy and an increasingly important tool for addressing Bellevue's anticipated growth in travel."

POPULATION AND EMPLOYMENT GROWTH

Between 2010 and 2030 the city of Bellevue as a whole is expected to increase in population by over 28,000. Downtown Bellevue is expected to double in size reaching 19,000 by 2030 comprising about 45% of the city's projected population growth over

Figure 46 Population growth in Bellevue – 2010 to 2030.



the next 20 years (see Figure 46 on page 66). Bel-Red is expected to accommodate about 7,500 in population, almost another third of projected growth, and other mixed use areas about 16%. The remaining 7% of Bellevue's projected population growth is expected to be spread throughout residential areas in the city as development occurs on remaining vacant and underdeveloped land.

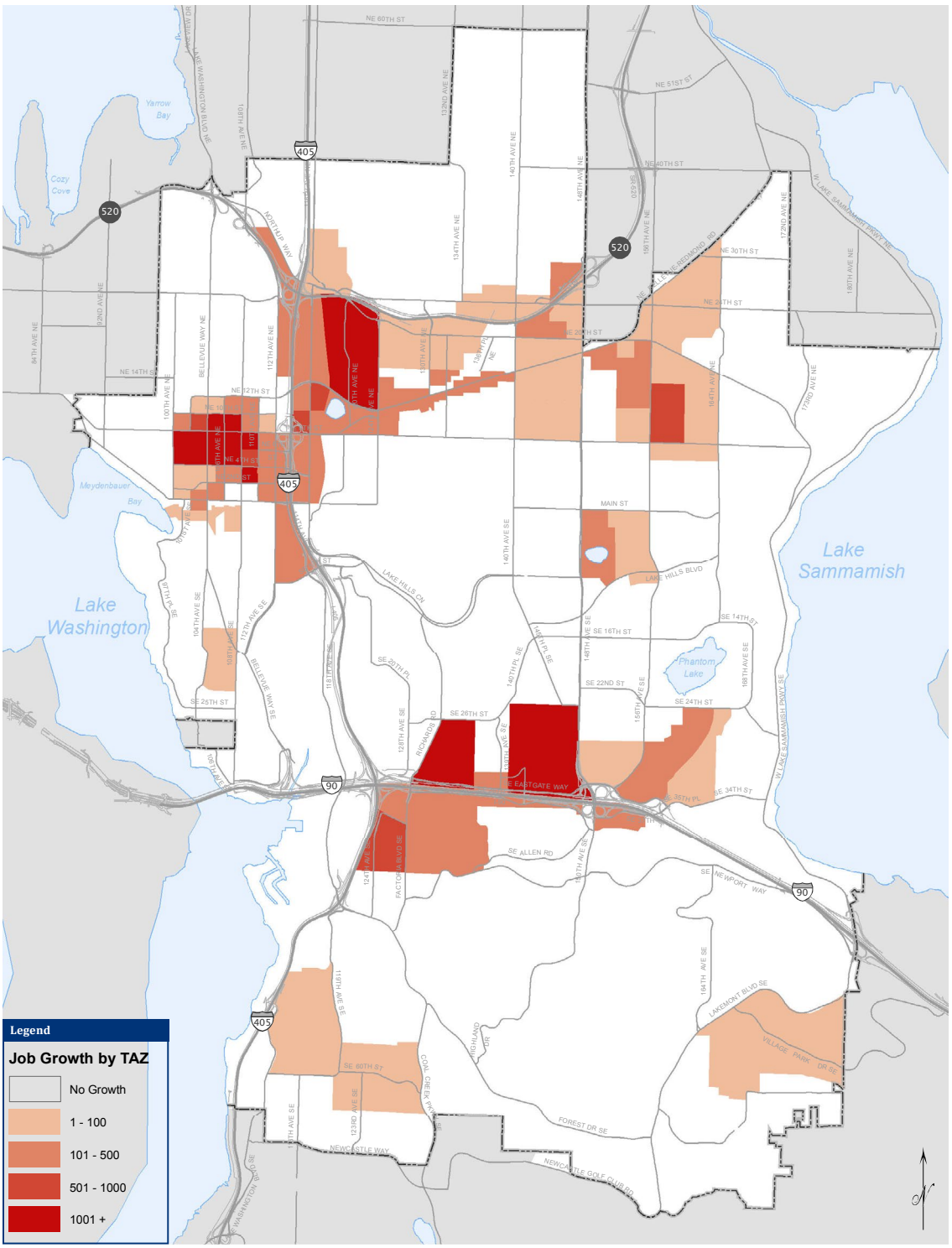


Figure 47 Employment growth in Bellevue – 2010 to 2030.

The number of jobs within the city of Bellevue is expected to increase by over 54,000 between 2010 and 2030 (see Figure 47 on page 67). Downtown Bellevue is projected to capture over half of these jobs and Bel-Red about 18%. Eastgate would capture almost 14% and SR-520 nearly 5%. Other commercial and industrial lands in the city would capture the remaining 12% of projected job growth.

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

Figure 48 Transit reinforces the Downtown Bellevue 2030 Vision, Bel-Red Subarea Plan, South Kirkland P&R Transit Oriented Development Project, and Eastgate/I-90 Transit Oriented Development concept.

Downtown Bellevue 2030 Vision

S. Kirkland P&R Transit Oriented Development Project

Bel-Red Subarea Plan

Eastgate Transit Oriented Development Concept

of promising trends that suggest the continued improvement of transit as a viable mobility option for Bellevue residents (see Figure 48).

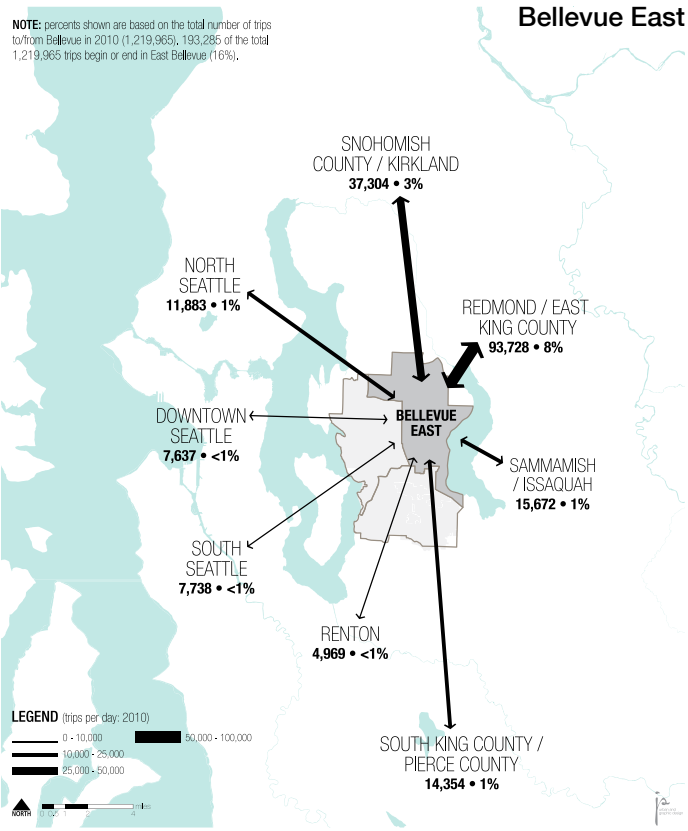
One of the objectives of Bellevue's growth strategy is to strategically allocate population and employment in locations that are or are intended to be rich in public amenities, including public transit. While many areas of Bellevue are expected to see some growth, those growing the fastest are concentrated in select areas. The biggest clusters of growth are in Downtown Bellevue, along the proposed alignment of East Link through the Bel-Red Corridor, in Factoria, and in the vicinity of Bellevue College. These are all areas where transit can effectively serve a large population. Future transit service increases, whether through new routes or frequency improvements, should be successful when concentrated in these areas.

TRAVEL GROWTH

A major factor in assessing possible transit service improvements in Bellevue is the pattern and volumes of total travel demand. It is recognized that future total travel does not necessarily translate into transit travel demand. However, many trips will be candidates for transit. The examination of total travel serves as a starting point for examining what may be potentially feasible transit markets.

The City's Bellevue-Kirkland-Redmond (BKR) travel demand model (EMME version MP0r12.1) was utilized to examine existing (2010) and future (2030) travel patterns. While version MP30r6.2 of the BKR model assumes planned and programmed transportation system improvements in Bellevue and the region, Bellevue, Kirkland, Redmond, local land use and PSRC regional forecasted land use assumptions, and transit improvements programmed by Metro and Sound Transit, it does not assume the potential for I-90 tolling that is presently under

Figure 49 The BKR travel demand model estimates 1,219,965 daily person trips to/from or internal to Bellevue in 2010.

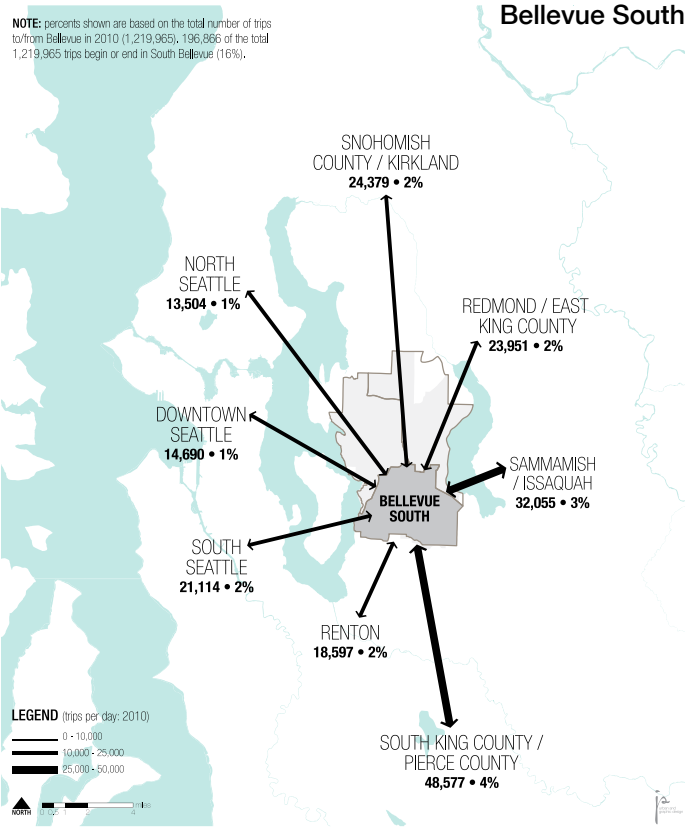


193,285 of the total 1,219,965 trips start and/or end in the Bellevue East area (16%).

