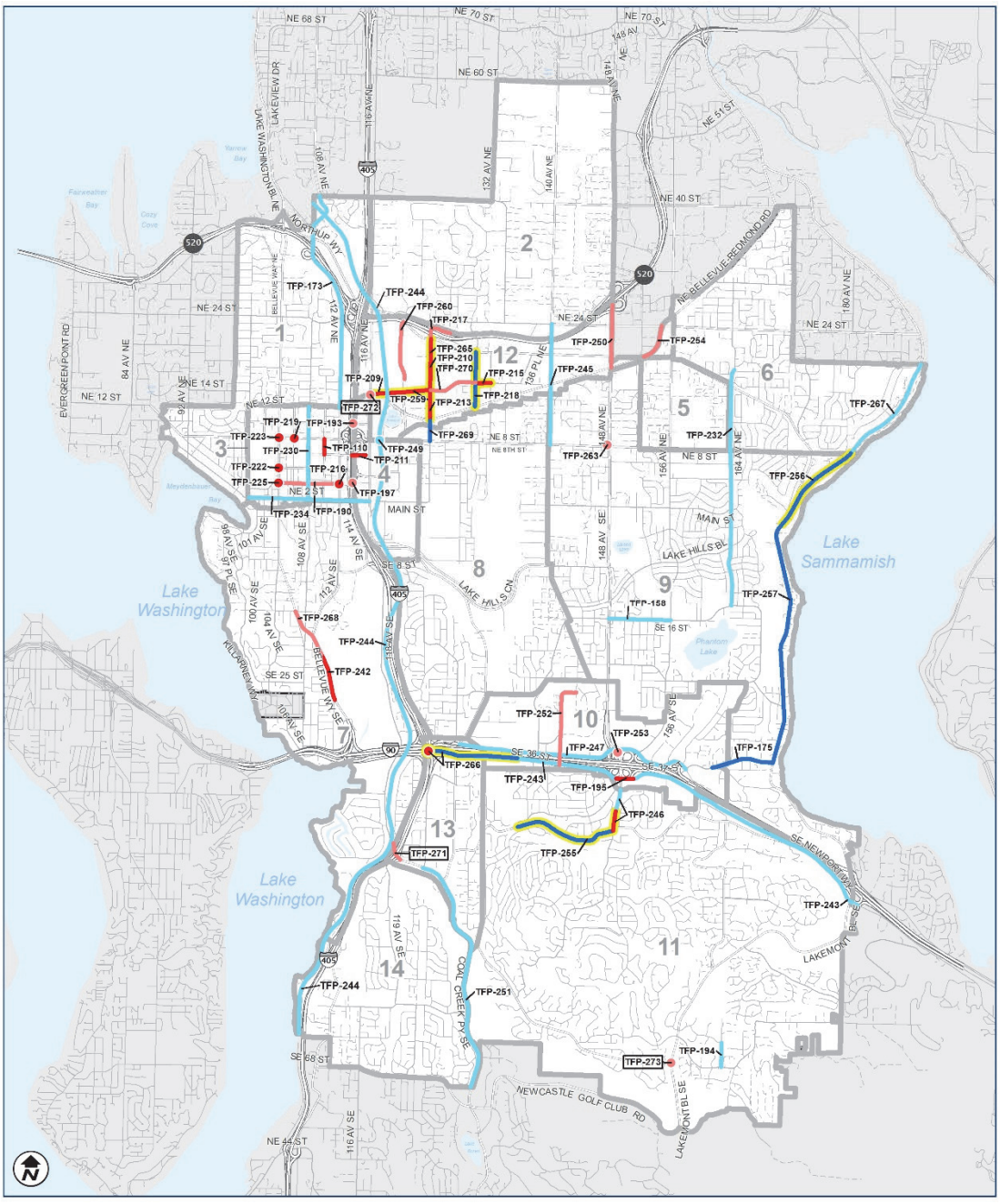
DRAFT

Supplemental Environmental Impact Statement

2019–2030 Transportation Facilities Plan

City of Bellevue



March 2019

City of Bellevue

Post Office Box 90012 ▪ Bellevue, Washington ▪ 98009 9012

March 14, 2019

TO: Recipients of the Draft Supplemental Environmental Impact Statement for the City of Bellevue 2019-2030 Transportation Facility Plan

This Draft Supplemental Environmental Impact Statement (SEIS) analyzes the potential citywide impacts of two alternatives for implementation of transportation facilities by the year 2030 to address needs, consistent with the transportation vision and policies set forth in the Transportation Element of the Bellevue Comprehensive Plan. This programmatic, or "non-project" SEIS is part of a phased environmental review as defined under SEPA. Specific projects listed in the plan will undergo separate environmental review as they are funded for design and/or implementation. This Supplemental EIS augments the EIS developed for the 2013-2024 Transportation Facilities Plan.

Alternatives considered include:

The **CIP Network (**or "No Action") Alternative assumes no future investment in transportation facilities beyond those included in Bellevue's adopted 2019-2025 Capital Investment Program (CIP) Plan or other funded regional or local agencies' plans.

The **Proposed 2019-2030 Transportation Facilities Plan (TFP) Network** Alternative assumes additional funding for transportation facilities through 2030. The projects selected for this alternative were prioritized based on the following criteria (taken from the goal and policies of the Comprehensive Plan):

- Level-of-Service (i.e., congestion management)
- Safety (vehicular, pedestrian and bicycle)
- Transit (improving service, facilities and/or access)
- Non-motorized (serving walking, bicycling)
- Regional coordination (whether project is consistent with regional transportation plans)
- Leveraging of funds (project's potential to receive grants or other outside funding)

Next Steps

Following the Environmental Impact Statement phase of the process, the Bellevue Transportation Commission, which guides the overall transportation facilities planning process, will forward recommendations to the City Council. The City Council is expected to consider and adopt the proposed 2019-2030 TFP in summer 2019. Implementation of TFP projects will occur over the next 12 years. For further information about this planning process, please contact Michael Ingram, Senior Transportation Planner, 425-452-4166 or via e-mail at mingram@bellevuewa.gov

Sincerely,

Elizabeth Stead, Environmental Coordinator
Department of Development Services

Draft Supplemental Environmental Impact Statement

2019–2030 Transportation Facilities Plan

Prepared for:

Transportation Department
Post Office Box 90012
Bellevue, Washington 98009
Contact: Mike Ingram
425/452-4166

Prepared by:

LEON Environmental, LLC

March 2019

This document should be cited as:
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Title VI Assurances

It is the City of Bellevue's policy to assure that no person shall, on the grounds of race, color, national origin or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. Any person who believes his/her Title VI protection has been violated may file a complaint with the City of Bellevue. For Title VI complaint forms and procedures, please contact the Title VI Coordinator for the City of Bellevue Transportation Department at 425.452.4496.

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Fact Sheet

Proposal Title

City of Bellevue 2019–2030 Transportation Facilities Plan (TFP)

Description of Proposal

Adoption of a program of transportation improvements to be implemented over the next 12 years and to provide the basis for the City of Bellevue's Transportation Impact Fees.

Proponent

City of Bellevue, Transportation Department

Location

Citywide

Lead Agency

City of Bellevue

Responsible Official

Elizabeth Stead
Environmental Coordinator
City of Bellevue
P.O. Box 90012
Bellevue, WA 98009-9012

Date of Draft Environmental Impact Statement Issuance

March 14, 2019

Date Comments Due

April 15, 2019

Comments must be submitted to:

Mail: Liz Stead, Environmental Coordinator, City Bellevue, P.O. Box 90012, Bellevue, WA 98009-9012. Attn: Peter Rosen.

Email: estead@bellevuewa.gov; CC to prosen@bellevuewa.gov

Staff Contacts

Proponent

Transportation Department, SEIS Project Manager
Contact: Michael Ingram, Senior Transportation Planner
425.452.4166
mingram@bellevuewa.gov

EIS

Development Services Department/Environmental Coordinator Representative
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Required Licenses and Permits

City of Bellevue, City Council Adoption

Draft Supplemental Environmental Impact Statement (Draft SEIS) Authors and Principal Contributors

This Draft Supplemental EIS (Draft SEIS) for the City of Bellevue 2019–2030 TFP has been prepared under the direction of the City of Bellevue Transportation and Development Services Departments. Research, analysis, and document preparation were performed by the following departments and firms:

City of Bellevue Transportation Department
Implementation Planning Group
Transportation Forecasting and Modeling Group

City of Bellevue Information Technology Department
Geographic Information Services Group

City of Bellevue Development Services Department
Environmental Coordinator

Leon Environmental, LLC
Seattle, WA
David E. Sherrard, Senior Environmental Planner

Environmental Impact Statement being supplemented

Final Environmental Impact Statement 2013–2024 TFP City of Bellevue July 2013. Available on the Internet at: https://transportation.bellevuewa.gov/planning/infrastructure-and-subareas.

Documents Incorporated by Reference

Wilburton Commercial Area Land Use and Transportation Project Draft Environmental Impact Statement, City of Bellevue, February 1, 2018. Available on the Internet at: https://planning.bellevuewa.gov/planning/planning-initiatives/wilburton-commercial-area-study

I-405 Congestion Relief and Bus Rapid Transit Projects – Final Environmental Impact Statement, Washington State Department of Transportation. Available on the Internet at: https://www.wsdot.wa.gov/Projects/I405/corridor/feis.htm

2013 SEPA Addendum East Link Extension, Sound Transit, 2013. Available on the Internet at: https://www.soundtransit.org/Projects-and-Plans/East-Link-Extension/East-Link-Extension-document-archive/East-Link-Documents/East-Link-document-collections/East-Link-SEPA-Addendum-to-Final-EIS-documents

Final Environmental Impact Statement East Link Project, Sound Transit, 2011. Available on the Internet at: https://www.soundtransit.org/Projects-and-Plans/East-Link-Extension/East-Link-Extension-document-archive/East-Link-Documents/East-Link-document-collections/East-Link-Final-EIS-document-collection

Regional Transportation Plan Final Environmental Impact Statement 2018 Addendum, Puget Sound Regional Council, April 2018. Available on the Internet at: https://www.psrc.org/sites/default/files/rtp2018-final_sepaaddendum20180405.pdf

Regional Transportation Plan Transportation 2040, Final Environmental Impact Statement, Puget Sound Regional Council, March 2010. Available on the Internet at: https://www.psrc.org/our-work/regional-planning/regional-transportation-plan/environmental-review-regional-transportation

2017-2020 Regional Transportation Improvement Program, Puget Sound Regional Council, Appendix E, Air Quality Conformity Analysis, October 2016. Available on the Internet at: https://www.psrc.org/sites/default/files/2017-2020tip-appendixe-aqconformity.pdf

Addendum to Environmental Impact Statement BelRed Corridor Project, City of Bellevue, 12 February 2009 (Bellevue 2009c).

Final Environmental Impact Statement for the City of Bellevue BelRed Corridor Project, City of Bellevue, 19 July 2007 (Bellevue 2007)

Nature and Date of Final Action by City

Adoption of the 2019–2030 Transportation Facilities Plan (TFP) anticipated May 2019.

Timing of Future Environmental Review

This EIS is part of a phased environmental review in accordance with WAC 197-11-060(5).

This document focuses on the impacts resulting from the adoption of the proposed plan, including the following:

- Broad policy implications of adoption of alternatives;
- The analysis of impacts on the general transportation system in the area;
- The analysis of impacts related to traffic such as air quality and noise; and
- General analysis of impacts on natural and human environments.

Specific projects listed in the plan will undergo separate project-level State Environmental Policy Act (SEPA) review as they are funded for design and/or implementation. Project-level review may result in different procedural compliance for individual projects including a Determinations of Significance, Mitigated Determinations of Non-significance, Determinations of Non-significance, adoption of this EIS, preparation of Supplemental EISs, preparation of new EISs, or review for compliance with the National Environmental Policy Act (NEPA).

Projects under the jurisdiction of the Washington State Department of Transportation (WSDOT) referenced in this EIS will undergo separate review by WSDOT as the lead agency under the authority of SEPA or National Environmental Policy Act (NEPA).

It is anticipated that this EIS will be adopted for specific private development projects that generate trip demand consistent with the land use projections included in Appendix D of this analysis.

Location of Draft SEIS, Background and Supporting Documents

Data used during the preparation of this document may be viewed at the following location:

https://transportation.bellevuewa.gov/planning/infrastructure-and-subareas

Hard copies of the Draft SEIS are available for review at:

City of Bellevue
Service First Desk
1st Floor Bellevue City Hall
450 110th Avenue NE
Bellevue, WA 98009

Bellevue Library
1111 110th Ave NE
Bellevue, WA 98002

Cost to the Public

Downloadable files are available on the Internet at:
https://transportation.bellevuewa.gov/planning/infrastructure-and-subareas

The purchase price of a copy of the Supplemental EIS is based on reproduction costs of printed documents or computer thumb drives; copies may be purchased by contacting the Service First Desk at:

City of Bellevue
Service First Desk
1st Floor Bellevue City Hall
450 110th Avenue NE
Bellevue, WA 98009
425.452.6800

Servicefirst@bellevuewa.gov

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Appendixes

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Acronyms and Abbreviations

°C	Celsius
ACS	American Community Survey
AGC	Associated General Contractor
BCC	*Bellevue City Code*
BFE	Base Flood Elevation
BKR	Bellevue-Kirkland-Redmond
BMPs	best management practices
CAA	Clean Air Act
CAO	Critical Areas Ordinance
CAT	Climate Action Team
CFR	*Code of Federal Regulations*
CIP	Capital Investment Program
city	City of Bellevue
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COP	Conference of the Parties
CTR	Commute Trip Reduction
dB	decibel
dBA	A-weighted decibel
Ecology	Washington State Department of Ecology
EDNA	Environmental Designation for Noise Abatement
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration
ft^2	square feet
GHG	greenhouse gas
GIS	Geographic Information System

GMA	Growth Management Act
GMPC	Growth Management Planning Council
HOV	high-occupancy vehicle
Hz	hertz
I-405	Interstate 405
I-90	Interstate 90
ICLEI	International Council for Local Environmental Initiatives
IPCC	Intergovernmental Panel on Climate Change
K4C	King County-Cities Climate Collaboration
Ldn	day-night sound level
Leq	equivalent sound level
LOS	level of service
LUC	Land Use Code
$MgCO_2e$	metric tons of carbon dioxide equivalent
MMA	Mobility Management Area
MSAT	mobile source air toxic
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGPA	Native Growth Protection Area
NGPE	Native Growth Protection Easement
NO_2	nitrogen dioxide
NOx	nitrogen oxides
NTSS	Neighborhood Traffic Safety Services
Pb	lead
PBII	Pedestrian and Bicycle Implementation Initiative
PHS	Priority Habitats and Species
PM_{10}	particulate matter less than 10 micrometers in size
$PM_{2.5}$	particulate matter less than 2.5 micrometers in size
ppm	parts per million
PSCAA	Puget Sound Clean Air Agency

PSRC	Puget Sound Regional Council
RCW	*Revised Code of Washington*
RPZ	Residential Permit Parking Zone
RTP	Regional Transportation Plan
SEIS	Supplemental Environmental Impact Statement
SEPA	State Environmental Policy Act
SMP	Shoreline Master Program
SO_2	sulfur dioxide
Sound Transit	Central Puget Sound Regional Transit Authority
SOV	single-occupant vehicle
SOx	sulfur oxide
SR	State Route
TDM	Transportation Demand Management
TFP	Transportation Facilities Plan
TIFIA	Transportation Infrastructure Finance & Innovation Act
TIP	Transportation Improvement Program
TMP	Transportation Management Program
TNM	Traffic Noise Model
TOD	transit-oriented development
UNFCCC	United Nations Framework Convention on Climate Change
V/C	volume-to-capacity ratio
VMT	vehicle miles traveled
VOC	volatile organic compound
WAC	*Washington Administrative Code*
WDFW	Washington Department of Fish and Wildlife
WRIA	Water Resource Inventory Area
WSDOT	Washington State Department of Transportation

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Chapter 1. Background and Summary

The City of Bellevue (city) proposes to adopt its 2019–2030 Transportation Facilities Plan (TFP), which serves as the city's 12-year transportation implementation planning document. It comprises priority projects detailed in the long-range facility plans and other projects that represent emerging transportation facility needs and opportunities.

The city's first TFP for the years 1991–2002 was adopted by the Bellevue City Council in 1990. Subsequent plan updates were adopted for the years 1994–2005, 1996–2007, 1998–2009 (an interim plan), 2001–2012, 2004–2015, 2006–2017, 2009–2020, 2013-2024, and 2016-2027. A copy of the current 2016–2027 TFP is available on the Internet, together with past environmental review, at: https://transportation.bellevuewa.gov/planning/infrastructure-and-subareas/transportation-facilities-plan.

The Washington State Environmental Policy Act (SEPA) requires government officials to consider the environmental consequences of a Proposed Action. Under SEPA, the TFP is considered a Proposed Action. As such, this Draft Supplemental Environmental Impact Statement (Draft SEIS) has been prepared. It will assist the public and agency decision-makers in considering the environmental effects of the proposed 2019-2030 TFP, including changes to the city's current 2016–2027 TFP. The projects from the 2016–2027 TFP that have been completed, as well as projects that are not proposed to be carried into the 2019–2030 TFP, are summarized in Appendix B.

1.1 Purpose of the Transportation Facilities Plan

The TFP serves as the city's 12-year, or intermediate-range, transportation planning document. It is a bridge between long-range facility plans in the city's Comprehensive Plan and the fully financed projects in the Capital Investment Program (CIP). More information about these plans and their relationship to each other is presented in Chapter 2 of this document. The TFP includes high-priority projects from the city's long-range plans that address future transportation and land-use needs and opportunities.

Projects included in the plan may address roadway/intersection capacity, safety/operations, walkway/bikeway mobility, and/or maintenance. The funded projects in the current 2019–2025 CIP Plan (adopted by the City Council in December 2018) provide the foundation for the proposed 2019–2030 TFP project list. The remainder of the projects identified for the 2019-2030 TFP were prioritized and selected from the nearly one hundred projects listed in the Comprehensive Plan Transportation Project List. Additional projects that address emerging safety and maintenance needs identified by city staff, or projects elevated through the public involvement component of the TFP update process, were also given thorough consideration. Candidate projects were scored and ranked according to evaluation criteria endorsed by the Bellevue Transportation Commission: Safety (for all modes), Level of Service (i.e., congestion management), Transit (improving service, facilities and/or access), Non-Motorized (serving key locations and populations, providing connected facilities), Regional Partnerships & Outside Funding (Integration with local and regional plans, likelihood of attracting non-local funds). Projects were further prioritized by taking into consideration public input, extent of project development to date and the opportunity to tie in with projects led by others (e.g., Sound Transit, Washington State Department of Transportation [WSDOT]). The final list of projects was approved by the Bellevue Transportation Commission.

Updated every 2 to 3 years, the TFP is a "financially constrained" plan; the identified cost of the projects in the TFP is balanced with the city's transportation revenue projections for the 12-year planning period. Some included projects do not have full funding for implementation; they have placeholder funding for initial design or property acquisition and will need additional funding in subsequent TFP updates. The TFP serves several functions:

- It provides the first level of project prioritization necessary to identify projects for funding in the adopted CIP. The CIP presents a schedule of major public facility improvements that will be implemented over the next 7 years. Project design, land acquisition, construction costs, and the projected means of financing these costs are integral components of the plan.
- It serves as the basis for the city's Transportation Impact Fee Program. The roadway and intersection capacity projects adopted in the TFP are used to calculate the impact fees charged to new land-use developments. The fees cover a portion of the cost of capacity needed to serve the new development.
- It describes current and future environmental conditions. Prepared in conjunction with each TFP update, this TFP Draft SEIS documents potential direct, indirect, and cumulative impacts to the environment and the citywide transportation system that may occur due to 12 years of projected land use growth and the implementation of the projects identified in the TFP.

1.2 Environmental Review

This Draft Supplemental Environmental Impact Statement (Draft SEIS) provides non-project-level qualitative and quantitative analysis of environmental impacts as appropriate to the general nature of this planning effort. The adoption of comprehensive plans or other long-range planning activities is classified by SEPA as a nonproject (that is, programmatic) action. A nonproject action is broader than a single, site-specific project and involves decisions on policies, plans, or programs. An Environmental Impact Statement (EIS) for a non-project proposal in a specific geographic area does not require site-specific analyses; instead, the EIS discusses alternatives and identifies general impacts appropriate to the scope of the nonproject proposal and to the level of planning for the proposal, with limited discussion of impacts on the built and natural environment. The EIS identifies subsequent environmental review that would be undertaken for project level review, although the system-wide impacts disclosed in this Draft SEIS may be subsequently adopted as part of the environmental record for project level review (*Washington Administrative Code* [WAC] 197-11-442).

This is a Draft SEIS, which means that it adds information to the previously prepared Final EIS for the 2013 to 2024 TFP and to the EIS Addendum prepared for the 2016-2027 TFP. Consistent with SEPA, WAC 197-11-620(1), the scoping process in WAC 197-11-408 is not required. In Appendix A, the city has included the following:

- A determination of the reasonable alternatives considered and elements of the environment for which probable significant adverse environmental impacts are expected;
- The elements eliminated from detailed study because impacts on those elements are not likely to be significant.

The analysis in this Draft SEIS is not intended to satisfy individual project action SEPA requirements such as the review required for future land use or building permit applications. Additional detailed environmental review of transportation projects will occur as specific projects are moved into the implementation phase.

1.2.1 Transportation Facilities Plan Nonproject Environmental Analysis

The city determined in the Scoping Determination in Appendix A that this environmental analysis should focus on potential impacts on the following resource areas:

- Built Environment
  - Transportation
  - Air quality
  - Noise
  - Land use and aesthetics
- The Natural Environment is discussed in an integrated section and addresses these elements:
  - Earth
  - Air Quality
  - Water
  - Plants and animals

Chapters 3 through 7 of this document discuss potential impacts on these resources that may result from the TFP Network. System-wide qualitative and quantitative analyses are presented in this document. Project-specific impacts are addressed in sufficient detail to identify the resources potentially affected and that would be analyzed in more detail for project level review.

1.2.2 Previous Environmental Review

This Draft Supplemental Environmental Impact Statement (Draft SEIS) supplements the Final Environmental Impact Statement for the 2013–2024 TFP published by the City of Bellevue in July 2013. The internet site at which it can be accessed is listed in the Fact Sheet.

The TFP includes projects drawn from a variety of plans and programs some of which have undergone environmental review. In addition, the analysis in this Draft SEIS includes information in environmental documents developed for other proposals. The Fact Sheet at the beginning of this Draft Supplemental EIS (Draft SEIS) indicates environmental documents incorporated by reference.

1.2.3 Relationship to Growth Projections

This Draft SEIS presents the potential citywide impacts that could occur if or when two outcomes happen:

- The city's 12-year land use growth projections are realized (see Appendix D).
- The city's transportation facilities are upgraded based on the projects identified in the city's adopted CIP (for the No Action Alternative) and/or the proposed TFP (the Action Alternative).

City staff and developers rely on the TFP SEIS for disclosure of the cumulative impacts of growth on the built and natural environments. This analysis is used for the review and approval of private development

applications to the extent that type, scale and general location of future private development projects are consistent with the assumptions described in this SEIS (detailed in Appendix D). Because this is a nonproject EIS, however, it is not possible to predict the exact location or amount of new development between the present and 2030. In addition, new development may be permitted on parcels for which the land use estimates did not project sufficient growth; therefore, the analysis presented in this EIS must be regarded as a comparison of potential impacts rather than a strict parcel by parcel projection. Actual land use growth and its impacts on the transportation system and other elements of the built and natural environments are not likely to exceed the cumulative land use projections and impacts disclosed in this TFP EIS in the period before development of the next updated TFP and related environmental analysis.

If future growth exceeds estimates used in this EIS analysis, the city can address these changes by one or a combination of the following options:

- Address the additional growth and impacts as part of a future TFP EIS. The TFP and its related EIS are updated approximately every 2 to 4 years. Updates are a crucial part of the process so that the reality of actual development patterns, updated land use growth projections, adjustments to the existing transportation network, and the evolution of future transportation plans are reflected in the citywide impact analysis.
- Prepare a Supplement to this TFP EIS to incorporate the additional land use growth and its associated impacts.
- Require new development to implement additional transportation system improvements, reduce the scope of the proposed development, or defer the development until the CIP and/or TFP are updated to include such improvements. Improvements required of developers as part of the development review process are included in subsequent TFP networks, once those improvements are guaranteed for implementation.

1.2.4 Steps in the Environmental Process

The Draft Supplemental EIS (Draft SEIS) will be circulated for a 30-day public review period to invite written comments from the general public, tribes, permitting agencies, and agencies with jurisdiction over the areas where the TFP projects may have potential environmental impacts. A Final Supplemental EIS will be prepared that responds to comments received during the Draft SEIS comment period. Following completion of the Final SEIS the Bellevue City Council will make its decision on the proposed 2019-2030 TFP.

1.3 Summary of Alternatives

Two alternatives are considered for the 2019–2030 TFP and are analyzed in this environmental document.

- The CIP Network Alternative
- The TFP Network Alternative

These alternatives are summarized below and described in detail in Chapter 2 of this Draft SEIS.

1.3.1 CIP Network Alternative

The CIP Network alternative includes all the projects that the city, along with its local jurisdiction and regional agency partners, has committed to fund and implement within the city limits; these projects are shown highlighted in yellow in Figure 1-1 and are listed in Table 2-1 with the CIP number in column 3.

Twenty projects are included in the CIP Network Alternative; 10 projects are roadway capacity projects, and 10 are non-capacity improvement projects. (Capacity projects add lanes, turn pockets, and/or signalization to improve motor vehicle flow.)

Because this alternative is based on existing project plans with secured funding, it is considered a "no action" alternative. The City Council is not required to take any additional action to implement the CIP Network alternative if it chooses not to adopt the proposed 2019-2030 TFP.

1.3.2 TFP Network Alternative

The TFP Network includes all CIP projects and an additional 31 projects not in the CIP. It includes 17 fully funded capacity projects, of which 15 are designated as impact fee projects (which requires that they be implemented and open for use by 2030). Also included are 15 capacity projects with placeholder funding allocations. The remaining 19 projects address non-capacity needs (generally pedestrian and bicycle facilities); six of these projects have funding allocations for full implementation, and 11 of the projects have a collective funding allocation (the Pedestrian and Bicycle Implementation Reserve), with prioritization of projects for implementation to be determined via the city's ongoing Pedestrian and Bicycle Implementation Initiative (PBII).

1.4 Summary of Potential Impacts and Mitigation Measures

Chapters 3 through 7 describe the affected environment, impacts, and mitigation measure analyses of this Draft SEIS for each of the elements discussed:

Chapter 3: Transportation

Chapter 4: Air Quality

Chapter 5: Noise

Chapter 6: Land Use and Aesthetics

Chapter 7: Natural Environment

A summary of impacts is presented in Table 1-1; it is considerably abbreviated from the full discussions in the analysis of each element and does not include explanations of terminology. The summary statements of the potential impacts also appear here without the context of the description of existing environmental conditions (the affected environment). For these reasons, readers are encouraged to review the more comprehensive discussion of issues of interest in Chapters 3 through 7 to formulate the most accurate impression of impacts associated with the CIP Network and TFP Network alternatives.

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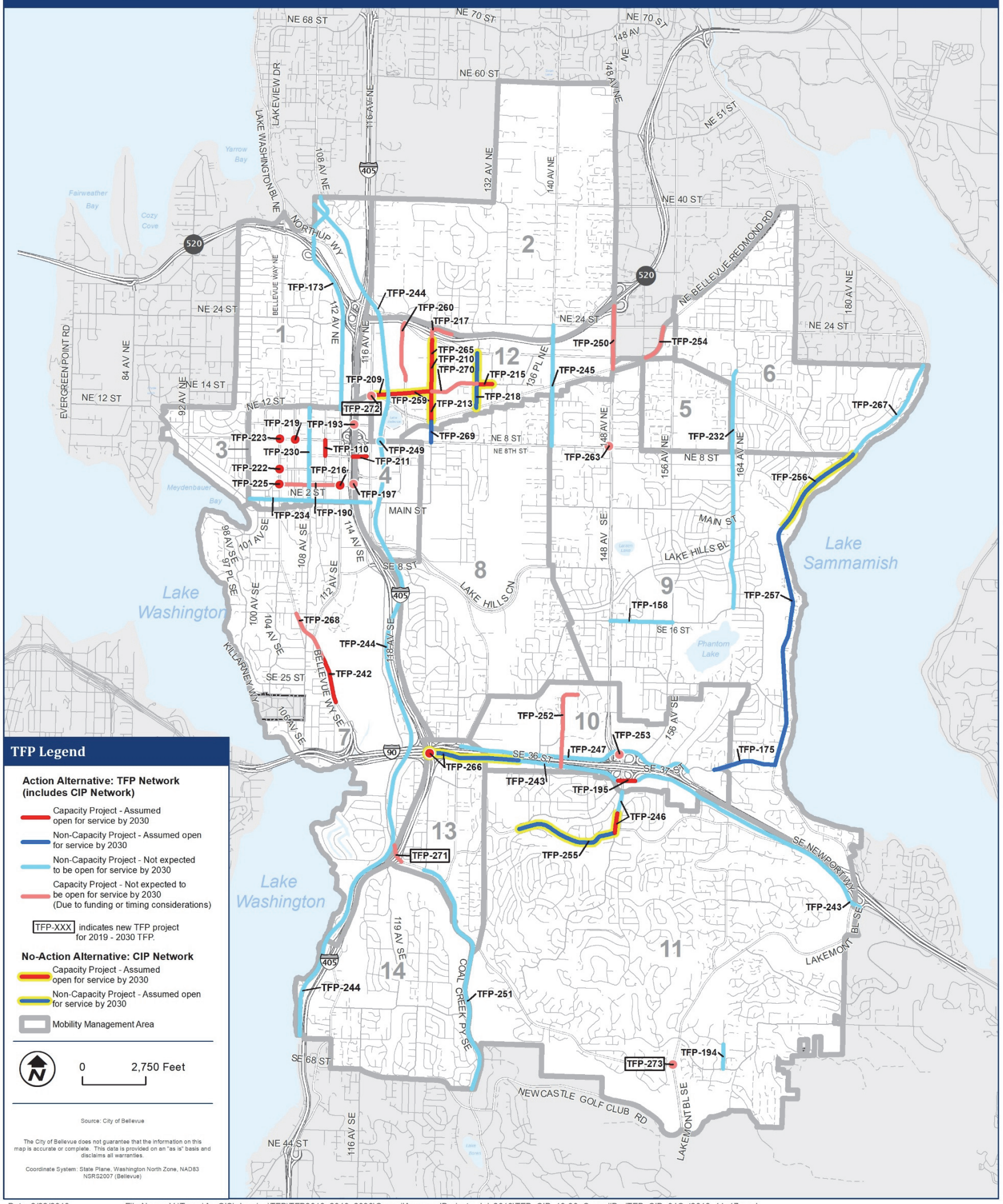
2019-2030 Transportation Facilities Plan

City Council Approved Preliminary Project List



TFP Legend

Action Alternative: TFP Network (includes CIP Network)

- Capacity Project - Assumed open for service by 2030
- Non-Capacity Project - Assumed open for service by 2030
- Non-Capacity Project - Not expected to be open for service by 2030
- Capacity Project - Not expected to be open for service by 2030 (Due to funding or timing considerations)

TFP-XXX indicates new TFP project for 2019 - 2030 TFP.

No-Action Alternative: CIP Network

- Capacity Project - Assumed open for service by 2030
- Non-Capacity Project - Assumed open for service by 2030

Mobility Management Area

0 2,750 Feet

Source: City of Bellevue

The City of Bellevue does not guarantee that the information on this map is accurate or complete. This data is provided on an "as is" basis and disclaims all warranties.

Coordinate System: State Plane, Washington North Zone, NAD83 NSRS2007 (Bellevue)

Date: 2/22/2019 File Name: V:\Trans\ArcGIS\planning\TFP\TFP2018_2019_2030\CouncilApprovedProjects_July2018\TFP_CIP_19-30_CouncilProjTFP_CIP_04Oct2018_11x17.mxd

Figure 1-1. Proposed 2019–2030 TFP Alternative and CIP Network Projects

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Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
Transportation		
Impacts	**System Performance** In general, volumes on arterials would increase at a rate consistent with the average over the next 12 years. As development, population, and traffic volumes increase, intersections in all MMAs are projected to operate at worsened level of service (LOS) conditions between now and 2030. Areas with the greatest increase (i.e., worsening) in traffic volumes are in the northerly part of the city including the Bridle Trails, Northwest Bellevue and BelRed/Northup Mobility Management Areas (MMAs) in which increases at some locations are projected to be in the 20%-35% range. This is generally due to projected increased development in the BelRed/Northup area and in the Redmond Overlake area to the northeast. Three MMAs are projected to exceed their areawide volume-to-capacity ratio (V/C) and/or congestion allowance standards in the 2030 horizon year: Bridle Trails MMA 2, Northeast Bellevue MMA 6, and East Bellevue MMA 9. The Bridle Trails and Northeast MMAs exceed the standard largely because of projected increased development in the BelRed/Northup area and in the Redmond Overlake. Intersections in the East Bellevue MMA are affected by traffic moving between the Overlake area and the I-90 corridor.	**System Performance** Impacts are generally as described under the CIP Network alternative. In most cases, V/C ratios are virtually the same. The Downtown and Crossroads MMAs both perform slightly better, with lower overall V/C ratio and fewer intersections exceeding standard.
Impacts *(The same for both alternatives)*	**Safety** Both the CIP and the TFP include rating criteria that prioritizes projects at locations where inherent design or engineering deficiencies may result in increased collisions. In some cases, capacity projects help resolve hazards resulting from traffic congestion; other projects such as the addition of turning lanes may improve safety by lowering the number of potential vehicle conflict points. Sidewalk and bicycle projects improve safety conditions for pedestrians and bicyclists by separating them from vehicular traffic. Because there are fewer sidewalk and bicycle projects than under the TFP Network alternative, the CIP Network alternative may improve safety conditions for pedestrians and bicycles to a lesser extent than the TFP Network alternative.	
Impacts *(The same for both alternatives)*	**Pedestrian/Bicycle Impacts** Fewer projects are included under the CIP Network alternative, leading to less improvement to non-motorized mobility than under the TFP Network.	
Mitigation Measures *(The same for both alternatives)*	The capacity, safety, operations, and non-motorized projects included in both alternatives would reduce congestion, improve mobility, and improve safety for vehicular traffic, bicyclists, and pedestrians. The TFP Network alternative includes more projects than the CIP Network alternative, and thus is expected to improve overall safety and mobility conditions to a greater extent. In order to address projected exceedance of LOS standards in several MMAs, under both the CIP Network and under the TFP Network, the city can pursue a number of strategies: • Continue to monitor compliance with transportation concurrency requirements via annual updates of the Transportation Concurrency Report. • Identify additional vehicle capacity improvements in updates of the TFP that will occur before 2030 conditions materialize. • In view of the fact that the projected exceedance of standards is in part owing to development and traffic increases in the Redmond Overlake area, the City of Bellevue and the City of Redmond could cooperate on a joint Overlake Transportation Plan to identify joint solutions. • Monitor Transportation Demand Management Plans and implement additional regulations or incentives to reduce reliance on single-occupancy vehicles.	

Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
	• Change LOS standards for specific MMAs if the City Council determines that meeting the current LOS standards is unfeasible and that accommodating projected development is in the public interest. • Change the Comprehensive Plan and zoning, if it is determined that meeting current LOS standards is in the public interest and that traffic demand could be reduced by reducing future development.	
Unavoidable Adverse Impacts *(The same for both alternatives)*	The analysis of 2030 conditions indicates that V/C is projected to exceed the areawide LOS standards congestion allowance in three MMAs under the CIP and TFP Network alternatives. As compared to the CIP Network alternative, the TFP Network alternative is projected to slightly improve the areawide V/C in the Richards Valley MMA.	
Air Quality		
Impacts *(Projected to be essentially the same for both alternatives)*	**Air Quality** Future air quality parameters for carbon monoxide, ozone, particulates and Mobile Source Air Toxics emissions are all projected to be lower than current conditions in nearly all cases because of improvements in emissions from the vehicle fleet. No exceedances of any air-quality standards is projected in Bellevue. The CIP and TFP networks will have no measurable impact on the overall amount of air pollutants produced from vehicles in the city or the region. The difference in traffic and delay between the alternatives is not likely to be distinguishable. The proposed roadway and intersection widening improvements and new roadway links contemplated as part of both the CIP Network alternative and the TFP Network alternative would move some traffic closer to existing nearby homes and businesses. The TFP Network alternative includes more projects of this type than the CIP Network alternative; therefore, there may be localized areas where ambient concentrations of pollutants could be slightly higher with the TFP Network alternative than with the CIP Network alternative. Overall emissions and compliance with air quality standards will be improved in the future under either network scenario by improvement in fleet emissions and will not exceed standards under either network. **Greenhouse Gases** Analysis performed for the PSRC 2018 Regional Transportation Improvement Program indicates reduction in greenhouse gas (GHG) emissions from the transportation sector based on improvements in emissions from the vehicle fleet. This includes travel in Bellevue and therefore supports the conclusion that neither the CIP and TFP alternatives will result in decreases in GHG emissions due to fleet improvements. **Construction Impacts** Potential construction impacts would be temporary and localized and could include dust; diesel, heavy truck, and equipment emissions; and odors. Construction equipment and materials hauling could also affect traffic flow on city streets, which could temporarily affect air quality. **Transportation Conformity Analysis** Analysis of conformity with air quality standards is not required for any air quality pollutants within Bellevue because the city is not in any non-attainment or maintenance area for regulated pollutants. Past analysis based on improvements in emissions by the vehicle fleet document that the region and Bellevue conditions are projected to be substantially below the area's target emission levels for compliance with standards.	
Mitigation Measures *(The same for both alternatives)*	**Construction** The city should require all construction contractors to implement air quality control plans for construction activities. The air quality control plans should include best management practices (BMPs) to control fugitive dust and odors emitted by diesel construction equipment. During construction, dust from excavation and grading could cause temporary, localized increases in the ambient concentrations of fugitive dust and suspended particulate matter. The city should adopt fugitive dust control measures specified in the brochure Guide to Handling Fugitive Dust from Construction Project published by the Associated General Contractors of Washington. The following BMPs would be used to control fugitive dust: • Use water sprays or other non-toxic dust control methods on unpaved roadways. • Minimize vehicle speed while traveling on unpaved surfaces. • Prevent track-out of mud onto public streets. • Cover soil piles when practical. • Minimize work during periods of high winds when practical.	

Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
	Vehicle Emissions Typical mitigation measures to minimize air quality and odor issues caused by tailpipe emissions include the following: • Maintain the engines of construction equipment according to manufacturers' specifications. • Minimize idling of equipment while the equipment is not in use. • Locate stationary equipment as far as practical from sensitive receptors. **Applicable Regulations and Commitments** As part of future project-specific SEPA and NEPA documentation for individual new roadway improvement projects, the city may be required to conduct CO hot-spot modeling (as required under WAC 173-420) to demonstrate that the projects would not cause localized impacts related to increased CO emissions from vehicle tailpipes at congested intersections. **Other Potential Reduction Measures** The city could identify GHG reduction measures in its projects and explain why other measures are not included or are not applicable.	
Unavoidable Adverse Impacts	No significant unavoidable adverse impacts on regional or local air quality or greenhouse gas emissions are anticipated. Temporary, localized dust and odor impacts could occur during the construction activities.	
Noise		
Impacts *(The same for both alternatives)*	Construction of roadways would temporarily increase short-term noise levels when projects are implemented. The impacts would be most severe at residential locations in the vicinity of construction. Noise increases would result from on-site construction activities, especially during site preparation, grading, and other earth-moving activities, as well as from construction-related vehicle traffic delivering materials to and from the construction site. The increase in long-term noise levels from increased traffic will be nearly the same (1 decibel [dB] or less) for most roadways under both alternatives. Background growth between the years 2017 and 2030 is a generally more substantial component of traffic noise levels in the future than changes in traffic patterns or increases related to projects in the alternatives. Traffic noise levels are predicted to increase by 5 dB or more at one location on SE 20th Street, which would result in a "definitely noticeable" increase. However, the resulting noise level of 56.5 A-weighted decibel (dBA) is in the normal background range for noise levels in a residential area. There are no specific CIP or TFP projects to which the increase can be specifically attributed. Traffic noise levels at a range of residential locations are predicted to exceed the city's threshold of 67 dBA Leq, at which point a project-level noise analysis is required under existing conditions, as well as under the CIP Network and TFP Network alternatives in the future. Because noise levels along certain roadways are predicted to exceed the city's threshold of 67 dBA Leq, which requires a project-level noise analysis, more detailed acoustical analysis of proposed projects will be addressed at the project implementation phase where warranted.	
Mitigation Measures *(The same for both alternatives)*	**Construction Noise** Roadway construction occurring outside of exempt hours should follow noise-reducing construction practices to ensure that the city's noise ordinance standards are not exceeded. Measures to limit noise include, but are not limited to: • Locating equipment as far as practical from noise-sensitive uses • Using equipment that is quieter than standard equipment • Selecting haul routes that affect the fewest number of people • Using noise-reducing enclosures around noise-generating equipment • Constructing barriers between noise sources and noise-sensitive land uses • Establishing a 24-hour complaint hotline • Offering temporary hotel rooms in exceptionally loud cases where nighttime noise limits cannot be achieved.	

Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
Mitigation Measures *(The same for both alternatives)*	**Traffic Noise** Noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures include the following: • Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project • Constructing noise barriers where substantial reduction in noise would be provided and where reasonable • Acquiring property to serve as a buffer zone • Using traffic management measures to regulate types of vehicles and speeds • Acoustically insulating public-use or nonprofit institutional structures. Noise walls are generally the most common and effective measure to reduce noise levels. In the project area, however, noise walls may not be desirable because of their effects on community cohesion and aesthetics. "Quiet pavements," such as rubberized asphalt, are sometimes considered as an effective measure to reduce traffic noise levels due to noise from the tire-pavement interface. Rubberized asphalt would be minimally effective for urban projects because travel speeds on surface streets are lower than on highways; the primary source of vehicle noise is expected to be from car and truck engines and exhaust, not tire noise. A detailed noise analysis would determine which, if any, mitigation measures would be acoustically effective.	
Unavoidable Adverse Impacts *(The same for both alternatives)*	The number of residential areas within the city predicted to be exposed to traffic noise levels exceeding 67 dBA Leq would increase from 2019 to 2030. Future traffic noise levels are basically equivalent between the two alternatives. Most residential areas within the city require direct driveway access to the roadways where traffic noise impacts are predicted to occur under either alternative. This access requirement would often conflict with placement of a noise barrier because of gaps in the barrier. Therefore, detailed analyses could conclude that future traffic noise impacts might be unavoidable.	
Land Use and Aesthetics		
Impacts	**Land Use Patterns** During construction, short-term impacts could include vehicular and pedestrian detours, loud noise, and construction dust. These impacts could affect localized uses and activities over the short term. Long-term land use impacts could result from the following: • Displacement of driveways and removal of parking areas, landscaping, and public facilities may require reorienting entrances or similar features. • Direct displacement or removal of parking spaces, especially parking areas located between streets and buildings, may affect the perceived utility of existing uses. • Acquisition of entire parcels or large parts of existing parcels for rights-of-way, especially for construction of new roadways, could slightly reduce the land supply for various uses. • If traffic noise and pollution levels become intrusive for nearby uses, they could make affected buildings less desirable for tenants, resulting in an effort by owners to change uses through marketing and/or changes in zoning. • If noise and pollution reach levels of regulatory action, they could lead to the need for investment in abatement measures.	**Land Use Patterns** Impacts would be as described under the CIP Network. The TFP Network includes projects not included in the CIP Network; therefore, the TFP Network has greater potential for these impacts. Projects with the potential for right-of-way acquisition are likely to affect more buildings and land uses as compared to the CIP Network.

Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
Impacts	**Plans and Policies** The CIP Network alternative projects are consistent with the city's Comprehensive Plan vision statements and goals, as well as policies of the land use and transportation elements.	**Plans and Policies** The additional transportation projects included in the TFP Network alternative are consistent with the city's Comprehensive Plan vision statements and goals, as well as the policies of the city's land use and transportation elements.
Impacts	**Aesthetics** The major impact would be the change in character of the roadway as perceived by an observer not on the roadway, or a change in character of the environment perceived by the observer from the roadway. This can occur by: • Removing elements, such as vegetation that establish the dominant character of a rural area, • Adding elements of an urban environment to an area where natural environment elements predominate, • In more urban contexts, reducing landscaping or native vegetation, • Changing road configurations that adds to the visual dominance of traffic lanes and/or • Adding new visually intrusive elements such as retaining walls, noise walls, or other structures that change views of scenic elements. Some projects will improve visual character by filling in missing elements of the streetscape. Projects with the greatest impacts are generally new roadways, substantial widening of existing roadways, and substantial widening for pedestrian and bicycle facilities or adjacent multi-use paths in areas where the roadway is bounded by native vegetation.	**Aesthetics** The TFP Network is expected to have similar impacts as the CIP network. Some projects also will improve visual character. Some areas may be transformed, however, from a lower-intensity rural or suburban character to the urbanized character envisioned in the Comprehensive Plan. Because the TFP Network includes more projects than the CIP Network, its impact on aesthetics would be greater.
Mitigation Measures *(The same for both alternatives)*	**Land Use Patterns** • Prepare a relocation plan for displaced residential or commercial uses. • Redesign and reconfigure parking areas to minimize the number of lost spaces. Potential parking lot redesign measures include providing a greater area for compact car spaces with smaller dimensions, reducing aisle width by designing one-way circulation systems within the lots, and reducing the width of perpendicular spaces by using angled stalls. • Minimize the loss of existing buildings and land uses in development of new transportation corridors and/or realignment of existing transportation corridors. • Mitigate land acquisition impacts by combining parcels that are not used for sale with adjacent parcels and incorporating undeveloped parcels into roadway designs. • Minimize the loss of landscaping and vegetation by shifting street alignments to avoid significant stands of vegetation; preserving significant specimen trees within sidewalk and planting strips by meandering sidewalks; and reducing the extent of cleared areas by using retention structures, where practical, in place of long fill slopes. • If transportation system demand associated with land use growth causes exceedance of transportation level-of-service standards, mitigation measures identified in the Transportation section would be pursued.	
Mitigation Measures *(The same for both alternatives)*	**Plans and Policies** There are many competing policies in the Comprehensive Plan. The exact balance between policy priorities will be determined at the detailed design phase.	

Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
Mitigation Measures *(The same for both alternatives)*	**Aesthetics** • Preserve natural vegetation and landscaping to the extent feasible. • Replace or add landscaping, including street trees when roadway widening or realignment removes landscaping, or where such amenities are lacking. • Design and align new transportation corridors and other improvements to minimize adverse aesthetic impacts, particularly in residential neighborhoods. • Implement consistent streetscapes along roadway corridors by using common designs for streets and common landscaping and street trees to provide visual unity. • Coordinate closely with adjacent land owners to identify significant features that should be considered for retention or replacement in design improvements. • Relocate utility lines underground. • Consider use of retaining walls rather than extensive fill, which can affect aesthetics of retained vegetation by widening the area of impact. • Incorporate interesting and attractive elements into retaining walls. • Construct gateway elements at appropriate locations, in coordination with the city's enhanced Right of Way and Urban Boulevards program. • Incorporate public art into streetscapes.	
Unavoidable Adverse Impacts *(The same for both alternatives)*	The areas most likely to be affected by the 2019–2030 TFP are Downtown (MMA 3), Wilburton (MMA 4), BelRed/Northup (MMA 12), and South Bellevue (MMA 7). These areas correspond to the major activity centers in the city through which vehicular and transit routes pass to access Downtown. Projects in both the CIP Network and the TFP Network have the potential for permanent displacement of buildings and existing land uses as well as landscaping and parking. In general, impacts are greatest where additional lanes are added, or where shoulders, bike lanes and multi-purpose paths remove substantial native vegetation at the margins of existing roadways.	
Natural Environment		
Impacts	**Geology and Soils** Construction activity in potentially unstable ground could destabilize hillsides if mitigating measures, such as groundwater interception, engineered retaining systems, or bridges are not employed. Projects located in the vicinity of slopes greater than 40% may require special engineering. Additional impact areas may be identified during project-level review.	**Geology and Soils** Impacts are generally as described under the CIP Network alternative, but with a greater impact due to additional projects. The TFP Network includes additional projects in areas of steep slopes or soils susceptible to liquefaction.
Impacts	**Wetlands** Several road-widening projects are adjacent to wetlands and may affect buffers or wetland areas. They also may affect wetland function through changes in the hydrologic recharge of the affected wetlands. The proximity to wetlands, however, may not necessarily result in impacts through use of retaining walls or other features that may result in little or no increase in road prism, or employment of stormwater management facilities. City Critical Area criteria address the consideration of alternatives to avoid displacement of wetlands and buffers and the minimization of impacts.	**Wetlands** Impacts are generally as described under the CIP Network alternative, but with a greater impact due to additional projects. Additional projects near wetlands are included in the TFP Network, but the extent of impacts cannot be accurately assessed until the detailed design is completed.
Impacts	**Aquatic Resources** A variety of projects included in the CIP Network cross streams. Additional areas may be identified during project-level review. Stream crossings may involve additional coverage of open-channel areas, but also may include replacement of inadequate culverts and fish passage impediments. Many projects will increase impervious surface, particularly those that would provide additional	**Aquatic Resources** Impacts are generally as described under the CIP Network alternative. The TFP Network includes more projects and introduces more impervious surface, so impacts may be greater.

Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
	lanes for traffic on existing roads and new road segments, and the construction of bicycle lanes and sidewalks. The potential increase is small in relation to the existing impervious surface in drainage basins and is unlikely to have a discernible impact. Stormwater detention facilities may result in less impact, despite increases. The potential for increased pollution from stormwater runoff is greater for those projects that provide additional pollution-generating surfaces. Fish passage may be improved by new stream crossings.	
Impacts	**Wildlife and Vegetation** Potential impacts resulting from implementation of proposed projects are likely to be minimal because existing roadways currently adversely affect wildlife habitat and movement. The marginal decrease in vegetation likely would have minor impacts on habitat. Additional impacts may be identified during project-level review.	**Wildlife and Vegetation** Impacts are generally as described under the CIP Network alternative. The TFP Network includes more projects, so loss of vegetation and impact to wildlife habitat would be greater.
Impacts	**Shorelines** Projects within Shoreline Management Act jurisdiction require permit review and must conform with applicable standards. Requirements are similar to Critical Area standards and criteria and citywide standards for fish passage, water quality, and storm drainage; conforming to these requirements may result in improved shoreline conditions when applied at project review.	**Shorelines** Impacts are generally as described under the CIP Network alternative, but with a greater impact due to additional projects. Project-level analysis will be conducted on individual projects to determine impacts on shorelines and compliance with relevant criteria.
Mitigation Measures *(The same for both alternatives)*	**Geology and Soils** Site-specific earth resource impacts would be evaluated and mitigated through the environmental review process for individual projects. It is assumed that all road improvements proposed will conform to city policies and regulations, particularly in accordance with *Bellevue City Code* (BCC) 20.25H.125 Critical Area Performance Standards. Roadway development in areas of potentially unstable slopes would be mitigated to ensure stability and safety during and after construction. As part of project-specific design and review, alternative alignments that reduce disturbance to critical areas would be examined.	
Mitigation Measures *(The same for both alternatives)*	**Wetlands** If a project results in impacts on wetlands, Critical Area performance standards in BCC 20.25H.100 would be implemented, with a preferred sequence ranging from avoidance to compensation.	
Mitigation Measures *(The same for both alternatives)*	**Aquatic Resources** If a project results in impacts on aquatic resources, Critical Area performance standards described in BCC 20.25H.080 would be implemented on sites with streams and/or associated buffer.	
Mitigation Measures *(The same for both alternatives)*	**Wildlife and Vegetation** If it is found that a species of local importance or that a potentially suitable habitat for a species of local importance is present in a project area, Critical Area performance standards described in BCC 20.25H.160 would be implemented. If performance standards cannot be met due to infeasibility, mitigation measures would be implemented as described in BCC 20.25H.210 through 20.25H.225. This would require the development of a wildlife management plan in consultation with WDFW. A habitat assessment consisting of an investigation of the site to evaluate the potential presence or absence of designated species of local importance or habitat for species of local importance, would also be required.	
Mitigation Measures *(The same for both alternatives)*	**Shorelines** If, during project-specific review, impacts on shorelines are identified, mitigation measures would be put in place. Projects designed to allow for improvements to fish passage, water quality, and storm drainage may improve shoreline ecological conditions.	

Table 1-1. Summary of Potential Impacts of the Alternatives

Subject	CIP Network Alternative	TFP Network Alternative
Unavoidable Adverse Impacts *(The same for both alternatives)*	Adverse impacts would largely be avoided or minimized through implementation of mitigation measures. Although proposed projects would be designed to minimize or avoid adverse impacts, it is possible that such impacts may occur. Proposed projects would result in an increase in pollution-generating impervious surfaces within the city and would reduce the amount of native vegetative cover available. Although stormwater would be treated to the extent possible, and current BMPs would be employed to reduce volumes of stormwater runoff, the increase in impervious surface would likely result in an increase in stormwater volumes entering streams and rivers and a corresponding increase in associated pollutants and ongoing stream erosion and habitat impacts. If insufficient mitigation measures are identified during project-level environmental analysis, a significant unavoidable adverse impact would occur.	

Chapter 2. Description of Alternatives

This chapter describes the two alternatives for the Transportation Facilities Plan (TFP) considered in this Draft Supplemental Environmental Impact Statement (Draft SEIS):

- the 2019 to 2025 CIP Network (No Action) alternative; and
- the 2019 to 2030 TFP Network (Proposed Action) alternative.

This chapter also presents background information about the TFP, its relationship to the city's other plans, and potential funding sources.

2.1 Background

The TFP is a 12-year transportation program that lists planned improvements balanced with projected revenues. This program is one phase in the city's multi-phased approach to planning for future transportation improvements, illustrated in Figure 2-1.

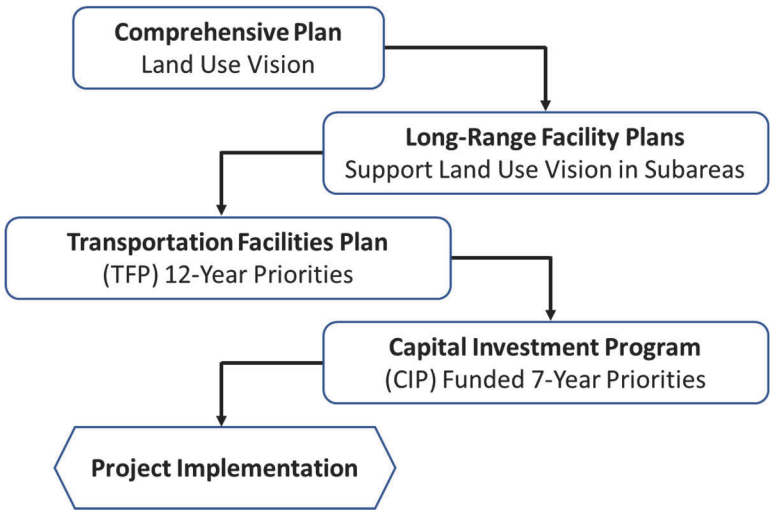


Figure 2-1. Transportation Planning Process

The components of the transportation planning process are as follows:

- The **Comprehensive Plan** outlines the city's long-term (over 20 years) land use vision and identifies the infrastructure and services needed to support that vision. It provides a broad statement of community goals and policies that direct the orderly and coordinated development of the city into the future. It also serves as a guideline for designating land uses and infrastructure development as well as developing community services. The City Council adopted the current Comprehensive Plan on August 3, 2015. The plan was updated following several years of process, including public outreach.

The comprehensive plan is organized into two volumes, one focused on citywide policies and the second on goals and policies for Bellevue's 16 neighborhood areas.

- Volume 1 provides background information about Bellevue and the community vision for the future, along with goals for elements such as housing, transportation, human services, and parks.
- Volume 2 contains goals and policies of the subarea (or neighborhood area) plans and a consolidated list of long-range transportation facility projects (the Comprehensive Transportation Project List).

Relevant policy guidance is found in the Comprehensive Plan Transportation Vision Statement:

> MOVING INTO, AROUND AND THROUGH BELLEVUE IS RELIABLE AND PREDICTABLE. Bellevue is connected to the region, enabling local and regional access for businesses and neighborhoods. Safe and reliable mobility options, including walking, biking, transit and car, take people where they need to go. The city's transportation system integrates leading safety and efficiency technology.

Oher relevant policy guidance includes Policy TR-22:

> Implement and prioritize transportation system improvements to meet the multi-modal level-of-service standards, Complete Streets goals, and other mobility targets for all transportation modes, recognizing the range of mobility needs of each corridor and Mobility Management Area.

- The **Comprehensive Transportation Project List** includes projects identified in long-range facility plans, such as the Downtown Transportation Plan Update, to meet the mobility goals of a subarea and also incorporates, by reference, projects in two functional plans: The Transit Master Plan and the Pedestrian and Bicycle Transportation Plan.
- The **Capital Investment Program (CIP)** provides a minimum 6-year period (the city adopts a 7-year CIP every 2 years) for implementation of TFP projects that are likely to be needed in the short term. It also includes programs that are not in the TFP; this additional funding supports operational, safety, and maintenance needs identified by city staff, the public, and other sources. The Bellevue City Council commits full or partial implementation funding to all CIP projects and programs through the city's biennial budget update process. The proposed 2019–2030 TFP is consistent with the adopted 2019–2025 CIP.
- The **Transportation Facilities Plan (TFP)** serves as the city's preliminary transportation implementation plan, constrained by identified city funds and other revenues that are projected for the next 12 years. The goal of the TFP is to identify the transportation facilities needed to implement the city's transportation policies in the Comprehensive Plan. The TFP comprises priority projects detailed in the long-range facility plans and other projects that represent emerging transportation facility needs and opportunities. All projects, if not specifically identified in the Comprehensive Plan, should be consistent with the goals and policies of the Comprehensive Plan. Emerging needs and opportunities can be influenced by changing conditions in the built environment, acts of nature, or actions of other agencies (such as the

planned implementation of the Sound Transit East Link light rail line initially approved by voters in 1996 and expanded by the Sound Transit 2 vote in 2008 and the Sound Transit 3 vote in 2016).

2.2 Funding Sources

2.2.1 City Revenue Sources

Over the next 12 years, the transportation projects in the TFP are projected to receive funding from a variety of sources, potentially including the following:

- **Transportation-dedicated taxes and fees** such as fuel and real estate excise taxes
- **General CIP revenue** consisting of the portion of the city's sales and business and occupation taxes dedicated to capital improvements
- **Grants and contributions** from other agencies such as the federal government, state agencies, and King County
- **Impact fees** and other developer contributions required from new development
- **Neighborhood Safety, Connectivity and Congestion Levy** approved by Bellevue voters in November 2016
- **Transportation Infrastructure Finance & Innovation Act (TIFIA)** loan proceeds

2.2.2 Developer Impact Fees

The city's *Traffic Standards Code*[1] requires review of development proposals to determine the impact of proposed development on the transportation system and ensure that vehicular level-of-service (LOS) does not fall below adopted standards. For purposes of this review, the transportation system includes projects funded in the CIP for implementation (the "concurrency" network). To partially offset the cost of projects needed to support growth and development, the city levies a transportation impact fee on new development; the fee amount depends on the number of new, peak-period trips generated by the development. TFP facility improvements implemented by the developer, or the value of real property dedicated for improvements, may be credited against the impact fee owed by that developer. If the full implementation resources for a project are not included in the TFP, however, the developer does not get a fee credit for the project's implementation.

TFP capacity projects that add lanes, turn pockets and/or signalization to improve motor vehicle flow that have full implementation resources allocated in the plan, including those funded in the CIP, provide the basis for the calculation and collection of impact fees. Therefore, alternative TFP strategies, in conjunction with the code, can affect the cost of development in two ways:

- If an alternative includes significant capacity improvements, the calculated maximum impact fees will be higher, to help fund the implementation of the TFP alternative.

[1] The *Traffic Standards Code* fulfills the requirements of the Growth Management Act RCW 36.70A.070(6)(b) which requires that "…local jurisdictions must adopt and enforce ordinances which prohibit development approval if the development causes the level of service on a locally owned transportation facility to decline below the standards adopted in the transportation element of the comprehensive plan…"

- If an alternative provides fewer capacity improvements, it can result in lower impact fees and may also reduce planned and funded road improvements that developers can count on to mitigate transportation impacts, potentially increasing the mitigation requirements that would need to be imposed directly on specific development projects.

The remaining discussion in this chapter focuses on the TFP project strategies analyzed in this Draft SEIS.

2.3 Traffic and Land Use Forecasts

For the purpose of this Draft SEIS, it is assumed that each alternative set of transportation projects will be added to the transportation network that existed at the end of 2017. The 2018 Existing Conditions are based on the existing transportation network and existing land use. Future traffic volumes were forecast using the 2030 Bellevue-Kirkland-Redmond (BKR) model, which is based on the 2030 land use forecast provided by the Bellevue Department of Community Development. Both alternatives have been evaluated using the 2030 land use scenario. By using the same 2030 land use distributions, the effects of land use are assumed to be the same for both alternatives. Appendix E contains the land use projection tables.

2.4 Alternative Descriptions

The city is considering two alternatives in this Draft SEIS:

- 2019 to 2025 CIP Network – No Action Alternative
- 2019 to 2030 TFP Network – Proposed Action Alternative

Table 2-1 presents a list of project descriptions for each project included in the alternatives. The table indicates the TFP number for the Proposed Action alternative, the CIP number (if applicable), and whether the project is a capacity project that adds lanes, turn pockets, and/or signalization to improve motor vehicle flow, an impact fee project, or both.

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action)

TFP Network Alternative includes all projects in table; CIP Network Alternative includes only projects with entry in "CIP #" column.

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
TFP-110	110th Avenue NE/NE 6th Street to NE 8th Street		This project will complete implementation of a five-lane roadway section with sidewalks where missing between NE 6th and NE 8th Streets. Project implementation will be coordinated with approved and potential future private development in the immediate vicinity.	Roadway	None	Full implementation	X	IF
TFP-158	SE 16th Street/148th Avenue SE to 156th Avenue SE		This project will add 5-foot-wide bicycle lanes outside of 11-foot-wide vehicle lanes on both sides of SE 16th Street. The project will construct new curb, gutter, and 6-foot-wide sidewalk and 4-foot-wide planter on the north side between 148th Avenue NE and 154th Avenue NE. This is a component of priority bicycle corridor EW-3: Lake to Lake Trail.	Pedestrian-Bicycle System	None	TBD		
TFP-173	108th/112th Avenue NE/north city limit to NE 12th Street	W/B-81	This project will add 5-foot-wide bicycle lanes on both sides of 108th/112th Avenue NE from the north city limit to NE 12th Street. A 6-foot-wide sidewalk will be constructed along the west side of 112th Avenue NE from the end of the transportation trail south to NE 24th Street. A sidewalk will be constructed on the east side from NE 24th Street to connect to the existing sidewalk, 450 feet south. Turn pockets will be widened at the NE 24th Street intersection. This is a component of priority bicycle corridor NS-2: Lake Washington Loop. The funding allocation is a placeholder that may be used to support project predesign or early implementation.	Pedestrian-Bicycle System	Partial implementation	Partial implementation		
TFP-175	SE 34th Street/162nd Pl SE to West Lake Sammamish Pkwy		This project will design and construct a curb, gutter, sidewalk and bike lane or wide curb lane on the north side where missing; it will also accommodate a wide curb lane on the south side, if feasible.	Pedestrian-Bicycle System	None	Full implementation		
TFP-190	NE 2nd Street/Bellevue Way to 112th Avenue NE		This project will widen the roadway from three lanes with parking and turn pockets to five lanes, consistent with the Main Street & NE 2nd Street Design Report (2009). The funding allocation is a placeholder that may be used to advance project predesign or support early	Roadway	None	None	X	

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			implementation. Project implementation will be coordinated with approved and potential future private development in the immediate vicinity.					
TFP-193	NE 10th Street at I-405		This project will add a southbound off-ramp. It would likely be a regional or outside agency-led effort in which the city may choose to participate financially. The funding allocation is a placeholder that may be used to support project predesign or early implementation.	Roadway	None	None	X	
TFP-194	164th Ave SE/SE Cougar Mountain Way to SE 63rd Street		This project will evaluate options for improving the gravel-surfaced road with pavement, curb, gutter and sidewalk on one side, or alternative storm drainage and non-motorized facility treatments. Consider cost sharing with benefiting property owners through the use of a Local Improvement District (LID).	Roadway and Pedestrian-Bicycle System	None	None		
TFP-195	150th Avenue SE/SE 37th Street/I-90 off-ramp		This project will widen the southbound approach to create a third southbound lane just south of the eastbound I-90 on-ramp that continues to the southbound right turn lane at SE 38th St.; extend the southbound left turn pocket by 75' to create more storage; create a second eastbound right turn lane on the freeway offramp; widen the east leg to provide eastbound and westbound left turn pockets that are the full length of the block between 150th Ave SE and the eastbound I-90 on-ramp, ultimately resulting in a four-lane cross-section on this block	Roadway	None	Full implementation	X	IF
TFP-197	NE 2nd Street Extension and I 405 interchange		This project will extend NE 2nd Street across I-405 from 112th Avenue NE to 116th Avenue NE, and add a half interchange with I-405, to/from the south. This project would likely be a regional or outside agency-led effort in which the city may choose to participate financially. The funding allocation represents only a placeholder that may be used to initiate project predesign or early implementation.	Roadway	None	None	X	
TFP-209	NE Spring Blvd/116th Avenue NE to	R-172	This project will complete the design and construct a new multi-modal arterial street connection between NE 12th Street/116th Avenue NE and 120th Avenue NE. NE 12th	Roadway and Pedestrian-	Full implementation	Full implementation	X	IF

Table 2-1. SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
	120th Avenue NE (Zone 1)		Street will be widened between 116th Avenue NE and the new street connection west of the Eastside Rail Corridor. The planned roadway cross-section for the new arterial street between NE 12th Street and 120th Avenue NE will include two travel lanes in each direction with turn pockets, along with new traffic signals at the NE 12th Street and at 120th Avenue NE intersections. This project will also incorporate other work elements including modifications to the existing NE 12th Street/116th Avenue NE intersection, a separated multi-purpose path along the north side, and a sidewalk on the south side, with landscaping and irrigation, illumination, storm drainage improvements and water quality treatment, and other underground utilities. The project will be designed and constructed in coordination with Sound Transit so that it can cross over the East Link light rail alignment and Eastside Rail Corridor.	Bicycle System				
TFP-210	124th Avenue NE/NE Spring Boulevard to Ichigo Way (NE 18th Street)	R-166	This project will widen the roadway to five lanes, including two travel lanes in each direction with turn pockets or a center turn lane. The project will install curb, gutter, and sidewalk or multi-use trail on both sides, illumination, landscaping, irrigation, storm drainage, and water quality treatment. This project will also install a new signal at NE 16th Street. Between Spring Boulevard and NE 16th Street, the project will include a bridge structure and be designed and constructed in coordination with Sound Transit and the undercrossing of the East Link light rail line project in this vicinity.	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation	X	IF
TFP-211	NE 6th Street Extension		The project will extend NE 6th Street from the I-405 HOV interchange to 116th Avenue NE. The facility will be designed to accommodate multiple uses, including HOV, frequent transit bus service, non-motorized and limited general-purpose traffic. Conceptual design alternatives have been completed to	Roadway and Pedestrian-Bicycle System	None	Full implementation (funding/ implementation by others)	X	

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			coordinate with WSDOT's I-405 improvements and Sound Transit's East Link route. The route crosses Sturtevant Creek, which is in a pipe at this location; it is anticipated that the project may involve shifting the pipe slightly to the east (to accommodate a bridge pier). The project would likely be a regional or outside agency-led effort in which the city may choose to participate financially. The funding allocation is a placeholder that may be used for additional predesign or other early implementation efforts.					
TFP-213	124th Avenue NE/NE 12th Street to NE Spring Boulevard	R-169	This project will complete design and construct improvements to 124th Avenue NE from NE 12th Street (Bellevue-Redmond (Bel-Red) Road) to NE Spring Boulevard. The roadway cross-section of this segment consists of five lanes, including two travel lanes in each direction with turn pockets or a center turn lane; curb, gutter and separated multi-use path on both sides; and illumination, landscaping, irrigation, storm drainage, and water quality treatment, intersection, and signal system improvements.	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation	X	IF
TFP-215	NE Spring Blvd/130th to 132nd Avenues NE (Zone 4)	R-174	This project will complete the design and construct a new arterial roadway connection between 130th and 132nd Avenues NE. The project includes a new traffic signal at 130th Avenue NE, modifies a signal at 132nd Avenue NE (to be built by Sound Transit) and will integrate vehicular traffic, pedestrian, and bicycle movements with the East Link Light Rail Transit (LRT) project. The roadway cross-section will include single westbound and eastbound travel lanes, outside the LRT alignment and 130th LRT station. Other improvements include sidewalks, bicycle facilities, illumination, landscaping and irrigation, storm drainage and water quality treatment, and other underground utilities.	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation	X	IF
TFP-216	112th Avenue NE/NE 2nd Street		This project will add dual southbound-to-eastbound left-turn lanes, and a northbound to eastbound right-turn lane. Project	Roadway	None	Full implementation	X	IF

Table 2-1. SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			implementation will be coordinated with potential future private development in the immediate vicinity. (Operation of the second southbound left-turn lane will not be active until the receiving lane is in place on NE 2nd Street.)					
TFP-217	124th Avenue NE at SR 520		This project will construct ramps to and from the east. This project would likely be a regional or outside agency-led effort in which the city may choose to participate financially. The funding allocation is a placeholder that may be used to initiate project predesign or early implementation.	Roadway	None	None	X	
TFP-218	130th Avenue NE/NE 20th Street to NE BelRed Road	R-170	This project provides multi-modal improvements along 130th Avenue NE between Bel-Red Road and NE 20th Street. The improvements include curb, gutter, sidewalk, landscaping, illumination, drainage, water quality treatment, bicycle facilities on both sides of the street, on-street parking at select locations, potential mid-block crossings, intersection improvements including turn lanes at NE Spring Blvd., potential traffic signal and intersection modifications at NE 20th Street and at Bel-Red Road; and accommodation for a Sound Transit East Link light rail crossing at the NE Spring Blvd. alignment.	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation		
TFP-219	NE 8th Street/106th Avenue NE		This project will realign NE 8th Street to the south to extend the third westbound travel lane to the west of 106th Avenue NE and preserve the existing large sequoia tree. This realignment will allow NE 8th Street three through lanes westbound from I-405 to Bellevue Way. Project implementation will be coordinated with potential future private development in the immediate vicinity.	Roadway	None	Full implementation	X	IF
TFP-222	Bellevue Way/NE 4th Street		This project will add a southbound-to-westbound right-turn lane, and convert a northbound through lane to a create a second northbound-to-westbound left-turn lane, subject to further analysis. Project implementation will	Roadway	None	Full implementation	X	IF

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			be coordinated with potential future private development in the immediate vicinity.					
TFP-223	Bellevue Way/NE 8th Street		This project will add a southbound-to-westbound right-turn lane. Project implementation will be coordinated with potential future private development in the immediate vicinity.	Roadway	None	Full implementation	X	IF
TFP-225	Bellevue Way/NE 2nd Street		This project will add a northbound-to-eastbound right-turn lane and create a second southbound-to-eastbound left-turn lane by converting an existing through lane, subject to further analysis. Project implementation will be coordinated with potential future private development in the immediate vicinity. (Operation of the second southbound left-turn lane will not be active until the receiving lane is in place on NE 2nd Street.)	Roadway	None	Full implementation	X	IF
TFP-230	108th Avenue NE/NE 12th Street to Main Street		This project will conduct a corridor study to identify, prepare preliminary designs, and potentially implement multi-modal improvements to enhance the 108th Avenue NE corridor through Downtown. Improvements to be considered may include mid-block crossings, intersection treatments (including the NE 6th Street Pedestrian Corridor interface), bicycle facilities, transit way improvements (also refer to the recommendations of the Bellevue Transit Master Plan), landscaping, and lighting. This roadway segment is a component of priority bicycle corridor NS-1: Enatai-Northtown Connection. Demonstration bikeway installed 2018.	Pedestrian-Bicycle System	Partial implementation	Partial implementation		
TFP-232	164th Avenue NE/SE-NE 18th Street to SE 14th Street		This project will designate a bicycle facility on both sides between NE 18th Street and Northup Way and between NE 8th Street and SE 14th Street. The 5-foot-wide bicycle lanes between Northup Way and NE 6th Street will be striped and signed. On-street parking will be accommodated on the east side of the street from NE 6th Street to SE 14th Street. This is a	Pedestrian-Bicycle System	TBD	TBD		

Table 2-1. SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			component of priority bicycle corridor NS-5: Spirit Ridge-Sammamish River Connection.					
TFP-234	Main Street/100th Avenue to 116th Avenue		This project will conduct a corridor study to identify, prepare preliminary designs, and potentially implement multi-modal improvements to enhance the Main Street corridor through Downtown. Improvements to be considered may include mid-block crossings, intersection treatments, bicycle facilities, landscaping, and lighting. This roadway segment is a component of priority bicycle corridor EW-3: Lake to Lake Trail. The segment between 110th and 112th Avenues NE is being coordinated with implementation of the East Link project in this vicinity.	Pedestrian-Bicycle System	TBD	TBD		
TFP-242	Bellevue Way HOV lane/107th Ave SE Segment A: Park & Ride to Winters House	R-184	This project will design and construct a new inside southbound HOV lane and a planter at the base of a retaining wall. Proposed funding would construct the lane from the Winter's House to the future South Bellevue light rail station (formerly the South Bellevue park-and-ride lot). It would connect to the section of Bellevue Way, including an HOV lane that extends to I-90, which will be built by Sound Transit. The design phase will include a public engagement process to help ensure the informed consent of the local community and other stakeholders in the Bellevue Way SE corridor. Future project implementation may occur in phases or include interim facilities, depending on funding availability and coordination with other capital investments in the area.	Roadway and Transit	None	Full implementation	X	IF
TFP-243	Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard	W/B-78	This project will advance the design and construction of priority segments of the Mountains to Sound Greenway Trail between 132nd Avenue SE and Lakemont Boulevard SE. It will continue work initiated by the Mountains to Sound Greenway Trail Design Study, completed in 2012. Trail design will typically include a 12-foot-wide, hard-surface	Pedestrian-Bicycle System	Partial implementation (132nd Ave – 136th Pl)	TBD		

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			cross-section. Various trail corridor segments will include additional design elements that may include trailhead treatments, way-finding and signage; planted roadway medians, street trees, and/or landscaped trail buffers; bridges, crosswalks, and mid-block crossings; lighting, trail furniture, and public art; and natural storm drainage practices. Project implementation may occur in phases or include interim facilities, depending on funding availability and coordination with other public capital investments or private developments along the project alignment.					
TFP-244	Eastside Rail Corridor multi-use path/southern city limits to northern city limits	G-103	This project will add a 10- to 14-foot-wide off-street path along the BNSF right-of-way from the southern city limits to the northern city limits. This is part of a planned regional trail that will connect Eastside communities from Renton to Woodinville. Approximately 7.5 miles of the trail are located within the city of Bellevue. The regional trail will have connections to pedestrian and non-motorized city facilities and be compliant with current trail standards. Potential trail connections include Newcastle Beach Park, Greenwich Crest, the I-90 Trail, Woodridge, the Wilburton area, Downtown Bellevue, BelRed, Spring Boulevard, the West Tributary Trail, and the SR 520 Trail. Identified as priority bicycle corridor NS-3: BNSF Trail Corridor. Funding allocation is to support the initial scoping of the project, including coordination with the community and property owners and/or acquisition.	Pedestrian-Bicycle System	Partial implementation (by King County & Sound Transit)	Partial implementation (by King County & Sound Transit)		
TFP-245	140th Avenue NE/NE 24th Street to NE 8th Street		This project will evaluate options for bicycle network implementation on 140th Avenue NE. This is a component of priority bicycle corridor NS-4: Somerset-Redmond Connection. Options may include: Option A: Addition of 5-foot-wide bicycle lanes on 140th Avenue NE between NE 24th Street and NE 8th Street. Option B: Development of an off-street multi-use paved path along the east side of 140th	Pedestrian-Bicycle System	TBD	TBD		

Table 2-1. SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			Avenue NE, replacing a separated gravel path that exists on much of the segment; it may be a boardwalk for part of the Bel-Red Road to NE 20th Street segment. With either option, the project will add a 10- to 14-foot-wide off-street path connecting the SR 520 Trail to 140th Avenue NE, if feasible.					
TFP-246	150th Avenue SE/south of SE 38th Street to Newport Way	R-202	The project will construct a 600' southbound right-turn pocket, with sidewalk the length of the pocket, to serve the six properties on the west side of 150th Ave SE.	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation	X	IF
TFP-247	Eastgate Way/Richards Road to SE 35th Place	W/B-56	This project will install bicycle lanes where missing through the Eastgate corridor. Completion of the missing link in the sidewalk between Richards Road and 139th Avenue SE may be implemented in coordination with adjacent development.	Pedestrian-Bicycle System	Partial implementation (full bike lanes in 2019)	Partial implementation (full bike lanes in 2019)		
TFP-249	Wilburton/NE 8th Street Station Access Improvements	G-103	This project will improve rider access to the East Link station at NE 8th Street, especially for pedestrians. An initial funding allocation may be used to identify and analyze potential access improvements, develop design concepts, and advance implementation of elements such as access links to 116th Avenue NE, sidewalks, street crossings, and other features to facilitate connections between the station and nearby employment, housing, shopping, and services.	Pedestrian-Bicycle System	Full implementation (King County lead)	Full implementation King County lead)		
TFP-250	148th Avenue NE Master Plan improvements at Bel- Red Road, NE 20th Street, and NE 24th Street		The project will evaluate and refine improvements to the 148th Avenue NE Master Plan. Potential improvements include the following: 1) a third northbound through lane on 148th Avenue NE from 350 feet south of Bel-Red Road to the SR 520 eastbound on-ramp, 2) a northbound right-turn lane, and eastbound and westbound dual left-turn lanes at 148th Avenue NE and Bel-Red Road, 3) eastbound and westbound dual left-turn lanes at NE 20th Street and 148th Avenue NE, 4) extension of the northbound and westbound right-turn lanes	Roadway and Transit	None	None	X	

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			at NE 24th Street and 148th Avenue, 5) eastbound and westbound dual left-turn lanes at NE 24th Street and 148th Avenue NE, 6) reconfiguration of the northbound 3-lane approach on 148th Avenue NE at the SR 520 eastbound on-ramp to right turn only, through/optional HOV right turn, and through only, and 7) convert and extend the southbound right-turn lane on 148th Ave NE between NE 24th and NE 20th into a BAT lane. Improvements at NE 24th Street will accommodate or implement a wide-lane east-west bicycle facility. The project may be phased with the initial phase focusing on the north end of the 148th Avenue NE corridor. Scope and cost may be modified based on future analysis and coordination with the City of Redmond associated with the 148th Avenue NE Master Plan. Funding allocation will support work in coordination with Redmond to identify project phasing and conduct predesign work or early implementation.					
TFP-251	Coal Creek Parkway/124th Avenue SE to the southern city limits		This project will add a 10- to 14-foot-wide off-street path along the west side of Coal Creek Parkway from 124th Avenue SE to the southern city limits. To accommodate the path, existing bicycle lanes may be eliminated and the roadway narrowed. The project will coordinate with the city's Urban Boulevards program. This is a component of priority bicycle corridor EW-5: Coal Creek-Cougar Mountain Connection.	Pedestrian-Bicycle System	None	None		
TFP-252	Bellevue College Connection: Kelsey Creek Rd/Snoqualmie River Road/142nd Pl SE from 145th Place SE to SE 36th St	R-201	This project will reconstruct the roadway to support frequent transit bus service, construct sidewalks and accessible bus stops, and modify the 142nd Pl SE/SE 32nd St intersection. Included is a separated multi-use paved path connecting 145th Pl SE bike lanes to the Mountains to Sound Greenway Trail. Also included is weather protection on 142nd Pl SE for transit users, pedestrians, and bicyclists. A Bellevue College Transit Center	Roadway, Transit, and Pedestrian-Bicycle System	None	None	X	

Table 2-1. SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			will be developed along the corridor. The project will likely be implemented in partnership with Bellevue College and other agencies. The funding allocation will advance the design in partnership with potential project partners.					
TFP-253	150th Avenue SE/Eastgate Way SE		This project will evaluate and determine a preferred intersection improvement option. Options may include: Option A: Add second northbound left-turn lane; add second eastbound through lane; add second westbound through lane past 148th Ave SE; add third southbound through lane across overpass. Option B: Construct multi-lane roundabout. The project will also evaluate/accommodate upgraded pedestrian and bike crossings, planned Eastgate Way bike lanes, and gateway treatments.	Roadway and Pedestrian-Bicycle System	None	None	X	
TFP-254	Bel-Red Road/NE 20th Street to NE 24th Street		This project will widen the roadway to five lanes, including two travel lanes in each direction, with a center turn lane and bicycle lanes. The funding allocation is a placeholder that may be used to support project pre-design or early implementation. Project implementation may be coordinated with the City of Redmond and with potential future private development in the immediate vicinity.	Roadway and Pedestrian-Bicycle System	None	None	X	
TFP-255	Newport Way SE/Somerset Blvd SE to 150th Avenue SE	R-185	This project will construct improvements to SE Newport Way between Somerset Blvd & 150th Ave SE, including a 10-ft wide multi-use path on the north side and a 5-ft bike lane on the south side, pedestrian crossings, turn lanes where necessary, & other potential roadway amenities.	Pedestrian-Bicycle System	Full implementation	Full implementation		
TFP-256	West Lake Sammamish Parkway Improvements – "North Central" segment: SE 2nd block to NE	R-183	This project will conduct a design alternatives analysis, in coordination with the community and other stakeholders It will complete design and construct roadway improvements on West Lake Sammamish Parkway, generally between the SE 200 Block and the NE 800 Block. Full-width improvements will be limited to this segment of West Lake Sammamish Parkway	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation		

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
	8th block (Phase 2)		and include, from east to west: a minimum 4-foot shoulder; two, 10-foot-wide travel lanes; 0- to 5-foot-wide buffer; and an 8 to 10-foot-wide multi-use path. The project will also make storm drainage, water quality and fish passage improvements as needed throughout the project corridor.					
TFP-257	West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4)	R-194	This project will conduct a design alternatives analysis in coordination with the community and other stakeholders. It will complete design and includes a full implementation placeholder for construction of the third and fourth phase of the corridor improvements (of five total), between SE 34th Street and the SE 2nd block. The full West Lake Sammamish Parkway project, between I-90 and the north city limit, will ultimately provide a consistent 4-foot-wide shoulder on the east side; a 10.5-foot-wide northbound vehicle travel lane; a10-foot-wide southbound vehicle travel lane; a10-foot-wide multi-purpose trail (8 feet wide in approximately 2% of the corridor due to constricted space) on the west side separated by a 1.5-foot shy distance space and a 2-foot- or 5-foot-wide landscaped buffer where space is available; a signal at SE 34th Street, if warranted ;and pedestrian crossings at SE 26th Street, Northup Way, NE 24th Street, and five other locations along the parkway The project will also make storm drainage, water quality, and fish passage improvements throughout the corridor. This funding allocation is to complete design and includes a full implementation placeholder for a third and fourth phase of improvements (of five total).	Roadway and Pedestrian-Bicycle System	None	Full implementation		
TFP-259	NE Spring Blvd/120th Avenue NE to 124th Avenue NE (Zone 2)	R-173	This project will complete design and construction of a new multi-modal arterial street connection between 120th and 124th Avenues NE, including signalized intersections at 120th, 121st, 123rd, and 124th Avenues NE. The planned roadway cross-section will include two travel lanes in each direction with turn pockets	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation	X	IF

Table 2-1. SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			or center medians, sidewalks with buffered bicycle paths on both sides, landscaping and irrigation, urban design elements, illumination, storm drainage improvements and water quality treatment, and other underground utilities. On-street parking will be provided along the north side of the roadway.					
TFP-260	120th Avenue NE (Stage 4)/NE 16th Street and to Northup Way	R-186	This project will conduct an alignment alternatives analysis and predesign process in coordination with Sound Transit and their potential development of an Operations and Maintenance Satellite Facility on the west side of the project alignment. Pre-design work on Stage 4 of the 120th Avenue NE corridor conducted through 2014 has assumed the current roadway alignment and would widen the roadway and transition from a 5-lane section to a 4-lane section in the proximity of NE 18th Street. North of NE 18th Street, the cross-section may consist of two northbound through lanes, a center turn lane, and one southbound lane, with sidewalks on both sides and a separated bicycle path on the west side. The project includes a stream crossing of the West Tributary. It will follow BelRed urban design standards.	Roadway and Pedestrian-Bicycle System	None	None	X	
TFP-263	148th Avenue NE/NE 8th Street		This project will evaluate potential intersection improvement options and identify a preferred alternative and update cost estimates. Options may include: Option A: Add 2nd eastbound and westbound left turn lanes on NE 8th Street. All widening would be done to the north side of the roadway. Option B: All features of Option A, plus add 2nd northbound and southbound left-turn lanes on 148th Avenue NE. With either option, evaluate configuring queue jumps for transit in existing NB, SB, and EB right-turn lanes; and evaluate impacts to Kelsey Creek, which crosses under NE 8th Street east of 148th Avenue NE.	Roadway and Transit	None	None	X	

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
TFP-265	124th Avenue NE/Ichigo Way (NE 18th Street) to Northup Way	R-191	This project will complete design and construct improvements to 124th Avenue NE between Ichigo Way (NE 18th Street) and Northup Way, which will include travel lanes, turn lanes, street lighting, traffic signals, sidewalk facilities, culvert replacement, wetland and critical area mitigation, landscaping, underground utilities, urban design treatments, and provisions for gateways. This project also provides funding to finish design for a multi-purpose pathway on the west side between NE 16th Street and Ichigo Way and replaces existing City of Seattle transmission towers with monotube towers. The project will also support evaluating environmental and open-space enhancements/trail connections along the West Tributary regional detention facilities.	Roadway and Pedestrian-Bicycle System	Full implementation	Full implementation	X	IF
TFP-266	Mountains to Sound Greenway – Factoria Crossing (includes I-90 exit expansion)	W/B-83	This project will construct the first phase of the Mountains to Sound Greenway Trail from I-405 to 132nd Avenue SE. The trail design includes a 12-foot-wide paved trail, a grade-separated crossing over Factoria Blvd. SE, a tunnel under the I-405/I-90 ramps, walls, storm system improvements, natural storm drainage practices where feasible, landscaping, street lighting, street furniture, and wayfinding. The project will also add storage capacity to the Eastbound I-90 off-ramp at Factoria Blvd. SE by relocating the existing trail and adding one additional storage lane. The project also will partner with WSDOT I-405 Renton to Bellevue Widening project to construct a single wall for the benefit of both projects.	Roadway, Transit and Pedestrian-Bicycle System	Full implementation	Full implementation	X	
TFP-267	West Lake Sammamish Parkway/"North" segment; (Phase 5)		This project will conduct a preliminary design of the fifth phase of the corridor improvements (of five total), between NE 8th Street and the north city limits. The full West Lake Sammamish Parkway project, between I-90 and the north city limit, will ultimately provide a consistent 4-foot-wide shoulder on the east side;a10.5-foot-wide northbound vehicle travel lane;a10-foot-wide southbound vehicle travel lane; a10-foot-	Roadway and Pedestrian-Bicycle System	None	None		

Table 2-1. SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			wide multi-purpose trail (8 feet wide in approximately 2% of the corridor due to constricted space) on the west side, separated by a 1.5-foot-shy distance space and a 2-foot or 5-foot-wide landscaped buffer where space is available; signal at SE 34th Street, if warranted and pedestrian crossings at SE 26th Street, Northup Way, NE 24th Street, and five other locations along the parkway. The project will also make storm drainage, water quality, and fish passage improvements throughout the corridor.					
TFP-268	Bellevue Way HOV lane/107th Ave SE Segment B: Winters House to 112th Ave SE & Segment C: 112th to 108th Avenues SE		This project contains placeholder funding for the evaluation of the two remaining segments of the Bellevue Way SE HOV project. Segment B: Bellevue Way SE from the Winters House to 112th Avenue SE; will widen Bellevue Way SE to the west to add a southbound inside HOV lane and 5' landscaped planter from the Winters House to the "Y" intersection along 112th Avenue SE. Segment C: Bellevue Way SE from 112th to 108th Avenues SE, will conduct a future evaluation to include consideration of operational scenarios other than an HOV lane (e.g., creating full-length dedicated left-turn lanes).	Roadway and Transit	None	None	X	
TFP-269	124th Avenue NE/NE 8th Street to NE 12th Street	R-190	The project will complete design and construct a separated multi-purpose pathway on both sides, and add illumination, landscaping, irrigation, storm drainage, and water quality treatment. The project will be designed and constructed to accommodate any new and/or relocation of existing utility infrastructure and will be coordinated with the design and implementation of 124th Avenue NE Improvements to the north.	Pedestrian-Bicycle System	None	Full implementation		
TFP-270	Spring Blvd – 124th Ave NE to 130th Ave NE (zone 3)		This project will create a multi-modal corridor incorporating east-west arterial capacity (2 through-lanes in each direction, potentially with an interim improvement limited to a single through-lane in each direction); light rail	Roadway and Pedestrian-Bicycle System	None	None	X	

Table 2-1. Draft SEIS Network Alternatives TFP Network (Proposed Action) and CIP Network (No Action) (continued)

2019-2030 Candidate Project #	Project Name, Location and Limits	CIP #	Project Description	Project Type	Project Elements Implemented CIP Network	Project Elements Implemented TFP Network	Capacity Project	IF = Impact Fee Project List
			guideways and stations; urban sidewalks; a bicycle trail/pathway with regional trail connections; and "green" elements, including urban open spaces, tree canopy and landscaping features, and natural drainage features where feasible.					
TFP-271	Coal Creek Parkway/120th Ave SE – I-405 – 119th Ave SE		This project will convert the three signalized intersections on Coal Creek Parkway at I-405 (2) and 119th Avenue SE and also the intersection of 120th Avenue SE to a series of roundabouts.	Roadway	None	None	X	
TFP-272	NE 12th St/116th Ave NE		This project will conduct a needs assessment to determine whether westbound to southbound dual left-turn lanes should be added or other revisions made at NE 12th St and 116th Ave NE.	Roadway	None	None	X	
TFP-273	Lakemont Blvd/Forest Dr		This project will provide a new traffic signal and eastbound to northbound left-turn lane on Forest Drive.	Roadway	None	None	X	

2.4.1 CIP Network Alternative

The CIP Network alternative includes all the projects that the city, along with its local jurisdiction and regional agency partners, has committed to fund and implement within the city limits; these projects are shown highlighted in yellow in Figure 1-1 and are listed in Table 2-1 with the CIP number in column 3.

The location of these projects within the 14 Mobility Management Areas (MMAs) is shown in Figure 1-1.

Twenty projects are included in the CIP Network Alternative; 10 projects are roadway capacity projects, and 10 are non-capacity improvement projects. (Capacity projects add lanes, turn pockets, and/or signalization to improve motor vehicle flow.)

Because this alternative is based on existing project plans with secured funding, it is considered a "no action" alternative. The City Council is not required to take any additional action to implement the CIP Network alternative if it chooses not to adopt the proposed 2019-2030 TFP.

2.4.2 TFP Network Alternative

The TFP Network includes 17 fully funded capacity projects, of which 15 are designated as impact fee projects (which requires that they be implemented and open for use by 2030). Also included are 15 capacity projects with placeholder funding allocations. The remaining 19 projects address non-capacity needs (generally pedestrian and bicycle facilities); six of these projects have funding allocations for full implementation, and 11 of the projects have a collective funding allocation (the Pedestrian and Bicycle Implementation Reserve), with specific project(s) for implementation to be determined via the city's ongoing PBII.