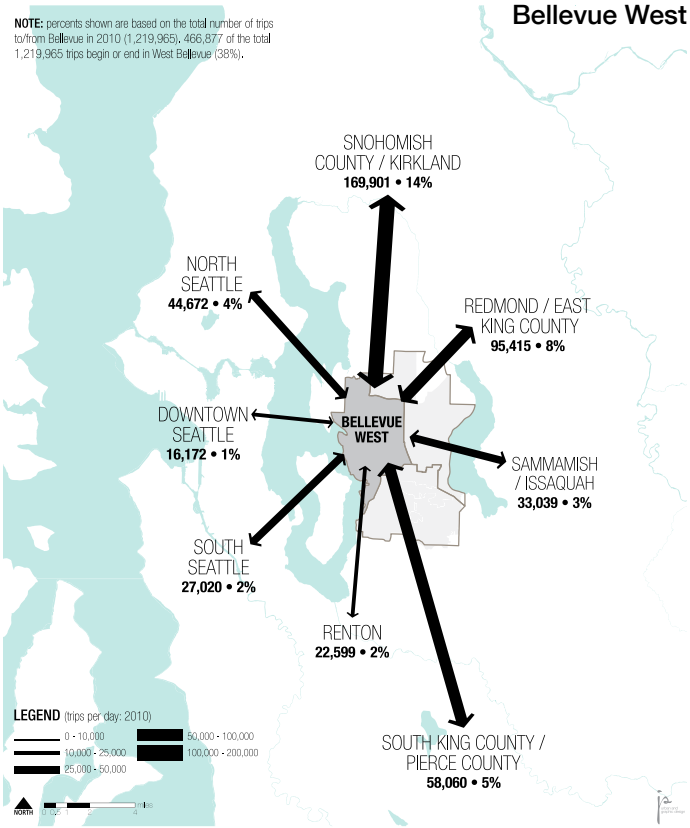
consideration in WSDOT's I-90 Tolling Environmental Assessment process.

Figure 49 through Figure 52 on page 72 reflect flow diagrams for existing and future total daily weekday person trips (including all modes of travel for home-based work, home-based other, and non-home-based trips) between three districts within Bellevue (Bellevue South, Bellevue East, and Bellevue West) and other Eastside and regional destinations. The Bellevue, Eastside, and Regional areas are aggregations of the traffic analysis zones (TAZ's) that make up the area covered by the BKR model.

The review of productions (trips originating in a particular area) and attractions (trips attracted to a particular area) indicates that the "Bellevue West" area, which includes Downtown Bellevue, is the largest production/attraction market for trips to/from Bellevue (see Figure 49). The largest flows are from Snohomish County/Kirkland (the I-405 North Corridor), Redmond/East King County (the SR 520



196,866 of the total 1,219,965 trips start and/or end in the Bellevue South area (16%).



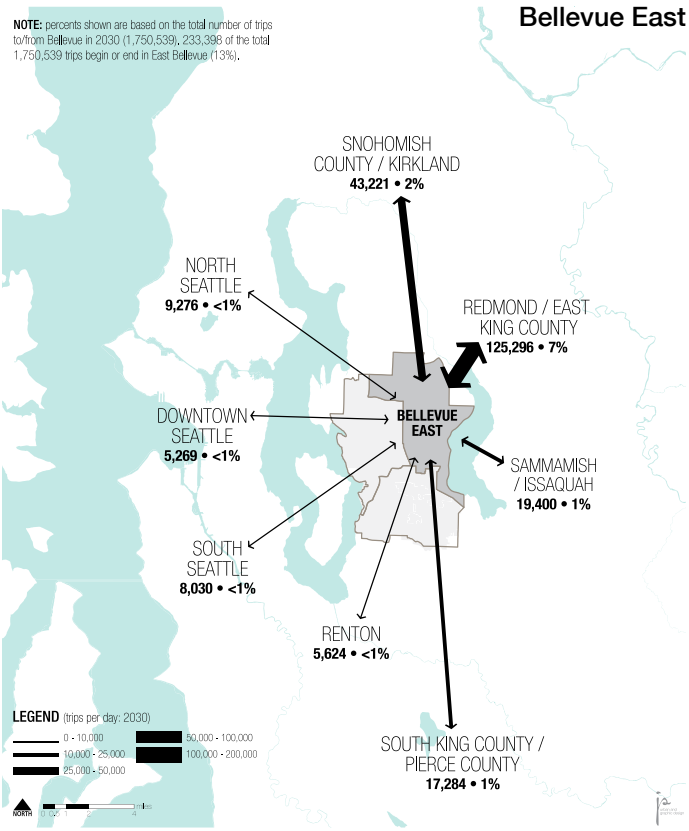
466,877 of the total 1,219,965 trips start and/or end in the Bellevue West area (38%).

corridor to Redmond), and the South King County/Pierce County (I-405 South/SR 167 corridor) markets. Interestingly, the Seattle market is smaller than the close in suburban markets in terms of total trips, but due to the overall more transit supportive land uses in Seattle, the transit trip market between Bellevue and Seattle is bigger than any other regional market.

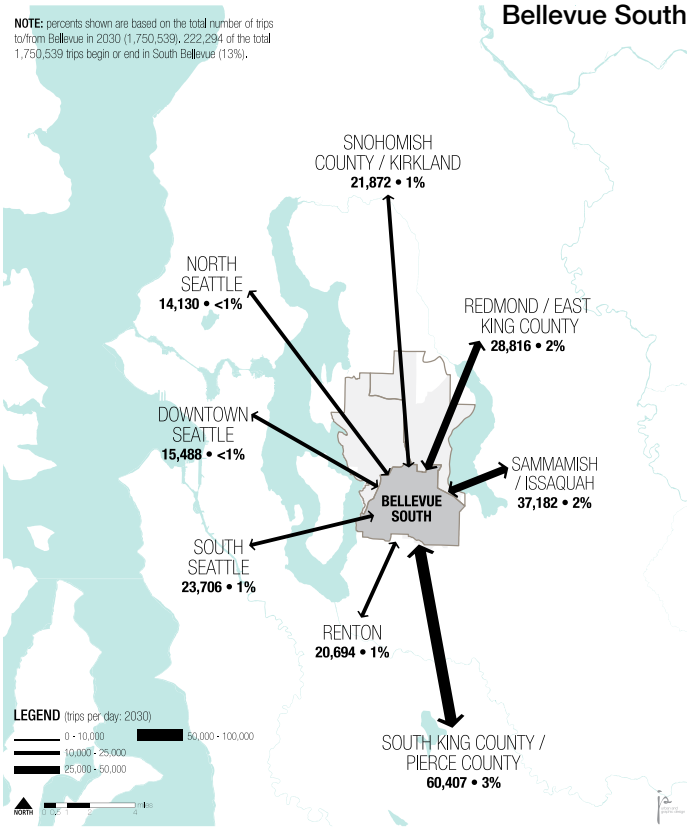
This baseline pattern is similarly evident in 2030 forecasts, with Snohomish County/Kirkland, Redmond/East King County, and South King County/Pierce County all still representing the most significant production/attraction markets (see Figure 50). The strongest market growth is projected to come between the Bellevue West area and Snohomish County/Kirkland (80,000 new trips), South King County/Pierce County (43,000 new trips), Redmond/East King County (26,000 new trips), and Sammamish/Issaquah (25,000 new trips).

Existing regional transit service is already serving these markets. Particularly in the suburban to

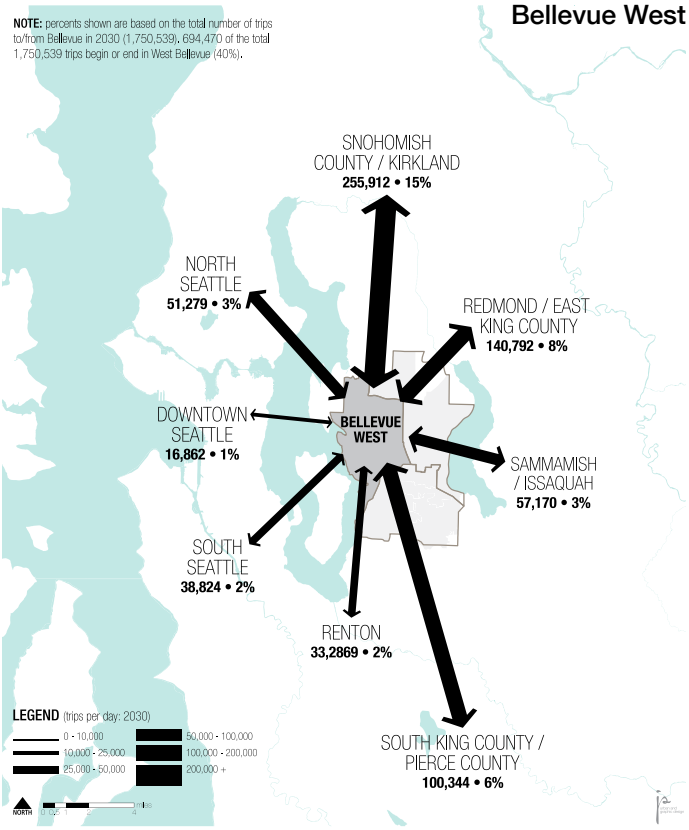
Figure 50 The BKR travel demand model estimates 1,750,539 daily person trips to/from or internal to Bellevue in 2030.



233,398 of the total 1,750,539 trips start and/or end in the Bellevue East area (13%).



222,294 of the total 1,750,539 trips start and/or end in the Bellevue South area (13%).



694,470 of the total 1,750,539 trips start and/or end in the Bellevue West area (40%).

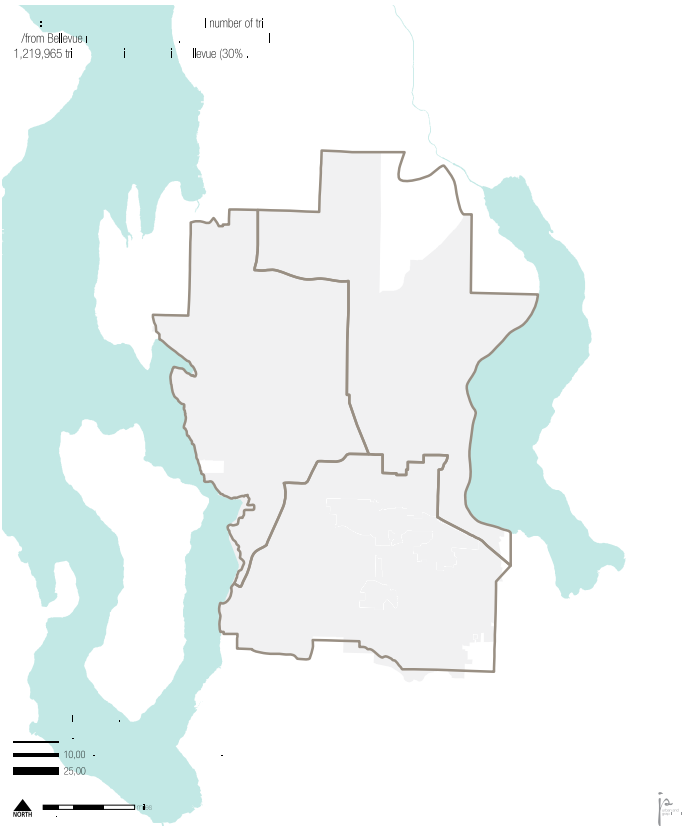


Figure 51 The BKR travel demand model estimates that 362,937 daily person trips begin/end within Bellevue in 2010; 30% of the 1,219,965 daily person trips to/from or internal to Bellevue.