Both alternatives assume the following projects will be built and funded by others:

- WSDOT Interstate 405 (I-405)/Renton to Bellevue – Corridor Widening & Express Toll Lanes (in general, adds one lane in each direction between SR 167 in Renton and NE 6th Street in Bellevue; revised roadway configuration will have two express toll lanes in each direction).
- WSDOT Interstate 90 (I-90) Auxiliary lanes – New auxiliary lanes on EB and WB I-90 between Eastgate and West Lake Sammamish Parkway, and extension of the WB offramp to West Lake Sammamish Parkway.
- WSDOT State Route (SR) 520 at 148th Ave – Modification of the EB offramp to add a new underpass under 148th Ave NE, creating an option for better access to 152nd Ave NE and the new Overlake Village area (in addition to existing options to go north or south on 148th Ave NE).
- Sound Transit East Link LRT – New light rail transit line from Seattle to Redmond, with stations in Bellevue at South Bellevue, East Main, Downtown, Wilburton, BelRed and 130th Ave.
- Sound Transit I-405 Bus Rapid Transit – Frequent service on I-405 between Lynnwood and Bellevue and between Bellevue and Burien, starting in 2024 (with access at downtown Bellevue Transit Center).

- Sound Transit Bellevue Way from S Bell P&R to I-90 – Addition of southbound high-occupancy vehicle (HOV) lane. To be implemented by Sound Transit, in conjunction with East Link construction.
- King County Metro Enhancements to key routes, as per the Metro Connects plan (KCMetro 2017).

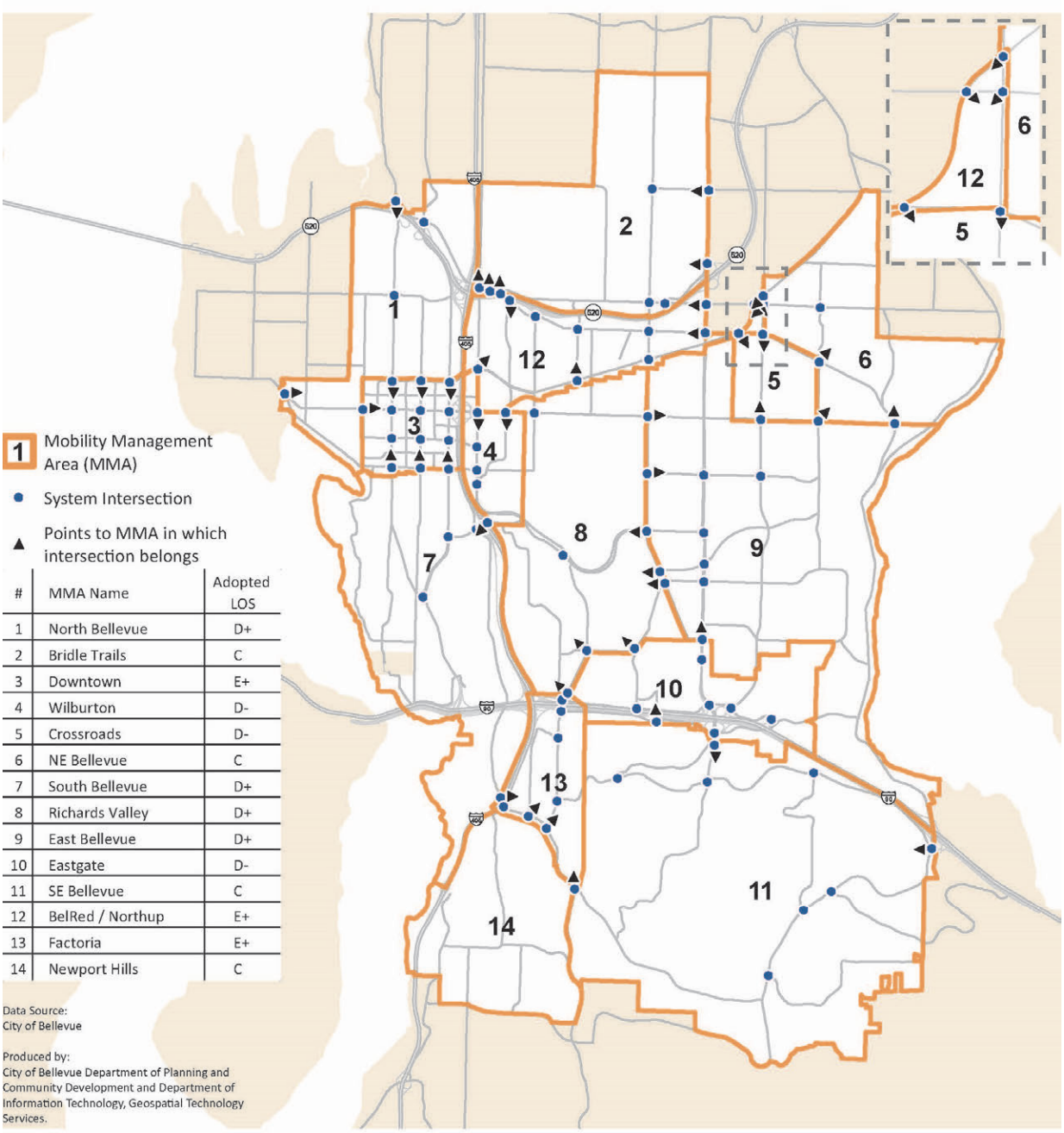
Table C-5 in Appendix C includes a detailed listing of improvements assumed to be implemented by others.

2.5 Benefits and Disadvantages of Delaying the Proposed Action Alternative

SEPA regulations require that an EIS evaluate the benefits and disadvantages of delaying implementation of the TFP Network alternative to some future time, compared with approval at this time. Particular attention is given to the potential for foreclosing future options by implementing the TFP Network alternative. The proposed TFP Network includes projects to address growth in Downtown, congestion in Eastgate and provide non-motorized facilities at several priority locations; also included are projects to analyze needs and identify preferred improvements at multiple locations around the city. Delay would disrupt the sequential, orderly capital transportation planning process that the city uses and would prevent the integration of new capacity project costs into the calculations for transportation impact fees.

2.6 Major Issues to be Resolved

The key environmental issues facing decision-makers are the effects of additional traffic on area roadways, effects on air quality, effects of street-widening projects on adjoining land uses, increases in impervious surfaces, and other effects on the natural environment resulting from the transportation projects included in this TFP. These potential environmental issues are evaluated in Chapters 3 through 7 of this Draft SEIS.



#	MMA Name	Adopted LOS
1	North Bellevue	D+
2	Bridle Trails	C
3	Downtown	E+
4	Wilburton	D-
5	Crossroads	D-
6	NE Bellevue	C
7	South Bellevue	D+
8	Richards Valley	D+
9	East Bellevue	D+
10	Eastgate	D-
11	SE Bellevue	C
12	BelRed / Northup	E+
13	Factoria	E+
14	Newport Hills	C

Figure 2-2. Mobility Management Areas

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Chapter 3. Transportation

This chapter reviews the existing conditions (2018) of the city's transportation system by subarea and identifies the potential impacts projected through 2030 of the CIP Network (No Action) and the TFP Network (Proposed Action) alternatives.

3.1 Affected Environment

The affected environment for transportation includes infrastructure and services. This section describes the following elements of the city's transportation system:

- Intersection and roadway operations
- Neighborhood conditions
- Traffic safety
- Travel alternatives
- Pedestrian and bicycle network

3.1.1 Intersection and Roadway Operations

Roadways in the city are characterized according to their functional classification, which reflects the relative access and mobility functions they serve. The major classifications are defined in the Comprehensive Plan as follows (Bellevue 2015).

- **Major arterial.** Major arterial streets provide efficient direct routes for long-distance automobile travel within the region. Streets connecting freeway interchanges to major concentrations of commercial activities are classified as major arterials. Traffic on major arterials is given preference at intersections, and some access control may be exercised in order to maintain the capacity to carry high volumes of traffic.
- **Minor arterial.** Minor arterial streets provide connections between major arterials and concentrations of residential and commercial activities. The amount of through traffic is less, and there is more service to abutting land uses. Traffic flow is given preference over lesser streets.
- **Collector.** Collector arterial streets are two- or three-lane streets that collect (or distribute) traffic in a neighborhood and provide the connections to minor or major arterials. Collectors serve neighborhood traffic and also provide access to abutting land uses. They do not carry much through traffic and are designated to be compatible with residential neighborhoods and local commercial areas.
- **Local.** Local streets provide access to abutting land uses and carry local traffic to the collector arterials. This classification includes both local and neighborhood collector streets as described in the city's Development Standards.

Figure 3-1 provides the functional classification of the main routes to and through the city (Bellevue 2015).

Level of Service (LOS) is a measure of vehicular congestion that describes the traffic volume on a facility compared to its carrying capacity. In Bellevue, in accordance with *the City Traffic Standards Code* (*Bellevue City Code* [BCC] 14.10), LOS is calculated as volume-to-capacity ratio (V/C). LOS is represented as a ratio of volume to capacity at intersections and can be evaluated by individual intersection or by an areawide average of designated "system" intersections. Lower values, for example 0.80 and under, reflect traffic flows with minimal delay; values between 0.80 and 0.90 reflect moderate and stable traffic conditions; values between 0.90 and 1.0 reflect conditions that approach capacity; and values above 1.0 reflect congested conditions with the potential for substantial user delay.

LOS standards are used to evaluate current conditions as well as the transportation impacts of long-term growth. The Washington State Growth Management Act (GMA) requires that development cannot occur unless adequate infrastructure either exists or is built concurrent with development (*Revised Code of Washington* [RCW] 36.70A). This is known as *concurrency*. Under GMA, jurisdictions adopt standards by which the minimum acceptable roadway operating conditions are determined. Deficiencies are identified if operations fall below these standards. Table 3-1 summarizes the LOS standards that have been defined by the city for each of the MMAs, as shown in Figure 3-2. In Bellevue, the standards are applied to a weekday averaged two-hour p.m. peak period representing extended high trip volume periods, which typically reflect the most congested conditions.

Traffic volumes for existing conditions for locations identified in Figure 3-3 are indicated in Table 3-2.

The evaluation of transportation system performance is based on travel demand forecasting and analysis using the BKR Travel Demand Model. The model methodology and other analysis assumptions are described in Appendix C of this document. Table C-7 in Appendix C summarizes existing and future projected operations (LOS) of the 92 system intersections, located throughout the city, by which it measures concurrency. It is important to note that the TFP analysis of future conditions, while similar to the approach that the city uses for concurrency analysis, differs from it in several important respects:

- The TFP analysis is for 12-year horizon conditions, whereas the GMA-required concurrency analysis uses a 6-year horizon.
- The TFP includes a forecast of land use growth over a 12-year period, whereas concurrency analysis is based only on existing land use plus additional development that has received permits (that is, a more limited universe of land use).
- The TFP roadway network includes certain projects assumed to be completed by the city and by others (including WSDOT and private development) with projected funding to be received beyond the 6-year horizon of the 6- to 7-year CIP, whereas concurrency analysis includes only projects (city-sponsored or otherwise) that have full funding secured within the 6-year horizon (that is, a more limited set of projects).

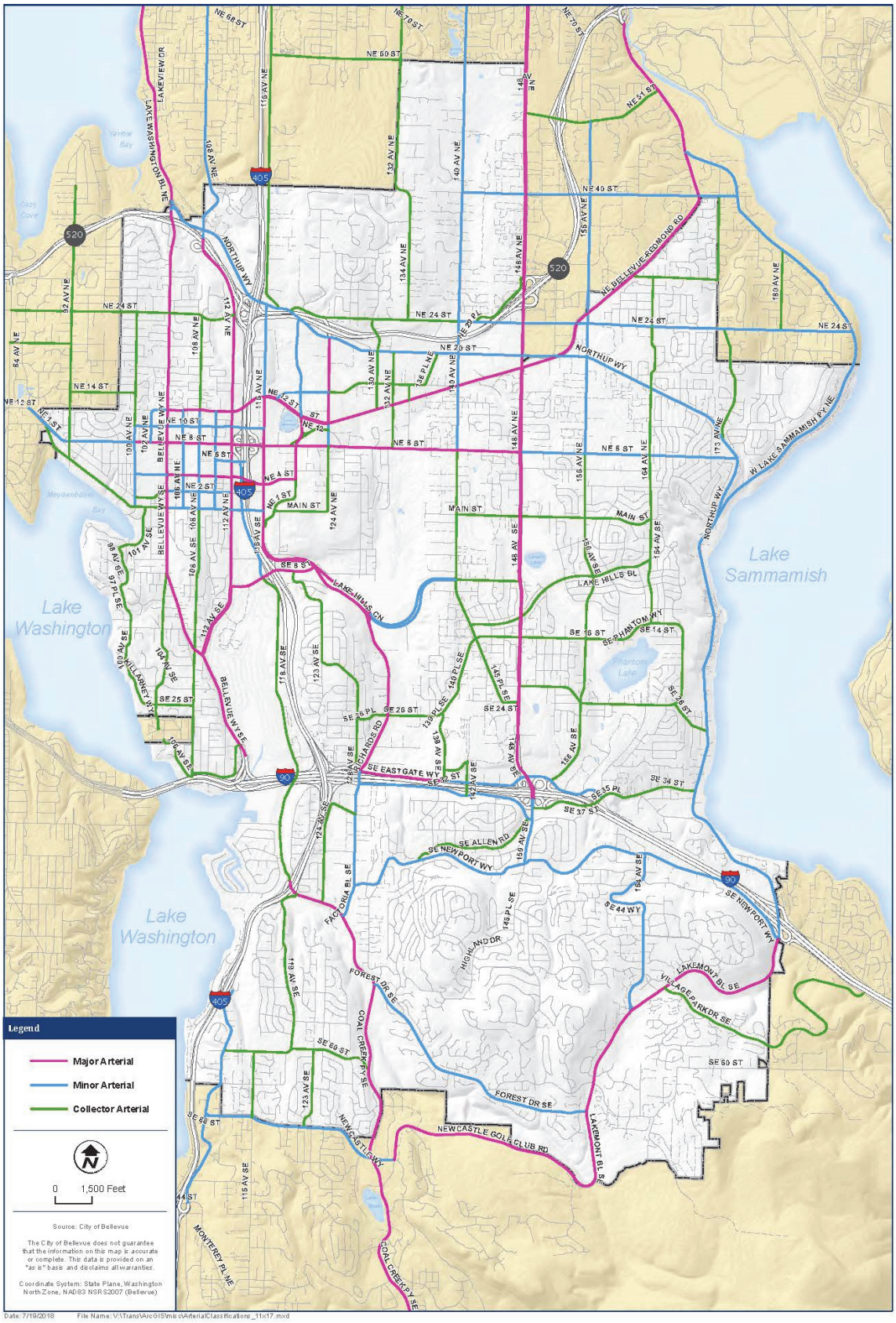


Figure 3-1. Roadway Classifications

Table 3-1. City of Bellevue Level of Service Standards[1]

Mobility Management Area	Area-Average LOS Standard (Maximum V/C Ratio)	Congestion Allowance[2]
Regional Center		
3 Downtown	0.950	9
Mixed Commercial/Residential Areas		
12 BelRed/Northup	0.950	7
4 Wilburton	0.900	3
5 Crossroads	0.090	2
10 Eastgate	0.090	4
13 Factoria	0.950	5
Residential Group 1		
1 North Bellevue	0.850	3
7 South Bellevue	0.850	4
8 Richards Valley	0.850	5
9 East Bellevue	0.850	5
Residential Group 2		
2 Bridle Trails	0.800	4
6 Northeast Bellevue	0.800	2
11 Southeast Bellevue	0.800	3
14 Newport[3]	0.800	--[3]

1 Excerpted from BCC 14.10.030.

2 Congestion allowance is the number of system intersections that may exceed the areawide maximum.

3 No system intersections are currently identified in this mobility management area.

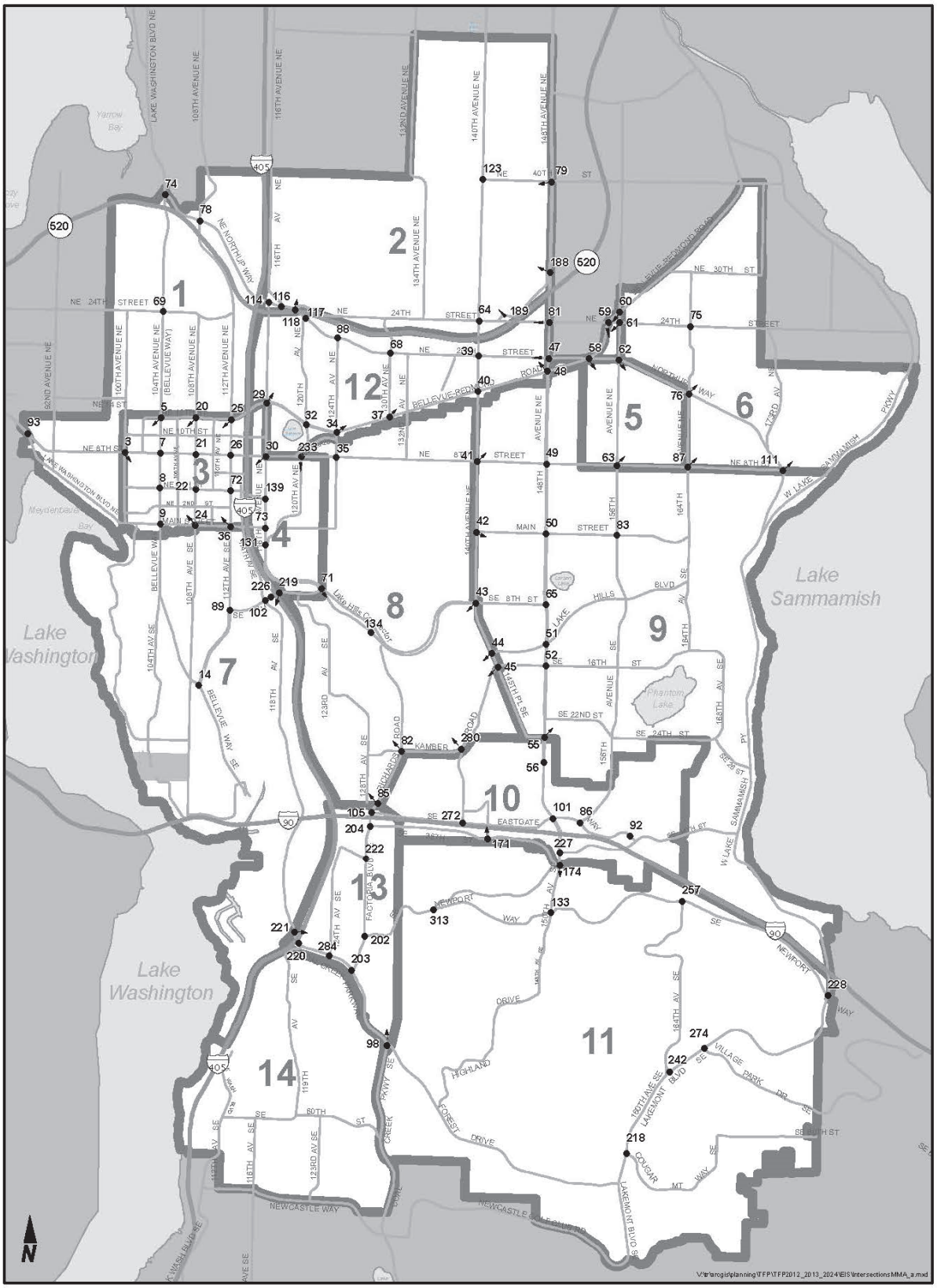


Figure 3-2. Mobility Management Areas and System Intersections

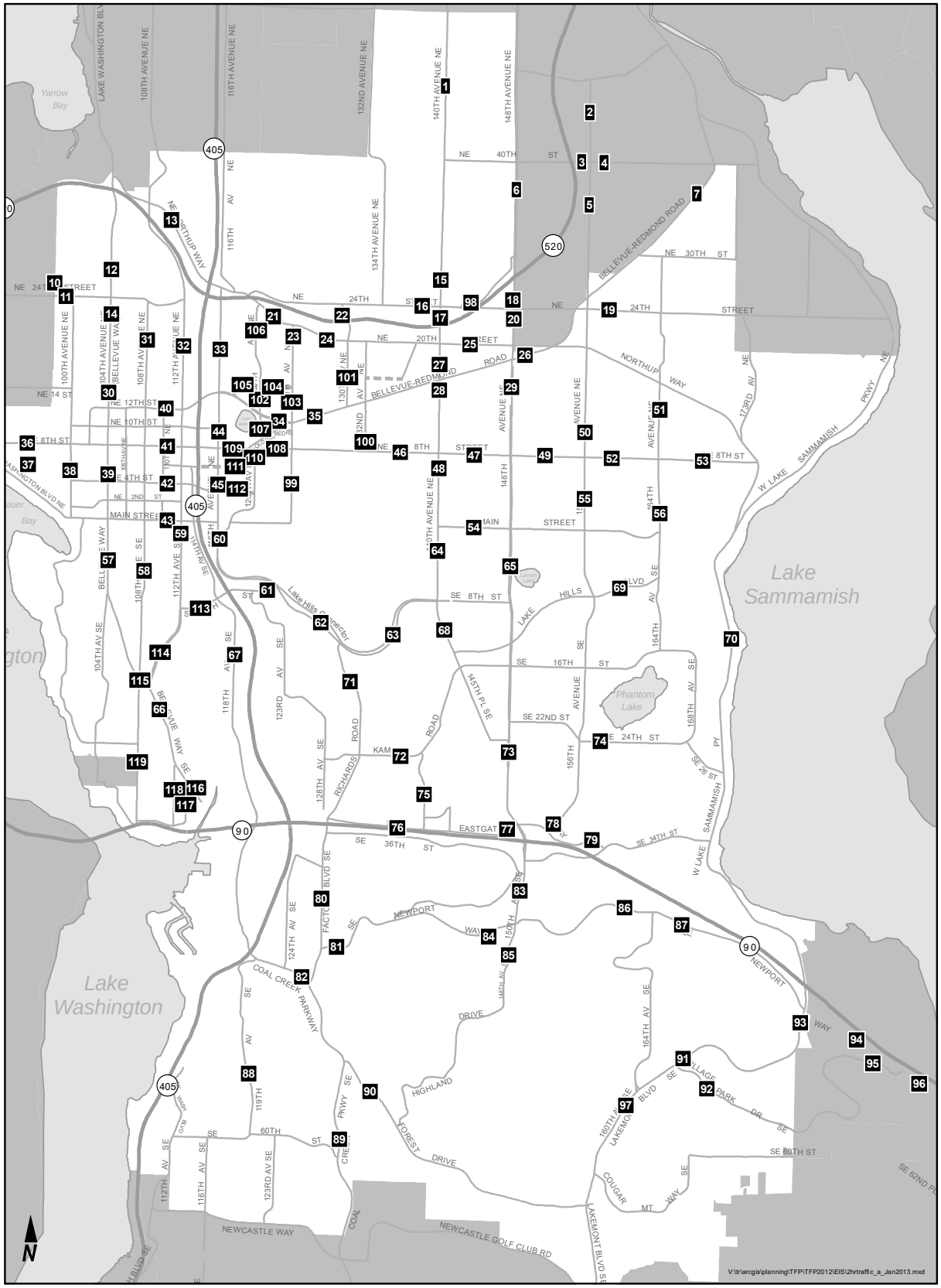


Figure 3-3. Traffic Volume Locations

Table 3-2. Existing and Projected Future Traffic Volumes

Roadway Location Index	Roadway Location	MMA[a]	Average Traffic Volume (Vehicles per Hour Averaged Over 2 Hours in PM Peak Period)			% Change in TFP Network over Existing
			Existing (2017 Observed)	Future (2030) CIP Network	Future (2030) TFP Network	
1	140th Ave NE, north of NE 40th St	2	1,239	1,446	1,427	17%
2	156th Ave NE, north of NE 40th St	0	1,659	1,833	1,738	10%
3	NE 40th St, west of 156th Ave NE	0	2,465	3,074	3,164	25%
4	NE 40th St, east of 156th Ave NE	0	1,701	2,580	2,588	52%
5	156th Ave NE, south of NE 40th St	0	1,983	2,541	2,534	28%
6	148th Ave NE, south of NE 40th St	2	1,934	2,420	2,387	25%
7	Bel-Red Rd, south of NE 40th St	0	987	1,333	1,324	35%
8	84th Ave NE, north of NE 24th St	0	1,214	1,353	1,344	11%
9	NE 24th St, east of 84th Ave NE	0	285	351	351	23%
10	98th Ave NE, north of NE 24th St	0	182	192	190	5%
11	NE 24th St, east of 98th Ave NE	1	689	811	815	18%
12	Bellevue Way NE, north of NE 24th St	1	1,625	1,925	1,897	18%
13	Northup Way, east of 108th Ave NE	1	1,125	1,433	1,376	27%
14	Bellevue Way NE, south of NE 24th St	1	1,624	1,927	1,908	19%
15	140th Ave NE, north of NE 24th St	2	1,133	1,083	1,077	-4%
16	NE 24th St, west of 140th Ave NE	2	954	1,230	1,226	29%
17	140th Ave NE, south of NE 24th St	2	1,853	1,947	1,941	5%
18	148th Ave NE, north of NE 24th St	12	3,570	4,037	3,997	13%
19	NE 24th St, east of 156th Ave NE	6	1,047	1,256	1,254	20%
20	148th Ave NE, south of NE 24th St	12	2,828	3,292	3,281	16%
21	Northup Way, west of 124th Ave NE	12	1,232	1,435	1,473	16%
22	130th Ave NE, south of NE 24th St	2	573	713	677	24%
23	124th Ave NE, south of Northup Way	12	601	1,549	1,715	158%
24	Northup Way, east of 124th Ave NE	12	2,034	2,700	2,662	33%

Table 3-2. Existing and Projected Future Traffic Volumes (continued)

Roadway Location Index	Roadway Location	MMA[a]	Average Traffic Volume (Vehicles per Hour Averaged Over 2 Hours in PM Peak Period)			% Change in TFP Network over Existing
			Existing (2017 Observed)	Future (2030) CIP Network	Future (2030) TFP Network	
25	NE 20th St, east of 140th Ave NE	12	1,640	2,201	2,200	34%
26	Bel-Red Rd, east of 148th Ave NE	12	1,455	1,858	1,852	28%
27	140th Ave NE, north of Bel-Red Rd	12	1,518	1,452	1,456	-4%
28	140th Ave NE, south of Bel-Red Rd	12	1,277	1,332	1,330	4%
29	148th Ave NE, south of Bel-Red Rd	12	2,702	2,955	2,954	9%
30	Bellevue Way NE, north of NE 12th St	1	1,935	2,206	2,190	14%
31	108th Ave NE, north of NE 12th St	1	190	329	347	73%
32	112th Ave NE, north of NE 12th St	1	1,135	1,190	1,209	5%
33	116th Ave NE, north of NE 12th St	12	1,014	949	968	-6%
34	NE 12th St, west of 124th Ave NE	12	1,852	1,823	1,828	-2%
35	Bel-Red Rd, west of 130th Ave NE	12	2,224	2,539	2,554	14%
36	NE 8th St, east of 92nd Ave NE	1	722	783	779	8%
37	Lake Washington Blvd NE, east of 92nd Ave NE	1	453	533	523	18%
38	100th Ave NE, south of NE 8th St	3	1,038	1,075	1,047	4%
39	Bellevue Way NE, south of NE 6th St	3	1,855	2,018	1,990	9%
40	NE 12th St, west of 112th Ave NE	3	1,785	2,245	2,211	26%
41	NE 8th St, west of 112th Ave NE	3	2,965	3,770	3,685	27%
42	NE 4th St, west of 112th Ave NE	3	2,144	2,681	2,621	25%
43	Main St, west of 112th Ave	3	1,619	1,917	1,885	18%
44	116th Ave NE, north of NE 8th St	4	1,934	2,496	2,821	29%
45	116th Ave NE, south of NE 8th St	4	1,806	2,125	3,664	18%
46	NE 8th St, west of 140th Ave NE	8	2,107	2,517	2,509	19%
47	NE 8th St, east of 140th Ave NE	9	1,643	1,890	1,885	15%
48	140th Ave NE, south of NE 8th St	9	1,549	1,701	1,684	10%
49	NE 8th St, east of 148th Ave NE	9	1,606	1,793	1,774	12%
50	156th Ave NE, north of NE 8th St	5	1,856	2,160	2,155	16%
51	164th Ave NE, south of Northup Way	6	1,093	1,279	1,279	17%

Table 3-2. Existing and Projected Future Traffic Volumes (continued)

Roadway Location Index	Roadway Location	MMA[a]	Average Traffic Volume (Vehicles per Hour Averaged Over 2 Hours in PM Peak Period)			% Change in TFP Network over Existing
			Existing (2017 Observed)	Future (2030) CIP Network	Future (2030) TFP Network	
52	NE 8th St, west of 164th Ave NE	5	1,069	1,202	1,200	12%
53	NE 8th St, east of 164th Ave NE	6	636	648	650	2%
54	Main St, east of 140th Ave	9	503	510	503	1%
55	156th Ave NE, north of Main St	9	1,478	1,680	1,673	14%
56	164th Ave NE, north of Main St	9	829	1,065	1,047	28%
57	Bellevue Way SE, south of SE 3rd St	7	2,472	2,681	2,650	8%
58	108th Ave SE, south of SE 4th St	7	535	580	606	8%
59	112th Ave SE, south of Main St	7	2,279	2,705	2,612	19%
60	116th Ave SE, south of Main St	4	2,016	1,994	2,118	-1%
61	SE 8th St, west of Lake Hills Connector	8	1,669	1,808	1,752	8%
62	Lake Hills Connector, south of SE 8th St	8	2,693	2,985	2,990	11%
63	Lake Hills Connector, east of Richards Rd	8	1,101	1,357	1,321	23%
64	140th Ave SE, north of SE 8th St	8	1,355	1,552	1,537	15%
65	148th Ave SE, south of Main St	9	3,071	3,197	3,172	4%
66	Bellevue Way SE, south of 112th Ave SE “Y” (total volume)	7	3,481	3,847	3,976	11%
67	118th Ave SE, south of SE 8th St	7	745	847	825	14%
68	145th Pl SE, south of SE 8th St	8	1,438	1,606	1,596	12%
69	Lake Hills Blvd, east of 156th Ave SE	9	384	342	325	-11%
70	West Lake Sammamish Parkway, south of Northup Way	9	1,216	1,414	1,406	16%
71	Richards Rd, north of Kamber Rd	8	2,248	2,395	2,394	7%
72	Kamber Rd, east of Richards Rd	8	1,240	1,328	1,304	7%
73	148th Ave SE, south of SE 24th St	10	3,902	4,079	4,047	5%
74	SE 24th St, east of 156th Ave SE	9	238	219	224	-8%
75	139th Ave SE, south of Kamber Rd	10	1,043	1,281	1,290	23%
76	SE Eastgate Way, east of Richards Rd	13	678	828	821	22%
77	SE Eastgate Way, west of 150th Ave SE	10	1,077	1,286	1,251	19%
78	156th Ave SE, north of SE Eastgate Way	10	1,333	1,455	1,443	9%

Table 3-2. Existing and Projected Future Traffic Volumes (continued)

Roadway Location Index	Roadway Location	MMA[a]	Average Traffic Volume (Vehicles per Hour Averaged Over 2 Hours in PM Peak Period)			% Change in TFP Network over Existing
			Existing (2017 Observed)	Future (2030) CIP Network	Future (2030) TFP Network	
79	SE Eastgate Way, west of 161st Ave SE	10	804	1,015	1,050	26%
80	Factoria Blvd, north of SE 41st St	13	2,242	2,457	2,435	10%
81	SE Newport Way, east of 128th Ave SE	13	1,340	1,469	1,460	10%
82	Coal Creek Parkway, west of SE Newport Way	13	2,035	2,204	2,215	8%
83	150th Ave SE, north of SE Newport Way	11	2,219	2,484	2,751	12%
84	SE Newport Way, west of 150th Ave SE	11	828	890	1,018	7%
85	150th Ave SE, south of SE Newport Way	11	1,027	1,215	1,257	18%
86	SE Newport Way, west of 164th Ave SE	11	686	730	743	6%
87	SE Newport Way, east of 164th Ave SE	11	390	420	432	8%
88	119th Ave SE, north of SE 52nd St	14	713	982	971	38%
89	Coal Creek Parkway, south of Forest Drive SE	11	2,846	2,868	2,860	1%
90	Forest Drive SE, east of Coal Creek Parkway	11	862	1,148	1,175	33%
91	Lakemont Blvd SE, east of Village Park Drive SE	11	1,417	1,107	1,096	-22%
92	Village Park Drive SE, south of Lakemont Blvd SE	11	409	409	409	0%
93	Lakemont Blvd SE, south of SE Newport Way	11	1,474	1,003	965	-32%
94	SE Newport Way, north of Village Park Drive	0	979	1,051	1,059	7%
95	North Village Rd, west of SE Newport Way	0	63	88	89	40%
96	Village Park Drive, west of SE Newport Way	0	1,428	1,544	1,554	8%
97	Lakemont Blvd SE, west of 164th Ave SE	11	1,421	1,343	1,351	-5%
98	NE 29th Pl, north of NE 24th St	2	848	1,087	1,074	28%
99	124th Ave NE, south of NE 5th St	8	524	896	849	71%
100	132nd Ave NE, north of NE 8th St	8	310	392	407	26%
101	130th Ave NE, north of NE 16th St	12	674	1,156	1,132	72%
102	120th Ave NE, south of NE 15th St	12	366	1,043	1,109	185%
103	124th Ave NE, south of NE 15th St	12	639	1,049	1,062	64%
104	NE Spring Blvd, west of 124th Ave NE	12	0	862	911	--
105	NE Spring Blvd, west of 120th Ave NE	12	0	1,993	2,093	--

Table 3-2. Existing and Projected Future Traffic Volumes (continued)

Roadway Location Index	Roadway Location	MMA[a]	Average Traffic Volume (Vehicles per Hour Averaged Over 2 Hours in PM Peak Period)			% Change in TFP Network over Existing
			Existing (2017 Observed)	Future (2030) CIP Network	Future (2030) TFP Network	
106	120th Ave NE, south of Northup Way	12	273	770	790	182%
107	120th Ave NE, south of NE 12th St	12	789	1,694	1,810	115%
108	NE 8th St, west of 124th Ave NE	8	1,962	2,077	2,167	6%
109	NE 8th St, west of 120th Ave NE	4	2,367	3,057	3,344	29%
110	120th Ave NE, north of NE 6th St	4	1,364	1,661	1,629	22%
111	NE 6th St, west of 120th Ave NE	4	152	142	133	-7%
112	NE 4th St, west of 120th Ave NE	4	188	604	558	221%
113	SE 8th St, east of 112th Ave SE	7	1,265	1,763	1,600	39%
114	112th Ave SE, north of Bellevue Way SE	7	1,266	1,429	1,514	13%
115	Bellevue Way SE, west of 112th Ave SE	7	2,517	2,782	2,788	11%
116	Bellevue Way SE between the park-and-ride and 113th Ave SE (total count)	0	3,468	3,952	4,079	14%
116a	Bellevue Way SE between the park-and-ride and 113th Ave SE—southbound HOV only	7	0	29	206	--
117	113th Ave SE, southwest of Bellevue Way SE	7	171	228	216	33%
118	112th Ave SE, south of Bellevue Way SE	7	125	89	93	-29%
119	108th Ave SE, south of SE 25th St	7	219	264	235	21%

[a] MMA locations indicated as “0” fall outside of Bellevue city limits.

Existing roadway operating conditions, as reflected by the 2017 V/C values presented in Appendix C, are discussed in the following sections. In general, the analysis indicates that most system intersections are currently operating at an acceptable V/C, with all except 15 locations operating within their respective standards. Those operating below V/C standards are often located in proximity to the interchanges with State Route (SR) 520, Interstate 405 (I-405) or Interstate 90 (I-0). This indicates that high traffic volumes generated by the freeways are most likely to affect operations on the local roadways located near the interchanges.

3.1.1.1 North Bellevue

The North Bellevue subarea (MMA 1) is largely single-family residential, with some multi-family use in the southern portion along Bellevue Way; it includes a small neighborhood commercial area and substantial office development along 112th Avenue NE. The two regional arterials that pass through the areas, Bellevue Way NE and 112th Avenue NE, provide north-south connections between SR 520 and Downtown.

The North Bellevue MMA's areawide average LOS of 0.53 V/C is well below the adopted standard of 0.85 V/C. No intersections exceed the LOS standard of 0.85 V/C.

3.1.1.2 Bridle Trails

The Bridle Trails subarea (MMA 2) is largely single-family residential. North-south arterials that pass through the area, include 116th Avenue NE, 140th Avenue NE, and 148th Avenue NE at the eastern boundary; these connect the major development area of BelRed/Northup and central Bellevue to Redmond and to SR 520.

The Bridle Trails MMA's areawide average LOS of 0.67 V/C is well below the adopted standard of 0.80. Of the eight system intersections located in this area, six are operating within their respective V/C standards, and the following two intersections are operating at a V/C level that exceeds the MMA standard:

- (116) 115th Place NE/Northup Way—Its V/C of 0.81 exceeds its V/C threshold of 0.80. This is an intersection of two arterials with substantial southbound-to-eastbound left turns and westbound-to-northbound right turns.
- (188) 148th Avenue NE/NE 29th Place—Its V/C of 0.86 exceeds its V/C threshold of 0.80. This intersection funnels traffic to the SR 520 interchange to the south and also north to 148th Avenue NE.

Although two intersections operate over the 0.80 V/C for Bridle Trails, the MMA operates within the congestion allowance, which allows four intersections to exceed the standard.

3.1.1.3 Downtown

The Downtown subarea (MMA 3) is designated by local and regional plans as one of King County's Urban Centers, and the area in Bellevue that will receive the city's most intense development. It is the major employment area of the city. Most Downtown streets are major or minor arterials. Its areawide average of 0.72 V/C is well within standards adopted for this MMA (0.95 V/C). Of the 13 system

intersections located in this area, 10 are operating within their respective standards, and the following three intersections are operating at a V/C level that exceeds the MMA standard:

- (9) Bellevue Way/Main Street—Its V/C of 0.96 exceeds its V/C threshold of 0.95. This is an intersection of two arterials with substantial left turns on all approaches.
- (26) 112th Avenue NE/NE 8th Street—Its V/C of 1.05 exceeds its V/C threshold of 0.95. This intersection is located at the interchange of NE 8th Street and I-405 and receives large volumes of inbound and outbound traffic in the PM peak hour.
- (36) 112th Avenue NE/Main Street—Its V/C of 0.98 exceeds its V/C threshold of 0.95. This is an intersection of two arterials with substantial northbound-to-westbound and westbound-to-southbound left turns.

Although three intersections operate over the 0.95 V/C standard, this MMA operates well below the congestion allowance, which allows nine intersections to exceed the standard.

3.1.1.4 Wilburton

The Wilburton subarea (MMA 4) is located along the I-405 corridor. It has a concentration of offices and hotels, and also includes a significant number of auto dealers and retail stores. This area is anticipated to change significantly due to its strategic location between Downtown and BelRed and its proximity to the freeway and light rail (opening in 2023). 116th Avenue NE is the major north-south arterial serving this area. NE 8th Street is the major arterial that forms the north boundary of the majority of this area.

Wilburton has an areawide average LOS of 0.72 V/C that is well below its V/C standard of 0.90 V/C. Of the five system intersections located in this area, all are operating within their respective LOS standards. This MMA operates well below the congestion allowance, which allows three intersections to exceed the standard.

3.1.1.5 Crossroads

Crossroads (MMA 5), in the northeast quadrant of the city, is a community commercial center containing retail stores and offices that serve both the nearby neighborhoods and the larger community. 156th Avenue NE is the major north-south thoroughfare and is classified as a minor arterial. NE 8th Street is the east-west major arterial that forms the southern boundary of the area. Crossroads has an areawide average V/C of 0.72 that is well below the adopted standard of 0.90 V/C. Of the three system intersections located in this area, all are operating within their respective LOS standards. This MMA operates well below the congestion allowance, which allows two intersections to exceed the standard.

3.1.1.6 Northeast Bellevue

The Northeast Bellevue subarea (MMA 6) is primarily residential. It is abutted by Bellevue-Redmond (Bel-Red) Road, a major arterial on the northwest. 164th Street is the major north-south thoroughfare and is classified as a minor arterial. It has an areawide average V/C of 0.72 that is below the adopted standards of 0.80 V/C. Of the four system intersections located in this area, all are operating within their respective LOS standards. This MMA operates well below the congestion allowance, which allows two intersections to exceed the standard.

3.1.1.7 South Bellevue

The South Bellevue subarea (MMA 7) lies south of Downtown and is a largely single-family area, with some medium-density multi-family use south of downtown and some commercial and office use along Bellevue Way SE and in the Bellefields Office Park. Bellevue Way SE and 112th Avenue SE are the major north-south arterials in the area. It has an areawide average V/C of 0.68 that is below the adopted standard of 0.85 V/C. Of the five system intersections located in this area, all are operating within their respective LOS standards. This MMA operates well below the congestion allowance, which allows four intersections to exceed the standard.

3.1.1.8 Richards Valley

The Richards Valley subarea (MMA 8) is largely single-family residential with some multi-family and industrial use along Richards Road. Richards Road is a major north-south arterial that passes through the area. It is bounded on the east by 140th Avenue, a minor arterial. NE 8th Street is a major arterial that is the northern boundary of the area, and the Lake Hills Connector is an east-west major and minor arterial that passes through the center of the area.

The MMA's areawide average LOS of 0.69 V/C is well below the adopted standard of 0.85 V/C. Of the nine system intersections located in this area, seven are operating within their respective V/C standards, and the following two intersections are operating at a V/C level that exceeds the MMA standard:

- (71) Lake Hills Connector/SE 8th Street—Its V/C of 0.94 exceeds its V/C threshold of 0.85. This intersection of an east-west arterial and a north-south arterial has substantial northbound-to-westbound left turns.
- (82) Richards Road/Kamber Road—Its V/C of 0.87 exceeds its V/C threshold of 0.85. This intersection of a major north-south arterial and an east-west collector arterial has substantial southbound-to-eastbound and westbound-to-southbound left turns.

With two intersections operating over the 0.85 V/C standard, this MMA operates well below the congestion allowance, which allows five intersections to exceed the standard.

3.1.1.9 East Bellevue

The East Bellevue subarea (MMA 9) is largely single-family residential with some multi-family and commercial centers. 148th Avenue is the major north-south arterial that passes through the area. It is also served by collector arterials 156th Avenue and 164th Avenue. NE 8th Street is a major east-west arterial.

The MMA's areawide average LOS of 0.81 V/C is below the adopted standard of 0.85 V/C. Of the nine system intersections located in this area, six are operating within their respective V/C standards. The following three intersections are operating at a V/C level that exceeds the MMA standard; all are located along 148th Avenue, which has the highest intersection approach volumes:

- (49) 148th Avenue NE/NE 8th Street—Its V/C of 0.94 exceeds its V/C threshold of 0.85. This intersection of a major north-south arterial and a major east-west arterial has substantial left turns in all directions.

- (50) 148th Avenue NE/Main Street—Its V/C of 0.91 exceeds its V/C threshold of 0.85. This intersection of a major north-south arterial and an east-west collector arterial has substantial left turns in all but the eastbound leg.
- (52) 148th Avenue NE/SE 16th Street—Its V/C of 0.87 exceeds its V/C threshold of 0.85. This intersection of a major north-south arterial and an east-west collector arterial has substantial eastbound to northbound volumes.

With three intersections operating over the 0.85 V/C standard, this MMA operates well below the congestion allowance, which allows five intersections to exceed the standard.

3.1.1.10 Eastgate

The Eastgate subarea (MMA 10) is located both north and south of the I-90 corridor and has varied land use including commercial, office, and hotels; the Bellevue College campus; and multi-family and single-family residential use. Eastgate Way is the main east-west major/minor arterial. 148th Avenue NE is a major north-south arterial that bisects the area. This MMA has an areawide average V/C of 0.70, which is well below adopted standards (0.90 V/C). Of the seven system intersections located in this area, one is operating outside of the LOS standard of 0.90:

- (101) 150th Avenue SE/SE Eastgate Way—Its V/C of 1.06 exceeds its V/C threshold of 0.90. This intersection receives heavy volumes entering and leaving the I-90 interchange in the PM peak hour.

With one intersection operating over the 0.90 V/C standard, this MMA operates well below the congestion allowance, which allows four intersections to exceed the standard.

3.1.1.11 Southeast Bellevue

This Southeast subarea (MMA 11) is south of the Eastgate area and east of the Factoria area. It has largely single-family land use with a commercial and multi-family area on Lakemont Boulevard. This area has an areawide average 0.75 V/C that is below adopted standards of 0.80 V/C. There are eight system intersections located in this area, of which three are not operating within the LOS standards.

- (133) 150th Avenue SE/SE Newport Way—Its V/C of 0.96 exceeds its V/C threshold of 0.80. It has substantial left-turn volumes on its southbound and eastbound approaches.
- (174) 150th Avenue SE/SE 38th Street—Its V/C of 1.03 exceeds its V/C threshold of 0.80. It has substantial north-south through volume, as well as substantial left-turn volumes on its eastbound approach for traffic accessing the interchange at I-90.
- (228) Lakemont Blvd./SE Newport Way—Its V/C of 0.82 exceeds its V/C threshold of 0.80. It has substantial left-turn volumes on all approaches, associated with traffic accessing the interchange at I-90.

With three intersections operating over the 0.80 V/C standard, this MMA operates at the congestion allowance, which allows three intersections to exceed the standard.

3.1.1.12 BelRed/Northup

The BelRed/Northup subarea (MMA 12) lies south of SR 520 and east of I-405. It has historically been an area with warehouses and manufacturing, with some professional office use south of Bel-Red Road, retail centers along Northup Way, auto dealerships, and office developments. The new BelRed Subarea Plan, adopted in 2009, targets a shift to higher density mixed residential and office use, and identifies significant investments to take advantage of planned light rail stations and an economic niche different from Downtown. It currently has an areawide average V/C of 0.68 that is below the adopted standards of 0.95 V/C. Of the 15 system intersections located in this area, all are operating within their respective LOS standards. This MMA operates well below the congestion allowance, which allows seven intersections to exceed the standard.

3.1.1.13 Factoria

The Factoria subarea (MMA 13) is located south of I-90 and east of I-405. It has a commercial center along Factoria Boulevard SE which passes through the center of the area and has a significant concentration of jobs as well as multi-family and institutional uses. This MMA has an areawide average 0.80 V/C that is well below adopted standards (0.95 V/C). Of the nine system intersections located in this area, eight are operating within their respective standards, and the following one intersection is operating at a LOS level that exceeds its standard:

- (204) 128th Avenue SE/SE 36th Street—V/C of 1.04 exceeds its V/C threshold of 0.95.

With one intersection operating over the 0.95 V/C standard this MMA operates well below the congestion allowance, which allows five intersections to exceed the standard.

3.1.1.14 Newport Hills

The Newport Hills subarea (MMA 14), east of I-405 and west of Coal Creek Parkway, has a LOS standard of 0.80 but no adopted system intersections and therefore no tracking mechanism. The area is primarily single-family and is projected to have little or no additional development between now and 2030.

3.1.2 Neighborhood Conditions

Traffic and parking issues on residential streets can greatly affect neighborhood livability. When problems become a daily occurrence, the sense of community and personal well-being is compromised. When streets are safe and pleasant, quality of life is enhanced. The city addresses transportation concerns through its Neighborhood Traffic Safety Services (NTSS) group. NTSS is committed to working with residents to protect and preserve neighborhood livability by minimizing cut-through traffic, discouraging excessive vehicle speeds, encouraging walking and bicycling, and reducing overflow parking.

The City of Bellevue Residential Traffic Guidebook (Bellevue 2013) provides a variety of tools to address neighborhood traffic concerns depending on traffic conditions. Areas of focus include changing driver behavior through education, encouragement, and enforcement efforts, as well as physically changing the street environment through traffic safety projects that may include speed bumps, traffic circles, medians, raised crosswalks, and stationary radar signs.

The Residential Permit Parking Program effectively addresses neighborhood spillover parking. A Residential Permit Parking Zone (RPZ) is an area established by a city ordinance to restrict non-residential parking on neighborhood streets. A neighborhood may be eligible for zoned or general parking restrictions if it regularly experiences a significant amount of spillover parking from adjacent businesses, such as from Downtown Bellevue, or is near major generators of parked cars (high schools, shopping malls, etc.). RPZ restrictions require majority support from neighborhood residents, as well as City Council approval. The city has 14 designated permit parking zones.

3.1.3 Traffic Safety

Analysis of information from the United States on vehicular based crashes based on the last event in the crash causal chain (the last point at which an accident could be avoided) assigned responsibility to the driver in 94 percent of cases. Recognition errors (driver's inattention, internal and external distractions, and inadequate surveillance) accounted for about 41 percent, decision errors (driving too fast for conditions, too fast for a curve, false assumption of others' actions, illegal maneuver and misjudgment of gap or others' speed) accounted 33 percent, and performance errors overcompensation, poor directional control, sleep, etc.) accounted for 11 percent (NTSA 2015).

Causes of fatalities included speeding in 31 percent of cases and alcohol impairment in 31 percent of cases, with some overlap. In the case of speeding, increased speed reduces the available time for the driver to receive and process information, and stopping distance increases with speed (NTSB 2017).

The number of pedestrians killed on US roadways exhibited a decreasing trend for 35 years, but beginning in 2010, the number of fatalities began increasing, and annual traffic-related injuries to pedestrians also become deadlier—deaths per 100 crashes increased by 29 percent from 2010 to 2015 (NTSB 2018).

Locations of collisions in Bellevue between 2010 and 2017 are shown on Figure 3-4.

Bellevue is currently developing its "Vision Zero" program to reflect the city's commitment to reducing traffic deaths and serious injury collisions on city streets to zero by the year 2030. In 2015, the City Council passed a resolution providing a framework to achieve this goal. In 2016, the City Council passed an ordinance adopting Vision Zero amendments into the city's Comprehensive Plan.

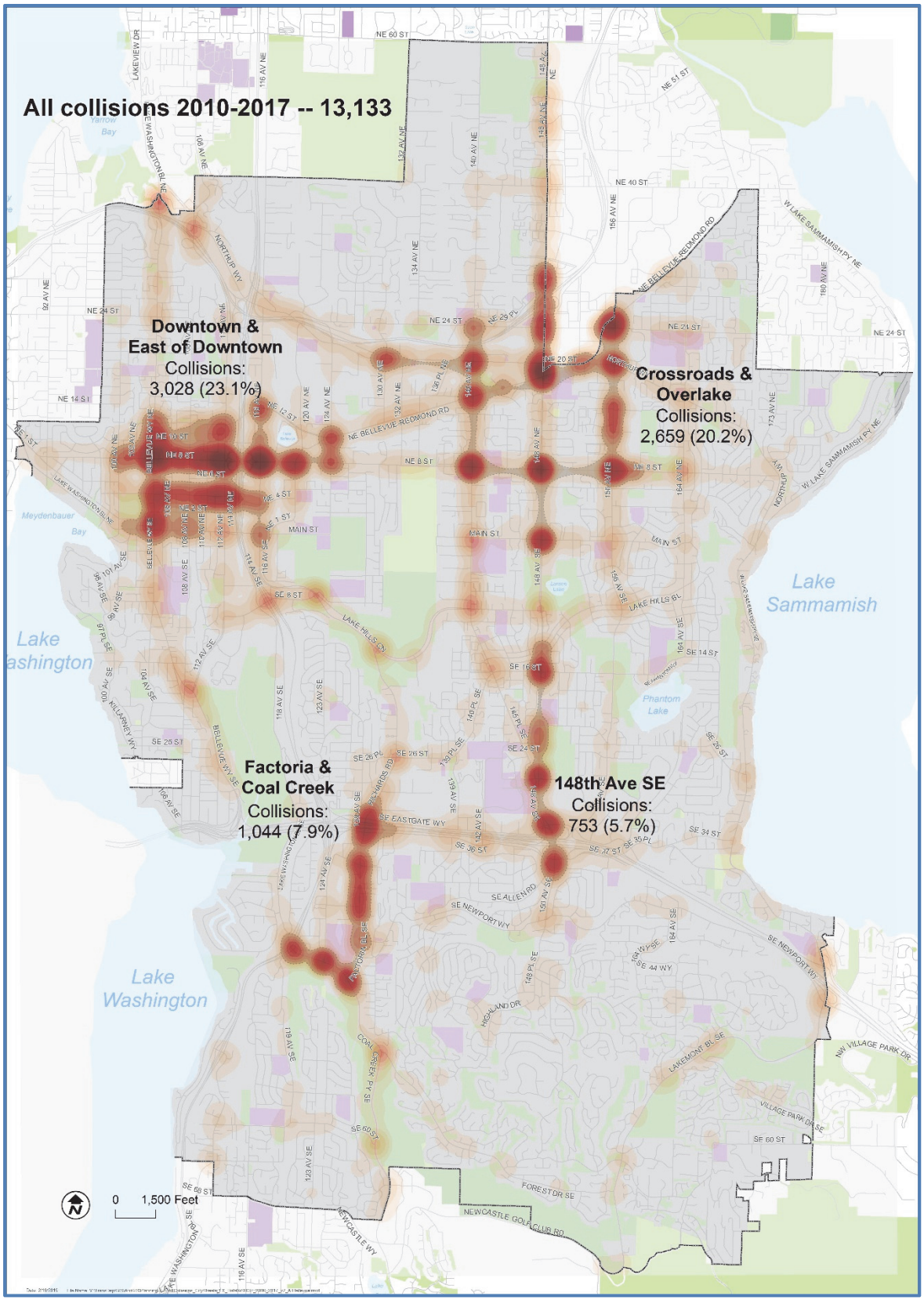


Figure 3-4. Collision Locations on Bellevue Streets

(Darker red indicates higher number of collisions)

Bellevue has policies and programs intended to make streets safer for all modes of travel. Vision Zero includes the following key elements:

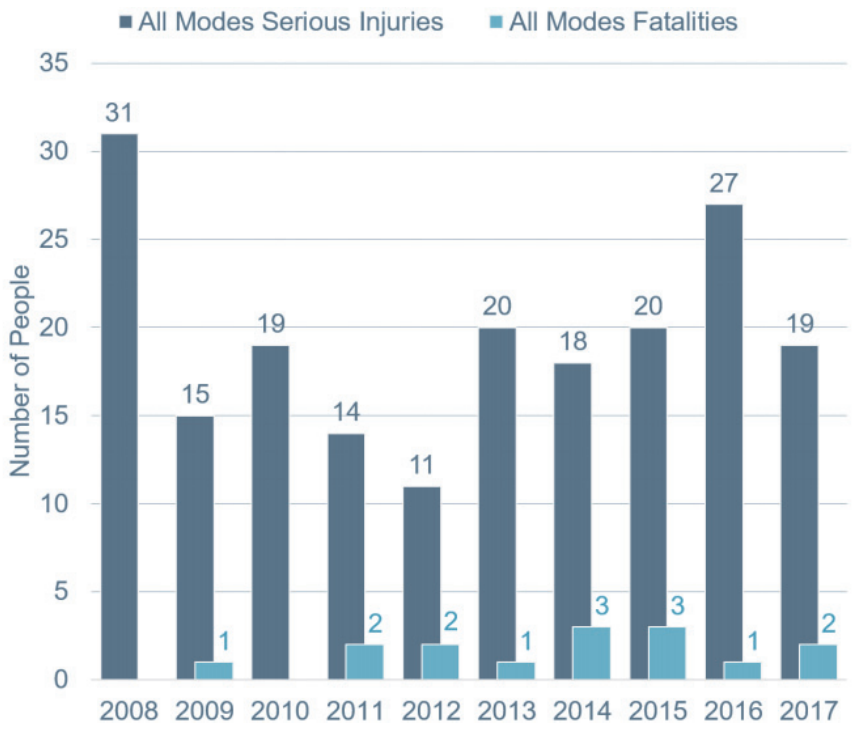
- Informing residents about traffic laws and safe behavior for travelers of all ages and abilities
- Encouraging and incentivizing safe, positive behavior
- Employing sound design techniques to make streets safer for all, especially the most vulnerable users
- Ensuring that safety applies equitably to everyone, no matter what transportation mode is used or where in the city one is traveling
- Monitoring and evaluating progress, adjusting strategies when needed and celebrating successes

Vision Zero instills a more holistic, comprehensive view regarding traffic fatalities and serious injuries by regarding them as not inevitable. The goal of eliminating such collisions is approached from the perspective that street design should emphasize safety, predictability, and the potential for human error. Education and rigorous, data-driven enforcement also are needed to support the program goals.

Strategies needed to accomplish Vision Zero's ambitious goal will be developed further in collaboration with the Transportation Commission and City Council. One of the near-term actions to achieve Vision Zero's goal is the implementation of projects identified in Bellevue's Pedestrian and Bicycle Implementation Initiative. The Initiative identifies specific projects to improve safety for people walking and biking on city streets.

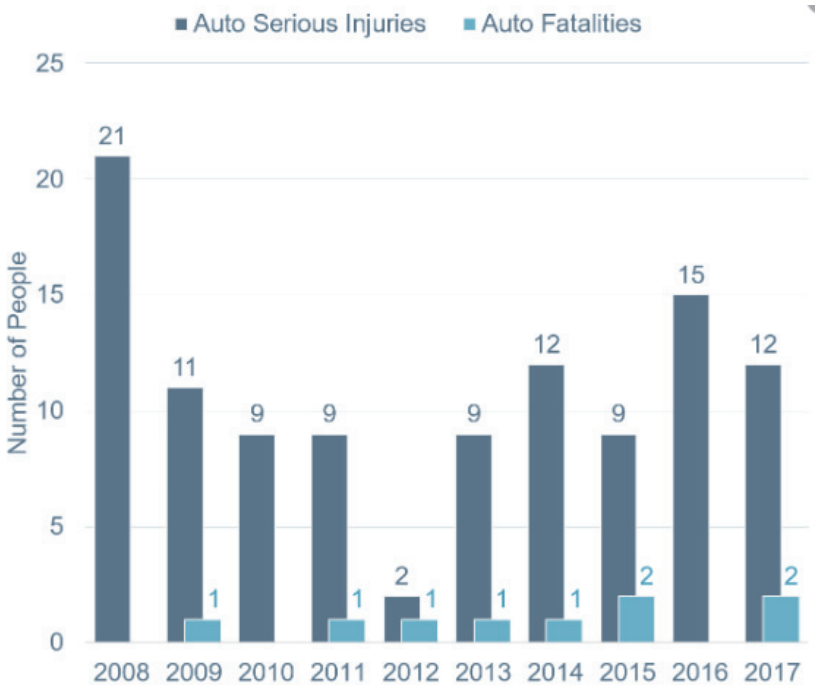
The city uses a collision records database to help identify trends in collision occurrence and to assist in evaluating corrective measures to improve safety. This information includes intersections and mid-block locations, types of collision, and pedestrian and bicycle-related collisions.

Trends in pedestrian, bicycle, and automobile injuries and fatalities are summarized in the graphs below (Figures 3-5 through 3-8).



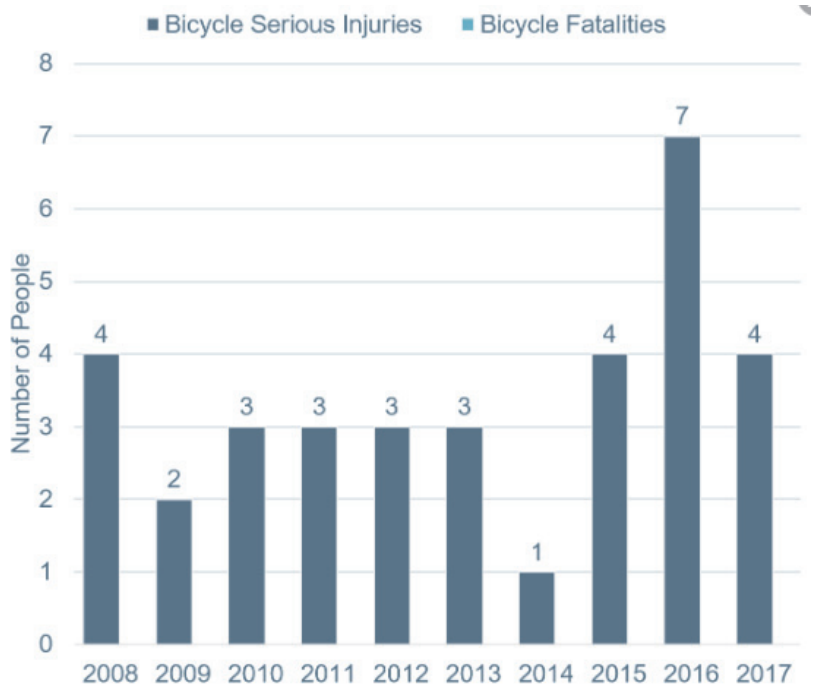
Source: City of Bellevue Vision Zero Action Plan

Figure 3-5. Bellevue Trends in All Modes Injuries and Fatalities



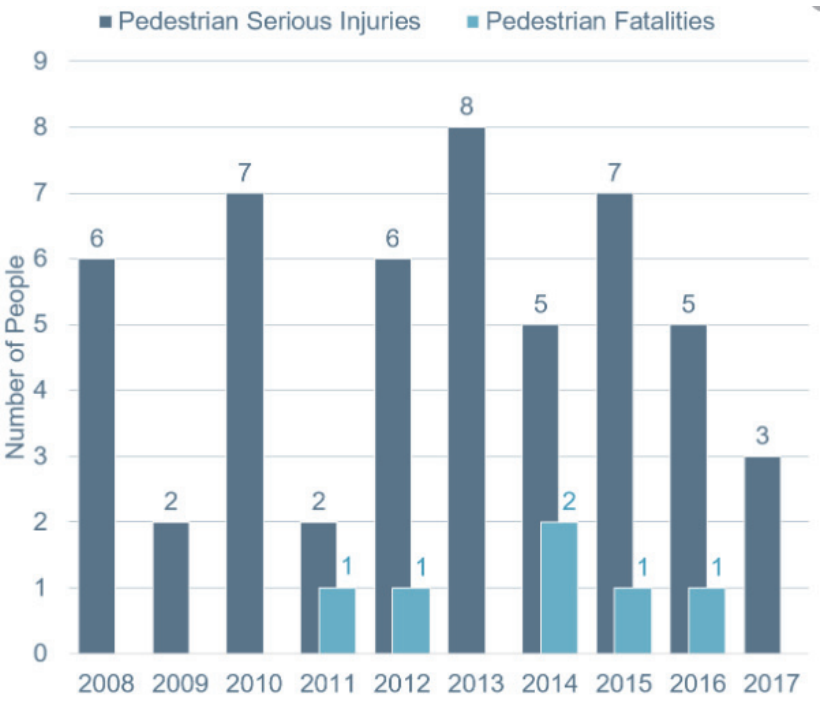
Source: City of Bellevue Vision Zero Action Plan

Figure 3-6. Bellevue Trends in Automobile Injuries and Fatalities



Source: City of Bellevue Vision Zero Action Plan

Figure 3-7. Bellevue Trends in Bicycle Injuries and Fatalities



Source: City of Bellevue Vision Zero Action Plan

Figure 3-8. Bellevue Trends in Pedestrian Injuries and Fatalities

Some relevant patterns for collision trends for Bellevue, based on the city's collision database, include the following:

- From 2008 to 2017, overall annual serious injury collisions (including those involving bicycles and pedestrians) show no definite trends, but vary greatly (from 11 to 31 per year).
- From 2008 to 2017, annual fatalities (including those involving bicycles and pedestrians) show no definite trends, but vary greatly (from 0 to 3 per year).
- From 2008 to 2017, 12 intersections (out of 160) had three or more serious injury collisions in the period. These include:
    - 102nd Avenue NE and NE 10th Street (one motorist, two pedestrians)
    - Bellevue Way and Main Street (two motorists, one pedestrian)
    - 116th Avenue NE and NE 10th Street (three motorists)
    - Lake Hills Connector and SE 8th Street (three motorists)
    - 124th Avenue NE and Northup Way (two motorists, one bicycle)
    - 140th Avenue NE and NE Bel-Red Rd (two pedestrians, one bicycle)
    - 148th Avenue and Main St (one motorist, two bicycles)
    - 148th Avenue NE and NE 24th Street (three motorists, one bicycle)
    - 140th Avenue NE and NE 8th Street (two motorist, one pedestrian, one bicycle)
    - 156th Avenue NE and NE 8th Street (two motorists, two pedestrians)
    - W Lake Sammamish Pkwy SE and SE 26th St (two motorists, one bicycle)
    - Lakemont Blvd SE and SE Newport Way (two motorists, one bicycle)
- Street corridors with the highest traffic volumes generally had higher number of serious injury collisions:
    - The 148th Avenue NE corridor had the largest number of collisions at 19
    - The NE 8th Street corridor had the second largest number of collisions at 17
    - The 156th Avenue corridor had the third largest number of collisions at 13
    - The Bel-Red Road corridor had the fourth largest number of collisions at 12
    - The NE 24th Street corridor had the fifth largest number of collisions at 9
    - The Northup Way corridor had the sixth largest number of collisions at 7

Reviews to determine influences and causes for collisions are an ongoing effort, with higher risk locations being evaluated for safety improvement projects.

3.1.4 Travel Alternatives

The transportation system's effectiveness in moving people depends directly on the choice of travel mode. Modes that involve more persons per vehicle, such as carpooling and transit, carry more persons

with less adverse impact on the capacity of highways and local streets. Facilitating reliable and convenient alternatives to the single-occupant vehicle (SOV) is a vital component of the city's transportation strategy.

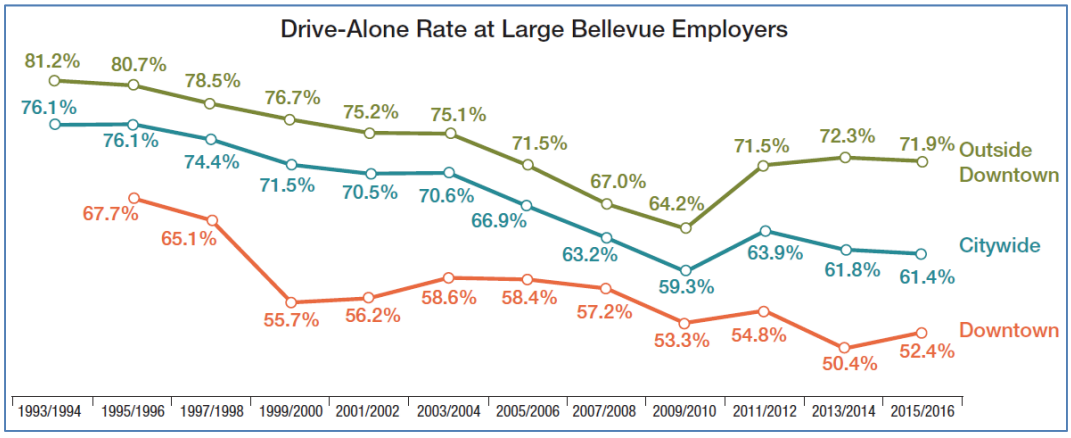
The U.S. Census American Community Survey (ACS) provides citywide information on commute modes used by residents and workers in the city. ACS data are collected by surveying a sample of residents; because sample sizes are limited, results are best cited in terms of 5-year averages of the data. Most recent available 5-year average survey results (for the years 2012-2016) are summarized in Table 3-3. The rate of drive-alone commuting is gradually declining among residents and workers.

Table 3-3 Commute Modes for Bellevue Residents and Workers

	Drive Alone	Carpool/Vanpool	Public Transportation	Walked	Other	Worked at Home
Residents of Bellevue	65%	9%	13%	5%	1%	7%
Workers in Bellevue	73%	11%	8%	3%	2%	4%

Census Bureau 2012-2016; American Community Survey Tables B08101, B08501.

The City of Bellevue Commute Trip Reduction plan focuses on employers citywide with 100 or more full-time employees. The most recent update to the plan was adopted in September 2015. By state and city law (RCW 70.94.531, BCC 14.40.080), certain employers with 100 or more employees must provide Commute Trip Reduction programs. As of December 2016, there were 57 affected worksites in Bellevue with 38,868 workers, approximately 26 percent of all workers in the city. From 1993 to 2016, Bellevue's Commute Trip Reduction (CTR)-affected employers lowered the rate of people commuting by driving alone from approximately 76 percent to 61 percent. Downtown CTR employers reduced their drive-alone rate from 68 percent to 52 percent, and employers outside downtown reduced their rate from 81 percent to 72 percent. Trends are summarized in Figure 3-9.



Source: Bellevue Transportation Demand Management Progress Report 2016

Figure 3-9. Drive-Alone Rates for Bellevue CTR Worksites

Bellevue's Transportation Demand Management (TDM) program promotes use of carpooling, vanpooling, transit, walking, biking, teleworking, and flexible work hours. TDM activities focus on employers, employees, property, residents, and visitors. The benefits to the community include maximizing the efficiency of the existing transportation system and limiting the impacts of traffic on Bellevue neighborhoods. Reducing trips also reduces water pollution and air pollution (including carbon dioxide [CO_2] emissions) (Bellevue 2015b).

Existing city policies help create an environment in which alternatives to driving alone can be attractive to commuters:

- City land use policies focus growth into certain areas, including Downtown and BelRed, to create higher-density, mixed-use centers. This allows many trips to be made by foot and facilitates development of transit hubs.
- Investments in transit mobility and service make it a more attractive option and keep pace with increasing transit demand.

The TDM program enhances the effects of these policies by providing information, assistance, and incentives to help increase the use of alternatives to driving alone, such as transit, carpooling, vanpooling, walking, biking and teleworking (Bellevue 2016a). People who can use alternatives are encouraged to do so through information and incentives; and people for whom driving is the most viable option benefit from less congested roadways.

- The city offers consultations for smaller employers, which are not affected by CTR regulations, to help develop tailored commute programs. Since its launch in 2007, 197 employers have engaged in the program by participating in an activity or consultation, and about 36 percent of them have implemented a program element or participated in a program activity.
- The city requires Transportation Management Programs (TMPs) at large real estate developments, which require building managers to undertake measures to reduce drive-alone commute trips by employees working in the building. Specific requirements vary according to the size and land use of each affected building. Through TMP programs, many building managers offer discounted or preferred carpool or vanpool parking, bicycle parking, or other incentives for non-drive-alone commuters. Building managers may also conduct other activities, such as facilitating ride matching for carpools and performance measurement.
- Bellevue publishes up-to-date information about transportation options through ChooseYourWayBellevue.org, a comprehensive website resource for Bellevue residents, workers, employers, property managers, students, and schools. Users can find information, maps and advice to help make use of alternative modes. Current transportation conditions, news, construction information and city and regional plans are also linked from the site. Interested users can calculate the transportation costs of different modes, sign up to receive program newsletters and get updates about upcoming events.
- Choose Your Way Bellevue Rewards offers incentives to workers and residents who log trips made by modes other than driving alone, to offset the cost of trying a new mode and encourage them to leave their cars at home. The program works in partnership with local businesses to reward regular users with discounts.

Bellevue adopted a Transit Master Plan in 2014 that is a comprehensive look at the system that will be required to meet the transit needs of the community through 2030. The Transit Master Plan identifies short- and long-term strategies to foster a high-quality transit system that effectively connects residents, employees and visitors in Bellevue with the places they want to go. Key elements of the plan include:

- A policy element that serves as the guiding framework for the planning process and identifies the strategies that should be pursued to realize the service and capital visions.
- A service element that presents route-level recommendations that are responsive to different financial scenarios and to different time horizons (2015, 2022, and 2030).
- A capital element that details how the city can positively affect transit within Bellevue in order to maintain transit-supportive land use policies, improve pedestrian and bicycle facilities, bus stops, and park-and-rides, and implement transit speed and reliability infrastructure.

The plan is coordinated with transit service provided by Sound Transit and King County Metro.

3.1.5 Pedestrian and Bicycle Network

The City of Bellevue Pedestrian and Bicycle Transportation Plan Update (2009a) identifies goals for accommodating walking and bicycling and specifies needed non-motorized transportation facilities. The city is making progress in implementing pedestrian and bicycle facility improvements along key routes, as identified in the plan but is not keeping pace with the targeted rate of improvement identified in city policy.

Pedestrian and Bicycle Transportation Plan policy PB-2 calls for 25 miles of sidewalk to be constructed along arterials by 2019. By the end of 2018 the city had built approximately 12.5 miles of arterial sidewalk, or 50 percent of the total length of added sidewalk that the policy targets by 2019 (Bellevue 2019).

Policy PB-2 also calls for at least one east-west and one north-south bicycle route through Downtown to be implemented by 2014 and at least two north-south and two east-west bicycle routes (“corridors”) across the city to be implemented by 2019. See Figure 3-10 for map of the Priority Bicycle Corridors described below:

- The two east-west Priority Bicycle Corridors designated through Downtown are EW-2 (Downtown-Overlake Connection) and EW-3 (Lake-to-Lake Trail Corridor). Currently, a short segment of bicycle facility (approximately 1 block) exists along EW-3 (Main Street). No other east-west Priority Bicycle Corridor improvements exist in Downtown.
- The two north-south Priority Bicycle Corridors designated through Downtown are NS-1 (Enatai-Northtown Connection) and NS-2 (Lake Washington Loop Trail). Of these, NS-1 was implemented as a “demonstration” bikeway in summer 2018, The performance of this facility (including its impact on other travel modes) will be evaluated in 2019 and a decision made on whether to retain the bicycle facility, potentially with some modifications. The other corridor, NS-2 is 61 percent complete within Downtown.
- Citywide, the two east-west Priority Bicycle Corridors that are closest to completion are EW-1 (520 Trail), which 77 percent complete, and EW-5 (Coal Creek-Cougar Mountain Connection), which is 69 percent complete. (EW-1 is identified in the Bellevue Pedestrian and Bicycle Plan as

a continuous separated path facility—the "520 Trail". In 2016, the city completed improvements to the Northup Way corridor that include bike lanes to provide an "interim" facility until WSDOT constructs a separated path in this area in conjunction with a future phase of improvements [not currently funded or scheduled] at the SR 520/I-405 interchange area. With completion of the Northup Way improvements, a continuous bicycle facility—a combination of path and bike lanes—is now in place along the EW-1 route.)

- There are two north-south Priority Bicycle Corridors that are more than 80 percent complete. One is NS-1 (Enatai-Northtown Connection), which is 93 percent complete (figure includes the 108th Ave NE demonstration bikeway in Downtown). The other is NS-2 (Lake Washington Loop), which is 89 percent complete.

(The Priority Bicycle Corridor completion figures noted above are per Bellevue staff analysis and will be included in the forthcoming 2018 Pedestrian and Bicycle Progress Report Story Map.)

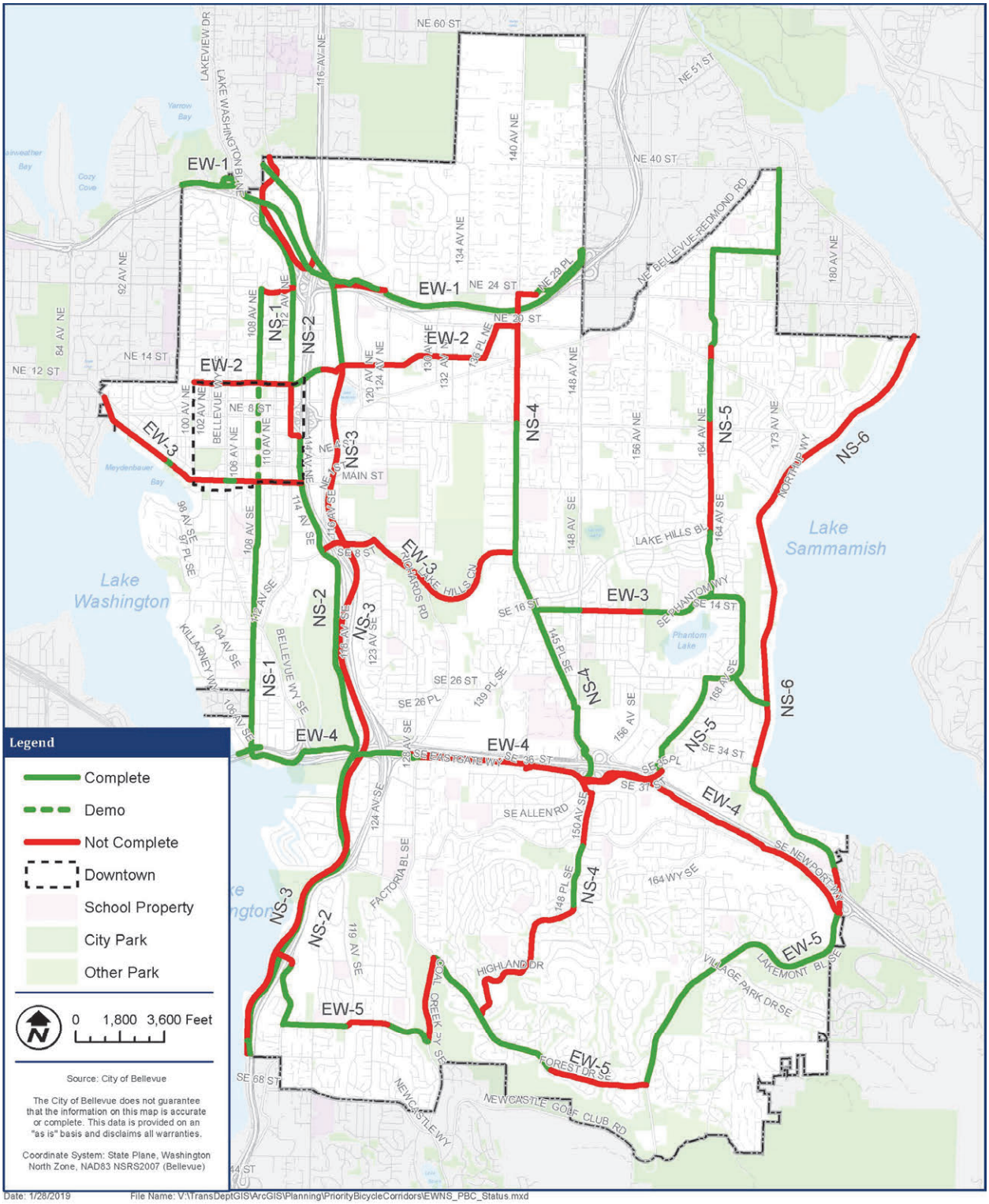


Figure 3-10. Priority Bicycle Corridors Completion Status

3.2 Impacts

This section assesses the potential impacts of the CIP Network and TFP Network alternatives on the transportation system. As discussed in Chapter 2, the CIP Network alternative includes only the projects that are in the current CIP. The TFP Network alternative includes adoption of the full list of 2019–2030 TFP projects summarized in Table 2-1.

The potential impacts of the CIP Network and TFP Network alternatives were assessed in the following areas:

- Overall system performance
- Intersection and arterial traffic operations
- Neighborhood impacts
- Safety
- Pedestrian and bicycle impacts

A major driver of the performance of the transportation system is the production of new trips by new development. The projected growth in the various Bellevue subareas between 2017 and 2030 is summarized in Table 3-4. (See Appendix D for detail on land use projections.)

Table 3-4. Forecast Change in Land Use by Major Category (2017-2030)

MMA	Change in Floor Area (Square Feet)			Change in Dwelling Units	
	Office	Retail	Other*	Single-Family	Multi-Family
1 North Bellevue	0	13,751	0	6	135
2 Bridle Trails	55,092	614	0	1	0
3 Downtown	5,286,614	275,042	1,029,058	0	4,490
4 Wilburton	260	984	329,893	0	31
5 Crossroads	4,599	18,178	2,647	10	565
6 Northeast Bellevue	0	0	0	0	0
7 South Bellevue	481,429	41,547	35,293	2	332
8 Richards Valley	0	0	0	0	0
9 East Bellevue	5,671	-3,196	62,294	6	30
10 Eastgate	1,065,559	25,270	432,420	-3	446
11 Southeast Bellevue	0	640	10,455	42	105
12 BelRed/Northup	2,743,441	178,117	-4,340	22	2,810
13 Factoria	115,200	5,179	93,367	34	280
14 Newport	0	0	0	1	9
Totals	9,757,865	556,126	1,991,087	121	9,233

*"Other" commercial includes institutional, industrial, hotel, and recreation use.

3.2.1 Overall System Performance

Figure 3-3 shows the locations where traffic volumes were analyzed. Table 3-2 summarizes the 1-hour average of the 2-hour PM peak arterial volumes for current 2017 and projected 2030 volumes under the two alternatives at each of the analysis locations.

In general, the increase in volumes on arterials at the identified locations follows the following pattern:

- Approximately 10 percent experience an equal or decrease in volumes
- Approximately 25 percent experience an increase of up to 10 percent
- Approximately 40 percent experience an increase between 10 and 25 percent
- Approximately 15 percent experience an increase between 25 and 50 percent
- Approximately 5 percent experience an increase between 50 and 100 percent
- Approximately 5 percent experience an increase more than 100 percent

Areas with the greatest increase in traffic volumes are the BelRed/Northup area (MMA 12) with 60 percent of the locations that had a volume increase of more than 50 percent and 30 percent of the locations with a volume increase of more than 25 percent. The Wilburton (MMA 4) and South Bellevue (MMA 7) areas each have about 10 percent of the locations with a volume increase of over 25 percent.

Increases in volumes generally correlates with increases in projected future growth. The BelRed/Northup area (MMA 12) has the greatest increase in volumes and also has a large increase in office development, which is projected to double, with almost 2,800,000 square feet (ft^2) of new development. In this area, multi-family development is projected to quadruple with about 3,000 new units. The new BelRed Subarea Plan, adopted in 2009, targets significant investments to take advantage of planned light-rail stations and an economic niche different from Downtown. The Spring District development, under construction, aims to be a catalyst around the 120th Avenue station. In addition, the City of Redmond anticipates growth in excess of the level included in the regional PSRC forecast in the Overlake area (PSRC 2018e) (home of Microsoft headquarters) that will also increase traffic on local arterials in Bellevue. (Projected increases in development are documented in Appendix D.) Arterials with substantial increases in traffic volumes in the BelRed/Northup Area include the east-west arterials NE 24th Street, Northup Way, and Bel-Red Road, as well as most north-south arterials, with the greatest increases on 120th Avenue NE, 124th Avenue NE, and 130th Avenue NE.

The increase in traffic volumes in the Wilburton (MMA 4) and South Bellevue (MMA 7) areas is largely the result of new development in the Downtown (MMA 3), where office development is projected to increase about 50 percent with about 5,000,000 additional ft^2; multi-family development is projected to increase about 50 percent with about 4,500 new units. Arterials leading into the Downtown will experience increases in traffic volumes with Bellevue Way NE forecast at a 14 percent increase, 108th Ave NE at a 73 percent increase (from 190 to 347 vehicles/hour) and Bellevue Way SE, with an 8 percent increase.

In general, the change of 2030 roadway volumes over existing volumes is projected to be within 5 percent of each other under the CIP and TFP alternatives, except where the TFP Network includes projects that

change the network and redistribute traffic, such as the new NE 6th Street overcrossing of I-405 that brings additional traffic from the Downtown (MMA 3) into the Wilburton area (MMA 4).

Locations with higher volume changes overall include:

- Projected volumes on 120th Avenue NE, between NE 8th Street and Northup Way (ID #106, #107, #102) are projected to double to triple, but increase only about 20 percent increase south of NE 8th Street. This is likely due to substantial growth from new development in the BelRed/Northup Area, particularly the Spring District development.
- Projected volumes on 124th Avenue NE between Northup Way (ID #23) and the planned Spring Blvd almost triple, but fall further to the south. This is likely due to substantial growth from new development in the BelRed/Northup Area, particularly the Spring District development, as well as completion of a new arterial link, Spring Boulevard (TFP-259) that provides a route for traffic to access NE 124th Avenue NE for access to SR 520 to the north.
- Volumes on 130th Avenue NE between Northup Way (ID #23) and NE 12th Street are projected to increase by more than 50 percent, but fall further to the south. This is likely due to substantial growth from new development in the BelRed/Northup Area, and multi-modal improvements along the corridor (TFP 218).
- Volumes on 116th Avenue NE north of NE 8th Street are projected to increase by more than 50 percent north of NE 8th Street (ID #4) and more than double south of NE 8th Street (ID #45), but with little change north of NE 12th Street or south of Main Street. This is likely due to completion of the new NE 6th Street Extension over I-405 to 120th Avenue NE (TFP 211) that allows another option for access to serve substantial new development Downtown (MMA 3).
- Volumes on NE 8th Street between I-405 and 120th Avenue NE are projected to increase between 30 and 40 percent, but drop off substantially to the east and west. This is likely due to completion of the new NE 6th Street Extension over I-405 to 116th Avenue NE (TFP 211) that allows another option for access to serve substantial new development Downtown (MMA 3) and also due to traffic from new development in the BelRed/Northup Area accessing I-405.
- Volumes on Bellevue Way SE, north and south of the "Y" intersection with 112th Avenue SE (ID #115, 66), are projected to be higher with both the CIP Network alternative and the TFP Network alternative, likely because of capacity improvements to Bellevue Way SE (TFP 242).

The following locations have larger discrepancies between the alternatives:

- Volumes on 116th Avenue NE south of NE 8th Street (ID #45) are projected to be substantially higher under the TFP Network alternative than the CIP Network alternative. This is likely due to completion of the new NE 6th Street Extension over I-405 to 120th Avenue NE (TFP 211).
- Volumes on 124th Avenue NE south of Northup Way (ID #23)) are projected to be higher under the TFP Network alternative than the CIP Network alternative, even though both include expansions of 124th Avenue NE. This is likely due to complex patters of re-routing of traffic due to a number of TFP projects, together with the increase in traffic volumes due to growth in the area.

- Volumes on Newport Way SE west of 150th Avenue SE (ID #84) are projected to be higher under the TFP Network alternative than the CIP Network alternative. This is likely due to completion of intersection improvements on 150th Avenue SE that increase capacity and provide less congested access to Newport Way (TFP 195, 246).

3.2.2 Intersection and Arterial Traffic Operations

Existing and forecast future roadway operating conditions under the CIP Network and TFP Network alternatives are summarized by MMA in Table 3-5. See Appendix C, Table C-7, for a full listing of existing and forecasted future conditions at all system intersections.

Table 3-5. Existing and Forecast Traffic Conditions by MMA

MMA	V/C Std	Congestion Allowance*	2017 Conditions (Existing)		2030 CIP Network Alternative		2030 TFP Network Alternative	
			V/C	Intersection Over Standard	V/C	Intersection Over Standard	V/C	Intersection Over Standard
1. North Bellevue	0.850	3	0.53	0	0.57	0	0.57	0
2. Bridle Trails	0.800	4	0.67	2	**0.84**	4	**0.83**	4
3. Downtown	0.950	9	0.72	3	0.86	4	0.83	2
4. Wilburton	0.900	3	0.72	0	0.85	1	0.86	2
5. Crossroads	0.900	2	0.72	0	0.84	1	0.81	0
6. Northeast Bellevue	0.800	2	0.72	0	**0.90**	**3**	**0.90**	**3**
7. South Bellevue	0.850	4	0.68	0	0.78	1	0.80	1
8. Richards Valley	0.850	5	0.69	2	0.82	5	0.82	4
9. East Bellevue	0.850	5	0.81	3	**0.91**	**6**	**0.91**	**6**
10. Eastgate	0.900	4	0.70	1	0.74	1	0.75	2
11. Southeast Bellevue	0.800	3	0.75	3	0.76	2	0.78	2
12. BelRed/Northup	0.950	7	0.68	0	0.92	7	0.91	7
13. Factoria	0.950	5	0.80	1	0.92	4	0.92	4
14. Newport Hills	No System Intersections – No Analysis							
Total Intersections Over Standard				15		39		37

Notes: Figures in **bold** exceed standard.
No values are listed for MMA 14 (Newport Hills) because no system intersections are currently identified in this area.
* "Congestion Allowance" is the number of intersections permitted to exceed the designated V/C standard for MMA.

Following is a discussion of forecast conditions in each area.

3.2.2.1 North Bellevue

In the North Bellevue subarea (MMA 1), very little growth is projected, only about a six percent increase in commercial and multi-family use.

No capacity projects are proposed in this subarea.

The areawide LOS for the North Bellevue subarea is projected to change from the 2017 average of 0.53 V/C to a 2030 average of 0.57 V/C, with the largest change on Bellevue Way NE at NE 24th Street, where the individual intersection changes from 0.56 V/C to 0.66 V/C. Under both alternatives, the averages remain below the 0.85 V/C standard. No intersections exceed the V/C standard. Table 3-6 summarizes operation of system intersections in the subarea.

Table 3-6. 2030 Level of Service under CIP Network and TFP Network Alternatives for North Bellevue

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 1 – North Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 3						
69	Bellevue Way NE – NE 24th St	0.56	0.66	17.9%	0.66	17.9%
74	Bellevue Way NE – Northup Way NE	0.63	0.60	-4.8%	0.61	-3.2%
78	108th Ave NE – Northup Way NE	0.62	0.71	14.5%	0.71	14.5%
93	Lake Washington Blvd – NE 1st/NE 10th	0.32	0.31	-3.1%	0.31	-3.1%
	Areawide LOS Average	**0.53**	**0.57**	7.5%	**0.57**	7.5%
	# of Intersections Over Standard	**0**	**0**		**0**	

3.2.2.2 Bridle Trails

In the Bridal Trails subarea (MMA 2) very little growth is projected, only about a seven percent increase in office use and a minimal increase in other use.

No capacity projects are proposed in this subarea.

The areawide LOS for the Bridle Trails subarea is projected to change from the 2017 average of 0.67 V/C to a 2030 average of 0.84 V/C, resulting from increased volumes largely on north-south arterials carrying traffic through the area from origins outside the area to destinations outside the area. The largest change will occur on 148th Avenue NE, which serves a major regional office center in the Redmond Overlake Area.

The Bridle Trails MMA 2030 areawide average LOS of 0.84 V/C is above the adopted standard of 0.80. Of the eight system intersections located in this area, four operate within the V/C standard, and the following four intersections operate at a V/C level that exceeds the MMA standard as shown in Table 3-7:

- (64) 140th Ave NE/NE 24th Street—This had a V/C of 0.79 in 2017 that is projected to worsen to a 2030 V/C of 0.91, largely from westbound traffic originating in the Overlake area.
- (79) 148th Ave NE/NE 40th Street—This had a V/C of 0.65 in 2017 that is projected to worsen to a 2030 V/C of 0.97, largely from eastbound traffic originating in the BelRed/Northup subarea and traffic on 148th Avenue NE accessing the interchange at NE 40th Street and SR520.
- (116) 115th Place NE/Northup Way—This had a V/C of 0.81 in 2017 that is projected to worsen to a 2030 V/C of 1.05, which indicates operation overcapacity. The source of the major increase in traffic volumes is the BelRed/Northup area, where substantial growth is projected.

- (188) 148th Avenue NE/NE 29th Place—This had a V/C of 0.85 in 2017 that is projected to worsen to a 2030 V/C of 1.08, which indicates operation over capacity. The source of the major increase in traffic volumes is the BelRed/Northup area, where substantial growth is projected, as well as the Redmond Overlake area to the east.

With four intersections operating over the 0.80 V/C for Bridle Trails, this MMA operates at the margins of but within the congestion allowance of four intersections over the standard.

Table 3-7. 2030 Level of Service under CIP Network and TFP Network Alternatives for Bridle Trails

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 2 – Bridle Trails – LOS Standard C or V/C 0.80; Congestion Allowance: 4						
64	140th Ave NE – NE 24th St	0.79	**0.91**	15.2%	**0.91**	15.2%
79	148th Ave NE – NE 40th St	0.65	**0.97**	49.2%	**0.95**	46.2%
114	116th Ave NE – Northup Way NE	0.74	0.75	1.4%	0.76	2.7%
116	115th Pl NE – Northup Way	**0.81**	**1.05**	29.6%	**1.06**	30.9%
118	Northup Way – NE 24th St	0.52	0.65	25.0%	0.66	26.9%
123	140th Ave NE – NE 40th St	--	--	--	--	--
188	148th Ave NE – NE 29th Pl	**0.85**	**1.08**	27.1%	**1.07**	25.9%
189	NE 29th Pl – NE 24th St	0.36	0.46	27.8%	0.45	25.0%
	Areawide LOS Average	0.67	**0.84**	25.4%	**0.83**	23.9%
	# of Intersections over Standard	2	4		4	

Note: Figures in **bold** exceed standard.

3.2.2.3 Downtown

The Downtown subarea (MMA 3) capacity projects shown on Table 3-8 include ten capacity projects proposed in this area in the TFP Network alternative. None of the projects are included in the CIP Network alternative.