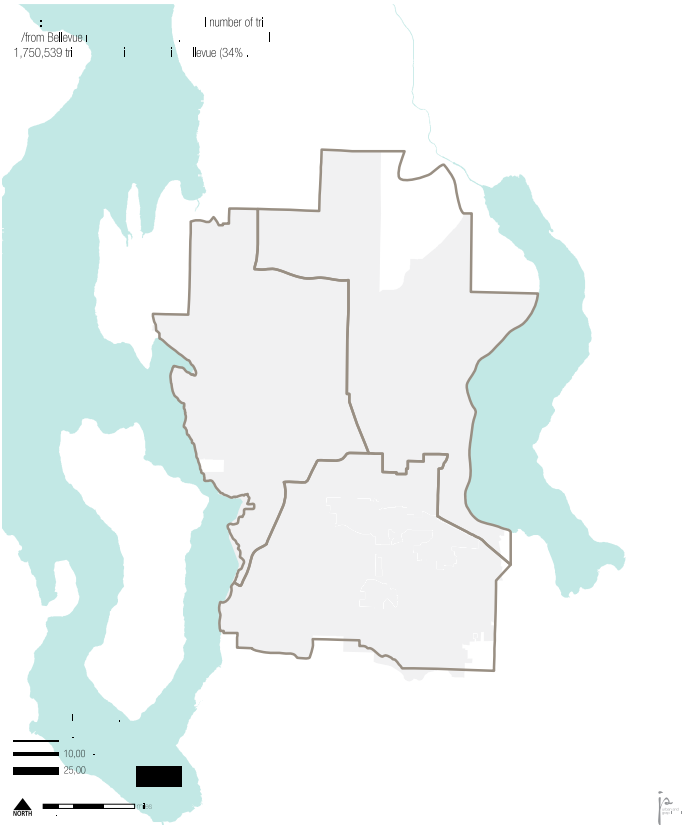


Figure 52 The BKR travel demand model estimates that 600,377 daily person trips begin/end within Bellevue in 2030; 30% of the 1,750,539 daily person trips to/from or internal to Bellevue.

Downtown Bellevue market, the growth projections suggest an additional need for suburban Park & Ride capacity and express bus capacity in the I-405 and I-90 corridors.

Within Bellevue, the 2010 flow map shows that there is a strong production/attraction market between the Bellevue West area and both the Bellevue East and South areas (see Figure 51). Travel is projected to grow by 2030, with the most significant growth taking place within the Bellevue West area itself, where an estimated 157,000 new trips will occur (see Figure 52). The number of internal trips in the Bellevue West area is projected to more than double between 2010 and 2030. The growth of internal trips in the circulation market in Bellevue West is an "all-day market" rather than a work-oriented market.

Close to 500,000 new daily trips are projected to occur to/from or within the city of Bellevue between 2010 and 2030. Based on projected increases in trips, the number of trips with a production/attraction outside of the city of Bellevue will increase by over 260,000 trips. Most of that growth (over 200,000 trips) will be to the Bellevue West area including Downtown Bellevue. More than one third of those new trips will be from the I-405 North Corridor.

Over 230,000 new daily weekday trips are projected to have a production/attraction within Bellevue. The majority of these trips (157,000) are within West Bellevue, centered on Downtown Bellevue, and most of these trips are non-work trips. The projected growth within West Bellevue, which includes Downtown Bellevue, is the single biggest growing trip market for either "regional" or "local" trips – it is almost twice has high as the next biggest market (Kirkland/Snohomish County to Bellevue).

The Bellevue West internal market represents the City's best opportunity to gain transit mode share, as the City can influence service levels, capital enhancements, and priority transit at both the trip origin and destination.

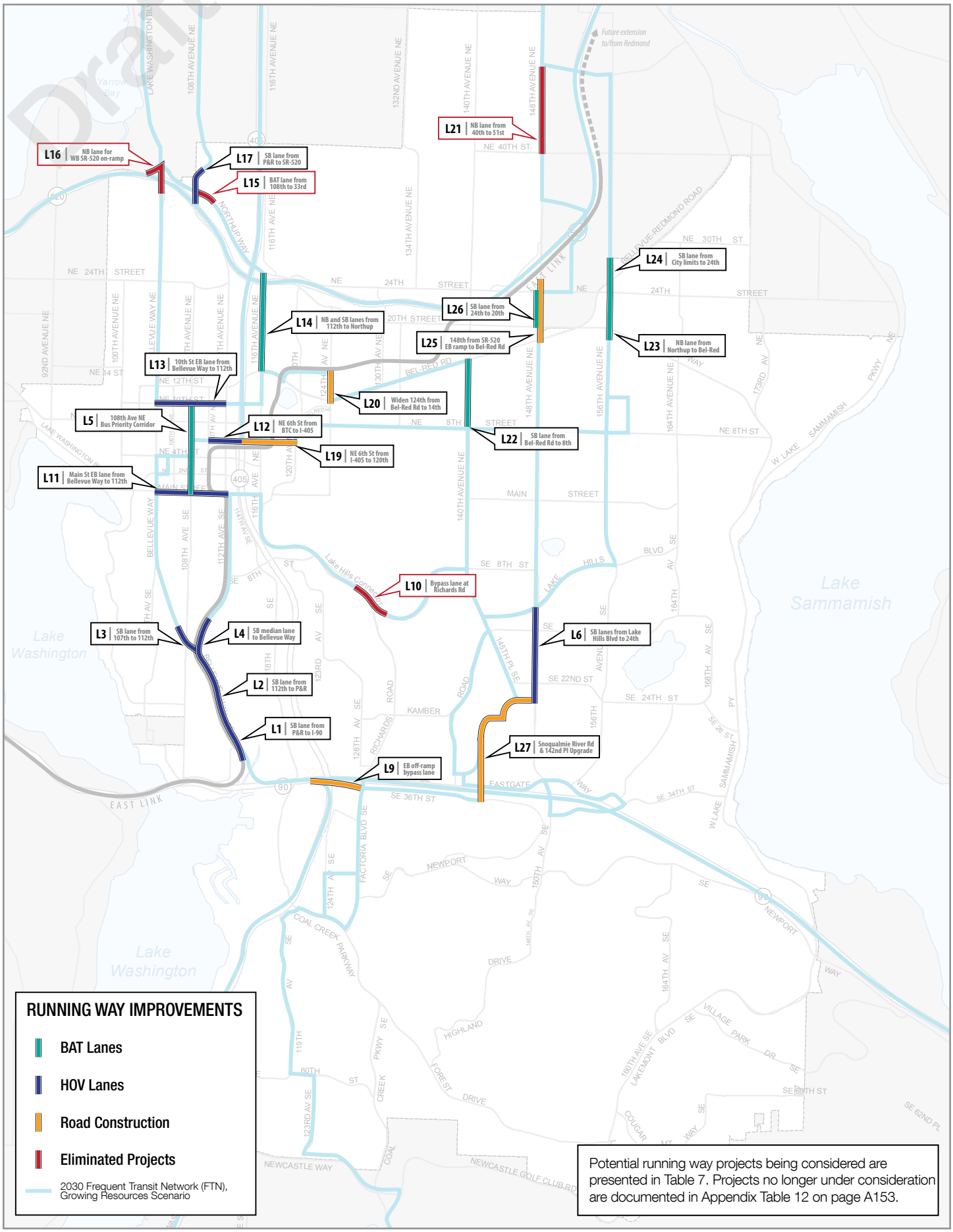
ATTACHMENT 8

RUNNING WAY IMPROVEMENT PROJECTS

EXCERPT FROM THE TRANSIT SPEED AND RELIABILITY REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/TransitSpeedReliabilityReport_02192014.pdf

Figure 61 Map of potential transit running way projects.



ATTACHMENT 9

VALUE OF TRAVEL TIME SAVINGS

EXCERPT FROM THE TRANSIT SPEED AND RELIABILITY REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/TransitSpeedReliabilityReport_02192014.pdf

Draft

Stated simply, time is money. In this case, this addage applies both to the value of transit users' time spent riding the bus and to the cost for transit providers to operate the service. For riders, time spent traveling could be better used to achieve more productive ends. For transit operators, minutes lost to traffic congestion can mean the difference between requiring three buses or four to operate the same route at a given frequency. The improvements in speed and travel time realized by implementing HOV and BAT lane projects can therefore be monetized to estimate the aggregate value of the time saved. As shown in Table 14, these improvements in travel time translate to societal savings of between $2.5–$4.2 million annually during the PM peak alone, depending on the rate at which riders' time spent traveling is valued relative to the region's mean hourly wage. Additional savings would also be realized during other times of day, particularly in the AM peak, but because travel demand model outputs reflect PM peak conditions, no assumptions are made here about the savings realized during other periods.

For transit operators, the calculation is somewhat more complicated for two reasons. First, the ability to remove a bus from a schedule while maintaining the same headways depends on multiple factors that

Table 13 2030 PM peak hour signalized intersection LOS before and after HOV and BAT lane implementation.

		2030 Reduced Funding w/o HOV/BAT Projects	2030 Growing Resources w/o HOV/BAT Projects	2030 Growing Resources with HOV/BAT Projects
Level of Service (LOS)	A	8	8	8
	B	27	31	28
	C	49	49	54
	D	50	53	52
	E	33	30	33
	F	28	24	20
Citywide LOS		D	D	D
Citywide Avgerage Vehicle Delay (sec)		51.8	49.9	48.3
Citywide Total Delay Hours		8,141	7,665	7,350

Source: Dynameq model D30R1.0.3, for November 14, 2013 Transportation Commission meeting.

are not reflected by this analysis. Second, the travel demand models used here to assess transit travel speed assume the service frequencies defined by the 2030 Growing Resources scenario as model inputs. However, it will only be possible to operate these frequencies within the budget defined by the *Funding Scenarios Report* if transit travel speeds meet or exceed the speeds assumed for each service type in the *Service Vision Report*. Nevertheless, it is still instructive to estimate the operating cost savings attributable to implementing these HOV and BAT lane projects, even if these savings are reinvested in prodiving service at the frequencies being proposed. To that end, Table 15 indicates that transit service providers would save between about $510,000–$780,000 annually based on the travel time savings achieved in the PM peak period alone, depending on the assumed operating cost per hour. See Appendix 9 on page A159 for additional information about how these figures for the value of travel time savings were calculated.