Table 3-8. TFP Projects for CIP Network and TFP Network Alternatives for Downtown

2019–2030 TFP#	MMA	Project Location	CIP Network Alternative	TFP Network Alternative
110	3	110th Ave NE/NE 6th St to NE 8th St[a]		X
190	3	NE 2nd St/Bellevue Way to 112th Ave NE		X
193	3	NE 10th St/I-405		X
197	3	NE 2nd St Extension and I-405 interchange		X
211	3	NE 6th Street Extension		X
216	3	112th Ave NE/NE 2nd St[a]		X
219	3	NE 8th St/106th Ave NE		X
222	3	Bellevue Way NE/NE 4th St[a]		X
223	3	Bellevue Way NE/NE 8th St[a]		X
225	3	Bellevue Way NE/NE 2nd St[a]		X

Table 3-9 summarizes the LOS at system locations within this area under the CIP Network and TFP Network alternatives. Downtown Bellevue will receive the city's most intense development and is projected to receive about 5,000,000 ft^2 of additional office development and about 4,500 additional residential units. Its 2017 areawide average of 0.72 V/C is projected to worsen in 2030 to an average of 0.86 V/C under the CIP Network, with four intersections (listed below) operating at a V/C level that exceeds the MMA standard of 0.95. In 2030, under the TFP Network, the average V/C is projected to be 0.83, with only two intersections that exceed the standard.

- (9) Bellevue Way/Main Street—In 2017, the V/C of 0.96 exceeded the V/C threshold of 0.95. Operating conditions are projected to worsen in 2030 to a V/C of 1.08 under both the CIP Network and the TFP Network alternatives. This is an intersection of two arterials with substantial left turns on all approaches that will experience a general increase in volumes, with the greatest increases to and from Main Street.
- (22) 108th Avenue NE/NE 4th St—In 2017, the V/C of 0.68 was well within the V/C threshold of 0.95. Operating conditions are projected to worsen to a 2030 V/C of 0.97 and 0.95 with the CIP Network and the TFP Network, respectively. The difference between 2017 and 2030 operations relate to increased volumes on all approaches related to general growth and traffic accessing the interchange at I-405.
- (26) 112th Avenue NE/NE 8th Street—In 2017 the V/C of 1.05 exceeds the V/C threshold of 0.95. That worsens in 2030 to a V/C of 1.09 with the CIP Network and improves to a V/C of 0.93 with the TFP Network. Intersection operation improvements between the CIP and TFP are largely related to the NE 6th Street overpass over I-405 that provides an alternative route to the east and diverts some traffic off the north-south legs of the intersection.
- (36) 112th Avenue NE/Main Street—In 2017, the V/C of 0.98 exceeded the V/C threshold of 0.95. This is projected to worsen to a V/C of 1.15 with the CIP Network and to improve slightly to a V/C of 1.12 with the TFP Network. The difference of operation between the CIP and TFP relate to minor redistribution of traffic from a variety of TFP projects.

With four or two intersections operating over the 0.95 V/C standard in the CIP or TFP Networks respectively, this MMA operates well below the congestion allowance of nine intersections over the standard.

Table 3-9. 2030 Level of Service under CIP Network and TFP Network Alternatives for Downtown

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 3 – Downtown – LOS Standard E+ or V/C 0.95; Congestion Allowance: 9						
3	100th Ave NE – NE 8th St	0.64	0.68	6.3%	0.67	4.7%
5	Bellevue Way NE – NE 12th St	0.70	0.78	11.4%	0.78	11.4%
7	Bellevue Way NE – NE 8th St	0.78	0.85	9.0%	0.84	7.7%
8	Bellevue Way NE – NE 4th St	0.69	0.78	13.0%	0.67	-2.9%
9	Bellevue Way – Main St	**0.96**	**1.08**	12.5%	**1.08**	12.5%
20	108th Ave NE – NE 12th St	0.45	0.59	31.1%	0.59	31.1%
21	108th Ave NE – NE 8th St	0.61	0.85	39.3%	0.85	39.3%
22	108th Ave NE – NE 4th St	0.68	**0.97**	42.6%	0.95	39.7%
24	108th Ave – Main St	0.52	0.66	26.9%	0.65	25.0%
25	112th Ave NE – NE 12th St	0.74	0.95	28.4%	0.95	28.4%
26	112th Ave NE – NE 8th St	**1.05**	**1.09**	3.8%	0.93	-11.4%
36	112th Ave – Main St	**0.98**	**1.15**	17.3%	**1.12**	14.3%
72	112th Ave NE – NE 4th St	0.67	0.75	11.9%	0.80	19.4%
	Areawide LOS Average	0.72	0.86	19.4%	0.83	15.3%
	# of Intersections over Standard	3	4		2	

Note: Figures in **bold** exceed standard.

3.2.2.4 Wilburton

The Wilburton subarea (MMA 4) is located east of the I-405 corridor. This area is anticipated to change significantly due to its strategic location between Downtown and BelRed and its proximity to the freeway and light rail. 116th Avenue NE is the major north-south arterial serving this area.

Table 3-10 shows that one capacity project is proposed in this area under the TFP Network alternative; it is not included in the CIP.

Table 3-10. TFP Projects for CIP Network and TFP Network Alternatives for Wilburton

2019–2030 TFP#	MMA	Project Location	CIP Network Alternative	TFP Network Alternative
211	4	NE 6th St Extension		X

The 2017 areawide average LOS of 0.72 V/C is well below the V/C standard of 0.90. Of the five system intersections located in this area, all operated in 2017 within their LOS standard of 0.90 VC. In 2030, this MMA is projected to operate at an areawide average LOS of 0.85 V/C, with one intersection operating at worse than the V/C standard of 0.90 under the CIP Network and two different intersections operating at worse than the standard with the TFP Network, as shown in Table 3-11.

- (30) 116th Avenue NE/NE 8th Street—In 2017, the V/C of 0.71 was well within the V/C threshold of 0.90. It is projected to worsen to a 2030 V/C of 0.75 with the CIP Network and

worsen substantially to 1.03 with the TFP Network. The difference between 2017 and 2030 CIP operations relate to increased volumes on all approaches related to general growth and traffic accessing the interchange at I-405. The differences between the CIP and TFP Networks relate to redistribution of traffic from the NE 6th Street overcrossing of I-405.

- (139) 116th Avenue NE/NE 4th Street—In 2017, the V/C of 0.82 was well within the V/C threshold of 0.90. It is projected to worsen to a 2030 V/C of 1.06 with the CIP Network and improve to 0.80 with the TFP Network. The difference between 2017 and 2030 CIP operations relate to increases in volumes on all approaches related to general growth and traffic accessing the interchange at I-405. The differences between the CIP and TFP Networks relate to redistribution of traffic from the NE 6th Street overcrossing of I-405.
- (233) 120th Avenue NE/NE 8th Street—In 2017, the V/C of 0.62 was well within the V/C threshold of 0.90. It is projected to worsen to a 2030 V/C of 0.84 with the CIP Network and worsen further to 0.91 with the TFP Network. The difference between 2017 and 2030 CIP operations relate to increased volumes on all approaches related to general growth and traffic accessing the interchange at I-405. The differences between the CIP and TFP Networks relate to redistribution of traffic from a variety of projects, including some outside this subarea.

Table 3-11. 2030 Level of Service under CIP Network and TFP Network Alternatives for Wilburton

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 4 – Wilburton – LOS Standard D+ or V/C 0.90; Congestion Allowance: 3						
30	116th Ave NE – NE 8th St	0.71	0.75	5.6%	**1.03**	45.1%
73	116th Ave – Main St	0.65	0.69	6.2%	0.68	4.6%
131	116th Ave SE – SE 1st St	0.80	0.90	12.5%	0.90	12.5%
139	116th Ave NE – NE 4th St	0.82	**1.06**	29.3%	0.80	-2.4%
233	120th Ave NE – NE 8th St	0.62	0.84	35.5%	**0.91**	46.8%
	Areawide LOS Average	0.72	0.85	18.1%	0.86	19.4%
	# of Intersections over Standard	0	1		2	

3.2.2.5 Crossroads

The Crossroads subarea (MMA 5) in the northeast quadrant of the city, is a community with a wide diversity of single-family, multi-family, and commercial development. Modest growth in commercial and multi-family development is projected for 2030.

No capacity projects are proposed in this subarea.

Table 3-12 summarizes the intersection LOS at key locations within this area under the CIP and TFP Network alternatives. The table shows that operations under the TFP Network alternative would be equal to or better at all locations compared to the CIP Network alternative. One location, 156th Avenue at NE/Northup Way, is projected to exceed its respective standards of 0.90 V/C with operating conditions of

0.92 under the CIP Network but improve to 0.84 under the TFP Network, due to minor redistribution of traffic due to projects in other MMAs.

The areawide 2030 LOS forecast for Crossroads (Table 3-12) is projected to be below the standard of 0.90 with both alternatives. One intersection under the CIP Network exceeds the standard (63 – 156th Ave NE/Northup Way). The number of intersections exceeding the LOS standard is below the maximum of two.

Table 3-12. 2030 Level of Service under CIP Network and TFP Network Alternatives for Crossroads

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 5 – Crossroads – LOS Standard D- or V/C 0.90; Congestion Allowance: 2						
58	Bellevue-Redmond- NE 20th St	0.62	0.80	29.0%	0.80	29.0%
62	156th Ave NE – Northup Way	0.83	**0.92**	10.8%	0.84	1.2%
63	156th Ave NE – NE 8th St	0.70	0.81	15.7%	0.80	14.3%
	Areawide LOS Average	0.72	0.84	16.7%	0.81	12.5%
	# of Intersections over Standard	0	1		0	

Note: Figures in **bold** exceed standard.

3.2.2.6 Northeast Bellevue

The Northeast Bellevue (MMA 6) subarea has no proposed capacity projects.

Table 3-13 summarizes the intersection LOS at key locations within this area under the CIP and TFP Network alternatives. The table shows that operations at three signalized intersections out of the four system intersections, all along 164th Avenue NE, exceed the LOS standard of 0.80 V/C under the CIP and TFP Network alternatives. The number of intersections over the standard is three and exceeds the congestion allowance maximum of two for this MMA.

- (75) 164th Avenue NE/NE 24th Street—In 2017, the V/C of 0.70 was well within the V/C threshold of 0.80. It is projected to worsen to a 2030 V/C of 0.91 and 0.90 with the CIP and TFP Networks, respectively. The difference between 2017 and 2030 operations is due almost entirely to increased volumes of southbound traffic, a large portion of which originates in the Redmond Overlake area north of Bel-Red Road.
- (76) 164th Avenue NE/Northup Way—In 2017, the V/C of 0.72 was well within the V/C threshold of 0.80. It is projected to worsen to a 2030 V/C of 0.89 with both the CIP and TFP Networks, respectively. The difference between 2017 and 2030 operations relates almost entirely to increased volumes of southbound traffic, a large portion of which originates in the Redmond Overlake area north of Bel-Red Road.
- (87) 164th Avenue NE/NE 8th Street—In 2017, the V/C of 0.74 was within the V/C threshold of 0.80. It is projected to worsen to a 2030 V/C of 0.91 with both the CIP and TFP Networks, respectively. The difference between 2017 and 2030 operations relates partially to increased

volumes of southbound traffic, a large portion of which originates in the Redmond Overlake area north of Bel-Red Road, as well as other origins in Bellevue to the west and south.

- (111) Northup Way/NE 8th Street—Although this is a system intersection, it is not signalized and therefore V/C information cannot be developed.

Table 3-13. 2030 Level of Service under CIP Network and TFP Network Alternatives for Northeast Bellevue

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 6 – Northeast Bellevue – LOS Standard C or V/C 0.80; Congestion Allowance: 2						
75	164th Ave NE – NE 24th St	0.70	**0.91**	30.0%	**0.90**	28.6%
76	164th Ave NE – Northup Way	0.72	**0.89**	23.6%	**0.89**	23.6%
87	164th Ave NE – NE 8th St	0.74	**0.91**	23.0%	**0.91**	23.0%
111	Northup Way – NE 8th St	--	--	--	--	
	Areawide LOS Average	0.72	**0.90**	25.0%	**0.90**	25.0%
	# of Intersections over Standard	0	**3**		**3**	

Note: Figures in **bold** exceed standard.

3.2.2.7 South Bellevue

The South Bellevue area (MMA 7) south of Downtown is projected to have about a 40 percent increase in office development and a 15 percent increase in multi-family development; however, the floor area of this increase is about 10 percent of the projected increase projected for the Downtown.

Two capacity projects are proposed in this subarea, as shown in Table 3-14.

Table 3-14. TFP Projects for CIP Network and TFP Network Alternatives for South Bellevue

2019–2030 TFP#	MMA	Project Location	CIP Network Alternative	TFP Network Alternative
242	7	Bellevue Way HOV lane/107th Ave SE, Park & Ride to Winters House		X
268[a]	7	Bellevue Way HOV lane/107th Ave SE Segment B: Winters House to 112th Ave SE & Segment C: 112th to 108th Avenues SE		X

[a.] Implementation funding not included in TFP, not modeled in TFP Network

Table 3-15 summarizes the intersection LOS at key locations within this area. The table shows a general worsening of LOS; however, the areawide average LOS remains within the standard of V/C 0.85, and the one intersection that exceeds the V/C 0.85 standard is below the allowance of 4.

- (102) 118th Avenue SE/SE 8th Street—In 2017, the V/C of 0.76 was well within the V/C threshold of 0.85. It is projected to worsen to a 2030 V/C of 0.87 with both the CIP and TFP Networks, respectively. The difference between 2017 and 2030 operations relates almost entirely to increased volumes of westbound traffic, together with already high southbound-to-eastbound left turns, both of which are largely related to traffic accessing the I-405 interchange.

Table 3-15. 2030 Level of Service under CIP Network and TFP Network Alternatives for South Bellevue

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 7 – South Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 4						
14	112th Ave SE – Bellevue Way SE	0.77	0.80	3.9%	0.85	10.4%
89	112th Ave SE – SE 8th St	0.64	0.66	3.1%	0.71	10.9%
102	118th Ave SE – SE 8th St	0.76	**0.87**	14.5%	**0.87**	14.5%
219	I-405 NB Ramps – SE 8th St	0.63	0.85	34.9%	0.85	34.9%
226	I-405 SB Ramps – SE 8th St	0.59	0.74	25.4%	0.74	25.4%
	Areawide LOS Average	0.68	0.78	14.7%	0.80	17.6%
	# of Intersections over Standard	0	1		1	

Note: Figures in **bold** exceed standard.

3.2.2.8 Richards Valley

The Richards Valley subarea (MMA 8) is projected to have little or no growth between now and 2030.

No capacity projects are proposed in this subarea.

Table 3-16 summarizes intersection LOS at key locations within this area under the CIP and TFP Network alternatives. The table shows that operations worsen from the 2017 Areawide Average of 0.69 V/C to 0.82 V/C in 2030 but is still within the standard of 0.85 V/C. The number of intersections below the standard increase from two in 2017 to five in 2030 under the CIP Network, and four under the TFP Network alternative. Intersections that exceed the standard include the following:

- (35) 124th Avenue NE/NE 8th Street—In 2017, the V/C of 0.62 was well within the V/C threshold of 0.85. It is projected to worsen to a 2030 V/C of 0.90 with the CIP Network and 0.92 with the TFP Network. The difference between 2017 and 2030 operations relates to increased volumes of northbound and southbound traffic and associated left turns, together with some increases in westbound traffic.
- (43) 140th Avenue SE/SE 8th Street—In 2017, the V/C of 0.76 was well within the V/C threshold of 0.85. It is projected to worsen to a 2030 V/C of 0.96 with the CIP Network and 0.95 with the TFP Network. The difference between 2017 and 2030 operations relates largely to increased volumes of westbound traffic, together with already high southbound traffic.
- (45) 145th Place SE/SE 16th Street—In 2017, the V/C of 0.69 was well within the V/C threshold of 0.85. It is projected to worsen to a 2030 0.86 V/C with the CIP Network and improve to 0.84 V/C with the TFP Network. The latter would meet the V/C standard. The difference between 2017 and 2030 operations relates to increased volumes on several intersection legs, likely reflecting general traffic growth. The improvement in the TFP Network results from minor shifts in volumes related to system changes that encourage somewhat different travel patterns.
- (71) Lake Hills Connector/SE 8th St/7th Street—In 2017, the V/C of 0.94 was over the V/C threshold of 0.85. It is projected to worsen to a 2030 1.11 V/C with the CIP Network and 1.09

V/C with the TFP Network. The difference between 2017 and 2030 operations relates to increased volumes on SE 8th Street leading from the interchange at I-405 together with already high volumes on Lake Hills Connector, which serves traffic orienting to Downtown as well as traffic accessing the freeway.

- (82) Richards Rd/Kamber Rd—In 2017, the V/C of 0.87 is over the V/C threshold of 0.85. It is projected to worsen to a 2030 V/C of 0.90 with both the CIP Network and the TFP Network. The difference between 2017 and 2030 operations relates to increased volumes of left turns from Kamber Road, together with already high north-south volumes on Richards Road, that are likely related to general traffic growth.

Table 3-16. 2030 Level of Service under CIP Network and TFP Network Alternatives for Richards Valley

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 8 – Richards Valley – LOS Standard D+ or V/C 0.85; Congestion Allowance: 5						
35	124th Ave NE – NE 8th St	0.62	**0.90**	45.2%	**0.92**	48.4%
43	140th Ave SE – SE 8th St	0.76	**0.96**	26.3%	**0.95**	25.0%
44	145th Pl SE – Lake Hills Blvd	0.64	0.74	15.6%	0.74	15.6%
45	145th Pl SE – SE 16th St	0.69	**0.86**	24.6%	0.84	21.7%
71	Lake Hills Connector – SE 8th St/7th St	**0.94**	**1.11**	18.1%	**1.09**	16.0%
82	Richards Rd – Kamber Rd	**0.87**	**0.90**	3.4%	**0.90**	3.4%
85	Richards Rd – SE 32nd St	0.51	0.59	15.7%	0.59	15.7%
134	Richards Rd – Lake Hills Connector	0.60	0.68	13.3%	0.68	13.3%
280	139th Ave SE – Kamber Rd	0.59	0.70	18.6%	0.70	18.6%
	Areawide LOS Average	0.69	0.82	18.8%	0.82	18.8%
	# of Intersections over Standard	2	5		4	

Note: Figures in **bold** exceed standard.

3.2.2.9 East Bellevue

The East Bellevue area (MMA 9) is largely single-family residential with some multi-family and commercial centers and is projected to have little or no growth between now and 2030.

148th Avenue is the major north-south arterial that passes through the area. It is also served by collector arterials 140th Avenue NE, 156th Avenue, and 164th Avenue. NE 8th Street is a major east-west arterial.

There is one potential capacity project in the subarea, TFP 263 at 148th Avenue NE/NE 8th Street, a placeholder that will evaluate an intersection reconfiguration that may include addition of additional left-turn lanes on NE 8th Street and/or 148th Avenue.

Table 3-17 summarizes the intersection LOS at key locations within this area under the CIP and TFP Network alternatives. The table shows that operations worsen from the 2017 Areawide Average of 0.81, which meets the mobility standard to a 2030 areawide V/C of 0.91 under both network alternatives,

exceeding the standard of 0.85 V/C. The number of intersections below the standard increase from three in 2017 to six in 2030 under both network alternatives.

- (41) 140th Avenue NE/NE 8th Street—This intersection has a 2017 LOS of 0.79 VC that is within the V/C area standard of 0.85 V/C. The projected 2030 LOSs of 0.91 V/C and 0.90 V/C for the CIP and TFP Networks, respectively, will exceed the standard. This intersection of a north-south collector arterial and a major east-west arterial is projected to experience minor increases in all movements.
- (49) 148th Avenue NE/NE 8th Street—The current V/C of 0.94 exceeds the area standard of 0.85 VC. The projected 2030 LOSs of 1.08 V/C and 1.07 VC, for the CIP and TFP Networks, respectively, will exceed the standard. This intersection of a major north-south arterial and a major east-west arterial has substantial traffic volumes in all directions, with minor increases in most movements. TFP project 263 will examine improvement options for this location.
- (50) 148th Avenue NE/Main Street—The current V/C of 0.91 exceeds the V/C threshold of 0.85. In 2030, the projected LOSs of 0.95 with the CIP Network and 0.94 with the TFP Network will both exceed the standard. This intersection of a major north-south arterial and an east-west collector arterial has substantial left turns on the east-west legs and is projected to experience a substantial increase in southbound left turns.
- (51) 148th Avenue SE/Lake Hills Blvd—This intersection has a 2017 LOS of 0.85 VC that meets the area LOS standard of 0.85 V/C. The projected 2030 LOSs of 0.96 V/C for both the CIP and TFP Networks will exceed the standard. This intersection of a north-south major arterial and an east-west collector arterial includes high north-south volumes and moderate east-west volumes, with a high proportion of westbound left turns. In 2030, this intersection is projected to experience minor increases in all movements.
- (52) 148th Avenue NE/SE 16th Street—The V/C of 0.87 exceeds the area V/C standard of 0.85. The projected 2030 LOSs of 0.97 V/C for both the CIP and TFP Networks also exceed the standard. This intersection of a major north-south arterial and an east-west collector arterial has substantial left turns on the east-west legs and is projected to experience minor increases in volumes in most movements.
- (83) 156th Avenue/Main Street—The current V/C of 0.76 is within the area V/C standard of 0.85. The projected 2030 LOSs of 0.90 V/C for both the CIP and TFP Networks will exceed the standard and reflect substantial left turns on the eastbound leg and is projected to experience minor increases in volumes in most movements.

Table 3-17. 2030 Level of Service under CIP Network and TFP Network Alternatives for East Bellevue

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 9 – East Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 5						
41	140th Ave NE – NE 8th St	0.79	**0.91**	15.2%	**0.90**	13.9%
42	140th Ave NE – Main St	0.63	0.76	20.6%	0.76	20.6%
49	148th Ave NE – NE 8th St	**0.94**	**1.08**	14.9%	**1.07**	13.8%
50	148th Ave NE – Main St	**0.91**	**0.95**	4.4%	**0.94**	3.3%
51	148th Ave SE – Lake Hills Blvd	0.85	**0.96**	12.9%	**0.96**	12.9%
52	148th Ave SE – SE 16th St	**0.87**	**0.97**	11.5%	**0.97**	11.5%
55	148th Ave SE – SE 24th St	0.77	0.82	6.5%	0.82	6.5%
65	148th Ave SE – SE 8th St	0.74	0.84	13.5%	0.84	13.5%
83	156th Ave – Main St	0.76	**0.90**	18.4%	**0.90**	18.4%
	Areawide LOS Average	0.81	**0.91**	12.3%	**0.91**	12.3%
	# of Intersections over Standard	3	**6**		**6**	

Note: Figures in **bold** exceed standard.

3.2.2.10 Eastgate

The Eastgate area (MMA 10) is largely an office area with smaller amounts of hotel and commercial use and minor amounts of multi-family and single-family residential use. It is projected to increase office use by about 25 percent from about 4,000,000 ft^2 to 5,000,000 ft^2, with similar increases in other uses.

There are two capacity projects in the subarea, as shown in Table 3-18.

Table 3-18. TFP Projects for CIP Network and TFP Network Alternatives for Eastgate

2019–2030 TFP#	MMA	Project Location	CIP Network Alternative	TFP Network Alternative
195	10	150th Avenue SE/SE 37th Street/I-90 off-ramp		X
253	10	150th Avenue SE/Eastgate Way SE	X[a]	X[a]

[a] Implementation funding not included in CIP nor TFP, not modeled in CIP nor TFP Network

Table 3-19 summarizes the intersection LOS at key locations within this area under the CIP and TFP Network alternatives. The table shows that operations worsen from the 2017 Areawide Average of 0.70 (which meets the mobility standard of LOS 0.90) to a 2030 areawide V/C of 0.74 and 0.75 under the CIP and TFP Network alternatives, respectively, continuing to meet the LOS standard. The number of intersections below the standard increases from one under current 2017 conditions and the CIP Network to two for the TFP network, and continues to be fewer than the Congestion Allowance of four intersections over the standard. Intersections over the standard are as follows:

- (101) 150th Avenue SE/SE Eastgate Way—In 2017, the V/C of 1.06 exceeded the areawide LOS standard of 0.90 V/C. In 2030, the LOS is projected to worsen to 1.16 V/C with both the CIP and TFP Network alternatives. This intersection receives heavy volumes entering and leaving the I-90

interchange in the PM peak hour and has a high proportion of westbound left and right turns. In 2030, the intersection is projected to experience increased volumes of most movements. Project TFP-253 in the TFP Alternative involves evaluating this intersection and identifying and scoping preferred improvements.

- (227) 150th Avenue SE/I-90 EB Off-Ramp (south side of I-90)—In 2017, the V/C of 0.86 was within the areawide LOS standard of 0.90 V/C. In 2030, the LOS is projected to improve slightly to an 0.85 V/C with both the CIP Network and worsen to an LOS of 1.00 V/C with the TFP Network alternatives. This intersection receives heavy north-south volumes, moderate eastbound traffic leaving the I-90 interchange (there is a separate eastbound-to-northbound interchange loop ramp), and moderate westbound traffic on SE 37th Street (which serves nearby commercial development and, via a tunnel under I-90, areas to the north). In 2030, the intersection is projected to experience increased volumes of most movements, with especially high volumes on the southbound-to-eastbound left turn, which will be 70 percent higher in the TFP Network than the CIP network, which is likely as a result of TFP project 195, which adds storage to the southbound left-turn pocket.

Table 3-19. 2030 Level of Service under CIP Network and TFP Network Alternatives for Eastgate

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 10 – Eastgate– LOS Standard D- or V/C 0.90; Congestion Allowance: 4						
56	148th Ave SE – SE 27th St	0.67	0.65	-3.0%	0.64	-4.5%
86	156th Ave SE – SE Eastgate Way	0.59	0.50	-15.3%	0.43	-27.1%
92	161st Ave SE – SE Eastgate Way	0.46	0.61	32.6%	0.61	32.6%
101	150th Ave SE – SE Eastgate Way	**1.06**	**1.16**	9.4%	**1.16**	9.4%
171	142nd Ave SE – SE 36th St	0.80	0.83	3.7%	0.84	5.0%
227	150th Ave SE – I-90 EB Off-ramp	0.86	0.85	-1.2%	**1.00**	16.3%
272	139th Ave SE – SE Eastgate Way	0.45	0.56	24.4%	0.57	26.7%
	Areawide LOS Average	0.70	0.74	5.7%	0.75	7.1%
	# of Intersections over Standard	1	1		2	

Note: Figures in **bold** exceed standard.

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3.2.2.11 Southeast Bellevue

This Southeast subarea (MMA 11), south of the Eastgate area and east of the Factoria area, has largely single-family land use with a commercial and multi-family area on Lakemont Boulevard. The area is projected to experience very little growth between 2017 and 2030.

There is one proposed capacity project in the area (TFP-273) at Lakemont Blvd/Forest Drive that provides a new traffic signal and an eastbound-to-northbound left-turn lane on Forest Drive.

This area has a 2017 areawide LOS average 0.75 V/C that is below adopted standards of 0.80 V/C. In 2030, the area is projected to have an average LOS of 0.76 V/C with the CIP Network and 0.78 V/C with

the TFP Network. There are eight system intersections located in this area, of which three operate below the LOS standard in 2017 and two operate below the standard in 2030, as shown in Table 3-20:

- (133) 150th Avenue SE/SE Newport Way—In 2017, the V/C of 0.96 exceeded the area's LOS standard of 0.80 V/C. In 2030, it is projected to remain at 0.96 V/C under the CIP Network and worsen to 1.00 V/C under the TFP Network. It has substantial left-turn volumes on its southbound and eastbound approaches. In 2030, the southbound left turn is projected to increase slightly more under the TFP Network than under the CIP Network.
- (174) 150th Avenue SE/SE 38th Street—In 2017, the V/C of 1.03 exceeded the area's V/C Standard of 0.80. The 2030 LOS of 1.09 V/C with the CIP Network and 1.20 V/C with the TFP Network is also projected to exceed the LOS Standard. The intersection currently has substantial left-turn volumes on its eastbound approach, likely for traffic accessing the interchange at I-90. In 2030, most volumes are projected to increase moderately, except for the eastbound left turn, which decreases slightly while the eastbound right turn increases.
- (228) Lakemont Blvd./SE Newport Way—In 2017, the V/C of 0.82 exceeded its LOS standard of 0.80 V/C. In 2030, however it is projected to improve to a 0.74 V/C ratio, due to a decrease in northbound traffic on Lakemont Blvd.

With two intersections operating over the 0.80 V/C standard in 2030, this MMA operates below the congestion allowance of three intersections over the standard.

Table 3-20. 2030 Level of Service under CIP Network and TFP Network Alternatives for Southeast Bellevue

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 11 – Southeast Bellevue– LOS Standard C or V/C 0.80; Congestion Allowance: 3						
133	150th Ave SE – SE Newport Way	**0.96**	**0.96**	0.0%	**1.00**	4.2%
174	150th Ave SE – SE 38th St	**1.02**	**1.09**	6.9%	**1.20**	17.6%
218	Lakemont Blvd – SE 63rd St/Cougar Mtn Way	0.66	0.68	3.0%	0.68	3.0%
228	Lakemont Blvd SE- SE Newport Way	**0.82**	0.74	-9.8%	0.74	-9.8%
242	164th Ave SE – Lakemont Blvd	0.68	0.70	2.9%	0.71	4.4%
257	164th Ave SE – SE Newport Way	--	--	--	--	--
274	Lakemont Blvd SE – Village Park Drive	0.55	0.48	-12.7%	0.48	-12.7%
313	Allen Rd/Somerset Blvd – Newport Way SE	0.60	0.71	18.3%	0.69	15.0%
	Areawide LOS Average	0.75	0.76	1.3%	0.78	4.0%
	# of Intersections over Standard	3	2		2	

Note: Figures in **bold** exceed standard.

3.2.2.12 BelRed/Northup

The BelRed/Northup subarea (MMA 12) lies south of SR 520 and east of I-405. It has historically been an area with warehouses and manufacturing. The new BelRed Subarea Plan, adopted in 2009, targets significant investments to take advantage of planned light rail stations and an economic niche different

from Downtown. Office development is projected to more than double by 2030, from about 2,400,000 ft^2 to about 5,100,000 ft^2. Multi-family residential use is expected to grow from about 880 units to about 3,700 units.

This subarea has 13 roadway projects proposed, as shown in Table 3-21.

Table 3-21. TFP Projects for CIP Network and TFP Network Alternatives for BelRed/Northup

2019–2030 TFP#	MMA	Project Location	CIP Network Alternative	TFP Network Alternative
209, 259	12	NE Spring Blvd/116th Ave NE to 124th Ave NE	X	X
210, 213, 265	12	124th Ave NE/Bel-Red Road to Northup Way	X	X
215	12	Spring Blvd/130th Ave NE to 132nd Ave NE	X	X
217	12	124th Ave NE at SR 520		X[a]
218	12	130th Ave NE/NE 20th St to NE Bel-Red Rd	X	X
250	12	148th Ave NE Master Plan improvements at Bel-Red Rd, NE 20th St, and NE 24th St		X[a]
254	12	Bel-Red Rd/NE 20th St to NE 24th St		X[a]
260	12	120th Ave NE (stage 4)/NE 16th St to Northup Way	X[a]	X[a]
270	12	Spring Blvd/124th Ave NE to 130th Ave NE		X[a]
272	12	NE 12th St/116th Ave NE		X[a]

[a] . Implementation funding not included, project not modeled in corresponding CIP/TFP Network.

The subarea had a 2017 areawide average V/C of 0.68, below the adopted standards of 0.95 V/C. Of the 15 system intersections located in this area, all operated in 2017 within their respective LOS standards. In 2030, the area is projected to have an areawide average of 0.92 V/C with the CIP Network and 0.91 V/C with the TFP Network, both of which are below the adopted standard. In 2030, seven intersections will operate over the 0.95 V/C standard, which is equal to the maximum permissible in the congestion allowance for this MMA. Table 3-22 summarizes LOS at system intersections in this area under the CIP and TFP Network alternatives. The table shows that operations under the TFP Network alternative will be slightly better at some locations and slightly worse at others compared to the CIP Network alternative. Intersections that will exceed the LOS standard include the following:

- (29) 116th Avenue NE/NE 12th Street—The 2017 V/C of 0.69 is within the area's V/C Standard of 0.95. The 2030 LOS of 1.21 V/C with the CIP Network and 1.02 V/C with the TFP Network both are projected to exceed the LOS Standard. The intersection currently has the greatest volumes on its eastbound and westbound approaches. In 2030, volumes on all movements are projected to increase, but the southbound-to-eastbound and westbound-to-northbound volumes will increase more. This likely will be the result of overall growth in the BelRed/Northup area.
- (34) 124th Avenue NE/Bel-Red Road—The 2017 V/C of 0.79 is within the area's V/C Standard of 0.95. The 2030 LOS of 1.00 V/C with the CIP Network and 1.02 V/C with the TFP Network both are projected to exceed the LOS Standard. The intersection currently has a substantial portion of volumes in left-turn movements on the westbound approach. In 2030, the westbound to southbound left turns are projected to increase substantially. In 2030, volumes on all movements are projected to increase, but the southbound-to-eastbound and westbound-to-northbound

volumes will increase more. This likely will be the result of overall growth in the BelRed/Northup area.

- (47) 148th Avenue NE/NE 20th Street—The 2017 V/C of 0.88 is within the area's V/C Standard of 0.95. The 2030 LOS of 1.07 V/C with both the CIP Network and TFP Network is projected to exceed the LOS Standard. The northbound and southbound movements currently have the greatest volumes. In 2030, the southbound volume is projected to remain the greatest, but the westbound volume will grow to be equivalent to the northbound volume. This likely will be the result of overall growth in the BelRed/Northup and Redmond Overlake Area.
- (48) 148th Avenue NE/Bel-Red Road—The 2017 V/C of 0.89 is within the area's V/C Standard of 0.95. The 2030 LOS of 1.05 V/C with both the CIP Network and TFP Network is projected to exceed the LOS Standard. The northbound and southbound movements currently have the greatest volumes. In 2030, the southbound volume is projected to remain the greatest, but the westbound volume will grow to be almost equivalent to the northbound volume. This likely will be the result of overall growth in the BelRed/Northup area as well as growth in the Redmond Overlake Area.
- (61) 156th Avenue NE 24th Street—The 2017 V/C of 0.80 is within the area's V/C Standard of 0.95. The 2030 LOS of 1.05 V/C with both the CIP Network and TFP Network is projected to exceed the LOS Standard. The southbound and eastbound movements currently have the greatest volumes. In 2030, all volumes are projected to increase about 30 percent, with slightly more growth in the southbound movement. This likely will result from overall growth in the BelRed/Northup area, as well as growth in the Redmond Overlake Area to the north.
- (81) 148th Avenue NE/NE 24th Street—The 2017 V/C of 0.89 is within the area's V/C Standard of 0.95. The 2030 LOS of 1.08 V/C with both the CIP Network and TFP Network is projected to exceed the LOS Standard. The southbound and northbound movements currently have the greatest volumes. In 2030, all volumes on all movements except the westbound approach are projected to increase about 20 percent with about 70 percent growth of the westbound movement. This likely is the result of overall growth in the BelRed/Northup area as well as growth in the Redmond Overlake Area to the northeast.
- (88) 124th Avenue NE/Northup Way—The 2017 V/C of 0.58 is well within the V/C Standard of 0.95 for the area. The 2030 LOS of 0.99 V/C with the CIP Network and 1.08 V/C with the TFP Network exceed the LOS Standard. The southbound and westbound movements currently have the greatest volumes with the southbound to eastbound left turn the highest volume movement. In 2030 the northbound and westbound movements increase at a greater rate and the westbound to southbound left turn becomes the highest-volume movement. This likely will be the result of overall growth in the BelRed/Northup area.

Table 3-22. 2030 Level of Service under CIP Network and TFP Network Alternatives for BelRed/Northup

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 12 – BelRed/Northup – LOS Standard E+ or V/C 0.95; Congestion Allowance: 7						
29	116th Ave NE – NE 12th St	0.69	**1.21**	75.4%	**1.02**	47.8%
32	120th Ave NE – NE 12th St	0.55	0.91	65.5%	0.95	72.7%
34	124th Ave NE – Bellevue-Redmond Rd	0.79	**1.00**	26.6%	**1.02**	29.1%
37	130th Ave NE – Bellevue-Redmond Rd	0.58	0.73	25.9%	0.74	27.6%
39	140th Ave NE – NE 20th St	0.67	0.84	25.4%	0.83	23.9%
40	140th Ave NE – Bellevue-Redmond Rd	0.69	0.81	17.4%	0.81	17.4%
47	148th Ave NE – NE 20th St	0.88	**1.07**	21.6%	**1.07**	21.6%
48	148th Ave NE – Bellevue-Redmond Rd	0.89	**1.05**	18.0%	**1.05**	18.0%
59	Bellevue-Redmond – NE 24th St	0.64	0.76	18.8%	0.75	17.2%
60	156th Ave NE – Bellevue-Redmond Rd	0.74	0.92	24.3%	0.92	24.3%
61	156th Ave NE – NE 24th St	0.80	**1.05**	31.3%	**1.05**	31.3%
68	130th Ave NE – NE 20th St	0.60	0.86	43.3%	0.84	40.0%
81	148th Ave NE – NE 24th St	0.89	**1.08**	21.3%	**1.08**	21.3%
88	124th Ave NE – Northup Way NE	0.58	**0.99**	70.7%	**1.08**	86.2%
117	120th Ave NE – NE 20th St	0.31	0.52	67.7%	0.53	71.0%
	Areawide LOS Average	0.68	0.92	35.3%	0.91	33.8%
	# of Intersections over Standard	0	7		7	

Note: Figures in **bold** exceed standard.

3.2.2.13 Factoria

The Factoria subarea (MMA 13) is located south of I-90 and east of I-405. It has a commercial center along Factoria Boulevard SE and a significant concentration of offices as well as multi-family and institutional uses. Growth in this area is projected to be modest, with about 10 percent growth in office and commercial use and about 30 percent growth in multi-family units.

There are two TFP projects in this subarea as shown in Table 3-23.

Table 3-23. TFP Projects for CIP Network and TFP Network Alternatives for Factoria

2019–2030 TFP#	MMA	Project Location	CIP Network Alternative	TFP Network Alternative
266	13	Mountains to Sound Greenway – Factoria Crossing (includes adding one additional storage lane to the EB I-90 off-ramp)	X	X
271	13	Convert the three signalized intersections on Coal Creek Parkway at I-405 (2) and 119th Avenue SE and also the intersection of 120th Avenue SE to a series of roundabouts.		X[a]

a. Implementation funding not included in TFP, not modeled in TFP Network

This MMA has a 2017 areawide average of 0.80 V/C, which is well below the areawide standard of 0.95 V/C. In 2030 the areawide average of 0.92 for both the CIP and TFP Network alternatives will remain below the areawide standard. Of the eight system intersections located in this area, seven are currently operating within their respective standards and one exceeds the standard. This MMA complies with the congestion allowance, which allows up to five intersections to exceed the LOS standard. In 2030, four intersections are projected to operate at a LOS level that exceeds the standard; this will still be within the congestion allowance of five.

Table 3-24 summarizes intersection LOS at system intersections within this area under the CIP and TFP Network alternatives.

- (204) Factoria Blvd./SE 36th Street—The 2017 V/C of 1.04 exceeds the area's V/C Standard of 0.95. In 2030, the intersection is projected to operate at a LOS of 1.06 V/C with both the CIP and TFP Network alternatives and will continue to exceed the LOS standard. The northbound and southbound movements currently have the greatest volumes, with the eastbound volumes from the I-90 ramp and westbound volumes on SE 36th about a third to a half of the north-south volumes. The westbound-to-northbound right turn from SE 36th Street is the highest volume turn movement at the intersection. In 2030, all movements are projected to increase at a rate of about eight percent and maintain similar patterns of operation. This likely will be the result of overall growth in the area. TFP project 266 will add one additional storage lane to the eastbound I-90 off-ramp, which will somewhat improve efficiency at the intersection.
- (221) I-405 SB Ramps/Coal Creek Parkway—The 2017 V/C of 0.78 is well within the area's LOS standard of 0.95 V/C. The 2030 LOS of 0.97 V/C with both the CIP Network and the TFP Network is projected to exceed the LOS standard. The southbound-to-eastbound movement from the I-405 off-ramp to Coal Creek Parkway currently has the greatest volumes with about 36 percent of the total. The westbound left turn from Coal Creek Parkway to the southbound on-ramp has about 24 percent of the volume and the east-west movement about 25 percent of total volumes. In 2030 the southbound off-ramp left turn to Coal Creek Parkway volumes are projected to be about 10 percent less than current volumes. The westbound left turn from Coal Creek Parkway to the southbound on-ramp will increase about 40 percent to become the largest volume movement, and the east-west movements will remain at about 25 percent of the total. These changes may be the owing to overall growth in the area as well as an added high-occupancy toll (HOT) lane that WSDOT will add to I-405 in each direction between Renton and downtown Bellevue (opening in 2024). TFP 271 involves potential reconfiguration of the intersections of Coal Creek Parkway with I-405 NB and SB to add roundabouts at these locations as well as at intersections with two adjacent city streets (119th Ave SE, 120th Ave SE). These roundabouts are not included in the scope of the current WSDOT I-405 project, but could be pursued in the future.
- (222) Factoria Blvd./SE 38th Place—The 2017 V/C of 0.88 is well within the area's LOS standard of 0.95 V/C. The 2030 LOS of 0.99 V/C with the CIP Network and 0.98 V/C with the TFP Network is projected to exceed the LOS standard. The southbound movements currently have the greatest volumes, with the southbound movement about 50 percent of total intersection approach volumes and the east-west movements each about 12 to 14 percent of the total approach volume. In 2030, all movements are projected to increase at a similar rate. This likely will be the result of overall growth in the area.

- (284) 124th Avenue SE/Coal Creek Parkway—The 2017 V/C of 0.83 is well within the area's LOS standard of 0.95 V/C. The 2030 LOS of 1.02 V/C with both the CIP Network and the TFP Network is projected to exceed the LOS standard. The eastbound and westbound movements at this intersection are approximately equivalent, each with 40 percent of the total. The southbound volume is about 20 percent. In 2030, most movements are projected to increase at a similar rate of about 15 percent, except for the eastbound left turn onto 124th Avenue SE, which will increase about 50 percent. This overall increase will likely be the result of overall growth in the area, with the larger increase to 124th Avenue SE the result of a projected 50 percent increase in multi-family units in the vicinity of 124th Avenue SE (Factoria Mall area).

Table 3-24. 2030 Level of Service under CIP Network and TFP Network Alternatives for Factoria

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 13 – Factoria – LOS Standard E+ or V/C 0.95; Congestion Allowance: 5						
98	Coal Creek Parkway – Forest Drive	0.86	0.91	5.8%	0.92	7.0%
105	Richards Rd – SE Eastgate Way	0.67	0.80	19.4%	0.80	19.4%
202	Factoria Blvd – SE Newport Way	0.74	0.86	16.2%	0.87	17.6%
203	SE Newport Way – Coal Creek Parkway	0.73	0.82	12.3%	0.81	11.0%
204	Factoria Blvd – SE 36th St	**1.04**	**1.06**	1.9%	**1.06**	1.9%
220	I-405 NB Ramps – Coal Creek Parkway	0.68	0.87	27.9%	0.87	27.9%
221	I-405 SB Ramps – Coal Creek Parkway	0.78	**0.97**	24.4%	**0.97**	24.4%
222	Factoria Blvd – SE 38th Pl	0.88	**0.99**	12.5%	**0.98**	11.4%
284	124th Ave SE – Coal Creek Parkway	0.83	**1.02**	22.9%	**1.02**	22.9%
	Areawide LOS Average	0.80	0.92	15.0%	0.92	15.0%
	# of Intersections over Standard	1	4		4	

Note: Figures in **bold** exceed standard.

3.2.2.14 Newport Hills

The Newport Hills subarea (MMA 14), east of I-405 and west of Coal Creek Parkway, has a LOS standard of 0.80 but no adopted system intersections and therefore no tracking mechanism. The area is primarily single-family and is projected to have little or no additional development between now and 2030. Traffic volumes at 119th Avenue SE near SE 52nd St are projected to increase about 35 percent by 2030. No capacity projects are proposed in this area under both the CIP Network and TFP Network alternatives.

3.2.3 Neighborhood Impacts

A significant concern of city residents in neighborhoods served by the major arterials is cut-through traffic, that is, drivers attempting to bypass congested arterials on their way to the regional freeway system or other Eastside destinations by traveling on local streets. The city's NTSS program will continue to address those needs at problem locations by slowing traffic entering neighborhoods and discouraging

cut-through routes using a combination of education, enforcement, and physical facilities. The Neighborhood Safety, Connectivity and Congestion Levy approved by Bellevue voters in November 2016 increased the resources available to the city to analyze and, where appropriate, implement localized measures to address concerns such as cut-through traffic.

In general, the proposed capacity projects under the CIP Network alternative and TFP Network alternative do not directly respond to residents' concerns about traffic volumes or speeds on neighborhood streets. Capacity projects can reduce spillover traffic onto local streets, however, by improving the efficiency and traffic flow on the city's main arterials. Most of the capacity projects in the CIP Network and TFP Network alternatives either directly or indirectly address this concern.

Overall, more capacity projects are proposed under the TFP Network alternative; therefore, it is expected to address the issue of cut-through traffic to a greater extent than the CIP Network alternative.

3.2.4 Safety

One of the purposes of the TFP is to identify projects at specific locations to address inherent design or engineering deficiencies that may result in collisions. In some cases, capacity projects help resolve hazards resulting from traffic congestion; in others, project improvements (such as the addition of turning lanes) may improve safety by lowering the number of potential vehicle conflict points. Sidewalk and bicycle projects (detailed in the next section) improve safety conditions for pedestrians and bicyclists by separating them from vehicular traffic.

3.2.5 Pedestrian and Bicycle Impacts

Table 3-25 summarizes the bicycle and pedestrian improvement projects included in the CIP Network and TFP Network alternatives. These projects primarily provide increased mobility for non-motorized travel and complete missing links in the citywide pedestrian and bicycle network. The table shows one project included in the CIP Network alternative and two additional projects included in the TFP Network alternative. Also included with the TFP Network alternative is a list of 11 high-priority pedestrian and bicycle projects that will be considered for funding and implementation in conjunction with the city's ongoing Pedestrian and Implementation Initiative. The TFP Network alternative includes a line item, "Pedestrian and Bicycle Implementation Reserve" allocation, in recognition of the need for resources to build out the pedestrian and bicycle system. Apart from the TFP funding reserve, elements of some of the projects in the Pedestrian and Bicycle Implementation Reserve category may be advanced via resources available through ongoing city programs (including CIP W/B-56 Pedestrian Access Improvement Program, CIP W/B-76 Neighborhood Sidewalks, and additional resources from the Neighborhood Safety, Connectivity and Congestion Levy). Implementation of elements of several of these projects is under way or planned (specifically projects TFP-173, 230, 247, 249). In the case of TFP-244, the Eastside Rail Corridor, King County is owner of most of the corridor in Bellevue and is advancing design and implementation of certain elements. Segments of trail opened at the north and south sides of Bellevue in early 2018. Some funding is allocated in the Bellevue CIP to support the King County implementation and develop connections from Bellevue activity centers and neighborhoods into the corridor.

Table 3-25. Bicycle and Pedestrian Projects under the CIP Network and TFP Network Alternatives

2019–2030 TFP#	Project Location	CIP Network Alternative	TFP Network Alternative
175	SE 34th St/162nd Pl SE to West Lake Sammamish Pkwy		X
255	Newport Way SE/Somerset Blvd SE to 150th Avenue SE	X	X
269	124th Ave NE/NE 8th St to NE 12th St		X
	Pedestrian & Bicycle Implementation Reserve projects		
158	SE 16th St/148th Ave SE to 156th Ave SE		X[a]
173	108th/112th Ave NE/North city limit to NE 12th St		X[a]
230	108th Ave NE/NE 12th St to Main St		X[a]
232	164th Ave NE/SE / NE 18th St to SE 14th St		X[a]
234	Main St/110th Ave to 116th Ave		X[a]
243	Mountains to Sound Greenway/132nd Ave SE to Lakemont Blvd		X[a]
244	Eastside Rail Corridor/Southern city limits to northern city limits	X[b]	X[a]
245	140th Ave NE/NE 24th St to NE 8th St		X[a]
247	Eastgate Way/Richards Rd to SE 35th Pl		X[a]
249	Wilburton/NE 8th St station access improvements		X[a]
251	Coal Creek Parkway/124th Ave SE to the southern city limits		X[a]

[a] There is no specific TFP funding allocation for project. Project will be considered for funding in conjunction with the city's ongoing Pedestrian and Bicycle Implementation Initiative.

[b] The CIP includes a funding allocation (CIP G-103) to support implementation of key crossings along the corridor and connections into the corridor from Bellevue activity centers and neighborhoods.

Table 3-26 summarizes roadway projects that also include pedestrian and/or bicycle elements under the CIP Network and TFP Network alternatives. The table shows 12 roadway projects under the CIP Network alternative that include non-motorized improvements; an additional six roadway projects under the TFP Network alternative also add pedestrian and bicycle improvements. Some of the projects listed have funding allocation to support initial phases of project development but do not have sufficient funding allocation to support full implementation by 2030.

Table 3-26. Capacity and Non-Capacity Roadway Projects that Include Bicycle and/or Pedestrian Projects under the CIP Network and TFP Network Alternatives

2019–2030 TFP#	Project Location	CIP Network Alternative	TFP Network Alternative
194	164th Ave SE/Cougar Mtn Way to SE 63rd St		X[a]
209	NE Spring Blvd/116th Ave NE to 120th Ave NE	X	X
210	124th Ave NE/NE Spring Blvd to Ichigo Way (NE 18th St)	X	X
211	NE 6th St Extension to 116th Ave NE		X[b]
213	124th Ave NE/NE 12th St to NE Spring Blvd	X	X
215	NE Spring Blvd/130th Ave NE to 132nd Ave NE	X	X
218	130th Ave NE/NE 20th St to NE Bel-Red Rd	X	X
246	150th Ave SE/south of SE 38th St to Newport Way	X	X
252	Bellevue College Connection: Kelsey Creek Rd/Snoqualmie River Rd/142nd Pl SE from 145th Place SE to SE 36th St	X[a]	X[a]
254	Bel-Red Rd/NE 20th St to NE 24th St		X[a]
256	West Lake Sammamish Pkwy: “North Central” segment/SE 2nd block to NE 8th block (Phase 2)	X	X
257	West Lake Sammamish Pkwy: ”South Central” and “Central” segments/SE 34th St to SE 2nd block (Phases 3 & 4)		X[a]
259	NE Spring Blvd/120th Ave NE to 124th Ave NE	X	X
260	120th Ave NE/NE 16th St to Northup Way	X[a]	X[a]
265	124th Ave NE/Ichigo Way (NE 18th St) to Northup Way	X	X
266	Mountains to Sound Greenway – Factoria Crossing	X	X
267	West Lake Sammamish Pkwy: ”North” segment/NE 8th block to north city limit (Phase 5)		X[a]
270	Spring Blvd/124th Ave NE to 130th Ave NE		X[a]

[a] Funding allocation is less than needed to implement project in 2030 timeframe.

[b] Assumes primary funding for implementation from other agencies.

Table 3-27 indicates the contribution of each alternative to the policy goal of completing 25 miles of sidewalk along arterial roadways by 2019 (from the base level at adoption of the Pedestrian and Bicycle Transportation Plan in 2009 [Bellevue 2009a]). The CIP Network alternative adds 4.5 miles of arterial sidewalks to the 12.5 miles already completed since 2009, which would bring the total to 17.0 miles or 67.9 percent of the 25 miles of added arterial sidewalks identified (for 2019) in Policy PB-2. The new sidewalks added with the CIP Network will largely be in the BelRed area and along Newport Way SE. The TFP Network alternative includes an additional 0.4 miles of arterial sidewalks, for a total of 17.4 miles or 69.5 percent of the target in Policy PB-2. The added sidewalk in the TFP Network alternative is along SE 34th Street. Not counted in these arterial sidewalk totals are segments of added multi-use pathway along West Lake Sammamish Parkway (one new 0.8-mile segment in the CIP Network alternative; one additional 2.1-mile new segment with the TFP Network alternative). If the West Lake Sammamish Parkway multi-use path were included, the city would be 54 percent complete toward the target at the end of 2018, 71 percent complete with the CIP Network alternative, and 79 percent complete with the TFP Network alternative. As noted above, the TFP Network alternative also includes a Pedestrian and Bicycle Implementation Reserve allocation, which would support implementation of additional projects (specific projects TBD).

Table 3-27. Arterial Sidewalk Completion

Policy Goal	Completed by End of 2018	After CIP Network Alternative	TFP Network Alternative
Progress to 25-mile target	50.0%	67.9%	69.5%

Table 3-28 indicates the current status of the designated Priority Bicycle Corridors, as well as the contribution to completion associated with the CIP Network and TFP Network alternatives. See Figure 3-11 for a map of the Priority Bicycle Corridors and indication of new links associated with each alternative.

Table 3-28. Priority Bicycle Corridors Completion

Corridor	Name	Total Length Miles	Percent Complete at End 2018	Percent Complete with CIP Network Alternative	Percent Complete with TFP Network Alternative
EW-1	520 Trail	5.4	77.2%	77.2%	77.2%
EW-2	Downtown-Overlake Connection	3.7	22.5%	**60.6%**	60.6%
EW-3	Lake-to-Lake Trail	7.3	44.2%	44.2%	44.2%
EW-4	Mountain-to-Sound Greenway	6.3	29.6%	**33.0%**	33.0%
EW-5	Coal Creek-Cougar Mountain Connection	7.4	69.4%	69.4%	69.4%
NS-1	Enatai-Northtown Connection	3.8	93.2%	93.2%	93.2%
NS-2	Lake Washington Loop Trail	7.6	88.5%	88.5%	88.5%
NS-3	BNSF Trail Corridor	7.5	21.3%	21.3%	21.3%
NS-4	Somerset-Redmond Connection	7.1	56.7%	56.7%	56.7%
NS-5	Spirit Ridge-Sammamish River Connection	6.2	77.1%	77.1%	77.1%
NS-6	West Lake Sammamish Parkway	5.0	22.6%	**39.3%**	**80.3**%

Note: **Bold** figures indicate that corridor completion improves with alternative.

The CIP Network adds 1.4 miles to Priority Bicycle Corridor EW-2 (Downtown-Overlake Connection), resulting in 60.6 percent completion of the corridor. The CIP Network also advances the construction of Priority Bicycle Corridor NS-6 (West Lake Sammamish Parkway) by adding a segment of 0.8 mile, completing 39.3 percent of the corridor. The TFP Network alternative adds another 2.0 miles to the corridor, increasing it to 80.3 percent completion.

The CIP Network alternative does not meet the city's Policy PB-2 target of achieving two north-south and two east-west bicycle routes ("corridors") across Bellevue (targeted in the policy to occur by 2019). The elements of the TFP Network that are currently identified also fail to meet the Policy PB-2 target, although it is possible that if projects in the Pedestrian and Bicycle Implementation Reserve candidate list are advanced for construction that one or more corridors could be competed. Policy PB-2 also calls for at least one east-west and one north-south bicycle route through Downtown Bellevue (to be implemented by 2014); a "pilot" bicycle facility was installed on 108th Ave NE Downtown in 2018 and if it is made permanent will address the policy target for the north-south corridor. The CIP Network alternative does not advance the policy target of implementing an east-west bicycle corridor in Downtown. The elements

Figure 3-11. Priority Bicycle Corridors Improvements by Alternative

of the TFP Network that are currently identified also fail to meet the Policy PB-2 target for an east-west bicycle corridor in Downtown, although it is possible that if TFP-254 (Main Street from 100th Ave to 116th Ave), identified in Pedestrian and Bicycle Implementation Reserve candidate list is advanced for construction that this policy target could be satisfied (though later than the 2014 target date).

3.3 Mitigation Measures

Overall, the capacity, safety, operations, and non-motorized projects included in both alternatives would reduce congestion, improve mobility, and improve safety for vehicular traffic, bicyclists, and pedestrians.

The TFP Network alternative includes more projects than the CIP Network alternative and thus is expected to improve overall safety and mobility conditions to a greater extent. The projects included in the CIP and TFP Network alternatives would be expected to improve transportation conditions; therefore, no mitigation is recommended in those cases where improvements in safety and mobility conditions are projected.

Following are subareas where 2030 areawide LOS is projected to exceed the adopted standard:

- **Bridle Trails (MMA 2)** – LOS Standard C or V/C 0.80; Congestion Allowance: four
  2030 Areawide LOS Average 0.84 V/C with CIP Network, 0.83 V/C with TFP Network.
  Intersections exceeding standard: four (this is the maximum permissible number, per Congestion Allowance).
- **Northeast Bellevue (MMA 6)** – LOS Standard C or V/C 0.80; Congestion Allowance: two
  2030 Areawide LOS Average 0.84 V/C with CIP Network, 0.90 V/C with TFP Network.
  Intersections exceeding standard: three (one intersection more than permissible, per Congestion Allowance).
- **East Bellevue (MMA 9)** – LOS Standard D+ or V/C 0.85; Congestion Allowance: five
  2030 Areawide LOS Average 0.91 V/C with CIP Network, 0.90 V/C with TFP Network.
  Intersections exceeding standard: six (one intersection more than permissible, per Congestion Allowance).

Options for the city to address these projected conditions include the following strategies:

- Continue to monitor compliance with transportation concurrency requirements via annual updates of the Transportation Concurrency Report.
- In view of the fact that the projected exceedance of standards will not occur for 12 years, and the TFP is typically updated every two to three years, the city will have multiple opportunities to update the plan before the traffic growth that creates the exceedance in standards occurs. Options for addressing this (anticipated) situation include adding capacity projects in future CIP and TFP plans at intersections that exceed standards. In most cases, not all intersections not meeting the areawide LOS standard must be brought into compliance, because improving a limited number of intersections may improve the areawide average and/or bring the number of intersections exceeding the standard within the specified Congestion Allowance.
- Because some of the traffic that is projected to impact intersections that exceed standards is likely to have its origin in new development in the Redmond Overlake Area, the City of Bellevue and

the City of Redmond could cooperate on a joint BelRed/Overlake Transportation Plan that could identify joint solutions to intersection operating conditions affected by traffic generation from both jurisdictions.

- Bellevue could monitor Transportation Demand Management Plans and implement additional regulations or incentives to reduce reliance on single-occupancy vehicles that may reduce traffic generation and ameliorate traffic operating conditions in the future sufficient to meet LOS standards.
- Bellevue could change LOS standards for specific MMAs if the City Council determines that meeting the current LOS standards is unfeasible and that accommodating projected development is in the public interest.
- Bellevue could change its Comprehensive Plan and zoning if it determined that meeting current LOS standards is in the public interest and that traffic demand could be reduced by reducing future development.

None of these options are exclusive. All could be pursued in the integrated ongoing transportation planning program of the city.

3.4 Significant Unavoidable Adverse Impacts

The analysis of 2030 conditions indicate that V/C levels are forecast to exceed areawide LOS standards in three MMAs under the CIP and TFP Network.

The exceedance of the areawide standard in itself can be considered a significant unavoidable adverse effect.

No other significant unavoidable adverse impacts on the transportation system were identified as a result of the CIP Network and TFP Network alternatives and the TFP Network Plus scenario.

As noted above, the city updates the TFP every two to three years; therefore, the city will have four to six opportunities to update the plan before the traffic growth that creates the exceedance in standards occurs.

Chapter 4. Air Quality

This section addresses air quality impacts associated with the implementation of the TFP. This study includes a discussion of existing air quality conditions, a summary of local policies and regulations related to air quality, and an analysis of the environmental impacts of the CIP Network alternative and the TFP Network alternative.

4.1 Affected Environment

This section presents an overview of current air quality and associated regulations in the TFP project area. The affected environment provides the foundation by which impacts are assessed.

4.1.1 Regulatory Overview

The Clean Air Act (CAA), as amended in 1990, is the federal law that governs air quality in the United States. Its counterpart in Washington State is the Washington Clean Air Act of 1967, as amended. These laws set standards for the concentration of pollutants that can be in the air. At the federal level, the U.S. Environmental Protection Agency (EPA) administers the CAA. The Washington CAA is administered by the Washington State Department of Ecology (Ecology) at the state level and by local clean air agencies at the regional levels. The Bellevue TFP area and surrounding areas are located in the Puget Sound region, in which the Puget Sound Clean Air Agency (PSCAA) has local jurisdiction.

4.1.1.1 Ambient Air Quality Standards

EPA and Ecology have established regulations designed to limit emissions from air pollution sources and to minimize concentrations of pollutants in the outdoor ambient air. Although their regulations are similar in stringency, each agency has established its own standards. Unless the state or local jurisdiction has adopted more stringent standards, EPA standards apply (EPA 2018a).

Table 4-1 lists both the national and Washington State ambient air quality standards for six criteria pollutants: carbon monoxide (CO), ozone, particulate matter less than 10 micrometers in size (PM_{10}), particulate matter less than 2.5 micrometers in size ($PM_{2.5}$), lead (Pb), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2). The National Ambient Air Quality Standards (NAAQS) consist of primary standards designed to protect public health and secondary standards designed to protect public welfare (e.g., preventing air pollution damage to vegetation). Ecology has established additional ambient standards for total suspended particulates and SO_2 that are more stringent than the federal requirements.

Table 4-1. Federal and Washington State Ambient Air Quality Standards

Pollutant	Federal[a]	State[b]
Carbon Monoxide		
8-hour average (not to be exceeded more than once a year) 1-hour average (not to be exceeded more than once a year)	9 ppm 35 ppm	9 ppm 35 ppm
Ozone		
8-hour average (not to be exceeded more than once a year) 1-hour average (not to be exceeded more than once a year)	0.075 ppm 0.12 ppm	No standard 0.12 ppm
Total Suspended Particles		
24-hour average (not to be exceeded more than once a year) Annual Arithmetic Mean	No standard No standard	60 µg/m^3 150 µg/m
Particulate Matter—PM_{10}		
24-hour average (not to be exceeded more than once a year) Annual Arithmetic Mean	150 µg/m^3 No Standard	150 µg/m^3 50 µg/m
Particulate Matter—$PM_{2.5}$		
24-hour average (not to be exceeded more than once a year) Annual Arithmetic Mean	35 µg/m^3 12 µg/m^3	No standard No standard
Lead		
Calendar Quarter Rolling 3-Month Average	1.5 µg/m^3 0.15 µg/m^3	1.5 µg/m^3 0.15 µg/m^3
Sulfur Dioxide		
Annual average 24-hour average 3-hour average 1-hour average	0.03 ppm 0.14 ppm No standard 0.075 ppm	0.02 ppm 0.10 ppm No standard 0.25 – 0.40 ppm
Nitrogen Dioxide		
Annual average	0.053 ppm	0.05 ppm
1-hour average	0.1 ppm	0.1 ppm

Notes: Annual standards are never to be exceeded. Short-term standards are not to be exceeded more than once per year unless noted.
ppm = parts per million; PM_{10} = particles 10 microns or less in size; $PM_{2.5}$ = particles 2.5 microns or less in size;
µg/m^3 = micrograms per cubic meter

[a] Source: 40 CFR Part 50

[b] Source: Chapter 173-474, 173- 475 WAC

4.1.1.2 Attainment Status Designation

Ecology maintains a network of air quality monitoring stations throughout the state. These stations are placed in areas where there may be air quality problems, usually in or near urban areas or close to large air pollution sources. A limited number of additional stations are located in remote areas to provide an indication of regional air pollution levels.

Based on monitoring information collected over a period of years, EPA and Ecology designate regions as being attainment or nonattainment areas for regulated air pollutants. Attainment status indicates that air quality in an area meets the federal, health-based ambient air quality standards, and nonattainment status indicates that air quality in an area does not meet those standards. If the measured concentrations in a nonattainment area improve so that they are consistently below the federal standards, Ecology and EPA can reclassify the nonattainment area as a maintenance area. In that case, Ecology and PSCAA are

required to implement maintenance plans to ensure ongoing emission reductions and continuous compliance with the federal standards.

4.1.2 Existing Air Quality

Typical air pollution sources in Bellevue include vehicular traffic, the activities of commercial and retail businesses, and light industrial facilities, as well as residential wood-burning devices. While many types of pollutant sources are present, the single largest contributor to most criteria pollutant emissions is vehicle emissions. Of the various vehicular emissions for which there are ambient air quality standards, CO is the pollutant emitted in the largest quantities. Therefore, for the transportation plans that could redistribute traffic volumes or result in additional vehicular traffic, CO is the major concern among the criteria pollutants.

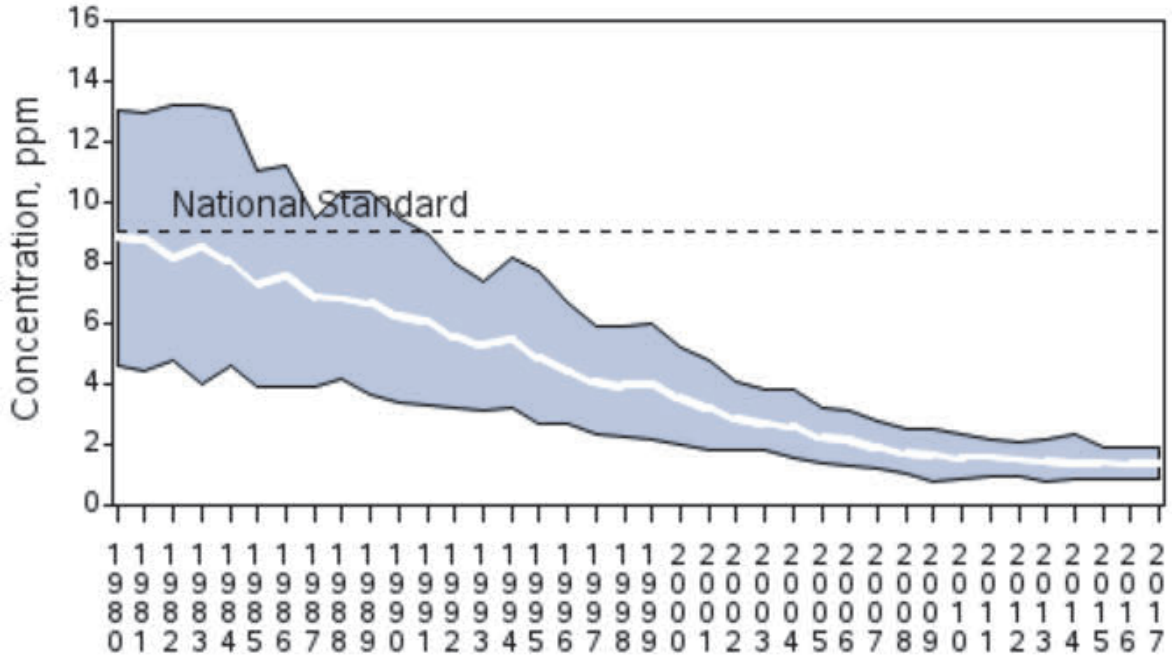
Other pollutants generated by vehicular traffic include the ozone precursors: volatile organic compounds (VOCs) and nitrogen oxides (NOx), which could be important in the future if there is at some point a re-designation to nonattainment status for ozone. Particulate matter (PM_{10} and $PM_{2.5}$) is also emitted in vehicle exhaust and generated by tire action on pavement (or unpaved areas). In winter, residential fireplaces and stoves are the predominant sources of $PM_{2.5}$; in the summer, motor vehicles are the largest source. Sulfur oxides (SOx) and NO_2 are also emitted by motor vehicles, but concentrations of these pollutants are usually not high, except near large industrial facilities.

The following paragraphs describe the key pollutants considered for this analysis.

4.1.2.1 Carbon Monoxide

CO, a product of incomplete combustion, is generated by mobile sources, residential wood combustion, and industrial fuel-burning sources. CO is a concern related to on-road mobile sources because it is the pollutant emitted in the greatest quantity for which short-term health standards exist. The impact of the pollutant CO is usually localized, and CO concentrations typically diminish within a short distance of roads. The highest ambient concentrations of CO usually occur near congested roadways and intersections during periods of air stagnation in winter.

Carbon monoxide emissions by vehicles has decreased substantially since 1970 when Congress passed the CAA, which called for the first tailpipe emissions standards. In 1977, Congress amended the CAA and tightened emission standards. In 1990, further amendments tightened standards. In 2004, EPA implemented Tier 2 tailpipe emissions standards. As shown in Figure 4-1, vehicle emission standards have led to cuts in pollution from cars and trucks by about 85 percent since 1980, with further improvements projected from the Tier 3 standards (EPA 2018b).



Annual 2nd Maximum 8-hour Average based on 51 Sites Source: EPA 2018c

Figure 4-1. Carbon Monoxide Emissions National Trends

The Bellevue TFP area is located in the Puget Sound region, which was designated by EPA as a CO nonattainment area from 1978 until the early 1990s. As older, more polluting cars have been replaced with new, highly efficient cars, no monitoring stations have recorded violations of the air quality standards in recent years. In 1996, EPA re-designated the region as being in attainment for CO. On October 11, 2016, the area reached the end of the 20-year maintenance period for CO and is no longer designated either a non-attainment or maintenance area (Ecology 2018).

4.1.2.2 Ozone

Ozone is a highly reactive form of oxygen created by the atmospheric chemical reaction of NOx and VOCs, both of which are emitted directly from industrial sources and mobile sources. Ozone problems tend to be regional in nature because the atmospheric chemical reactions that produce ozone occur over a period of time, and because ozone precursors can be transported far from their sources during the delay between emission and ozone formation. Transportation sources such as automobiles and trucks are some of the sources that produce ozone precursors.

In the past, due to violations of the federal ozone standards, the Puget Sound region was designated as a nonattainment area for ozone until the early 1990s. After this period, more stringent emission limits on mobile sources and industrial facilities greatly reduced emission rates for the NOx and VOC precursors. On November 25, 1996 the Seattle-Tacoma Puget Sound Area was redesignated attainment for ozone by EPA. Washington submitted an ozone maintenance plan on January 28, 1993, and EPA approved the plan on September 26, 1996 (61 CFR 50438). The 20-year maintenance period automatically ended November 25, 2016 at the end of the 20 years. Separate from the maintenance area designation, in 2005, EPA eliminated the 1-hour ozone standard; and since then, ozone compliance has been based solely on the 8-

hour standard. Because the region had always complied with the 8-hour ozone standard, the region has been an attainment area for ozone (Ecology 2018).

4.1.2.3 Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate matter is generated by industrial emissions, residential wood combustion, motor vehicle tailpipes, and fugitive dust from roadways and unpaved surfaces. When first regulated, particle pollution was based on "total suspended particulate," which included all size fractions. As sampling technology has improved and the importance of particle size and chemical composition have become more clear, ambient standards have been revised to focus on the size fractions thought to be most dangerous to people. At present, there are standards for PM_{10} and $PM_{2.5}$ because they contribute the most to human health effects, regional haze, and acid deposition. The highest ambient concentrations generally occur near the emission sources. $PM_{2.5}$ has a greater impact than PM_{10} for two reasons. One is that these smaller particles remain suspended in the atmosphere longer and travel farther from the emitting source. The second is that smaller particles pose the greatest health risk; fine $PM_{2.5}$ particles can go deep into the lungs and may even enter the bloodstream of people.

In 1987, the industrial areas of the Seattle Duwamish River, Kent Valley, and Tacoma Tideflats were classified as nonattainment areas for PM_{10}. The three PM_{10} areas were redesignated as attainment areas in 2001. The three areas currently have monitored PM_{10} levels that are roughly one-third of the standard, with steady declines in PM_{10} levels. EPA released the final approval of the limited maintenance plan in 2014 (PSCAA 2013). In 2008, the Wapato Hills-Puyallup River Valley area near Tacoma was designated as a nonattainment area for $PM_{2.5}$ (PSCCA 2013). The region was redesignated by the EPA as an attainment area with an approved maintenance plan for $PM_{2.5}$ in 2015 (Ecology 2018, PSRC 2018c). There is no PM_{10} or $PM_{2.5}$ nonattainment area or maintenance area in Bellevue.

4.1.2.4 Transportation Conformity Regulations

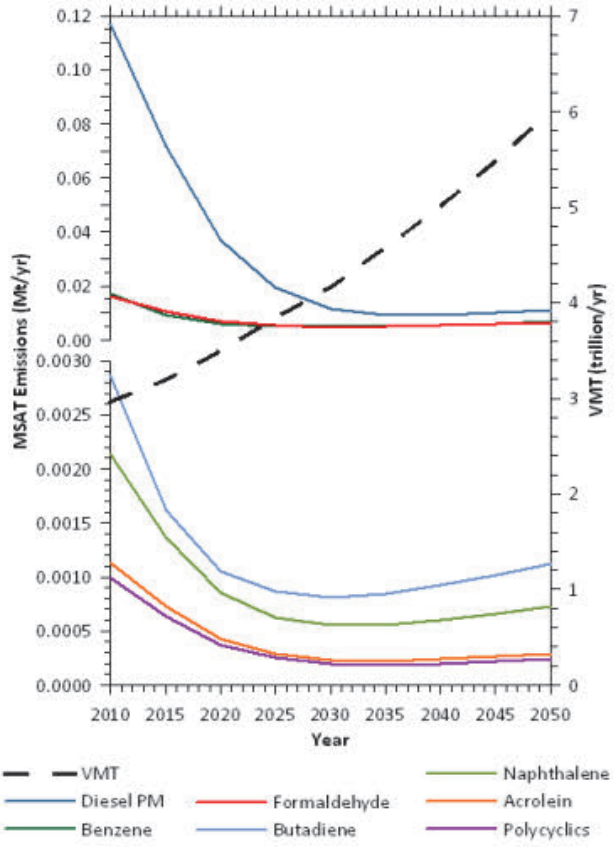
Regionally significant transportation projects (regardless of the funding source) are subject to the Transportation Conformity regulations specified under federal regulations (EPA; 40 *Code of Federal Regulations* [CFR] Parts 51 and 93) and state regulations (Chapter 173-420 WAC). Regionally significant projects include construction or widening of new roadways and widening of signalized intersections. The intent of these regulations is to ensure that transportation projects, plans, and programs affecting regional and local air quality conform to existing plans and timetables for attaining and maintaining federal health-based air quality standards (EPA 2018d). Because this is a non-project action, the city is demonstrating in this analysis that the proposed plan is consistent with the Puget Sound Regional Council (PSRC) regional air quality modeling for its required periodic Air Quality Conformity Analysis, and confirming that the regional emissions (including the proposed TFP) are within the allowable emission budget specified.

At the time of environmental review of specific projects, the city can rely on the demonstration provided by the PSRC regional air quality modeling for its Transportation Improvement Plan (TIP) Air Quality Conformity Analysis (PSRC 2018g). This analysis demonstrates that regional emissions (including the proposed project) are within the allowable emission budget.

4.1.2.5 Mobile Source Air Toxics Regulations

Mobile source air toxics (MSATs) are compounds emitted from highway vehicles and non-road mobile equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. The EPA has identified seven priority MSATs: benzene, formaldehyde, naphthalene, diesel particulate matter/diesel exhaust organic gases, acrolein, 1,3-butadiene, and polycyclics.

The EPA has issued a number of regulations that dramatically decrease MSATs by mandating the use of cleaner fuels and cleaner engines. The MSAT regulations were issued under the authority of CAA Section 202. In its regulations, the EPA examined the impacts of existing and newly promulgated mobile source control programs, including the reformulated gasoline program, national low-emission vehicle standards, Tier 2 motor vehicle emissions standards, gasoline sulfur control requirements, proposed heavy-duty engine and vehicle standards, and on-highway diesel fuel sulfur control requirements (EPA 2018b). According to a Federal Highway Administration (FHWA) analysis, even if nationwide vehicle miles traveled (VMTs) increase by 102 percent between 2010 and 2050, reductions of up to 83 percent in MSATs are projected (FHWA 2012), as shown in Figure 4-2.



Source: FHWA 2012

Figure 4-2 National MSAT Emission Trends 2010 – 2050 for Vehicles Operating on Roadways

4.1.2.6 Greenhouse Gas and Climate Change Issues

The issue of how emissions from human activities may affect the global climate has been the subject of extensive international research during the past several decades. There is now a broad consensus among atmospheric scientists that emissions generated by humans have already caused measurable increases in global temperature and are expected to result in significantly greater increases in temperature in the future. While there is some uncertainty regarding the magnitude of future global impacts, it is clear that reducing carbon emissions is critical to mitigating (or limiting) the impacts.

4.1.2.6.1 Global Climate Change Initiatives

The United Nations' Intergovernmental Panel on Climate Change (IPCC) published its Fifth Assessment Report in 2014, summarizing worldwide research on the state of knowledge concerning global climate change (IPCC 2014). A key statement released with the report notes that "human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems."

The 2015 United Nations Climate Change Conference, generally known as the Paris Agreement, or COP 21 (the 21st yearly session of the Conference of the Parties [COP] to the 1992 United Nations Framework Convention on Climate Change [UNFCCC]), led to an agreement, ratified by 175 parties. The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by keeping the global temperature rise this century well below 2 degrees Celsius (ºC) above pre-industrial levels and by pursuing efforts to limit the temperature increase even further to 1.5ºC. To reach these ambitious goals, appropriate mobilization and provision of financial resources, a new technology framework, and enhanced capacity-building is to be put in place; this supports action by developing countries and the most vulnerable countries, in line with their own national objectives. The Agreement also provides for an enhanced transparency framework for action and support (UN 2015).

The United States has withdrawn from the Paris Agreement; however, Washington State is a party to the United States Climate Alliance, a coalition of states and unincorporated self-governing territories in the United States that are committed to upholding the objectives of the 2015 Paris Agreement on climate change within their borders. The Alliance was formed on June 1, 2017, following the announcement earlier that day by U.S. President Donald Trump that he had decided to withdraw the United States from the Paris Agreement. The Alliance also acts as a forum for its members to further develop and strengthen their existing Climate Action Plans, through sharing of information and best practices (USCA 2018).

The IPCC Climate Report 2018 concludes that limiting global warming to 1.5ºC would require rapid, far-reaching and unprecedented changes in all aspects of society. With clear benefits to people and natural ecosystems, limiting global warming to 1.5ºC compared to 2ºC could go hand in hand with ensuring a more sustainable and equitable society (IPCC 2018).

Conclusions of the Intergovernmental Panel on Climate Change include the following:

- From 1880 to 2012, average global temperature increased by 0.85°C. To put this into perspective, for each 1 degree of temperature increase, grain yields decline by about 5 percent. Maize, wheat, and other major crops have experienced significant yield reductions at the global level of 40 megatons per year between 1981 and 2002 due to a warmer climate.

- Oceans have warmed, the amounts of snow and ice have diminished, and sea level has risen. From 1901 to 2010, the global average sea level rose by 19cm as oceans expanded due to warming and melted ice. The Arctic's sea ice extent has shrunk in every successive decade since 1979, with 1.07 million km² of ice loss every decade.
- Given current concentrations and ongoing emissions of greenhouse gases, it is likely that by the end of this century, the increase in global temperature will exceed 1.5°C (compared to 1850 to 1900) for all but one scenario. The world's oceans will warm, and ice melt will continue. Average sea-level rise is predicted to be 24–30cm by 2065 and 40-63cm by 2100. Most aspects of climate change will persist for many centuries even if emissions are stopped.
- Global emissions of CO_2 have increased by almost 50 percent since 1990.
- Emissions grew more quickly between 2000 and 2010 than in each of the three previous decades.
- It is still possible, using a wide array of technological measures and changes in behavior, to limit the increase in global mean temperature to 2ºC above pre-industrial levels.
- Major institutional and technological change will give a better-than-even chance that global warming will not exceed this threshold.

Global climate change is a cumulative issue related to worldwide GHG emissions. No single project emits enough GHG to influence global climate change by itself. GHG emitted anywhere on the planet remains active for roughly 100 years and eventually disperses throughout the world. Therefore, future climate change in Washington State would be influenced as much by, for example, new industrial activity in China as it would be by the future improvements of the city's roadway system.

4.1.2.6.2 State of Washington GHG Initiatives

In response to growing worldwide concerns, Washington State Governor Christine Gregoire issued Executive Order 07-02 in February 2007. GHG reduction goals in the Executive Order were to:

- Reduce emissions to 1990 levels by 2020 and 50 percent below 1990 levels by 2050;
- Increase green economy jobs to 25,000;
- Reduce expenditures on fuel imported into the state by 20 percent by 2020 (Ecology 2008a).

In 2008 the Washington State Legislature adopted these goals (Chapter 70.235 RCW) as limits that the Legislature expected Washington to achieve statewide by 2020, 2035, and 2050.

In order to achieve these goals, the Washington Climate Action Team (CAT) was formed to develop a full range of state-level policy recommendations, including mitigation strategies, policies, and programs. The recommendations in the CAT report focus on four areas: the built environment, transportation, reduction of the waste stream, and the role of SEPA in climate change. The recommended actions build a future in which the following occur (Ecology 2008a):

- Citizens and goods move more efficiently with less pollution;
- Infrastructure investments and good planning create transportation choices and sustainable communities;

- Buildings are constructed and operated with less energy;
- Energy is produced and used more efficiently and with less carbon;
- Solid waste is reduced and more materials are recycled;
- Natural ecological systems are healthier and store carbon more effectively;
- The impacts of development on the environment are analyzed to maximize the effectiveness of mitigating climate change and avoid needless litigation;
- Government, business, labor, and environmental advocates work together to support entrepreneurial creativity and economic opportunities for all.

The recommended actions to reduce transportation-related GHG emissions are summarized below:

- Expand and enhance transit, rideshare, and commuter choice;
- Encourage compact and transit-oriented development;
- Use GHG/VMT as criteria for funding and pursue new revenue sources to support transportation choices;
- Use transportation pricing to reduce per-capita VMT and GHG emissions, raise revenue, and manage the system for better efficiency and reliability;
- Pursue additional non-VMT actions to reduce GHG emissions from the transportation sector, including rail use, diesel engine improvements, transportation systems management, plug-in hybrid and electric vehicles, and a low-carbon fuel standard.

In May 2009, Governor Christine Gregoire issued Executive Order 09-05, Washington's Leadership on Climate Change. Transportation-related elements of this order include the following:

- Developing emission reduction strategies to help meet the state's statutory GHG reduction limits;
- Recommending ways to implement a low-carbon fuel standard or alternative measures to reduce carbon emission from transportation fuels;
- Joining with other West Coast states and the private sector to develop and implement a "West Coast Green Highway" that supports electric and alternative-fuel vehicles;
- Developing additional strategies for reducing GHG emissions from the transportation sector;
- Working with the five largest metropolitan planning organizations to increase transit options.

Another consideration in evaluating limits is the guidance from the Memorandum of Understanding on Subnational Global Climate Leadership (Under 2MOU). This agreement evolved from a partnership between California and the German state of Baden-Württemberg, and is aimed at promoting action to address climate change at the subnational level. Signatories to the Under 2MOU agree to:

- Work to limit global warming to less than 2°C by 2050
- Commit to reducing emissions to 80 to 95 percent below 1990 levels by 2050, or limiting per-capita emissions to 2 metric tons carbon dioxide equivalent (CO_2e)
- Commit to establishing intermediate emission-reduction targets at 2030

To date, a total of 165 jurisdictions from 33 countries and six continents have signed the Under 2MOU. Washington State is a founding signatory of the Under 2MOU, signed May 19, 2015 (MUSGCL 2015).

In December 2016, the Department of Ecology issued the Washington Greenhouse Gas Emission Reduction Limits report that contained the following recommendation:

- By 2020, reduce overall emissions of greenhouse gases in the State to 1990 levels.
- By 2035, reduce overall greenhouse gas emissions in the state to 40 percent below 1990 levels.
- By 2050, reduce overall greenhouse gas emissions in the state to 80 percent below 1990 levels (Ecology 2016).

4.1.2.6.3 King County GHG Initiatives

King County adopted its Strategic Climate Action Plan in December 2012 and the King County Council unanimously approved an update of the King County Strategic Climate Action Plan in November 2015 (King County 2015). The 2015 SCAP is a five-year blueprint for County action to confront climate change, integrating climate change into all areas of County operations and its work in the community. The County has set ambitious reduction targets, calling for GHGs to be 80 percent below 2007 levels by 2050. While the city is not currently subject to the emission-reduction goals described in King County's Climate Action Plan or Ecology's GHG regulations, the recent state and county goals illustrate the importance of local action to reduce GHG emissions.

King County conducts periodic assessments of its carbon footprint by looking at the levels at which King County government and the greater community release greenhouse gases (GHG).

The 2017 Report contains the following results:

- King County's geographic-plus greenhouse gas (GHG) emissions totaled 20.3 million metric tons of carbon dioxide equivalent ($MgCO_2e$) in 2015.
- The largest sources of geographic-plus-based GHG emissions were the built environment (62 percent), dominated by GHG emissions from residential and commercial energy usage; and transportation (36 percent), primarily GHG emissions from passenger vehicles.
- Total 2015 geographic-plus emissions increased by an estimated 0.9 percent compared to total 2007-year emissions, despite a nearly 10 percent increase in population during this time period. However, this trend is not on track toward King County and Growth Management Planning Council (GMPC) adopted GHG reduction targets that include a near-term goal of a 25 percent reduction in countywide GHG emissions by 2020 compared to 2007.
- Per-person GHG emissions declined to 9.9 $MgCO_2e$ per person in 2015, an estimated 8 percent decrease compared to 2007. King County and GMPC targets include a per-capita target of 8.5 $MgCO_2e$ per person by 2020.
- Core emissions, which include emissions from residential and commercial electricity and natural gas, on-road vehicles, and solid waste, peaked in 2010 and have declined by 1.3 percent (203,000 $MgCO_2e$) overall and 7 percent per capita (0.6 $MgCO_2e$ per person) (King County 2017).

4.1.2.6.4 City GHG Initiatives

In 2007, the city adopted a community-wide target to reduce GHG emissions to 7 percent below their 1990 level by 2012. While this goal, articulated by Resolution 7517, applied to community-wide emissions, the base majority of signatories to the U.S. Mayors' Climate Protection Agreement also strive to meet or exceed this target for municipal operations. The city updated its emissions inventory in 2012. The following are the major elements of the city's program:

- In February 20, 2007, the Bellevue City Council passed Resolution 7517, which adopted the goal of reducing GHG emissions to 7 percent below 1990 levels by 2012.
- In August 2007, the city became a signatory to the U.S. Mayors' Climate Protection Agreement, joining over 800 communities in all 50 states to affirm its commitment to reduce GHG emissions in a manner consistent with the international targets set by the Kyoto Protocol.
- In order to implement these resolutions, the city joined more than 400 local governments in the United States and 1,000 local governments worldwide in the International Council for Local Environmental Initiatives (ICLEI) Cities for Climate Projection Campaign. In partnering with ICLEI, the city has committed to ICLEI's Five Milestone Process to fight global warming:
    - Milestone 1—Conduct a baseline emissions inventory and forecast
    - Milestone 2—Adopt an emissions reduction target
    - Milestone 3—Develop a Climate Action Plan for reducing emissions
    - Milestone 4—Implement policies and measures
    - Milestone 5—Monitor and verify results.

The city completed its initial emissions inventory in 2007 and updated the inventory in 2008 and 2012. The city's proposed Climate Action Plan was completed in September 2008 and updated in 2012 (Bellevue 2012a).

The 2006 community emissions baseline is 1,725,000 metric tons. The Mayor's Climate Protection Agreement target, adopted by the City Council in 2007, is 7 percent below 1990 levels by 2012, or about 1,300,000 metric tons.

The city joined the King County-Cities Climate Collaboration in 2014 to leverage efforts to reduce the local and global impact of climate change. The King County-Cities Climate Collaboration (K4C) is a group of 13 cities (along with King County) to reduce carbon pollution from transportation, energy supply, consumption, buildings, and land use. The GMPC of King County adopted a target of reducing greenhouse gas emissions by 25 percent in 2020 compared to 2007, 50 percent by 2030, and 80 percent by 2050, which is now a shared commitment of the K4C (K4C 2018, Bellevue 2018b).

The city's air quality policies are presented in the Environmental Chapter of the 2015 Bellevue Comprehensive Plan:

EN-50. Support federal, state, and regional policies intended to protect clean air in Bellevue and the Puget Sound Basin.

EN-51. Work with the private sector to reduce growth in vehicle trips as a key strategy for reducing automobile-related air pollution.

EN-52. Implement transportation projects that provide significant air quality improvements to areas with existing air quality problems, even where the project does not bring all locations up to adopted standards, provided that the project is the best feasible solution and it significantly improves the air quality at each substandard location.

EN-53. Provide transportation improvements for the purpose of relieving localized air quality problems by shifting traffic to less congested facilities nearby, provided this does not encourage cut-through traffic in neighborhoods.

EN-54. Promote the use of alternative fuels such as electricity and compressed natural gas and evaluate the use of such fuels for the city's vehicles.

EN-55. Maintain the ban on outdoor burning within the urban area and encourage the composting of leaves and other yard debris and other actions as alternatives to burning.

EN-56. Reduce the amount of air-borne particulates through a street sweeping program, dust abatement on construction sites, and other methods to reduce the sources of dust.

Specific policies on climate change include:

EN-7. Develop and implement climate change adaptation strategies that create a more resilient community by addressing the impacts of climate change to public health and safety, the economy, public and private infrastructure, water resources, and habitat.

The City of Bellevue has shown a steady decline in greenhouse gas emissions since the baseline year of 2006. As of 2015, greenhouse emissions from city operations have decreased 21 percent compared to 2006. Community greenhouse gas emissions have decreased 15 percent between 2006 and 2015. The city has not quite reached its Mayors Climate Protection Agreement target (Resolution 7517) to reduce emissions to 7 percent below 1990 levels by 2012; however, it is making progress toward this goal despite population growth of 15 percent since 2006 and employment growth of 13 percent.

4.2 Impacts

All components of the CIP Network alternative are included as part of the TFP Network alternative; therefore, this section discusses impacts that are common to both alternatives. In general, the increase in vehicle emissions is related to the total miles of vehicle trips generated (which is largely a function of population growth and mode choice) and the emissions of the vehicle fleet. The CIP and TFP networks provide somewhat different routes for trips to take, but generally the trip distribution and the volumes on roadways and intersections is very similar. One of the objectives of the CIP and TFP is to reduce intersection congestion and traffic delays, which would tend to reduce emission of pollutants since slow moving and idling vehicles tend to produce more pollutants. In general, however, the overall national strategy of improving emissions from vehicles through technology improvements has been the most significant factor in reducing vehicle pollutants and is expected to continue in the future. Overall, the CIP and TFP networks have little direct impacts on emission of pollutants and do not adversely impact trends of projected continuing future compliance with air quality standards.

4.2.1.1 Carbon Monoxide

As described under Existing Conditions, above, CO emissions by vehicles has declined by about 85 percent since 1980, with further improvements projected from the Tier 3 standards (EPA 2018a). The Puget Sound area is well within attainment of standards for CO. Past analysis shown in Table 4-2 has shown that regional CO emissions in 2030 are projected to be about 45 percent of the emission budget that represents violation of air quality standards. The emissions from Bellevue are included in these projections. The slight differences in trip distribution and total vehicle miles travelled between the CIP ad TFP Networks would not change the conclusion that emissions would be well below standards and therefore no adverse impacts would occur.

Table 4-2. Regional CO Emission Projections

Analysis Year	Regional Emissions (tons per day)
Motor Vehicle Emissions Budget	2,512.00
2016	1,031.80
2020	942.14
2030	1,134.72
2040	1,189.54

Source: PSRC 2010

4.2.1.2 Ozone

As indicated in the Existing Conditions section, the Puget Sound region was designated as a nonattainment area for ozone until the early 1990s. After this period, more stringent emission limits on mobile sources and industrial facilities greatly reduced emission rates for the NOx and VOC precursors. The region has now been in compliance with standards for over 20 years. The emissions from Bellevue result from the total emissions of the vehicle fleet which is nearly the same in trip distribution and total vehicle miles travelled between the CIP and TFP Networks. These emissions would not change the overall regional compliance of the area with ozone standards.

4.2.1.3 Particulate Matter (PM_{10} and $PM_{2.5}$)

As indicated in the Existing Conditions section, particulate matter is generated by industrial emissions, residential wood combustion (smoke), motor vehicle tailpipes, and fugitive dust from roadways and unpaved surfaces. Bellevue has never been within a non-attainment area for particulates because it is not near sources of industrial emissions, wood smoke or high concentrations of diesel fueled vehicles. Emissions from vehicles under either the CIP or TFP Networks would be expected to be similar and would not lead to exceeding standards.