Given that only a portion of the proposed transit priority projects can be modeled (i.e. HOV and BAT lanes), it can be expected that implementation of the entire package of improvements would result in greater travel time savings than are reflected here. This is because HOV and BAT lanes are often paired with other improvements, such as queue jump lanes and/or TSP to help transit pass through problematic intersections more efficiently. This assessment therefore only presents part of the picture—the degree of benefit achieved by HOV and BAT lanes in isolation of any other related transit priority projects—so the results presented in Table 11 should not be understood to mean that the City will be unable to achieve the target travel speeds assumed in the *Transit Service Vision Report*. The other types of priority projects being considered will also contribute to transit travel speed improvement, but those projects' benefits will need to be assessed using more detailed applications.

Draft

Table 14 Value of Annualized PM Peak Travel Time Savings for Transit Users from Proposed HOV/BAT Projects.

FTN Service Type	Annualized PM Peak Pass Hours Saved	Value of Pass Hours Saved		
		Low	Medium	High
FX	148,592	$1,439,564	$2,056,519	$2,344,432
FR	17,414	$168,711	$241,016	$274,759
FL	99,779	$966,655	$1,380,936	$1,574,267
Annual Total:		**$2,574,930**	**$3,678,471**	**$4,193,457**

Notes: Value of travel time savings based on the May 2012 mean hourly wage for Seattle-Everett-Bellevue of $27.68, obtained from the US Department of Labor Bureau of Labor Statistics. Low, Medium, and High estimates are based on the percentage of that wage considered when valuing transit passenger time, reflecting 35%, 50%, and 57%, respectively. Higher rates of time valuation relative to the mean hourly wage correspond to reduced perceived convenience due to lower intersection LOS (e.g. High corresponds to LOS 'D') and/or standing rather than sitting. See Appendix 9 on page A159 for details.

Table 15 Value of Annualized PM Peak Travel Time Savings to Transit Operators from Proposed HOV/BAT Projects.

FTN Service Type	Annualized PM Peak Revenue Hours Saved	Value of Revenue Hours Saved	
		Low[1]	High[2]
FX	2,352	$209,285	$319,054
FR	521	$46,399	$70,736
FL	2,869	$255,322	$389,238
Annual Total:		**$511,007**	**$779,027**

1. Low estimate based on King County Metro's 2010 marginal hourly operating cost of $89.
2. High estimate based on King County Metro's 2012 'Transit Operating Cost per Vehicle Hour', as reported on the agency's website at: http://metro.kingcounty.gov/am/reports/annual-measures/financial.html#cost-per-hour. See Appendix 9 on page A159 for details.

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ATTACHMENT 10

CORRIDOR THROUGHPUT BY MODE

EXCERPT FROM THE TRANSIT SPEED AND RELIABILITY REPORT

Full document available at:
http://www.bellevuewa.gov/pdf/Transportation/TransitSpeedReliabilityReport_02192014.pdf

Draft

APPENDIX 3: CORRIDOR THROUGHPUT ANALYSIS

Following the development of composite scores for all FTN analysis segments (see pages 31 through 53), twenty corridor segments of particular interest were identified for further consideration. As reflected in the tables and charts on the following pages, composite scores and their constituent parts were compiled for each corridor, and the BKR travel demand model (MP30R6.2) was leveraged to compare vehicle throughput to person throughput, consistent with guidance from the Measures of Effectiveness Report.

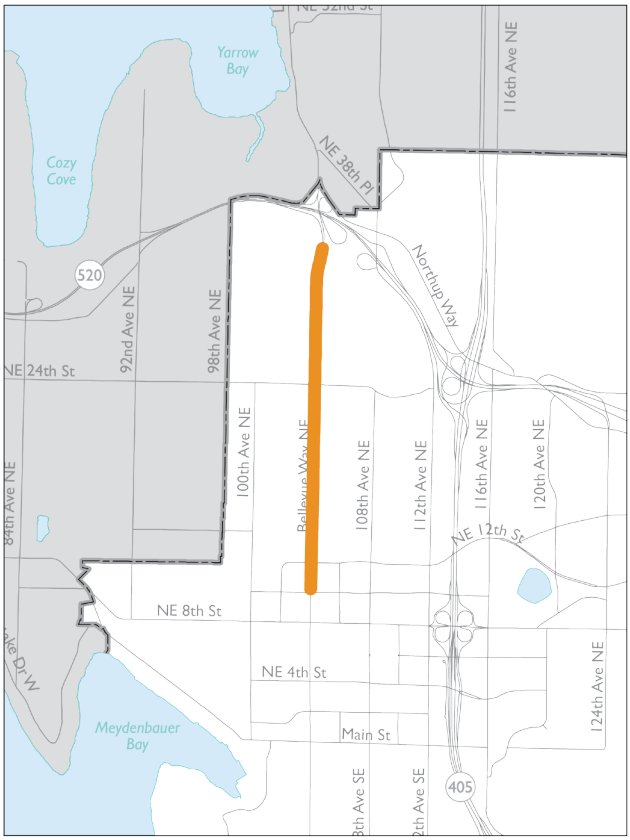
The BKR model produces Peak-Period Person Throughput (PPPT) by mode for the corridor segments that comprise the Frequent Transit Network (FTN). This takes into account average vehicle occupancy for personal vehicles and buses, thereby facilitating a comparison of vehicle and person throughput for both transit and personal vehicles along FTN corridors. For example, on Bellevue Way NE between NE 10th St and NE 32nd Pl, the 2030 projected PPPT on transit is 36 percent of all person trips, yet transit represents only 0.8 percent of all vehicle trips along this corridor. Clearly, bus service is projected to make efficient use of the roadway capacity here.

Whereas the composite scores indicate how great a particular corridor's need is for transit speed and reliability investments relative to other FTN corridors, the throughput analysis provides insight into the relative share of total person trips served by transit and private vehicles. The composite scores help to prioritize corridors for potential projects based solely on characteristics that directly affect transit operations, while throughput by mode helps to assess how reasonable it might be to allocate limited right-of-way to one mode or another based on their relative ability to move people. The larger the share of person trips served by transit along a corridor, the more appropriate it may be to consider transit priority projects.

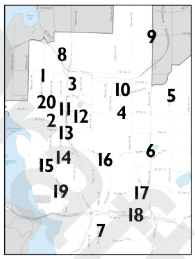
Appendix Table 1 Legend of Long-Term Weighted Score color-coded tables.

LEGEND	Weighted Scores[2] Long-Term			
Composite Score	5-11	12-15	16-18	19-24
Weekday Ridership	0-2	4	6	8
Weekday Bus Volumes	1	2	3	4
Approach Delay (sec)	1	2	3	4
Approach Queue Length (ft)	1	2	3	4
Intersection LOS	0-1	2	3	4

2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.



Bellevue Way NE btw NE 10th St and NE 32nd Pl



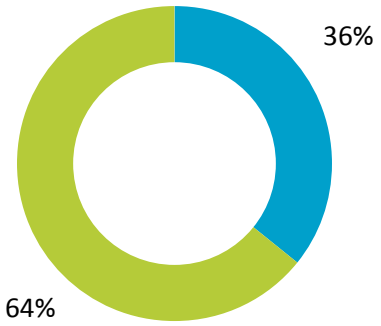
Buses[1]	16
Total Vehicles[1]	2,109
Percent Transit[1]	0.8%
Person Trips – Transit[1]	1,583
Person Trips – Total[1]	4,420
Percent Transit[1]	36%

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

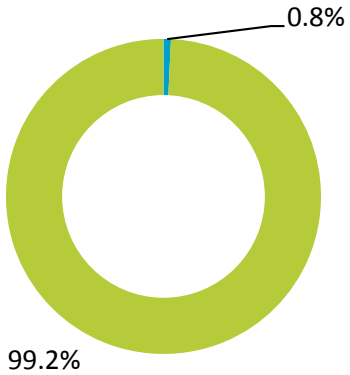
	Weighted Scores[2] Long-Term
Composite Score	11 - 15 (13.0)
Weekday Ridership	6
Weekday Bus Volumes	2
Approach Delay (sec)	1 - 3 (1.8)
Approach Queue Length (ft)	1 - 3 (1.8)
Intersection LOS	1 - 2 (1.4)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



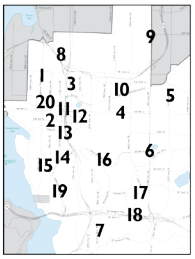
Person Throughput



Vehicle Throughput

Bus Auto

2 108th Ave NE btw Main St and NE 10th St



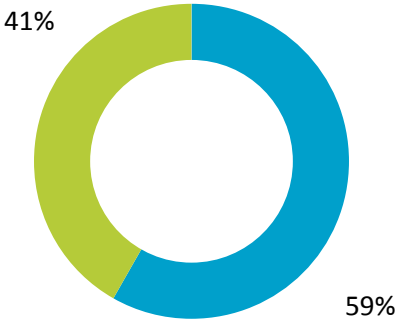
Buses[1]	62
Total Vehicles[1]	2,022
Percent Transit[1]	3.0%
Person Trips – Transit[1]	3,966
Person Trips – Total[1]	6,678
Percent Transit[1]	59%

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

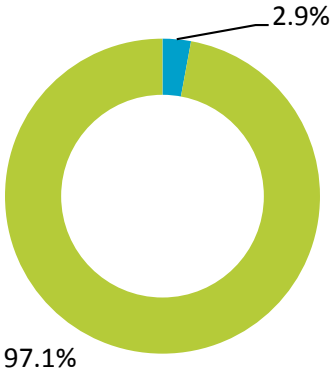
	Weighted Scores[2] Long-Term
Composite Score	19 - 23 (21.0)
Weekday Ridership	8
Weekday Bus Volumes	4
Approach Delay (sec)	3 - 4 (3.6)
Approach Queue Length (ft)	2 - 4 (3.0)
Intersection LOS	2 - 3 (2.4)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



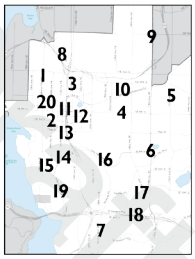
Person Throughput



Vehicle Throughput

Bus Auto

3 116th Ave NE btw NE 12th St and Northup Way



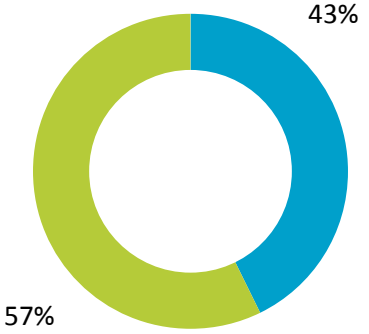
Buses[1]	23
Total Vehicles[1]	1,518
Percent Transit[1]	1.5%
Person Trips – Transit[1]	1,480
Person Trips – Total[1]	3,465
Percent Transit[1]	43%

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

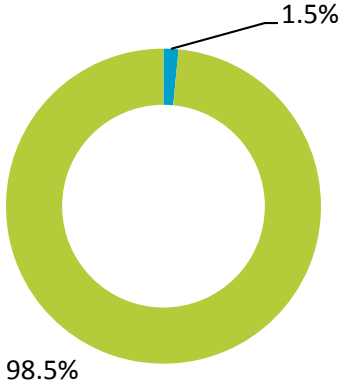
	Weighted Scores[2] Long-Term
Composite Score	24
Weekday Ridership	8
Weekday Bus Volumes	4
Approach Delay (sec)	4
Approach Queue Length (ft)	4
Intersection LOS	4

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak

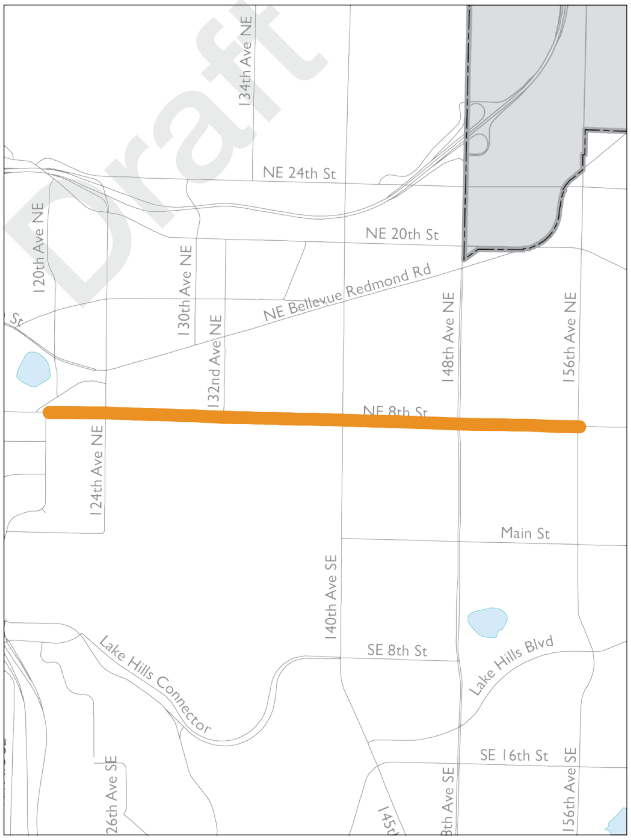


Person Throughput

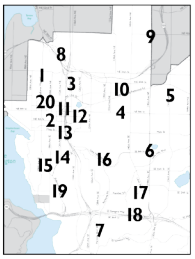


Vehicle Throughput

Bus Auto



4 NE 8th St btw 120th Ave NE and 156th Ave NE



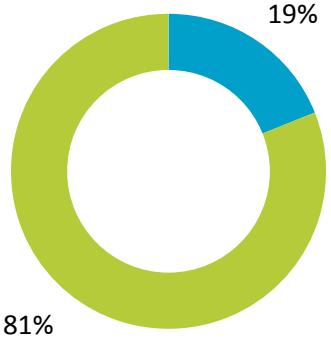
Buses[1]	17
Total Vehicles[1]	2,703
Percent Transit[1]	0.6%
Person Trips – Transit[1]	871
Person Trips – Total[1]	4,606
Percent Transit[1]	19%

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

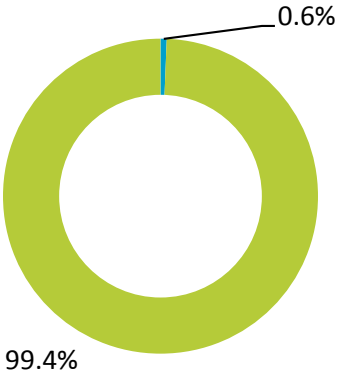
	Weighted Scores[2] Long-Term
Composite Score	12 - 18 (15.8)
Weekday Ridership	4 - 6 (4.3)
Weekday Bus Volumes	2 - 3 (2.2)
Approach Delay (sec)	2 - 4 (3.3)
Approach Queue Length (ft)	2 - 4 (3.3)
Intersection LOS	2 - 4 (2.7)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak

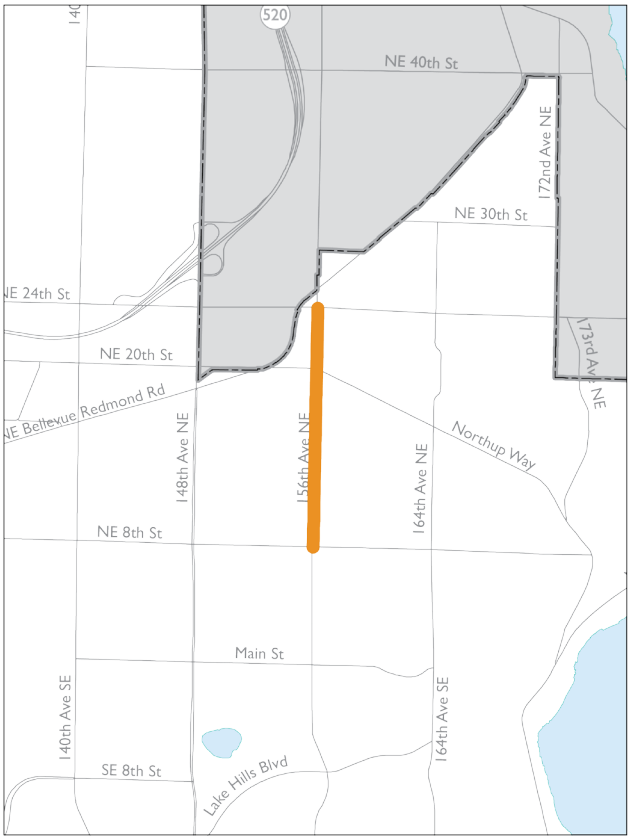


Person Throughput

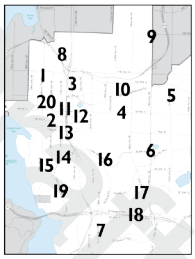


Vehicle Throughput

Bus Auto



5 156th Ave NE btw NE 8th St and Bel-Red Rd



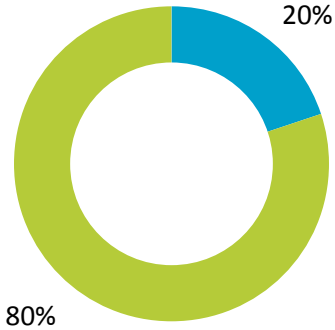
Buses[1]	22
Total Vehicles[1]	2,799
Percent Transit[1]	0.8%
Person Trips – Transit[1]	903
Person Trips – Total[1]	4,547
Percent Transit[1]	20%

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

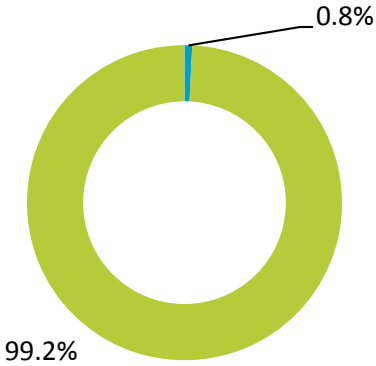
	Weighted Scores[2] Long-Term
Composite Score	8 - 17 (11.4)
Weekday Ridership	4
Weekday Bus Volumes	2 - 3 (2.3)
Approach Delay (sec)	1 - 4 (1.9)
Approach Queue Length (ft)	1 - 4 (1.9)
Intersection LOS	0 - 3 (1.4)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1] 2030 PM Peak

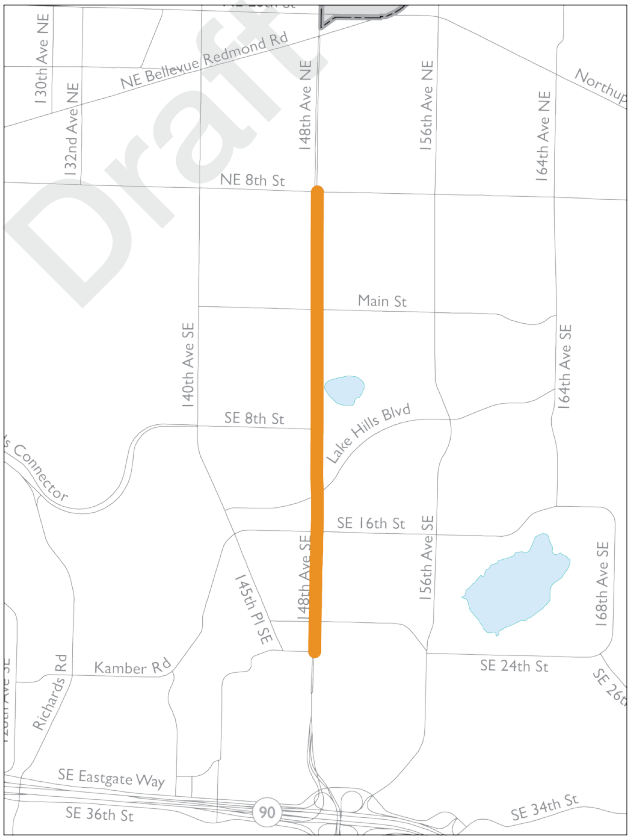


Person Throughput

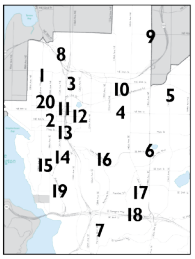


Vehicle Throughput

Bus Auto



6 148th Ave NE btw NE 8th St and SE 24th St



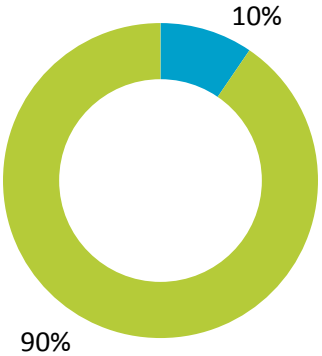
Buses[1]	16
Total Vehicles[1]	3,281
Percent Transit[1]	0.5%
Person Trips – Transit[1]	432
Person Trips – Total[1]	4,527
Percent Transit[1]	10%