4.2.2 Mobile Source Air Toxics

According to traffic data provided by the city, the future (2030) Vehicle Miles Travelled (VMT) will be higher than existing levels. The magnitude of the EPA-projected MSAT emission reductions, however, is so great (even after accounting for VMT growth) that MSAT emissions in the project area are likely to be lower in the future in nearly all cases. The overall increase in VMT under the CIP and TFP Networks is nearly the same at 1.59 and 1.60 million trips annually, respectively. This is an increase of 14 percent from the 2017 1.40 million trips, but is well under the 32 percent increase projected by EPA in their

demonstration that MSAT emissions will decrease despite VMT growth as indicated in Figure 4-2 (EPA 2018b).

The proposed roadway and intersection widening improvements, including new roadway links contemplated as part of both the CIP Network alternative and the TFP Network alternative, would have the effect of moving some traffic closer to nearby homes and businesses. The TFP Network alternative includes more such projects than the CIP Network alternative; therefore, there may be localized areas where ambient concentrations of MSAT emissions could be higher with the TFP Network alternative than under the CIP Network alternative. The magnitude and the duration of these potential increases between the two alternatives cannot be accurately quantified due to the inherent mathematical and validation deficiencies of current emission models. In sum, when a roadway is widened and as a result moves closer to receptors, the localized level of MSAT emissions for the TFP Network alternative could be higher relative to the CIP Network alternative, but this effect could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). On a regional basis, however, EPA's vehicle and fuel regulations, together with ongoing future fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause regionwide MSAT levels to be significantly lower than today under either the CIP or TFP Networks (EPA 2018c).

4.2.3 Greenhouse Gas Emissions

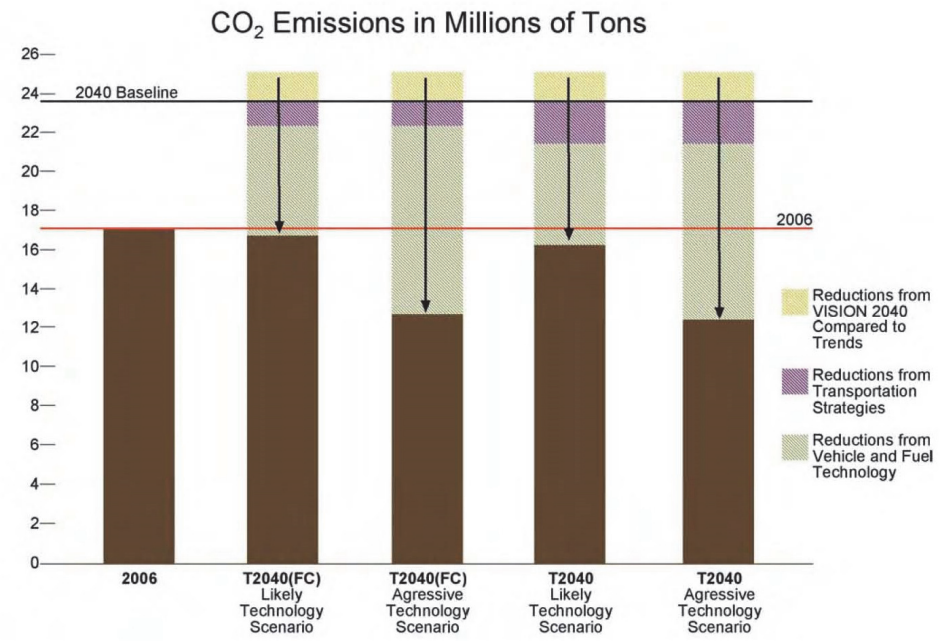
This TFP EIS adopts by reference the analysis of GHGs and climate change contained in the Regional Transportation Plan (RTP) 2018, Appendix E Climate Change Analysis, developed by the PSRC and adopted by its General Assembly (PSRC 2018d).

The PSRC analysis does not include specific modeling but rather catalogues programs that are likely to contribute to reduction in GHG. These include the following:

- Land use programs developed by counties and cities that together are expected to reduce GHG emissions.
- User fee programs, including highway tolls, that are expected to contribute to traffic management and reduce VMT.
- Multi-modal investments including new trails, transit lines such as bus rapid transit and light rail, and strategic roadway expansions expected to contribute to use of alternatives to single occupant vehicle travel.
- Technology changes to improve the fuel economy of vehicles and reduce emissions from fuels. These include updated Corporate Average Fuel Economy.

PSRC reports that initial modeled performance based on the policies and investments in the plan result in a reduction in CO_2e of 24 percent below 2006 levels by 2040. It is important to note that these reductions are the result of significant investments such as a regional integrated transit network that provides 80 percent of the region's population access to transit service, from 47 percent today, while at the same time accommodating a million more people in the region (PSRC 2018d).

Results of modeling performed for the previous 2010 RTP are illustrated in Figure 4-3 and show a reduction in emissions of between 5 percent and 28 percent below 2006 levels. These reductions occur despite increases in VMT.



Note: FC = Financially Constrained portion of the plan

Source: PSRC 2010

Figure 4-3. Regional Greenhouse Gas CO_2 Emissions

The CIP Network and TFP Network transportation improvements have been developed to accommodate projected growth and changes in land use and resulting vehicle trips generated in the future. The growth projections and assumptions that govern the generation of trips assigned under the alternative networks of improvements are based on regional economic factors and projections and are not affected by the different networks of improvements. The regional growth and the vehicle fleet emissions, including improvements mandated by federal law, will produce the primary impact on GHG emissions, rather than the CIP and TFP Networks transportation improvements.

Analysis of GHG emissions from construction of infrastructure included in the TFP was done using the FHWA's Infrastructure Carbon Estimator, a spreadsheet tool that estimates the lifecycle energy and greenhouse gas emissions from the construction and maintenance of transportation facilities. The Estimator requires limited data inputs and is designed to inform planning and pre-engineering analysis. It can be used to address the total energy and emissions impact of construction projects.

The tool is based on a nationwide database of construction bid documents, data collected from State DOTs, and consultation with transportation engineers and lifecycle analysis experts. Results are shown on Table 4-3. Compared with the existing citywide emissions of about 1,600,000 metric tons, the additional emission burden is negligible.

Table 4-3. Annual Greenhouse Gas Emissions from Infrastructure (Construction and Maintenance) for 30 Years

Source	Roadways	Pedestrian and Bicycle	Total
Upstream Emissions: Materials	42	20	62
Direct Emissions: Construction Equipment	21	4	25
Direct Emissions: Maintenance			1,278
Total	**63**	**24**	**1,365**

Units: Metric tons of CO_2 per year

4.2.4 Construction Emissions

The construction phase of projects in the CIP Network alternative or the TFP Network alternative will include numerous tasks, each generating a variety of pollutants. Table 4-4 summarizes these tasks and sources of pollutant emissions.

Table 4-4. Pollutants Generated by Construction Activities

Construction Task	Source of Emissions	Pollutant
Conducting Demolition for Right-of-way	Track/wheel loaders, bulldozer, and haul trucks	CO, PM_{10}, $PM_{2.5}$, NOx, SO_2, fugitive dust, and MSATs
Removing Existing Concrete and Paved Surfaces	Track/wheel loaders, bulldozer, and haul trucks	Same as above
Removing Concrete Debris	Haul trucks and dump trucks	Same as above
Re-grading Roadbed and Laying the Aggregate Base	Track/wheel loaders, bulldozer, and grader	Same as above
Trenching for New Utilities	Backhoe and gravel trucks	Same as above
Paving Roadway	Concrete trucks, asphalt trucks, and asphalt rollers	CO, PM_{10}, $PM_{2.5}$, NOx, SO_2, and MSATs
Painting Lane Markers	Paint spray equipment	Odorous compounds and MSATs

Construction contractors would have to comply with PSCAA regulations requiring that all reasonable precautions be taken to minimize fugitive dust emissions (Regulation I, Section 9.15).

Construction activities would likely require the use of diesel-powered, heavy trucks and smaller equipment such as generators and compressors. These engines emit air pollutants that could slightly degrade local air quality in the immediate vicinity of the activity. These emissions would be temporary and localized, however, and the resulting construction emissions would likely be far outweighed by emissions from existing traffic around the construction area.

Some construction activities could cause odors detectible to some people in the vicinity of the activity, especially during paving operations that use tar and asphalt. Such odors would be short-term and localized. Stationary equipment used for the construction activities must comply with PSCAA regulations requiring the best available measures to control the emissions of odor-bearing air contaminants (Regulation I, Section 9.11). In addition, no slash burning would be permitted in association with either alternative.

Construction equipment and material hauling could affect general traffic flow on city streets adjacent to a construction area. If construction delays traffic enough to significantly reduce travel speeds in the area, general traffic-related emissions would increase. Given that there is heavy traffic during some periods of

the day, scheduling haul traffic during off-peak times (e.g., between 9 a.m. and 4 p.m.) would have the least effect on other traffic and would minimize indirect increases in traffic-related emissions.

4.2.5 Transportation Air Quality Conformity Analysis

Cars and trucks traveling on city streets would be the major source of air pollutant emissions associated with implementation of the proposed projects for either alternative. Potential air quality impacts caused by increased tailpipe emissions are divided into two general categories: 1) regional photochemical smog caused by combined emissions throughout the Puget Sound region, and 2) CO hot-spots caused by localized emissions at heavily congested intersections (EPA 2018e).

4.2.5.1 Regional Air Quality Conformity

The PSRC performs an annual air-quality conformity analysis for the Puget Sound region that forecasts regional transportation emissions produced by the region's long-range regional transportation plan (PSRC 2018b) and the Regional TIP (PSRC 2018f). Those projects in the CIP Network and the TFP Network alternatives that are considered regionally significant are submitted to the PSRC for inclusion in the Regional TIP and are included in the network analyzed in the regional air-quality analysis. The regional growth in traffic anticipated in the 2018 TIP framework accommodates the growth in traffic and emissions associated with the implementation of the CIP Network alternative or the TFP Network alternative. The PSRC analysis associated with the 2018 TIP conforms to the analysis required by the federal and state CAAs (EPA 2018d) and the FHWA and would not cause or contribute to regional exceedances of the federal standards.

4.2.5.1.1 Carbon Monoxide

In 1978, the central Puget Sound region was classified as a nonattainment area by EPA for CO. In 1996, having met the federal standards for several years, the region was redesignated by the EPA as an attainment area with an approved maintenance plan for CO. On October 11, 2016, the area reached the end of the 20-year maintenance period for CO; transportation conformity is no longer required for CO in the region as of this date (PSRC 2018c).

4.2.5.1.2 Ozone

In the past, due to violations of federal ozone standards, the Puget Sound region was designated as a nonattainment area for ozone until the early 1990s. After this period, more stringent emission limits on mobile sources and industrial facilities greatly reduced emission rates for NOx and VOC precursors. In 1996, having met the federal standards for several years, the region was redesignated by EPA as a maintenance area for ozone. In 2005, EPA eliminated the 1-hour ozone standard; since then, ozone compliance is based solely on the 8-hour standard. Because the region had always complied with the 8-hour ozone standard, EPA reclassified the region as an attainment area for ozone. No conformity analysis for ozone is required (PSRC 2018c).

4.2.5.1.3 Particulate Matter (PM_{10})

Portions of Kent and the industrial areas of the Duwamish Valley in Seattle and the Tideflats of Tacoma were classified as nonattainment areas in 1990 by the EPA for the 24-hour PM_{10} NAAQS. The Kent,

Seattle, and Tacoma PM_{10} nonattainment areas were reclassified to maintenance areas in 1993, 1995, and 1995, respectively. Maintenance plans for 20 years were submitted and approved for these areas (PSCAA 2013). Bellevue has never been within a PM_{10} non-attainment area or maintenance area and therefore no conformity analysis is required.

4.2.5.1.4 Particulate Matter ($PM_{2.5}$)

In 2008, the Wapato Hills-Puyallup River Valley area near Tacoma was designated as a nonattainment area for $PM_{2.5}$. The region was redesignated by the EPA as an attainment area with an approved maintenance plan in 2015 (PSRC 2018c). Bellevue has never been within a $PM_{2.5}$ non-attainment area or maintenance area and therefore no conformity analysis is required.

4.2.6 Transportation Hot-spot Analysis

Because the City of Bellevue is not within a non-attainment or maintenance area for any pollutant regulated under the federal or state CAAs, hot-spots analysis caused by localized emissions at heavily congested intersections is not required. Although there is a $PM_{2.5}$ non-compliance area in the region, its boundaries do not encompass the area of the Bellevue TFP, and therefore no analysis is required (EPA 2018e).

4.3 Mitigation Measures

This section discusses mitigation measures that should be implemented for the proposed projects, whether they are part of the CIP Network alternative or the TFP Network alternative.

4.3.1 Construction

The city should require all construction contractors to implement air quality control plans for construction activities. These air quality control plans should include best management practices (BMPs) to control fugitive dust and odors emitted by diesel construction equipment.

During construction, dust from excavation and grading could cause temporary, localized increases in the ambient concentrations of fugitive dust and suspended particulate matter. The city should adopt fugitive dust control measures specified in the Guide to Handling Fugitive Dust from Construction Projects published by the Washington Associated General Contractors of Washington (AGC and Fugitive Dust Task Force 2009). Contractors would conduct the following BMPs to control fugitive dust:

- Use water sprays or other non-toxic dust control methods on unpaved roadways
- Minimize vehicle speed while traveling on unpaved surfaces
- Prevent track-out of mud onto public streets
- Cover soil piles when practical
- Minimize work during periods of high winds when practical

Mobile construction equipment and portable stationary engines emit air pollutants including NOx, CO, and highly toxic diesel particulate matter. These emissions would be temporary and localized. It is highly

unlikely that the temporary emissions would cause ambient concentrations at adjoining parcels to approach the federal ambient air quality limits.

Typical mitigation measures to minimize air quality and odor issues caused by tailpipe emissions include the following:

- Maintain the engines of construction equipment according to manufacturers' specifications,
- Minimize idling of equipment while the equipment is not in use,
- Locate stationary equipment as far as practical from sensitive receptors.

Burning of slash or demolition debris would not be permitted without express approval from PSCAA. No burning of woody debris is anticipated for any construction projects in the project area.

4.3.2 Other Potential Reduction Measures

Table 4-5 lists additional mitigation measures that could reduce GHG emissions caused by transportation facilities (Ecology 2008b). The table lists potential GHG reduction measures and indicates where the emission reductions might occur.

Table 4-5. Potential Greenhouse Gas Reduction Measures

Reduction Measures	Comments
Develop and implement a marketing/information program that includes posting and distribution of ride sharing/transit information.	Reduces direct and indirect VMT.
Subsidize transit passes. Reduce employee trips during peak periods through alternative work schedules, telecommuting, and/or flex-time. Provide a guaranteed ride home program.	Reduces employee VMT
Provide bicycle storage and showers/changing rooms.	Reduces employee VMT
Utilize traffic signalization and coordination to improve traffic flow and support pedestrian and bicycle safety.	Reduces transportation emissions and VMT
Apply advanced technology systems and management strategies to improve operational efficiency of local streets.	Reduces emissions from transportation by minimizing idling and maximizing transportation routes and systems for fuel efficiency

Source: Ecology 2008b

4.4 Significant Unavoidable Adverse Impacts

No significant unavoidable adverse impacts on regional or local air quality are anticipated. Temporary, localized dust and odor impacts could occur during the construction activities.

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Chapter 5. Noise

This section addresses the effects of noise from construction activities and increased vehicle traffic associated with implementation of the TFP. This study includes a discussion of existing conditions, a summary of applicable policies and regulations related to noise levels in the community, and an analysis of the direct environmental impacts of the CIP Network and TFP Network alternatives.

5.1 Affected Environment

This section presents an overview of current noise conditions in Bellevue and the TFP project area. The affected environment provides the foundation by which impacts are assessed.

5.1.1 Noise Terminology and Criteria

The following are brief definitions of acoustical terms used in this discussion:

- **Sound.** A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Ambient Noise.** The composite of noise from all sources near and far in a given environment, exclusive of particular noise sources to be measured.
- **Day-night Average Sound Level (Ldn).** The average noise level over a 24-hour period, generally measured as dBA. The noise between the hours of 10pm and 7am is artificially increased by 10 dB. This noise is weighted to take into account the decrease in community background noise of 10 dB during the night.
- **Decibel (dB).** A unitless measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micropascals.
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear. Typical A-weighted noise levels for various types of noise sources are shown in Table 5-1.
- **Equivalent Sound Level (Leq).** Leq represents the average of sound energy occurring over a specified interval of time. In effect, Leq is the steady-state sound level over a given time interval that contains the same amount of acoustical energy as the time-varying sound that actually occurs during that time interval. For example, the 1-hour A-weighted equivalent sound level (Leq [1h]) is the energy average of the varying A-weighted sound levels occurring during a 1-hour period.

A doubling of acoustical energy from a noise source results in a 3-dBA increase in sound. Given a sound level change measured with precise instrumentation, however, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hertz [Hz] to 8,000 Hz) range. It is widely accepted that people are able to begin to detect sound level changes of 3 dB for typical noisy environments in instances where the new intruding noise is similar to the existing background (e.g., an increase in traffic noise compared to existing traffic noise). Where the intruding noise has a character different from the background, however (e.g., construction equipment operating in an otherwise quiet rural area), most people can clearly discern the new intruding noise even if increases in the overall noise level are less than 1 dB.

Table 5-1. Typical A-Weighted Sound Levels

Sound Source	Sound Level (dBA)	Typical Experience or Response
Carrier-deck jet operation	140	Painfully Loud
Limit of amplified speech	130	
Jet takeoff (200 feet) Automobile horn (3 feet)	120	Threshold of feeling and pain
Riveting machine Jet takeoff (2,000 feet)	110	Very annoying
Shout (0.5 foot) New York subway station	100	
Heavy truck (50 feet) Pneumatic drill (50 feet)	90	Hearing damage (8-hour exposure)
Passenger train (100 feet) Helicopter (in flight, 500 feet) Freight train (50 feet)	80	Annoying
Freeway traffic (50 feet)	70	Intrusive
Air conditioning unit (20 feet) Light automobile traffic (50 feet)	60	
Normal speech (15 feet) Quiet urban daytime	50	Quiet
Living room Bedroom Library	40	
Soft whisper (15 feet)	30	Very quiet
Broadcasting studio	20	
	10	Just audible
	0	Threshold of hearing

Source: Federal Transit Administration (2006).

Traffic noise is created by vehicle exhaust systems, engines, and by contact of tires with the road during travel. Of these, tire contact with the road accounts for 75 to 90 percent of the overall traffic noise. Heavier vehicles such as trucks or busses tend to produce both higher tire noise and higher levels from other sources. In addition, exhaust stacks from heavy trucks are generally about 13 feet above the roadway and produce noise that tends to carry further and is less attenuated by vegetation and topography. Higher truck and bus volumes therefore can substantially affect noise levels. In addition, steep grades or faulty vehicle equipment can cause strain on vehicle engines, resulting in an increase in traffic noise (Donovan 2017). Higher speeds generally result in higher traffic noise levels. Traffic noise is often loudest during free-flowing or nonstop traffic, just before or just after peak travel periods. During peak travel periods, noise levels are generally lower due to congestion, which lowers traffic speeds and reduces other contributing factors (Rochat 2016).

Noise levels typically increase by about 3 dBA (the level at which most people can discern a difference) with a doubling of traffic volumes (assuming a predominant automobile and light vehicle mix). Noise levels typically attenuate (or drop off) at a rate of about 4.5 dBA per doubling of distance for lightly travelled roads and about 3 dBA per doubling of distance for heavily travelled roads. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA (Rochat 2016).

5.1.2 Surrounding Noise-Sensitive Land Uses

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive land uses typically include residences, hospitals, schools, guest lodgings, libraries, parks, places of worship, and certain types of recreational uses. Single-family and multi-family residences, including areas of frequent outdoor use (such as residential backyards and neighborhood parks), are types of uses that could be affected by increases in traffic noise due to implementation of the TFP.

5.1.3 Ambient Noise Environment

Within most of the city, local motor vehicle traffic is the dominant noise source for dwellings and businesses within 500 feet of a major arterial or freeway. High volumes of traffic on SR 520, I-405, and I-90 contribute significantly to background noise levels in residential areas. For example, noise levels in residential areas west of I-405 and south of I-90 are in the range of 65 to 78 dBA (WSDOT 2018a, 2018b). Other sources contributing to ambient or background outdoor noise levels include equipment noise and aircraft overflights. Typical background noise levels in downtown urban environments generally fall in the range of 60 to 70 dBA. Noise levels near suburban residential streets are quieter, generally within the range of 50 to 60 dBA.

5.1.4 Noise Monitoring

In order to characterize the existing noise environment, daytime sound levels were measured at a variety of locations for the 2006–2017 TFP EIS (Bellevue 2006), the 2009–2020 TFP EIS (Bellevue 2009b), and the Sound Transit Light Rail 2013 EIS (Sound Transit 2013), shown in Table 5-2.

The 2006 measurement locations were selected by first screening the 2006–2017 TFP for projects that would shift or alter a roadway alignment, potentially affecting the degree to which traffic noise would be heard at nearby receivers. A list of these projects was generated and then evaluated in the field to identify those projects that would be close to potentially sensitive receiving locations (a home, park, school, etc.). Those locations where future projects would not adversely affect sensitive receivers were not considered for sound level measurements. The remaining locations were selected to reflect representative noise-sensitive locations that could be affected by changes in traffic circulation on the network as a whole, creating a dataset that represented the entire city (Bellevue 2006). For the 2009–2020 TFP update, the city selected five additional noise monitoring sites. Sites were selected to document existing ambient

Table 5-2. Summary of Short-Term Sound Level Measurements in the City of Bellevue

Monitor Site	Monitor Location	Date, Measurement Start Time	Duration of Measurement (Minutes)	Measured Sound Level (dBA Leq, all Noise Sources)
1	Bellevue Way NE, north of NE 24th St	5/31/06, 11:56	15	66.7
2	134th Ave NE, north of NE 24th St	5/31/06, 15:52	15	60.5
3	148th Ave NE, north of NE 40th St	6/14/06, 11:44	15	66.3
4	140th Ave NE, at NE 48th Pl	6/19/06, 13:54	15	63.6
5	140th Ave NE, north of NE 36th Pl	6/19/06, 14:45	15	66.3
6	NE 12th St, west of 112th Ave NE	6/15/06, 13:14	15	65.2
7	NE 8th St, west of 108th Ave NE	6/15/06, 13:47	15	65.0
8	110th Ave NE, north of NE 6th St	6/19/06, 16:04	15	65.1
9	NE 2nd St, west of 108th Ave NE	6/19/06, 15:33	15	61.3
10	112th Ave SE, south of Main St	5/31/06, 12:50	15	69.1
11	112th Ave SE, north of SE 8th St	5/31/06, 12:50	15	68.2
12	108th Ave SE, north of SE 25th St	6/14/06, 12:50	15	59.9
13	SE 20th Pl, east of 127th Ave SE	6/15/06, 10:59	15	56.2
14	132nd Ave NE, south of Bel-Red Rd	5/31/06, 15:16	15	53.1
15	145th Pl SE, west of 144th Ave SE	6/14/06, 14:26	15	61.1
16	148th Ave NE, south of Bel-Red Rd	5/31/06, 15:16	15	69.3
17	148th Ave SE, south of SE 22nd St	6/15/06, 12:11	15	67.6
18	Northup Way, east of 156th Ave NE	6/8/06, 13:41	15	62.8
19	156th Ave SE, north of Main St	6/8/06, 14:45	15	64.0
20	156th Ave SE, north of Lake Hills Blvd	6/8/06, 15:16	15	63.1
21	164th Ave NE, south of NE 24th St	6/8/06, 13:13	15	59.7
22	West Lake Sammamish Parkway, south of NE 15th Pl	6/14/06, 12:40	15	62.4
23	West Lake Sammamish Parkway, south of Northup Way	6/8/06, 16:40	15	69.3
24	West Lake Sammamish Parkway, south of SE 38th St at Vasa Park	6/8/06, 16:10	15	63.8
25	Factoria Blvd SE, north of Newport Way	6/14/06, 11:55	15	66.5
26	119th Ave SE, south of SE 54th St	6/14/06, 13:33	15	60.7
27	Lakemont Blvd, north of SE 63rd St	6/14/06, 13:16	15	63.9
28	Lakemont Blvd, west of Village Park Drive	6/14/06, 13:41	15	65.5
29	124th Ave NE/NE 4th Pl	11/10/08 16:00	15	60.8
30	140th Ave NE across from NE 6th Pl	11/10/08 12:08.	15	69.2
31	130th Ave NE/NE 24th St	11/10/08 12:45	15	60.1
32	130th Ave NE/NE 15th Pl	11/10/08 13:10	15	62.8
33	156th Ave NE, south of NE 24th St	11/10/08 15:12	15	69.3
34[a]	Bellevue Way/112th Ave SE (at SE 19th Place) Parcel 3001	09/2011	20	71
35[a]	Bellevue Way/SE 27th Pl Parcel 2160	09/2011	20	72

[a] Source: East Link Extension 2013 Addendum. Attachment E1, Table A3 (Sound Transit 2013).

noise levels at representative locations where noise-sensitive land uses are currently located, and at locations where future development is anticipated (Bellevue 2009b). Short-term measurements of 15 minutes in duration were conducted at most of the monitoring locations.

In conjunction with the environmental analysis for the East Link Extension project, Sound Transit commissioned the collection of noise data at multiple locations along the route of the rail corridor. Locations 34 and 35 are single-family residences along Bellevue Way SE, in an area not included in the earlier city sampling [Sound Transit 2013). This is adjacent to TFP Network alternative projects, TFP-242 and TFP-268, as well as being adjacent to the Sound Transit East Link Light Rail corridor.

Traffic was the dominant noise source observed during all short-term noise measurement periods. Aircraft over-flights and neighborhood landscaping noise were audible during the measurements, but these sources were overshadowed by traffic noise during vehicle pass-bys. Because the roadway and adjacent physical environment remain largely consistent from the time of the baseline measurements, the primary variable is the traffic volume. Additional monitoring was not deemed necessary to characterize existing noise levels, because a doubling of traffic volumes to produce a 3-dBA difference in noise levels generally has not occurred since measurements were taken. In addition, the time of day that many noise measurements were taken does not necessarily indicate peak traffic volumes. These measurements should be regarded as giving a general idea of the range in existing noise levels in the city; however, the modeled noise levels for 2017 Existing Conditions in Table 5-6 generally should be relied on as indicating the baseline for comparison of impacts.

Figure 5-1 shows the noise monitoring locations. The locations that were measured in 2006 are labeled 1 through 28. The additional locations that were measured in 2008 to supplement these data are labeled 29 through 33; the measurements reported in the 2013 study are labeled 34 and 35.

5.1.5 Regulatory Setting

This section summarizes city noise regulations applicable to the TFP. Capacity-increasing TFP projects built with state and federal funding may also be subject to WSDOT traffic noise regulations and noise abatement evaluation protocols under 23 CFR 772.

5.1.5.1 Noise Limits for Stationary Industrial and Commercial Sources

Bellevue City Code (BCC) Chapter 9.18 establishes limits on the levels and durations of noise crossing property boundaries. Maximum allowable sound levels at a receiving land use depend on the district zoning of both the source and receiving properties. Noise from motor vehicles on public roads is exempt from city noise regulations.

The land use zones are classified by Environmental Designation for Noise Abatement (EDNA) as follows:

- **Class A EDNA.** Residential land use districts
- **Class B EDNA.** Commercial land use districts
- **Class C EDNA.** Industrial land use districts

Permissible noise limits are shown in Table 5-3.

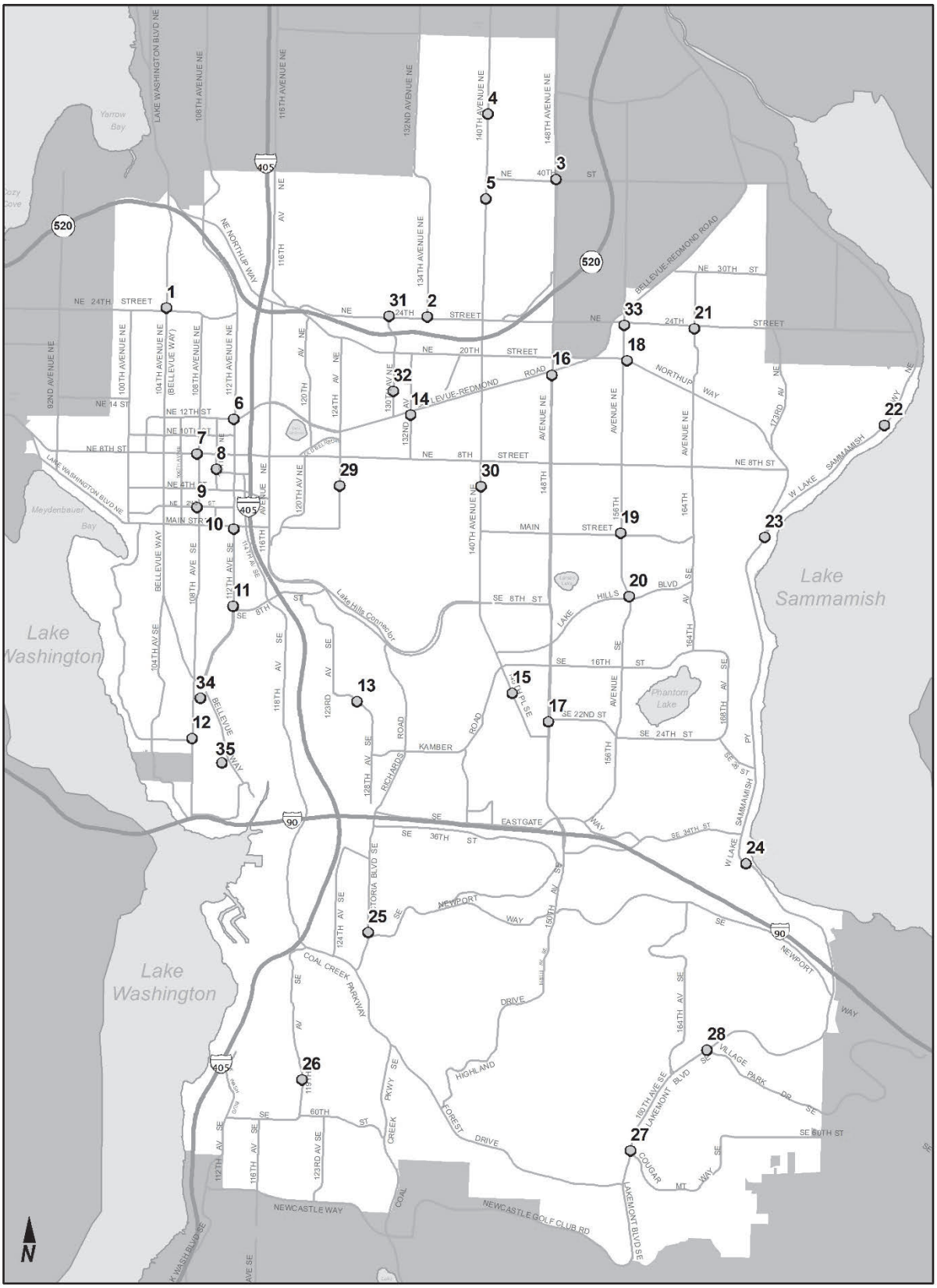


Figure 5-1. Short-Term Noise Measurement Locations

Table 5-3. Maximum Permissible Noise Levels at Receiving Property Line

EDNA of Sound Source	Permissible Noise Level (in dBA) EDNA of Receiving Source			
	Class A Daytime	Class B Nighttime	Class C All Hours	All Hours
Class A	55 dBA	45 dBA	57 dBA	60 dBA
Class B	57 dBA	47 dBA	60 dBA	65 dBA
Class C	60 dBA	50 dBA	65 dBA	70 dBA

Source: BCC Section 9.18.030.

For noise levels that exceed the above levels for short durations, maximum permissible sound levels are presented in Table 5-4.

Table 5-4. Adjustment to Maximum Permissible Noise Levels at Receiving Property Line for Noises of Short Duration

Duration of Sound Level within a 1-Hour Interval	Add Amount to Maximum Permissible Sound Level
15 minutes	+ 5 dB
5 minutes	+ 10 dB
1.5 minutes	+ 15 dB

Source: BCC Section 9.18.030.

The following sounds are exempt, at all times, from the maximum permissible sound levels established in BCC Section 9.18.030. They include but are not limited to the following:

- Sounds originating from aircraft in flight.
- Warning devices or alarms.
- Sounds created by construction equipment at temporary construction sites, between the hours of 7:00 a.m. and 6:00 p.m. on weekdays, and 9:00 a.m. and 6:00 p.m. on Saturdays. Noise from construction sites on Sundays, legal holidays, or during hours outside of exempt work hours described above are prohibited under BCC Section 9.18.040, unless expanded hours of operation are authorized by the applicable city department director.
- Traffic noise originating from vehicles traveling on public roads, when such vehicles are regulated by WAC 173-62. The city may require an acoustical analysis, however, if traffic noise exceeds city standards for arterial improvement projects (see below).

5.1.5.2 Standards for Arterial Improvement Projects (TFP projects)

For the purposes of studying environmental traffic noise, arterial improvement projects considered here do not include those that involve only minor widening (widening projects that do not increase capacity), addition of bicycle lanes, or walkways.

The BCC 9.18.045B.C requires a noise-analysis component for an arterial improvement project that passes through a residential area (Class A EDNA), if any of the following conditions are met:

- The existing exterior noise level exceeds 67 dBA peak hour Leq; or
- The projected exterior noise level as a result of the project is estimated to increase beyond 67 dBA peak hour Leq; or
- The exterior noise level is expected to increase by five dBA more as a result of the project.

The location of exterior noise exposure under these standards is 5 feet above existing grade at a distance of 60 feet from the arterial centerline.

Noise mitigation measures, intended to reduce exterior noise levels to 60 dBA Ldn or lower, will be approved by the Director of the Development Services Department if the cost of noise mitigation is included in the CIP budget, or by the City Council if additional funds for noise mitigation are required, in consideration of the following factors:

- Whether reasonable noise mitigation measures are available which will reduce exterior noise levels by three dBA or more;
- Whether the financial impacts of noise mitigation measures are not disproportionate to the overall cost of the arterial improvement project;
- Whether benefited property owners contribute to the cost of mitigation; provided, that this factor only applies if existing exterior noise levels exceed 67 dBA peak hour Leq; and
- Whether the benefited community is supportive of noise mitigation measures.

5.1.5.3 Restrictions on Adjacent Development

The BCC 9.18.045B.A does not allow new residential structures to be approved for construction if the exterior Ldn anywhere along the proposed building lines of the structure exceeds 65 dBA unless sound-attenuation measures are incorporated into the site design and/or the design and construction plans of the structure which are intended to reduce the maximum interior Ldn as follows:

- Forty dBA or lower for sleeping areas; and
- Forty-five dBA or lower for nonsleeping areas.

BCC 9.18.045B.B. does not allow play area equipment to be installed as part of an exterior public or private community recreation area if the exterior Leq (daytime) at the play area site exceeds 55 dBA unless sound attenuation measures including, but not limited to, berms, barriers and/or buildings are incorporated into the site design which are intended to reduce the maximum exterior Leq (daytime) to 55 dBA or lower.

5.2 Impacts

This section presents potential impacts that might occur if the CIP Network or TFP Network alternative is implemented. Because all components of the CIP Network alternative are included as part of the TFP Network, this section initially discusses impacts that are common to both alternatives.

5.2.1 Exposure of Noise-Sensitive Land Uses to Noise during Construction

Construction of roadways would temporarily increase noise levels at residential locations in the vicinity of the construction site. Noise increases would result from on-site construction activities, especially during site preparation, grading, and other earth-moving activities, as well as from construction-related vehicle traffic delivering materials to and from the construction site.

Table 5-5 summarizes noise levels produced by construction equipment that is commonly used on roadway construction projects. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 15 meters (50 feet), and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

Construction activity is prohibited in the city at night, on Sundays, or legal holidays, unless special approval is issued by the city. Construction noise that occurs outside of the exempt daytime hours is therefore considered to be potentially significant, and must comply with the allowable noise limits described in Section 5.1.5.

Table 5-5. Construction Equipment Noise Emission Levels

Equipment	Typical Noise Level 50 feet from Source (dBA)
Air Compressor	81
Backhoe	80
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Bulldozer	85
Excavator/Shovel	82
Generator	81
Grader	85
Loader	85
Scraper	89
Truck	88

Source: Federal Transit Administration (2006).

5.2.2 Exposure of Noise-Sensitive Land Uses to Increased Traffic Noise

Traffic noise from increased vehicle volumes on public roadways will result in increased noise levels along roadway locations throughout the city resulting from changes in traffic volumes under all network scenarios. In addition, traffic noise at adjacent receptors may increase when a road is widened or expanded to bring vehicles closer to adjacent land uses. To predict the magnitude of the increase under different alternatives and scenarios, a noise model was used.

5.2.2.1 Traffic Noise Model

Future noise levels were analyzed by using the FHWA Traffic Noise Model (TNM) Version 2.5 (FHWA 1998a, 1998b, 2004). TNM accounts for roadway and receiver location, ground or noise path conditions, roadway geometry, traffic volumes and speeds, intersection control, and vehicle classifications. From these data, the model calculates hourly equivalent sound levels (Leq dBA) due to vehicular traffic. For this analysis, a simplified version of the TNM was used. This “straight line” use of the model is

essentially a distance-decay calculation that does not account for changes in elevation, roadway alignments, or other noise-attenuating features (buildings, vegetation, etc.). The noise levels predicted by this model represent a non-project comparison of noise levels due to the change in traffic volumes on the adjacent street; these are in turn due to differences in the transportation network improvements in the alternatives. The changes generally represent a worst-case scenario, because the noise-attenuating features of the local environment are not considered, such as land cover, changes in topography and blockage by structures or noise walls installed as part of transportation improvement projects or installed as part of the Sound Transit East Link light rail system (Sound Transit 2008).

Table 5-6 shows the predicted noise levels at all modeled locations for all alternatives.

5.2.2.2 2030 CIP Network Alternative

The analysis shows a change in noise levels from a slight reduction to an increase of 3.2 dBA from the existing 2017 conditions.

Four modeled sound level locations (location Nos. 5, 7, 27, and 28) are expected to experience noise-level reductions from existing conditions, but these would be of such a small magnitude as to be indistinguishable. None of these locations have CIP capacity projects nearby. The decrease in traffic volumes and noise is minor and results from minor re-adjustment of volumes between transportation system links.

One location (No. 14, 132nd Avenue NE south of Bel-Red Road) is expected to experience an increase in noise levels in the range between 3.0 and 5.0 dBA (which is considered "slightly noticeable") with an increase of 3.2 dBA. This location has no CIP capacity projects in the immediate vicinity but experiences substantial increases in traffic volumes over the existing traffic volumes (110 percent); however, the resulting sound level of 63.3 dBA is still moderate for an urban area. Increases in street traffic volumes can be attributed to the large amount of growth projected in the BelRed/Northup area.

Location No. 13 (SE 20th Pl e/o 127th Ave SE (east of school)) experiences an increase just above 5 dBA, which would result in a "definitely noticeable" increase. However, there are no specific CIP Network or TFP Network projects to which the increase can be attributed and the resulting traffic volumes are low for a collector arterial. The resulting noise level of 56.8 dBA remains close to the normal residential area background levels of about 55 dBA.

All other locations are expected to increase less than 3 dBA, which is considered "typically unnoticeable."

Noise levels exceeding the city threshold of 67 dBA Leq were measured at 16 different locations. City code requires a detailed noise analysis for major arterial improvements where the existing noise level exceeds 67 dBA. All but two of these (No. 30 at 140th Avenue NE south of NE 8th Street and No. 10 at 112th Avenue SE south of Main Street) exceed the threshold in 2017. In those two locations, the increase in traffic volumes results in an increase in the modeled nose levels by less than 1 decibel.

Table 5-6. Predicted Noise Levels

SLM	Roadway	Modeled Traffic Volumes			Modeled Sound Level		
		2017 PM Peak Hour	2030 CIP Network	2030 TFP Network	2017 Existing	2030 CIP Network	2030 TFP Network
1	Bellevue Way n/o NE 24th St	1,751	2,050	2,024	68.9	69.6	69.5
2	134th Ave n/o NE 24th St	659	885	871	58.2	59.5	59.4
3	148th Ave NE n/o NE 40th St	2,094	2,507	2,362	69.9	70.7	70.4
4	140th Ave NE at NE 48th Place	1,257	1,463	1,444	65.2	65.9	65.8
5	140th Ave NE n/o NE 36th Pl.	953	885	877	64.0	63.7	63.7
6	NE 12th St w/o 112th Ave NE	1,918	2,378	2,344	66.6	67.6	67.5
7	NE 8th St w/o 108th Ave NE	2,272	2,005	2,084	68.0	67.4	67.6
8	110th Ave NE n/o NE 6th St	930	989	1,360	65.2	65.4	66.8
9	NE 2nd St w/o 108th Ave NE	737	1,086	1,025	65.1	66.8	66.6
10	112th Ave SE s/o Main St	2,411	2,836	2,744	66.9	67.6	67.5
11	112th Ave SE n/o SE 8th St	2,196	2,710	2,655	64.0	64.9	64.8
12	108th Ave SE n/o SE 25th St	290	330	310	57.7	58.9	58.5
13	SE 20th Pl e/o 127th Ave SE (east of school)	57	211	214	51.8	56.8	56.8
14	132nd Ave NE s/o Bel-Red Rd	251	529	546	60.1	63.3	63.3
15	145th Pl SE w/o 144th Ave SE	1,773	1,967	1,964	67.3	67.7	67.7
16	148th Ave NE s/o Bel-Red Rd	2,714	2,967	2,966	69.4	69.8	69.8
17	148th Ave SE s/o SE 22nd St	3,873	4,002	4,003	71.3	71.5	71.5
18	Northup Way e/o 156th Ave NE	1,183	1,288	1,289	67.0	67.4	67.4
19	156th Ave NE n/o Main St	1,498	1,699	1,693	66.0	66.6	66.6
20	156th Ave SE n/o Lake Hills Blvd	1,057	1,276	1,261	65.3	66.1	66.0
21	164th Ave NE s/o NE 24th St	789	1,034	1,032	62.7	63.8	63.8
22	W Lake Sammamish Pkwy s/o NE 15th Pl	796	860	857	62.5	62.8	62.8
23	W Lake Sammamish Pkwy s/o Northup Way	1,288	1,486	1,478	68.9	69.5	69.5
24	W Lake Sammamish Pkwy n/o SE 38th St, at Vasa Park	1,180	1,382	1,370	67.1	67.8	67.8
25	Factoria Blvd SE n/o Newport Way	2,405	2,646	2,621	69.2	69.6	69.6
26	119th Ave SE s/o SE 54th St	748	894	882	64.5	65.3	65.2
27	Lakemont Blvd n/o SE 63rd St	1,470	1,432	1,438	66.4	66.2	66.3
28	Lakemont Blvd w/o Village Park Dr	1,277	1,183	1,190	65.2	64.9	64.9
29	124th Ave NE s/o NE 5th St	590	963	916	62.9	65.0	64.7
30	140th Ave NE s/o Ne 8th St	1,559	1,710	1,696	66.8	67.2	67.2
31	130th Ave NE/NE 24th St (east leg)	975	1,022	1,027	63.2	63.4	63.4
32	130th Ave NE s/o NE 16th	593	957	971	62.0	64.1	64.1
33	156th Ave NE s/o NE 24th St	1,860	2,451	2,446	67.9	69.1	69.1
34	Bellevue Way SE/112th Ave SE (at SE 19th St)	3,715	4,081	4,210	73.2	73.6	73.8
35	Bellevue Way SE/SE 27th Pl	3,630	4,169	4,284	72.2	72.8	73.0

5.2.2.3 2030 TFP Network Alternative

The analysis shows changes in noise levels almost identical to the CIP Network; these range from a slight reduction to an increase of 3.2 dBA from the existing 2017 levels.

The same four locations (location Nos. 5, 7, 27, and 28) that have modeled future noise-level reductions from existing conditions also experience reductions in the TFP network, but these would be of such a small magnitude as to be indistinguishable. None of these locations have TFP capacity projects nearby. The decrease in traffic volumes and noise is minor and results from minor re-adjustment of volumes between transportation system links.

The same location (No. 14, 132nd Avenue NE south of Bel-Red Road) that experiences an increase in noise levels between 3.0 and 5.0 dBA (considered "slightly noticeable") in the CIP Network experiences the same 3.2 dBA increase in the TFP network. This location has no TFP capacity projects in the immediate vicinity but experiences substantial increases in traffic volumes over the existing traffic volumes (117 percent); however, the resulting sound level of 63.3 dBA is still moderate for an urban area. Increases in street traffic volumes can be attributed to the large amount of growth projected in the BelRed/Northup area.

As with the CIP Network, location No. 13 (SE 20th Pl e/o 127th Ave SE (east of school)) experiences an increase just above 5 dBA, which would result in a "definitely noticeable" increase. However, there are no specific CIP Network or TFP Network projects to which the increase can be attributed and the resulting traffic volumes are low for a collector arterial. The resulting noise level of 56.8 dBA remains close to the normal residential area background levels of about 55 dBA.

All other locations are expected to increase less than 3 dBA, which is considered "typically unnoticeable." At the three locations where there are predicted increases of 2.0 dBA or more (Nos. 13, 14 and 32). none appear to be linked to changes associated with a specific TFP project.

Noise levels exceeding the city threshold of 67 dBA Leq (at which point detailed noise analysis may be required at project implementation) are projected at the same 16 measurement locations as in the CIP Network. All but two (No. 6 at NE 12th Street west of 112th Avenue NE, No.10 at 112th Avenue SE south of Main Street and No. 30 at 140th Avenue NE south of NE 8th Street) already are above the threshold in 2017, as in the CIP Network. In those two locations, the increase that brings it over the threshold is less than 1 decibel.

5.3 Mitigation Measures

Potential noise impacts and mitigation measures may be studied through project-level acoustical analysis when a proposed project affecting one or more of the noise-affected roadway segments identified above in Table 5-6 reaches the design and permitting stage.