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

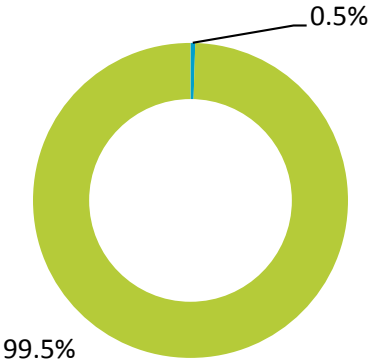
	Weighted Scores[2] Long-Term
Composite Score	6 - 14 (9.1)
Weekday Ridership	2
Weekday Bus Volumes	2
Approach Delay (sec)	1 - 4 (2.3)
Approach Queue Length (ft)	1 - 4 (1.9)
Intersection LOS	0 - 2 (1.0)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



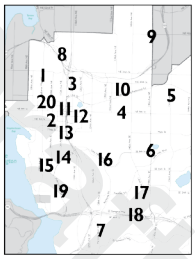
Person Throughput



Vehicle Throughput

Bus Auto

7 Factoria Blvd SE btw SE 36th St and SE Newport Way



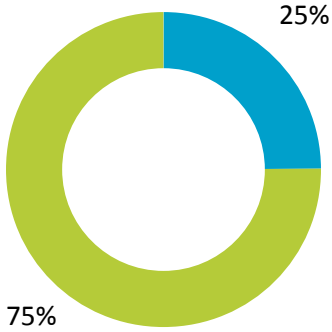
Buses[1]	34
Total Vehicles[1]	3,597
Percent Transit[1]	0.9%
Person Trips – Transit[1]	1,515
Person Trips – Total[1]	6,080
Percent Transit[1]	25%

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

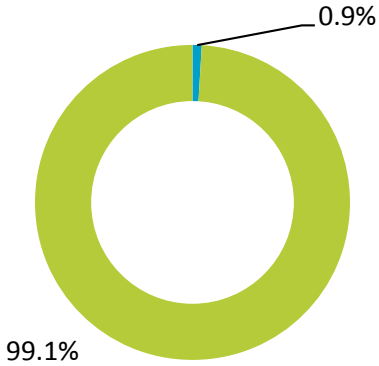
	Weighted Scores[2] Long-Term
Composite Score	13 - 24 (16.8)
Weekday Ridership	8
Weekday Bus Volumes	3 - 4 (3.6)
Approach Delay (sec)	1 - 4 (2.0)
Approach Queue Length (ft)	1 - 4 (2.0)
Intersection LOS	0 - 4 (1.2)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



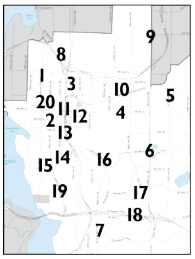
Person Throughput



Vehicle Throughput

Bus Auto

8 Northup Way btw 108th Ave NE and 116th Ave NE



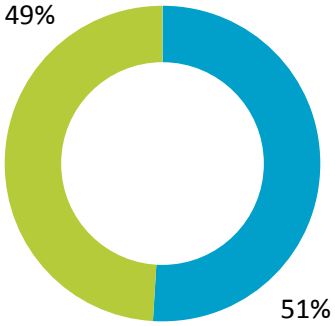
Buses[1]	30
Total Vehicles[1]	1,460
Percent Transit[1]	2.1%
Person Trips – Transit[1]	1,850
Person Trips – Total[1]	3,620
Percent Transit[1]	51%

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

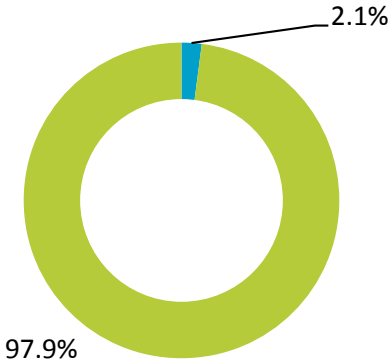
	Weighted Scores[2] Long-Term
Composite Score	24
Weekday Ridership	8
Weekday Bus Volumes	4
Approach Delay (sec)	4
Approach Queue Length (ft)	4
Intersection LOS	4

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak

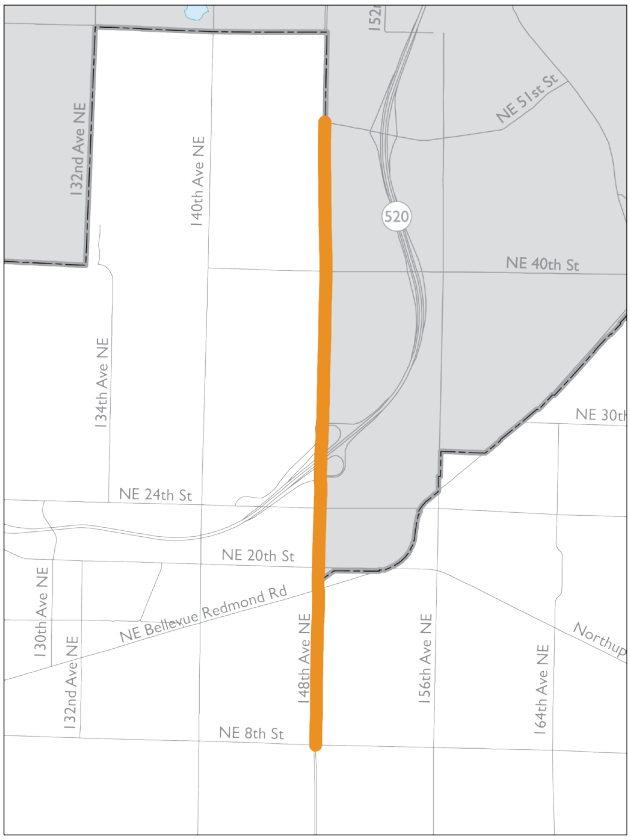


Person Throughput

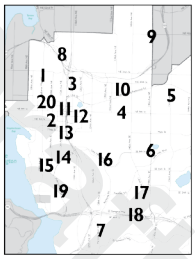


Vehicle Throughput

Bus Auto



9 148th Ave NE btw NE 8th St & NE 51st St



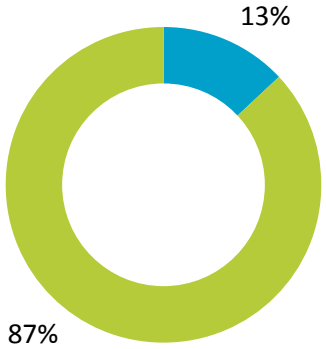
Buses[1]	15
Total Vehicles[1]	3,606
Percent Transit[1]	0.4%
Person Trips – Transit[1]	699
Person Trips – Total[1]	5,359
Percent Transit[1]	13%

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

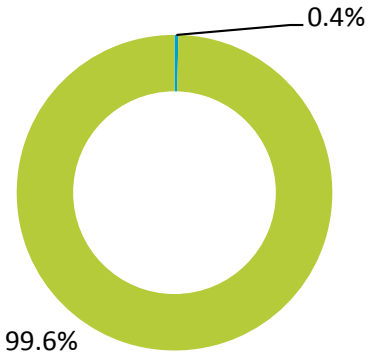
	Weighted Scores[2] Long-Term
Composite Score	14 - 21 (17.8)
Weekday Ridership	4 - 8 (5.4)
Weekday Bus Volumes	1 - 4 (2.6)
Approach Delay (sec)	1 - 4 (3.1)
Approach Queue Length (ft)	1 - 4 (3.2)
Intersection LOS	0 - 4 (3.5)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak

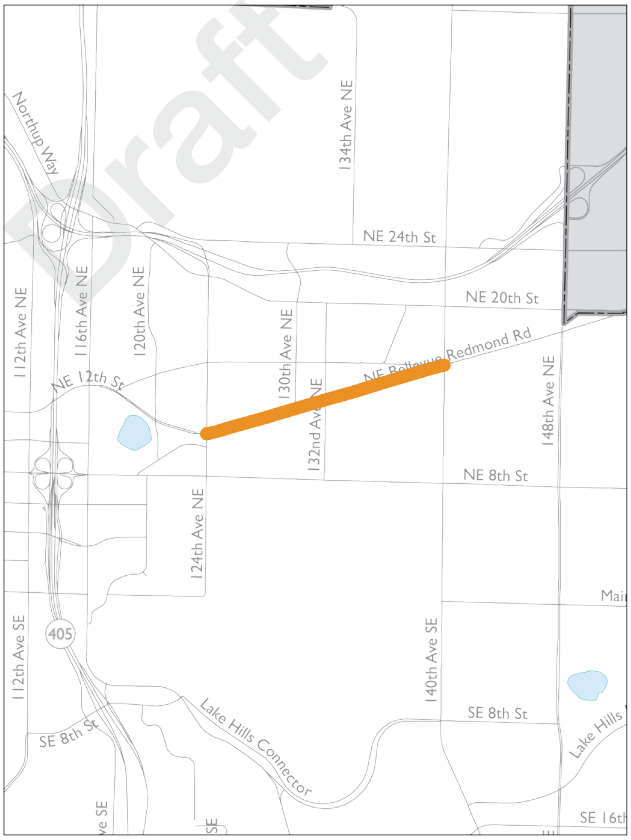


Person Throughput

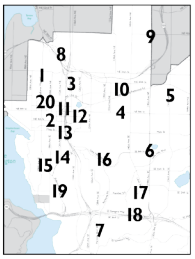


Vehicle Throughput

Bus Auto



10 Bel-Red Rd btw 124th Ave NE and 140th Ave NE



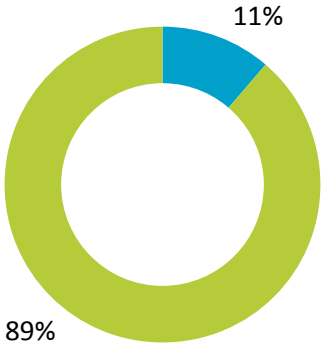
Buses[1]	16
Total Vehicles[1]	3,266
Percent Transit[1]	0.5%
Person Trips – Transit[1]	558
Person Trips – Total[1]	4,935
Percent Transit[1]	11%

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

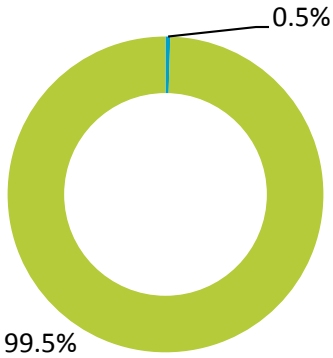
	Weighted Scores[2] Long-Term
Composite Score	8 - 15 (11.0)
Weekday Ridership	2 - 4 (3.0)
Weekday Bus Volumes	2
Approach Delay (sec)	2 - 4 (2.5)
Approach Queue Length (ft)	2 - 3 (2.5)
Intersection LOS	0 - 2 (1.0)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



Person Throughput

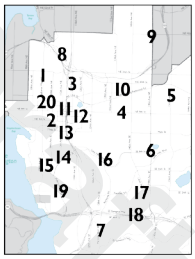


Vehicle Throughput

Bus Auto

11

NE 8th St btw Bellevue Way NE and 120th Ave NE



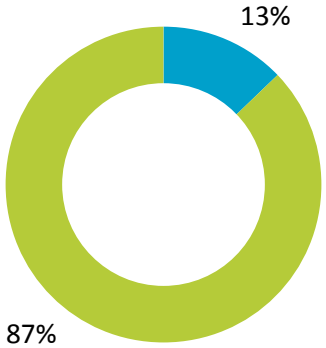
Buses[1]	14
Total Vehicles[1]	3,412
Percent Transit[1]	0.4%
Person Trips – Transit[1]	670
Person Trips – Total[1]	5,230
Percent Transit[1]	13%

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

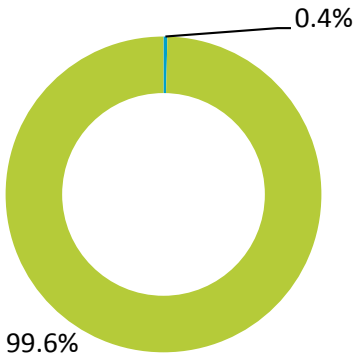
	Weighted Scores[2] Long-Term
Composite Score	**N/A**
Weekday Ridership	**N/A**
Weekday Bus Volumes	**N/A**
Approach Delay (sec)	**N/A**
Approach Queue Length (ft)	**N/A**
Intersection LOS	**N/A**

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak

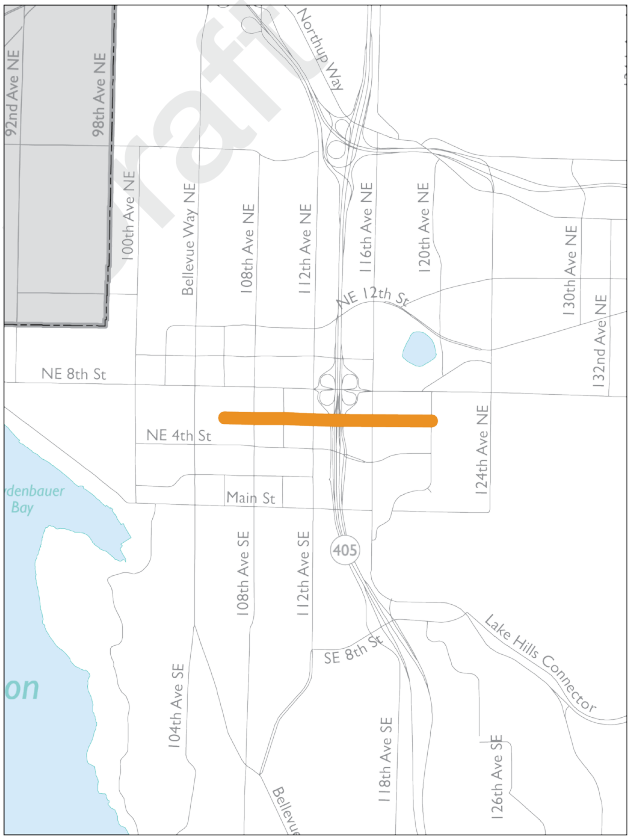


Person Throughput

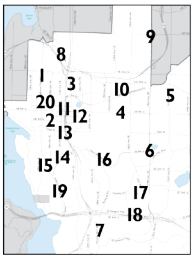


Vehicle Throughput

Bus Auto



12 NE 6th St btw 106th Ave NE and 120th Ave NE



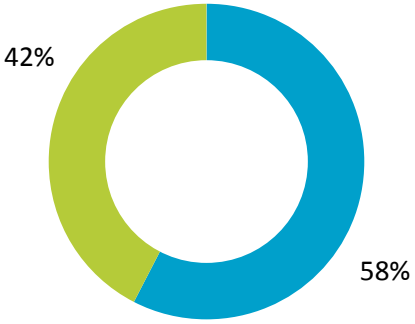
Buses[1]	71
Total Vehicles[1]	2,588
Percent Transit[1]	2.7%
Person Trips – Transit[1]	5,713
Person Trips – Total[1]	9,920
Percent Transit[1]	58%

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

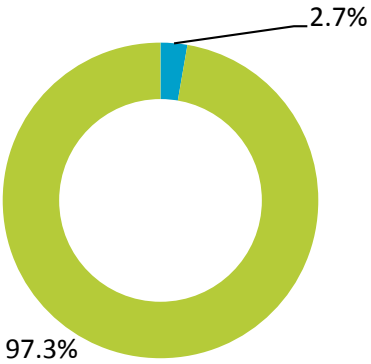
	Weighted Scores[2] Long-Term
Composite Score	15 - 23 (20.3)
Weekday Ridership	6 - 8 (7.5)
Weekday Bus Volumes	2 - 4 (3.5)
Approach Delay (sec)	2 - 4 (3.3)
Approach Queue Length (ft)	3 - 4 (3.5)
Intersection LOS	2 - 3 (2.5)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



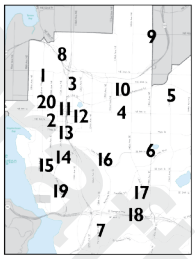
Person Throughput



Vehicle Throughput

Bus Auto

13 Main St btw Bellevue Way NE and 116th Ave NE



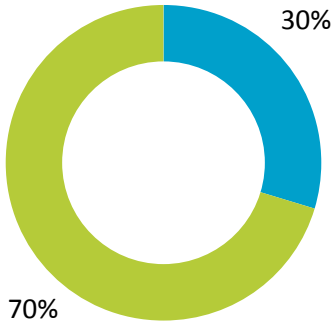
Buses[1]	23
Total Vehicles[1]	2,583
Percent Transit[1]	0.9%
Person Trips – Transit[1]	1,410
Person Trips – Total[1]	4,750
Percent Transit[1]	30%

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

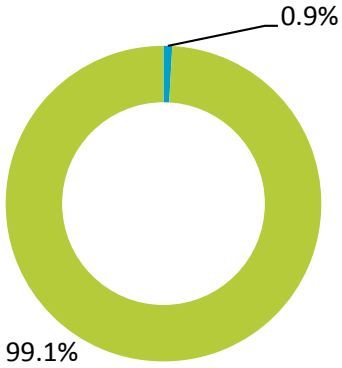
	Weighted Scores[2] Long-Term
Composite Score	17 - 24 (20.0)
Weekday Ridership	4 - 8 (6.4)
Weekday Bus Volumes	2 - 4 (3.2)
Approach Delay (sec)	3 - 4 (3.8)
Approach Queue Length (ft)	3 - 4 (3.6)
Intersection LOS	2 - 4 (3.0)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



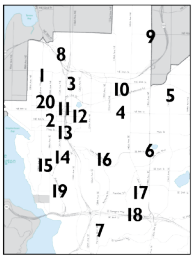
Person Throughput



Vehicle Throughput

Bus Auto

14 112th Ave SE btw Main St and Bellevue Way SE



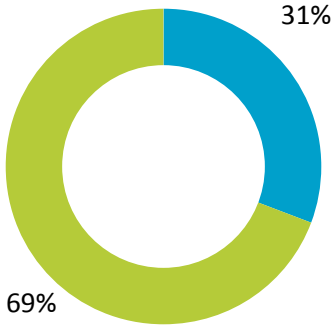
Buses[1]	16
Total Vehicles[1]	2,311
Percent Transit[1]	0.7%
Person Trips – Transit[1]	1,370
Person Trips – Total[1]	4,450
Percent Transit[1]	31%

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

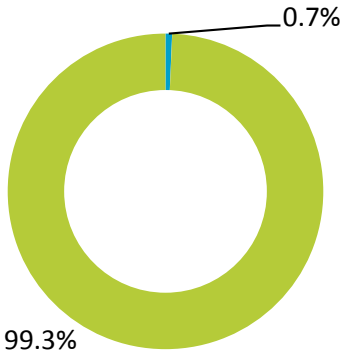
	Weighted Scores[2] Long-Term
Composite Score	12 - 20 (15.8)
Weekday Ridership	6
Weekday Bus Volumes	2
Approach Delay (sec)	2 - 4 (3.0)
Approach Queue Length (ft)	2 - 4 (3.0)
Intersection LOS	0 - 4 (1.8)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



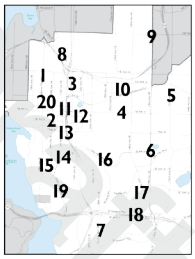
Person Throughput



Vehicle Throughput

Bus Auto

15 Bellevue Way SE btw SE 8th St and 113th Ave SE



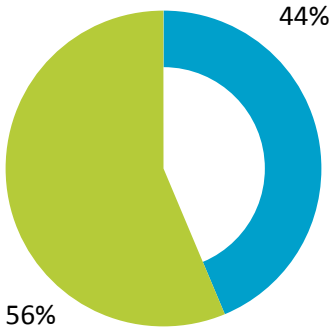
Buses[1]	36
Total Vehicles[1]	3,230
Percent Transit[1]	1.1%
Person Trips – Transit[1]	3,363
Person Trips – Total[1]	7,705
Percent Transit[1]	44%

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

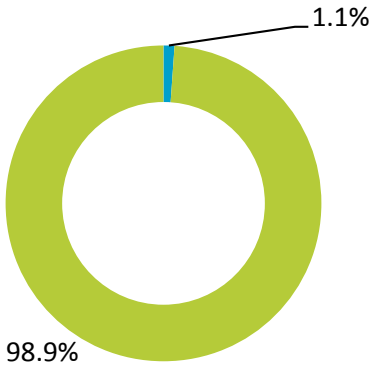
	Weighted Scores[2] Long-Term
Composite Score	16 - 22 (18.0)
Weekday Ridership	8
Weekday Bus Volumes	3 - 4 (3.3)
Approach Delay (sec)	1 - 4 (2.0)
Approach Queue Length (ft)	1 - 4 (2.3)
Intersection LOS	1 - 3 (2.5)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



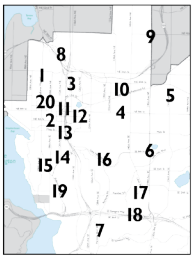
Person Throughput



Vehicle Throughput

Bus Auto

16 Lake Hills Connector btw SE 1st St and 150th Ave SE



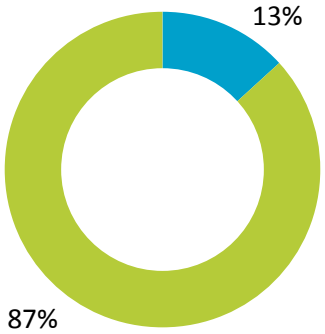
Buses[1]	16
Total Vehicles[1]	3,081
Percent Transit[1]	0.5%
Person Trips – Transit[1]	595
Person Trips – Total[1]	4,498
Percent Transit[1]	13%

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

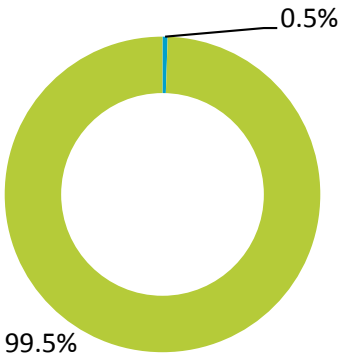
	Weighted Scores[2] Long-Term
Composite Score	11 - 16 (13.6)
Weekday Ridership	2 - 4 (3.2)
Weekday Bus Volumes	2
Approach Delay (sec)	1 - 3 (2.6)
Approach Queue Length (ft)	2 - 4 (3.2)
Intersection LOS	2 - 3 (2.6)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak

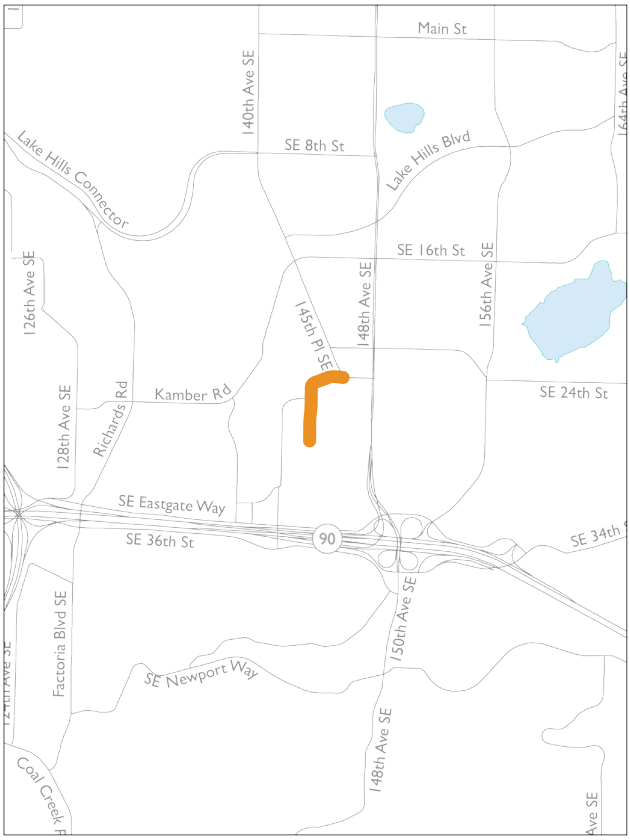


Person Throughput

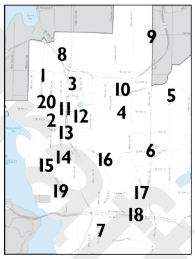


Vehicle Throughput

Bus Auto



17 Kelsey Creek Rd btw 145th Pl SE and Tyee River Rd



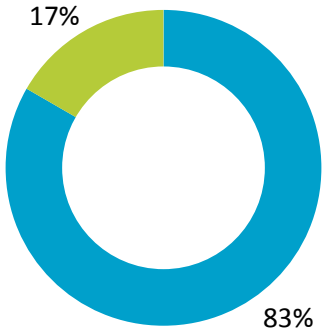
Buses[1]	46
Total Vehicles[1]	276
Percent Transit[1]	17%
Person Trips – Transit[1]	1,350
Person Trips – Total[1]	1,620
Percent Transit[1]	83%

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

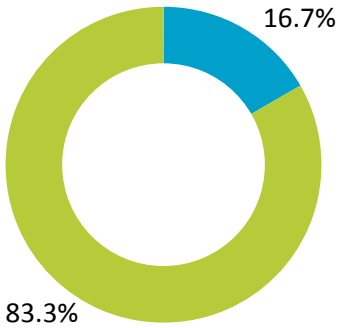
	Weighted Scores[2] Long-Term
Composite Score	12
Weekday Ridership	6
Weekday Bus Volumes	4
Approach Delay (sec)	1
Approach Queue Length (ft)	1
Intersection LOS	0

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak

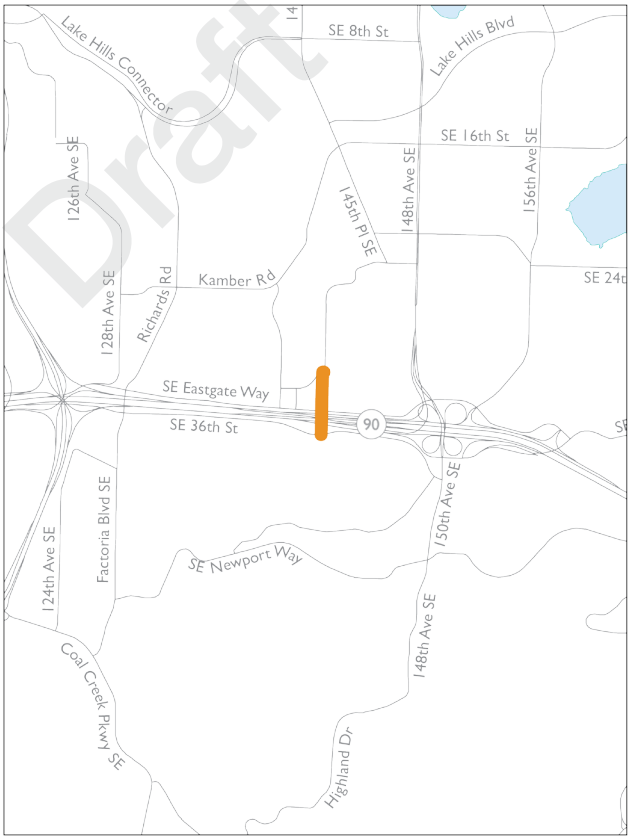


Person Throughput

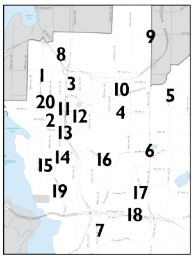


Vehicle Throughput

Bus Auto



18 142nd Pl SE btw Coal Creek Rd and SE 36th St



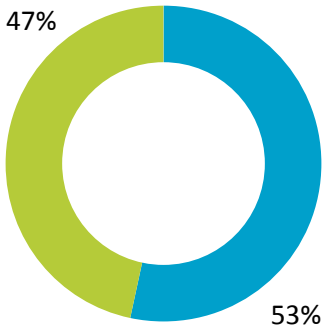
Buses[1]	40
Total Vehicles[1]	625
Percent Transit[1]	6%
Person Trips – Transit[1]	1,025
Person Trips – Total[1]	1,920
Percent Transit[1]	53%

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

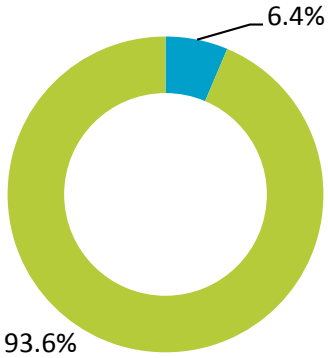
	Weighted Scores[2] Long-Term
Composite Score	15 - 19 (17.0)
Weekday Ridership	0 - 4 (2.0)
Weekday Bus Volumes	3
Approach Delay (sec)	4
Approach Queue Length (ft)	4
Intersection LOS	4

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



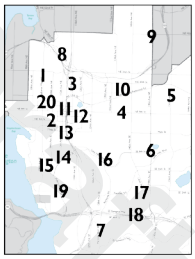
Person Throughput



Vehicle Throughput

Bus Auto

19 Bellevue Way SE btw 113th Ave SE and I-90



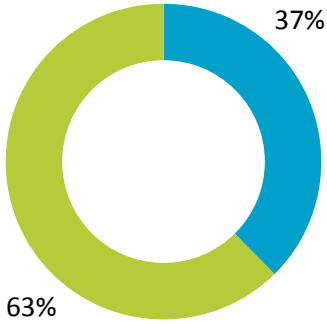
Buses[1]	48
Total Vehicles[1]	4,618
Percent Transit[1]	1%
Person Trips – Transit[1]	3,830
Person Trips – Total[1]	10,330
Percent Transit[1]	37%

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

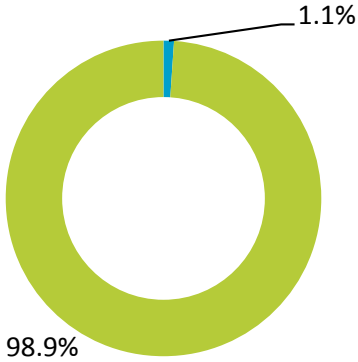
	Weighted Scores[2] Long-Term
Composite Score	22 - 23 (22.7)
Weekday Ridership	8
Weekday Bus Volumes	4
Approach Delay (sec)	2 - 4 (3.0)
Approach Queue Length (ft)	4
Intersection LOS	3 - 4 (3.7)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



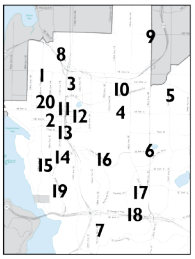
Person Throughput



Vehicle Throughput

Bus Auto

20 NE 10th St btw Bellevue Way NE and 112th Ave NE



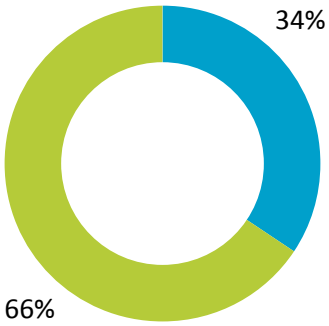
Buses[1]	24
Total Vehicles[1]	2,349
Percent Transit[1]	1%
Person Trips – Transit[1]	1,658
Person Trips – Total[1]	4,823
Percent Transit[1]	34%

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

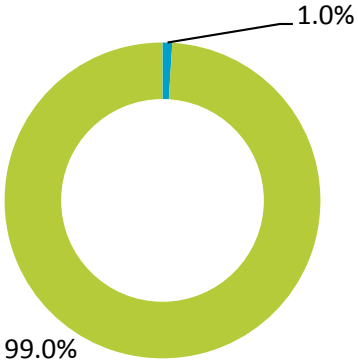
	Weighted Scores[2] Long-Term
Composite Score	17 - 19 (18.0)
Weekday Ridership	6 - 8 (7.0)
Weekday Bus Volumes	1 - 3 (2.3)
Approach Delay (sec)	2 - 4 (3.3)
Approach Queue Length (ft)	2 - 4 (3.3)
Intersection LOS	2 - 3 (2.3)

1. Based on the City of Bellevue 2030 PM Peak Hour BKR Model (MP30R6.2).
2. Derived from Issue Identification Methodology; see the Capital Element Background Report for details.

Projected Travel Demand[1]
2030 PM Peak



Person Throughput



Vehicle Throughput

Bus Auto