5.3.1 Construction Noise Mitigation

Roadway construction occurring outside of exempt hours should follow noise-reducing construction practices to ensure that city noise ordinance standards are not exceeded. Measures to limit noise include, but are not limited to:

- Locating equipment as far as practical from noise-sensitive uses
- Using equipment that is quieter than standard equipment
- Selecting haul routes that affect the fewest number of people
- Using noise-reducing enclosures around noise-generating equipment
- Constructing barriers between noise sources and noise-sensitive land uses
- Establishing a 24-hour complaint hotline
- Offering temporary hotel rooms in exceptionally loud cases where nighttime noise limits cannot be achieved

5.3.2 Traffic Noise Mitigation

As indicated in Section 5.1.5, the city will require a noise analysis component for an arterial expansion project that passes through a residential area (Class A EDNA) if any of the following conditions are met:

- The existing exterior peak-hour traffic noise level exceeds 67 dBA Leq (1 hour);
- The future exterior peak-hour traffic noise level is predicted to exceed 67 dBA Leq (1 hour) due to resulting future traffic demands as a result of the arterial improvements; or
- The exterior peak-hour noise level is expected to increase by 5 dB or more because of future traffic demands predicted to result from arterial improvements.

In cases where traffic noise levels are predicted to exceed these thresholds, mitigation may be considered if the average Ldn could be reduced to 60 dBA or lower.

Noise abatement is considered where noise impacts are predicted in areas of frequent human use that would benefit from a lowered noise level. Potential noise abatement measures include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project
- Constructing noise barriers
- Acquiring property to serve as a buffer zone
- Using traffic management measures to regulate types of vehicles and speed
- Acoustically insulating public-use or nonprofit institutional structures

Noise walls are generally the most common and effective measure to reduce noise levels. In the project area, however, noise walls may not be desirable because of their effects on community cohesion, safety, and aesthetics (including the potential to block views). “Quiet pavements,” such as rubberized asphalt, are

sometimes considered an effective measure to reduce traffic noise levels due to noise from the tire-pavement interface. However, rubberized asphalt would be minimally effective for urban projects because travel speeds on surface streets are lower than on highways, and the primary source of vehicle noise is expected to be car and truck engines and exhaust, not tire noise.

A detailed noise analysis would determine which, if any, mitigation measures would be acoustically effective. In order to meet approval, noise barriers should be studied in detail to ensure that they do not conflict with existing utility and safety requirements.

5.4 Significant Unavoidable Adverse Impacts

The number of residential areas within the city predicted to be exposed to traffic noise levels exceeding 67 dBA Leq will increase during the 2019–2030 period under any of the alternatives. Future traffic noise levels are basically equivalent between the CIP Network and TFP Network alternatives (including the Plus scenario). Most residential areas within the city require access to the roadways where traffic noise impacts are predicted to occur under either alternative. This access requirement may conflict with placement of a noise barrier as a potential mitigation measure for affected residences that have driveway access to these roadways. Therefore, detailed analyses could conclude that future traffic noise impacts might be significant and unavoidable.

Chapter 6. Land Use and Aesthetics

This chapter evaluates land use and aesthetics and the potential impacts of implementation of the CIP Network and TFP Network alternative. This analysis includes a review of existing land use patterns and compatibility, consistency with the city's plans and policies as represented by the city's Comprehensive Plan, and review of aesthetics based on the existing visual quality of the current natural and built environment. The impacts analysis identifies how existing conditions could change with implementation of either alternative.

Potential mitigation measures are also discussed in this chapter. Mitigation includes the features incorporated into the alternative that are designed to mitigate impacts, applicable regulations and commitments that will apply to future development allowed by the alternatives, and other potential mitigation measures that may further reduce the significant environmental impacts of the alternatives.

Land use projections by Traffic Analysis Zone and demographic information by subarea are presented in detail in Appendix D.

6.1 Affected Environment

This section presents an overview of current land uses in Bellevue. The aesthetics and visual quality along transportation corridors and neighborhoods are also discussed. Describing the affected environment and the existing conditions of the project area helps decision-makers understand the potential effects of the alternatives.

6.1.1 Land Use Patterns

Existing land use patterns in Bellevue consist of large areas of single-family residential development surrounding five major commercial and mixed-use centers. Pursuant to the city's Land Use Element in the Comprehensive Plan (Bellevue 2015a), new growth and development is targeted for the following five areas:

- Downtown (MMA 3)
- BelRed (MMA 12)
- Wilburton (MMA 4)
- Eastgate/Factoria (MMA 10 and north MMA 13)
- Crossroads (MMA 5)

Land use capacity analyses performed by the city show that with little vacant land, the majority of future development and growth in Bellevue will occur through redevelopment and infill. Much of this redevelopment and infill will occur in the areas listed above. The 2015 Comprehensive Plan description of the character and function of these centers is summarized below.

- **Downtown Bellevue (MMA 3)** has become the regional growth center of the Eastside. It is home to regional shopping destinations and tall office buildings as well as historic Main Street. With a large number of new residential developments built since the late 1990s, Downtown is now one of the city's largest residential neighborhoods.

Downtown has the greatest employment and housing density in the city. In 2017, there were more than 50,000 jobs in Downtown (representing approximately a third of the city's employment) and more than 14,000 residents. Together with cultural and entertainment uses, residents and workers provide an active daytime and nighttime environment. Local and regional plans designate Downtown Bellevue as one of King County's Urban Centers, and the area in Bellevue that will receive the city's most intense development. In Vision 2040, the region's long-term plan, Downtown Bellevue is 1 of 28 regional growth centers and the largest employment center outside of Seattle.

- **BelRed/Northup (MMA 12)** has historically been an area with warehouses and manufacturing, BelRed has begun to transition with the departure of many of the traditional uses, the expansion of the Medical Institution district, and the introduction of more retail shops, auto dealerships, and office developments. The new BelRed Subarea Plan, adopted in 2009, targets significant investments to take advantage of planned light rail stations and an economic niche different from Downtown. The Spring District development is under construction and aims to be a catalyst around the 120th Avenue station. Overall, BelRed is expected to grow by about 5,000 housing units and 10,000 jobs over the next two decades.
- **Eastgate/Factoria (MMA 10 and north MMA 13)** is not home to as many employees as Downtown or the BelRed area; however, Eastgate/Factoria has a significant concentration of Bellevue's jobs. The office complexes along the I-90 corridor in the Eastgate/Factoria area are home to many new-economy businesses, including T-Mobile and Verizon. Factoria includes the Market Place at Factoria, a regional retail center, as well as retail and services that cater to the surrounding neighborhoods.
- **Wilburton (MMA 4)** is located along the I-405 corridor. It has a concentration of offices and hotels, and also includes a significant number of auto dealers and retail stores. This area is anticipated to change significantly due to its strategic location between Downtown and BelRed and its proximity to the freeway and light rail. The city has initiated a process to update the vision for the Wilburton area, identified and evaluated alternatives and received recommendations for changes from a Citizen Advisory Committee. It is anticipated the City Council will consider the future direction for the Wilburton area in 2019, potentially including revisions to city land use code. The Wilburton Commercial Area Land Use and Transportation Project Draft EIS is incorporated by reference into this analysis.
- **Crossroads (MMA 5)** in the northeast quadrant of the city, is a community commercial center containing retail stores and offices that serve both the nearby neighborhoods and the larger community.

Certain mixed-use areas are anticipated to accommodate a significant proportion of the city's projected growth. These centers allow for different amounts and types of growth. The three centers traversed by the future light-rail extension (Downtown, Wilburton/Hospital, and BelRed) also encourage transit-oriented development (TOD) – mixed-use development with strong connections to transit.

Other Commercial Areas: While recognizing the importance of a strong Downtown, city policy aims to foster a strong, diverse economy. To achieve this, it is important that other commercial districts remain vital. Bellevue has several smaller, neighborhood-oriented retail centers, such as Northtowne, Lake Hills,

and Newport Hills. These centers not only provide goods and services to local residents, they also serve as important focal points and gathering spaces for the surrounding communities. Neighborhood centers help establish neighborhood identity through the unique mix of local stores, design, and even public art. They are places where people run into their neighbors, where groups gather for meetings, and where celebrations happen. Bellevue recognizes the importance of maintaining the health of these neighborhood centers. Future economic conditions and shifting demand may change the nature of some commercial areas, resulting in redevelopment or new uses in some business sectors. As the marketplace shifts, the city should plan for the next generation of uses that will want to locate in these areas.

Industrial Areas: Bellevue has a history of light industrial, warehousing and manufacturing uses. Over the last decade the demand for light industrial space in Bellevue has diminished relative to other competing commercial uses. The city has seen significant shifts of light industrial lands, with zoning changes in both Eastgate and BelRed. Additionally, the context of manufacturing uses in Bellevue has changed. It is unlikely that Bellevue will play a regional role in manufacturing and industrial activity over the next few decades. However, industrial and commercial properties can have local value, whether for research and development, construction services, or storage. The Comprehensive Plan supports maintaining a critical mass of light industrial lands, primarily in the Richards Valley area, to serve local needs.

Residential Areas: The city's residential areas exemplify Bellevue as an area of safe, quality neighborhoods with strong schools and great parks. Bellevue's distinct residential areas have developed over a period of many decades and range from higher-density residential with apartments and condominiums, to mid-density single-family subdivisions, to equestrian lots in the northern part of the city. Most neighborhoods are stable, well-maintained, and characterized by healthy reinvestment. The city's land use strategies work to ensure that new infill development appropriately fits into existing neighborhoods. Some older neighborhoods have not attracted much private reinvestment. In these cases, the city may encourage and promote investments in neighborhoods that add vitality and are compatible with the neighborhood context.

6.1.2 Land Use Plans and Policies

The city's Comprehensive Plan guides long-term growth and provides the framework for land use and transportation decisions for the city. The GMA requires comprehensive plans to be internally consistent across subjects. For purposes of this Draft SEIS, the Land Use and Transportation Elements are addressed, as well as policy direction that comes from the city's 14 subarea plans.

The Comprehensive Plan is guided by its vision that "Bellevue embraces the future while respecting our past." As part of this vision, the city has recognized specific features of the current and future city:

- **Transportation:** Moving into, around, and through Bellevue is reliable and predictable. Bellevue is connected to the region, enabling local and regional access for businesses and neighborhoods. Safe and reliable mobility options, including walking, biking, transit, and car, take people where they need to go. The city's transportation system integrates leading safety and efficiency technology.
- **Economic Development:** Bellevue is a hub for global business and innovation. Its economic strength is built on the creativity, innovation, and hard work of its people. Bellevue works to

attract innovative and entrepreneurial businesses through ensuring that its neighborhoods, cultural amenities, public schools, digital infrastructure, and business climate are among the nation's best.

- **Environment:** Bellevue embraces its stewardship of the environment by protecting and retaining natural systems and building for a sustainable future.

The city's vision and goal statements are reinforced through many land use and transportation policies presented in the Comprehensive Plan's various elements.

6.1.2.1 Land Use Element

The Comprehensive Plan's Land Use Element directs that the city develop and maintain a land use pattern that protects natural systems and retains trees and open space; maintains and strengthens the vitality, quality, and character of Bellevue's neighborhoods; and focuses development activity in Downtown and other commercial and residential centers.

Land Use Strategy policies promote a clear strategy for focusing the city's growth and development as follows:

- Direct most of the city's growth to the Downtown regional growth center and to other areas designated for compact, mixed use development served by a full range of transportation options.
- Enhance the health and vitality of existing single family and multi-family residential neighborhoods.
- Continue to provide for commercial uses and development that serve community needs.

Key policies related to transportation projects include:

- **Policy LU-4.** Support a land use vision that is consistent with the GMA goals, the regional Vision 2040, and the King County Countywide Planning Policies.
- **Policy LU-5.** Accommodate adopted growth targets of 17,000 additional housing units and 53,000 additional jobs for the 2006-2031 period and plan for the additional growth anticipated by 2035.
- **Policy LU-16.** Encourage adequate pedestrian connections with nearby neighborhood and transit facilities in all residential site development.
- **Policy LU-20.** Support Downtown's development as a regional growth center, with the density, mix of uses and amenities, and infrastructure that maintain it as the financial, retail, transportation, and business hub of the Eastside.
- **Policy LU-21.** Support development of compact, livable and walkable mixed-use centers in BelRed, Eastgate, Factoria, Wilburton, and Crossroads.
- **Policy LU-26.** Access high-traffic-generating land uses from arterials whenever possible. If this is not possible, provide mitigation to address access impacts.
- **Policy LU-35.** Adopt and maintain policies, codes, and land use patterns that promote walking in order to increase public health.

- **Policy LU-36.** Locate new community facilities near major transit routes and in areas convenient to pedestrians and bicyclists.

6.1.2.2 Transportation Element

The goal of the Comprehensive Plan's Transportation Element is to "To scope, plan, design, implement, operate, maintain, and enhance comprehensive multi-modal transportation system to serve all members of the community."

The Transportation Element strengthens the integration of land use and transportation planning in Bellevue. It supports the city's land use vision as expressed in the Land Use Element and Comprehensive Land Use Plan map.

Most of the transportation policies contained in the Transportation Element are relevant to this TFP. Several of the transportation policies direct the city's transportation investments to support its land use vision and urban growth strategy. Other policies support the vision of making Downtown Bellevue the major urban center of the Eastside by creating an area with pedestrian emphasis and providing alternatives to SOVs. Specific policies include:

- **TR-1.** Integrate land use and transportation decisions to ensure that the two mutually support the Comprehensive Plan.
- **TR-2.** Strive to reduce congestion and improve mobility.
- **TR-3.** Direct transportation investments and service to support the Urban Centers growth strategy of the Countywide Planning Policies
- **TR-4.** Incorporate transit-supportive and pedestrian-oriented design features in new development through development review.
- **TR-8.** Establish targets to increase the proportion of commute trips by modes other than driving alone. Periodically evaluate progress toward these targets and adjust programs and activities as needed to achieve them.
- **TR-10.** Require large employers to implement a commute trip reduction program for employees, as mandated by the state Commute Trip Reduction law, and evaluate program effectiveness on a regular basis.
- **TR-11.** Encourage employers to help reduce peak hour commute trips by facilitating employees' use of telework, flexible work hours, compressed work week schedules, and other scheduling options.
- **TR-33.** Utilize concurrency standards that consider the available and intended mobility options for transportation corridors, Mobility Management Areas, and implementation and management priorities.
- **TR-34.** Monitor the level-of-service for all modes, and adjust programs and resources as necessary to achieve mobility targets and objectives.
- **TR-35.** Review transportation system impacts of proposed developments and require appropriate mitigation as necessary. Prohibit development approval if the development will cause the area

level of service in one or more Mobility Management Areas to fall below the adopted standard, unless demand management or other system improvements are provided to mitigate the transportation impacts.

- **TR-129.** Maintain financing capability to meet the city's adopted mobility targets through a mix of funding sources, as identified in the TFP and the CIP. Seek broadly-based financing through proportional participation from the beneficiaries of the system, including:

  1. The citywide community;

  2. Existing businesses and property owners; and

  3. New development.

The Transportation Element also directs the reader to the city's CIP, the TFP, the Pedestrian and Bicycle Transportation Plan, the Transit Plan, and six subarea transportation plans for further information and guidance on the city's transportation plans and investments.

6.1.3 Aesthetics

Aesthetics has historically been defined as "that which is pleasing in appearance; that which is beautiful" and has a long philosophic history in the discussion of art (Beardsley 1958). In reference to urban form, and the natural environment, it has been approached from a number of perspectives, including Environmental Psychology, which seeks to understand and describe humankind's relationship with the environment in terms of environmental cognition and assessment (Averill 1998). For the purpose of this analysis, aesthetics is operationally defined as the human perception of what is "pleasing and harmonious in the built and natural environment." Aesthetics is presumed to be important for the psychological well-being of humans, and the integration of aesthetics into the design and construction of the built environment is a component of providing a more livable and pleasing environment (Reddig 1973). Analysis of aesthetics often includes the description of "visual character" (the description of the visible attributes of a scene) and "visual quality" (what viewers like and dislike about the visual character of a particular scene) (FHWA 2015).

The Bellevue Comprehensive Plan Urban Design and the Arts Element seeks to create a city that is people-oriented, aesthetically appealing, and functionally understandable through the continued development of the built environment. It provides a design framework for community development and guidelines for new construction and improvements while protecting the city's positive characteristics.

Policies addressing community character relevant to transportation projects include the following:

- **UD-1.** Enhance the appearance, image, and design character to make Bellevue an inspiring place to be.
- **UD-2.** Preserve and enhance trees as a component of the skyline to retain the image of a "City in a Park."
- **UD-3.** Foster and value the preservation of open space as a dominant element of the city's character.
- **UD-4.** Create a safe, engaging, and attractive pedestrian environment throughout the city using appropriate urban design features.

Policies addressing Residential Neighborhoods include the following:

- **UD-6.** Encourage the green and wooded character of existing neighborhoods.
- **UD-7.** Support neighborhood efforts to maintain and enhance their character and appearance.
- **UD-8.** Design collector arterials that go through residential neighborhoods to reduce traffic impacts and to support the existing residential character.
- **UD-9.** Enhance the appearance of neighborhoods with targeted city programs and right-of-way improvements.

Policies addressing Downtown, Commercial, and Mixed-Use Neighborhoods that are relevant to transportation projects include the following:

- **UD-12.** Enhance and support a safe, active, connected, and functional pedestrian environment for all ages and abilities.

Policies addressing Sidewalks, Walkways, and Trails include the following:

- **UD-63.** Ensure continuous and safe sidewalks wide enough to serve current and planned uses along arterials that are integrated with abutting land uses. Consider alternative street and sidewalk designs that minimize environmental impacts and use permeable surfaces where appropriate.
- **UD-64.** Use appropriate street-tree species and provide adequate rooting space to limit damage to sidewalk and street infrastructure.
- **UD-65.** Ensure that sidewalks, walkways, and trails are furnished, where needed and appropriate, with lighting, seating, landscaping, street trees, planter strips, trash receptacles, public art, bike racks, railings, handicap access, newspaper boxes, and so forth, without interfering with pedestrian circulation.

Policies addressing Street Corridors include the following:

- **UD-66.** Design streets to be visually appealing connections between different parts of the city for motorists, bicyclists, and pedestrians.
- **UD-67.** Give identity and continuity to street corridors by using a comprehensive street tree plan and other landscaping to enhance circulation routes, soften the appearance of pavement and separate pedestrians from traffic.
- **UD-68.** Design key city boulevards to be distinctive from other streets and to reinforce the image of Bellevue as a "City in a Park." Use features such as gateways, street trees, median plantings, special lighting, separated and wider sidewalks, crosswalks, seating, special signs, street names, landscaping, decorative paving patterns, and public art both within the right-of-way and on adjacent private development.
- **UD-69.** Design boulevards adjacent to parks, natural areas and open spaces to reflect scenic elements of the surrounding areas and neighborhoods. Streetscape design should promote a safe and comfortable park-like experience for all users.

- **UD-70.** Enhance neighborhood shopping streets to act as the local "main street" with exceptional landscaping, increased pedestrian and bicycle facilities and neighborhood specific character elements.
- **UD-71.** Work with the community to identify and develop a system of neighborhood greenways that offer safe alternative routes for pedestrians and bicyclists to provide local access to parks, schools and services.
- **UD-72.** Provide clear and identifiable walkways into and through Bellevue's large commercial blocks to improve pedestrian activity.
- **UD-73.** Design enhanced streetscapes at designated intersections and key entry points into the city and into smaller districts.
- **UD-74.** Incorporate dramatic and imaginative landscape and art features when reconstructing streets and/or sidewalks at key intersections.
- **UD-75.** Minimize the removal of existing vegetation when improving streets to preserve the natural character of Bellevue.

The differing aesthetic (or visual) character of different areas in Bellevue is primarily affected by the intensity of urban development versus the predominance of natural features. Downtown (MMA-3), with its dense high-rise development, is the area most dominated by the built environment. Areas that are most dominated by the natural features are characterized by low-density suburban residential development and large open space areas such as Bridle Trails (MMA-2) and Southeast Bellevue (MMA-11), which have a larger component of natural vegetation; other areas fall in the range between. As a transportation facility is developed, it can either make a transportation corridor contribute to the predominant character of an area or transform an area from one type of visual character to another (for example, create more of an urban feel in an otherwise low-intensity suburban environment).

Some areas of the city have substantial natural vegetation that frames roadways. This occurs in lower-intensity neighborhoods such as Bridle Trails, where lot sizes are larger and larger amounts of vegetation are generally retained both on rights-of-way and on adjacent lots. It also occurs where roads abut riparian corridors or steep slopes where native vegetation has been retained, for example:

- On West Lake Sammamish Parkway, in an area with steep slopes and large lots and partly adjacent to Wawona Park;
- On the Lake Hills Connector, adjacent to Kelsey Creek and steep slopes, where several roads cross the Lake Hills Greenbelt Park;
- Along portions of Newport Way adjacent to Sunset Creek and open space areas; and
- Along Coal Creek Parkway, which largely follows Coal Creek.

Other smaller stretches of roads have significant stands of native vegetation adjacent to the roadway for a variety of reasons.

The visual quality of more urbanized areas of Bellevue tends to be characterized by the elements of the roadway and surrounding development. The width of the roadway is the feature that most clearly defines the character of a street corridor. Roadways with more than five lanes, such as Bellevue Way through

downtown and north of I-90, NE 8th Street Downtown and to 120th Avenue NE, Factoria Way south of I-90, and 148th Avenue NE between SR 520 and Bel-Red Road, tend to have a character defined primarily by the dominance of the roadway over other elements. The presence of street trees and adjacent landscaping can substantially soften the predominance of hardscape, particularly where trees are mature and have a canopy that overhangs the road. In cases like Factoria Boulevard, partial median plantings also serve to reduce the dominance of hardscape. The incorporation of elements that provide an individual focus of interest (such as decorative paving patterns, distinctive crosswalk features, special lighting, separated and wider sidewalks, seating, and public art) can help divert attention from the dominance of the road surface.

6.2 Impacts

This section summarizes potential land-use and aesthetic impacts that may occur if either the CIP Network or TIP Network alternative is implemented. Overall, the CIP Network alternative would have less of an impact on land use and aesthetics within Bellevue simply because it includes fewer projects compared to the TFP Network alternative. Impacts of the proposed TFP projects are summarized in Table 6-1, Land Use Impacts Rating System, and Table 6-2, Potential Land Use Impacts.

6.2.1 Land Use Impacts

This section discusses general impacts that might result from implementation of each project included in the CIP Network alternative or the TFP Network alternative, which includes all CIP projects and additional projects.

The implementation of projects in either alternative could potentially affect existing land uses adjacent to the projects. Some impacts could be permanent, while others would be only short-term or temporary.

The CIP Network and TFP Network transportation improvements have been developed to accommodate projected growth and changes in land use. The land use projections and assumptions that govern the generation of trips assigned under the alternative networks of improvements are based on regional economic factors and projections and are not affected by the projects. The proposed alternative network improvements are not expected to have growth-inducing impacts.

6.2.1.1 Short-Term Impacts

During construction of any project, short-term impacts are typical. They could range from vehicular detours to loud noises, such as construction noise and dust near project areas or construction staging areas, and changes in access or detours for pedestrians, motorists, and building occupants in the project area. (Dust is discussed in Chapter 4, Air. Noise is discussed in Chapter 5, Noise.)

Although short-term inconvenience is possible during construction, project features such as lighting, landscaping, crosswalks, sidewalks, and bicycle lanes can ultimately improve the pedestrian environment, which could increase pedestrian usage and generally enhance adjacent land uses.

6.2.1.2 Permanent Impacts

The TFP roadway construction and widening projects could result in direct displacement or removal of existing physical features, including structures, parking areas, natural vegetation and landscaping, sidewalks, and utilities.

Depending on the type of project being implemented, permanent impacts could include the following:

- Within the right-of-way, there may be removal of on-street parking and displacement of on-street landscaping, including the park strip between the curb and the sidewalk and landscaping/native growth behind the sidewalk or edge of the roadway. This may affect the perception of the desirability of a parcel for specific uses where the appearance of the vicinity is important to tenants and customers, such as for some retail uses.
- Displacement of driveways, removal of parking areas, and changing landscaping and public facilities could require reorientation or consolidation of entrances or similar features. This may affect the convenience of access for tenants and users.
- Direct displacement or removal of landscaping and parking spaces on sites adjacent to the street, especially parking areas located between streets and buildings. Widening a street by one lane requires 11 or 12 additional feet. This can eliminate required on-site parking where located between the right-of-way and parking areas. It would reduce the depth of a standard parking stall that is perpendicular to the street by approximately two-thirds. (This assumes that the required landscaping between the street or sidewalk and parking area is restored. The replacement of on-site landscaping outside of the right-of-way is not required by Bellevue codes but is restored as feasible. If replacement did not take place, this would result in aesthetic impacts of loss of buffering landscaping affecting both the appearance of the road from the adjacent uses and the view from the road of adjacent parking and buildings without buffering landscaping.) Parking between the street and building is typical for commercial and multi-family development in many areas of the city. The severity of the impact from the loss of existing parking spaces will vary from site to site based on parking capacity, layout design, and vehicular circulation within the parking area. Generally, the loss of parking more severely affects small sites where the amount of displaced parking area is a relatively high proportion of the total area available, and where the size of the parking area limits redesign options.
- Displacement of buildings may occur where they are located close to the right-of-way. In cases where roadways and sidewalks encroach on buildings, the design decision to vary public facilities such as sidewalks and planting strips is made on a case-by-case basis. If a building has been located with a buffer of parking or landscaping between the street and the building, its design may not easily accommodate location adjacent to the roadway. In most cases, encroachment on a building would result in the demolition of the entire building.
- Entire parcels or large parts of existing parcels could be acquired for rights-of-way. Where new roadways are proposed, if the acquisition includes a large portion of the site and leaves a remainder that is unfeasible for use, the balance of the site may be used for road-oriented amenities such as landscaping, or may be sold to an adjacent parcel.

- Intrusive traffic noise and pollution levels may make affected buildings less desirable for tenants, potentially leading to an effort by owners to change uses through marketing and/or changes in zoning.
- If noise and pollution reach levels of regulatory action, they could lead to the need for investment in abatement measures.

6.2.2 Aesthetics

Construction of the new transportation facilities proposed in either alternative could result in a variety of impacts on the visual quality of the project area. The major impact from any of the proposed projects would be the change to the roadway as perceived by a roadway user (driver, bicyclist, pedestrian) or adjacent people (office or apartment building occupants). Of primary concern is whether the project alters the existing character of the area.

This can occur by adding elements of an urban environment to an area with a more rural character. Some areas of the city have substantial natural vegetation that frames roadways. This occurs in lower-intensity neighborhoods such as Bridle Trails and Southeast Bellevue where lot sizes are large, extensive vegetation is retained on or adjacent to right-of-way, and roads abut riparian corridors or steep slopes in which native vegetation has been retained. In these areas, widening roads provides a more visually intrusive element, or reducing landscaping features on or off the right-of-way changes the relative dominance of the roadway versus framing vegetation.

In areas with a more urban character dominated by built facilities, the appearance of new facilities such as wider streets (together with new or relocated sidewalks, the presence or absence of street trees and median vegetation, and the presence or absence of signals) may result in a visual change in the character of a street and surrounding area, even in a highly urban context. These changes could affect the overall aesthetics of a neighborhood or street corridor as suburban areas become more urban.

Depending on the type of project being implemented, visual impacts could include the following:

- Slight change in the components such as road width, street trees, landscaping, and other features, resulting in little noticeable difference in visual character for users of the facility; change would not be readily apparent from the adjacent neighborhood.
- Minor alteration or addition of roadway components and features such as landscaping on adjacent lots such that the existing visual character is altered, but the visual character remains similar to the existing view as seen by users and from the adjacent neighborhood.
- Moderate alteration that results in additional road width, loss of street trees and landscaping on adjacent parcels, together with project features that may partially replace or compensate for displaced features; these would result in a change in visual character that is likely to be readily noticed by users on the roadway and as seen from the adjacent neighborhood but would not generally be seen as a substantial transformation of the character of the road or the area. (For example, the arterial would be substantially screened from views from the neighborhood, and the existing screening vegetation would be reduced but not entirely removed.)
- Substantial alteration in visual character of existing roadway character in terms of adding lanes, reducing street trees, and substantial loss of framing vegetation. The existing character of the

arterial as seen by users and as seen from the adjacent neighborhood would be changed substantially. (For example: in a case where the arterial is substantially screened from views from the adjacent neighborhood, the project removes existing screening vegetation, and new visually intrusive retaining walls, noise walls, or other structures are introduced, or there is loss of view amenity such as views of mountains or water bodies.)

6.2.3 Impact Rating and Evaluation

Table 6-1 provides a numerical rating of different magnitudes of impacts on land use and aesthetics. This rating system is applied to potential permanent impacts of each project in Table 6-2, based on information currently available. As projects progress to final design, the actual level of impact may be found to differ from what is indicated in Table 6-2, particularly based on mitigation incorporated into the project.

Table 6-1. Land Use Impacts Rating System

Land Uses		Structures	
0	No change	0	No displaced or removed structures.
1	Some pressure to change use because of loss of parking, landscaping, or other amenity.	1	Loss of 1 to 2 residences or less than 5,000 ft^2 of building space for other uses.
2	Moderate pressure to change use because loss of parking, landscaping, or other amenities makes on-site parking supply less than desired, and shared parking is not practical.	2	Loss of 3 to 5 residences or 5,000 to 10,000 SF of building space.
3	Substantial pressure to change use because the market feasibility of the use is reduced by loss of parking, landscaping, buildings, or building area.	3	Loss of 5 to10 residences or 10,000 to 30,000 SF of building space.
4	Existing use is not feasible due to loss of substantial parking, landscaping, buildings, or building area that makes maintenance of existing use infeasible on the site.	4	Loss of more than 10 residences or more than 30,000 SF of building space.
Parking		**Landscaping or Native Growth**	
0	No net loss of parking capacity.	0	No change. Existing landscaping is retained or replaced in kind; no loss of adjacent vegetation.
1	Net displacement of up to 10 parking spaces and less than 5% of required parking; still meets code requirements.	1	Minimal disruption of existing landscaping or vegetation and wildlife habitat adjacent to the roadway.
2	Net displacement of 10 to 20 parking spaces and less than 20% of required parking; still meets code requirements.	2	Displacement of existing landscaping on parcels adjacent to the roadway, and replacement with less than 50% of the width of existing landscaping and/or displacement of up to 20,000 SF of existing vegetation.
3	Net displacement of 20 to 50 parking spaces and less than 40% of required parking; may not meet code requirements or tenant perception of adequacy.	3	Displacement of existing landscaping on parcels adjacent to the roadway, and replacement with less than 25% of the width of existing landscaping and/or displacement of up to 1 acre of existing vegetation, or displacement of up to 40 significant trees (6-inch diameter or greater).
4	Net displacement of over 50 parking spaces and more than 60% of required parking; does not meet code requirements or tenant perception of adequacy	4	Displacement of existing landscaping on parcels adjacent to the roadway such that there is no replacement landscaping provided, and/or displacement of more than 1 acre of existing vegetation, or displacement of more than 40 significant trees (6-inch diameter or greater).

Table 6-1. Land Use Impacts Rating System (continued)

Sidewalks, Bicycle Facilities, and Street Trees		Aesthetics	
0	Equals or improves conditions; may include adding sidewalks, bicycle facilities, and/or street trees where none exist or upgrading existing facilities that are substandard. If standard facilities are already in place, then net change to existing conditions is minimal. Assumes that standard street frontage with sidewalks and street trees are replaced and that the existing character of street trees is less than 4-inch caliper.	0	Slight change in visual character of existing arterial configuration; little noticeable difference for users and not readily apparent from the adjacent neighborhood.
1	Replacement of existing standard street frontage and replacement of street trees of greater than 4-inch caliper with substantially smaller specimens.	1	Minor alteration in visual character of existing arterial configuration; existing character is altered, but is similar to the existing view as seen by users and from the adjacent neighborhood.
2	Replacement of standard street frontage with sidewalks (and planter strips, if present) and/or bicycle facilities smaller in width than the present ones, or reduction in extent of planter strip and replacement of street trees with substantially fewer and/or substantially smaller size of street trees.	2	Moderate alteration in visual character of existing arterial configuration; users may notice modest change in existing character as seen from the adjacent neighborhood. (For example, the arterial is substantially screened from views from the neighborhood and the existing screening vegetation is reduced or removed.)
3	Displacement of existing street frontage that meets greater than standard specifications and/or bicycle facilities smaller in width, and replacement of street trees and existing landscaping with substantially fewer, substantially smaller street trees, and/or reduction of planter strips.	3	New arterial or substantial alteration in visual character of existing arterial in terms of number of lanes and framing vegetation. Existing character of the arterial as seen by users and as seen from the adjacent neighborhood is changed substantially. (For example, the arterial is substantially screened from views from the neighborhood, the existing screening vegetation is removed, and new visually intrusive retaining walls, noise walls, or other structures are introduced.)
4	Displacement of significant existing amenities, such as wide sidewalks, public congregation areas, and substantial amounts of retained vegetation on or adjacent to the facility.	4	New arterial or substantial alteration in visual character of existing arterial in terms of number of lanes and framing vegetation. Existing character of the arterial for users and as seen from the adjacent neighborhood is changed substantially, and there is loss of view amenity. (For example, existing screening vegetation is removed and new visually intrusive retaining walls, noise walls, or other structures are introduced, and existing scenic elements such as views of mountains or water bodies are blocked.)

Table 6-2. Potential Land Use Impacts

2019–2030 TFP Project No.	Project Description	Included in CIP	Land Use Patterns	Displacement or Removal				General Aesthetics
				Structure(s)	Parking	Sidewalks, Bicycle Facilities, and Street Trees	Landscaping or Native Growth	
TFP-110	110th Avenue NE/NE 6th Street to NE 8th Street		0	0	2	0	1	1[a]
TFP-175	SE 34th Street/162nd Pl SE to West Lake Sammamish Pkwy		0	0	0	0	2	1
TFP-190	NE 2nd Street/Bellevue Way to 112th Avenue NE		0	0	2	0	0	2
TFP-193	NE 10th Street at I-405		0	3	4	0	4	1
TFP-194	164th Ave SE/SE Cougar Mountain Way to SE 63rd Street		0	0	0	0	1	1
TFP-195	150th Avenue SE/SE 37th Street/I-90 off-ramp		0	0	0	0	2	2
TFP-197	NE 2nd Street Extension and I 405 interchange		0	3	4	0	3	3
TFP-209	NE Spring Blvd/116th Avenue NE to 120th Avenue NE (Zone 1)		0	4	4	0	3	4
TFP-210	124th Avenue NE/NE Spring Boulevard to Ichigo Way (NE 18th Street)	R-166	0	0	1	0	2	1
TFP-211	NE 6th Street Extension I-405 to 116th Avenue NE		0	0	3	0	0	1
TFP-213	124th Avenue NE/NE 12th Street to NE Spring Boulevard	R-169	0	0	2	1	1	1
TFP-215	NE Spring Blvd/130th to 132nd Avenues NE (Zone 4)	R-174	0	2	2	0	0	1
TFP-216	Intersection reconfiguration 112th Avenue NE/NE 2nd Street		0	1	2	1	0	1
TFP-217	124th Avenue NE at SR 520 New ramps to the east		0	0	0	0	3	2
TFP-218	130th Avenue NE/NE 20th Street to NE Bel-Red Road	R-170	0	0	4	1	1	1
TFP-219	Intersection realignment NE 8th Street/106th Avenue NE		0	0	2	0	1	0
TFP-222	Intersection improvement Bellevue Way/NE 4th Street		0	1	2	1	0	0

Table 6-2. Potential Land Use Impacts

2019–2030 TFP Project No.	Project Description	Included in CIP	Land Use Patterns	Displacement or Removal				General Aesthetics
				Structure(s)	Parking	Sidewalks, Bicycle Facilities, and Street Trees	Landscaping or Native Growth	
TFP-223	Intersection improvement Bellevue Way/NE 8th Street		0	0	2	0	0	1
TFP-225	Intersection improvement Bellevue Way/NE 2nd Street		0	0	0	0	0	0
TFP-242	Bellevue Way HOV lane/107th Ave SE Park & Ride to Winters House	R-184	0	0	0	0	3	3[a]
TFP-246	150th Avenue SE/south of SE 38th Street to Newport Way		0	0	0	0	2	1
TFP-250	148th Avenue NE Master Plan improvements at Bel- Red Road, NE 20th Street, and NE 24th Street		0	0	1	1	0	1
TFP-252	Bellevue College Connection: Kelsey Creek Rd/ Snoqualmie River Road/142nd Pl SE from 145th Place SE to SE 36th St		0	0	1	0	1	0
TFP-253	150th Avenue SE/Eastgate Way SE		0	0	0	0	0	0
TFP-254	Bel-Red Road/NE 20th Street to NE 24th Street			0	3	0	2	3
TFP-255	Newport Way SE/Somerset Blvd SE to 150th Avenue SE		0	0	1	0	2	2
TFP-256	West Lake Sammamish Parkway Improvements – "North Central" segment: SE 2nd block to NE 8th block (Phase 2)		0	0	0	0	3	3
TFP-257	West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4)		0	0	0	0	3	2
TFP-259	NE Spring Blvd/120th Avenue NE to 124th Avenue NE (Zone 2)	R-173	0	0	0	0	0	0
TFP-260	120th Avenue NE (Stage 4)/NE 16th Street to Northup Way	R-191	0	1	1	0	1	0
TFP-263	148th Avenue NE/NE 8th Street		0	0	0	0	2	0

Table 6-2. Potential Land Use Impacts

2019–2030 TFP Project No.	Project Description	Included in CIP	Land Use Patterns	Displacement or Removal				General Aesthetics
				Structure(s)	Parking	Sidewalks, Bicycle Facilities, and Street Trees	Landscaping or Native Growth	
TFP-265	124th Avenue NE/Ichigo Way (NE 18th Street) to Northup Way			0	1	0	1	1
TFP-266	Mountains to Sound Greenway – Factoria Crossing (includes I-90 exit expansion)	WB-83	0	0	0	0	2	2
TFP-267	West Lake Sammamish Parkway/"North" segment; (Phase 5)		0	0	0	0	3	2
TFP-268	Bellevue Way HOV lane/107th Ave SE Segment B: Winters House to 112th Ave SE & Segment C: 112th to 108th Avenues SE		0	2	0	0	3	3(a)
TFP-269	124th Avenue NE/NE 8th Street to NE 12th Street	R-190	0	0	0	1	1	1
TFP-270	Spring Blvd – 124th Ave NE to 130th Ave NE (Zone 3)		0	2	2	2	1	1
TFP-271	Coal Creek Parkway Roundabouts 120th Ave SE – I-405 – 119th Ave SE		0	0	0	0	3	2
TFP-272	Intersection Improvements NE 12th St/116th Ave NE		0	0	2	1	1	0
TFP-273	Signal at intersection Lakemont Blvd/Forest Dr		0	0	0	0	1	0
Pedestrian – Bicycle Implementation Initiative Reserve Projects								
TFP-158	SE 16th Street/148th Avenue SE to 156th Avenue SE		0	0	1	0	1	1
TFP-173	108th/112th Avenue NE/north city limit to NE 12th Street		0	0	1	0	2	1
TFP-230	108th Avenue NE/NE 12th Street to Main Street		0	0	1	0	0	0
TFP-232	164th Avenue NE/SE-NE 18th Street to SE 14th Street		0	0	3	1	1	1
TFP-234	Main Street/100th Avenue to 116th Avenue		0	0	1	1	1	0

Table 6-2. Potential Land Use Impacts

2019–2030 TFP Project No.	Project Description	Included in CIP	Land Use Patterns	Displacement or Removal				General Aesthetics
				Structure(s)	Parking	Sidewalks, Bicycle Facilities, and Street Trees	Landscaping or Native Growth	
TFP-243	Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard		0	0	0	0	3	1
TFP-244	Eastside Rail Corridor multi-use path/southern city limits to northern city limits		0	0	0	0	2	1
TFP-245	140th Avenue NE/NE 24th Street to NE 8th Street		0	0	1	0	1	0
TFP-247	Eastgate Way/Richards Road to SE 35th Place		0	0	0	0	2	0
TFP-249	Wilburton/NE 8th Street Station Access Improvements		0	0	0	0	0	0
TFP-251	Coal Creek Parkway/124th Avenue SE to the southern city limits		0	0	0	0	2	2

a. Magnitude of impacts considered in conjunction with adjacent Sound Transit East Link light-rail project

6.2.4 Future Project-Specific Land Use Impact Analysis

The amount of project-specific information that each project includes in the TFP varies. Some projects are well into the design phase, so there is sufficient information about the project to make reasonable assessments about potential impacts. Other projects are still conceptual, and there is less information on which to base assessments. For the land use impact assessment in this section, assessments were made after reviewing the design information currently available for each project.

6.2.5 CIP Network Alternative Impact Overview

All projects included in the CIP Network alternative involve some form of construction activity that could temporarily disrupt traffic and/or create pedestrian or motorist detours during construction. The CIP Network alternative includes three projects that create a new roadway link, the Spring Boulevard in the Bel Red/Northup area (MMA-12), in conjunction with redevelopment of this formerly industrial area.

- **R-172 (TFP-209).** 116th Avenue NE to 120th Avenue NE (Zone 1)
- **R-174 (TFP-215).** 130th to 132nd Avenues NE (Zone 4)

Although these are new arterials, they lie within a formerly industrial area that is being redeveloped. Because the area is already substantially developed, and the area is slated by the Comprehensive Plan and zoning for redevelopment, impacts on existing development are not considered substantial.

The CIP Network alternative also includes capacity projects that widen existing roadway links, such as the following:

- **R-169 (TFP-213).** 124th Avenue NE roadway expansion to five lanes, NE 12th Street to NE Spring Boulevard
- **R-186 (TFP-260).** 120th Avenue NE, roadway widening and reconfiguration, NE 16th Street to Northup Way
- **R-184 (TFP-242).** Bellevue Way HOV lane/107th Ave SE Segment A: Park & Ride to Winters House

Many widening projects would require acquisition of additional property for right-of-way to accommodate additional lanes and pedestrian facilities, which might displace on-site parking, on-site landscape elements, and/or in some cases, displace buildings. Depending on the extent of acquisition, existing uses may not be displaced, but acquisition may require re-alignment of parking, in cases where landscaping is removed by a project and where city codes do not require replacement. This would result in aesthetic impacts of loss of buffering landscaping affecting the appearance of the road from the adjacent uses and the view from the road of adjacent parking and buildings without buffering landscaping.

Arterial widening of 124th Avenue NE (CIP R-169, TFP-213)) and 120th Avenue NE (CIP R-186, TFP-260) may affect parking, landscaping, and existing buildings. However, since the area is already substantially developed, and the area is slated for redevelopment, impacts on existing development are not considered substantial.

CIP project R-184 (TFP-242) involves impacts along Bellevue Way SE due to widening of the roadway to the west of the current footprint for an HOV lane. Impacts involve loss of residences or property impacts to residential parcels, removal of native growth vegetation, introduction of a retaining wall, and potential loss of views from residences by the potential introduction of a noise wall in addition to the retaining wall. In addition, a portion of the HOV lane between the I-90 ramps and the Park and Ride is to be implemented in conjunction with the East Link project Light Rail Project. Land use impacts are documented in the East Link Extension 2013 SEPA Addendum, which also assesses impacts on the east side of the street in conjunction with loss of existing native vegetation due to installation of the light rail tracks.

Several roadways will be widened, primarily to add bicycle and pedestrian facilities.

- **R-183 (TFP-256).** West Lake Sammamish Parkway – "North Central" segment: SE 2nd block to NE 8th block (Phase 2), widen for shoulders, multi-purpose trail
- **R-194 (TFP-257).** West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4), widen for shoulders, multi-purpose trail
- **R-190 (TFP-269).** 124th Avenue NE/NE 8th Street to NE 12th Street, multi-purpose pathways
- **W/B-78 (TFP-243).** Multi-modal trail, Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard
- **W/B-81 (TFP-173).** 108th/112th Avenue NE/north city limit to NE 12th Street, bicycle lanes
- **G-103 (TFP-244).** Eastside Rail Corridor multi-use path/southern city limits to northern city limits on the former BNSF railroad right-of-way

The impacts of pedestrian and bicycle projects depend on several factors: the width of widening for wider shoulders or sidewalks on the same grade as the roadway, the width of multi-use paths, and the amount of separation from the roadway and topography and adjacent land cover as well as design. Widening for shoulders, sidewalks, and multi-use paths on the same grade as the road would have impacts similar to widening the roadway. In some cases, a separate multi-use path may have less impact than widening both sides of a roadway for both separated bike lanes and sidewalks. Where topography is steep, location of a multi-use path at a lower or higher elevation on a slope can reduce grading and the resulting catch slopes and vegetation removal. The installation of retaining walls also can reduce grading. Impacts ultimately will depend to a large extent on the tradeoffs incorporated in design choices. In particular, the West Lake Sammamish Parkway projects to widen for shoulders and a multi-purpose trail (R-183 and R-194) are likely to have substantial impacts because the existing roadway has narrow shoulders in many areas and is bounded by steep slopes on both the uphill and downhill sides in many areas. Impacts are likely to be largely the loss of native vegetation rather than displacement of parking or buildings on adjacent parcels. The Eastside Rail Corridor multi-use path traverses widely variable topography. In some areas, there are steep slopes uphill or downhill of the former rail bed. It is unlikely to affect adjacent uses, but grading outside of the existing rail bed may result in loss of mature vegetation in some areas.

6.2.6 TFP Network Alternative Impact Overview

Thirty-one projects included in the TFP Network alternative are not part of the CIP Network alternative. These projects are currently somewhat less well defined than CIP projects and their impacts known less precisely. Many of the new projects are located in the commercial/mixed-use Downtown (MMA 3), BelRed (MMA 12), and northern Wilburton (MMA 4) areas.

In addition to the impacts associated with the CIP Network alternative, similar impacts can be expected from new roads, expansion, and/or re-alignment of existing roadways, including loss of street trees and tree cover on existing rights-of-way and acquisition of adjacent property for right-of-way, which in turn might affect landscaping, parking, and buildings. Additional segments of the TFP-268 "Bellevue Way HOV lane/107th Ave SE (TFP-268) from Winters House to 108th Avenue SE likely would involve property impacts to residential parcels and removal of native vegetation.

Intersection improvements can require acquisition of additional property for right-of-way to accommodate additional lanes and pedestrian facilities, a relatively short distance back from the intersection which might displace on-site parking, and/or on-site landscape elements and, in some cases, displace buildings. Reconfiguration of the 148th Avenue NE/NE 8th Street intersection (TFP-263) may involve parking lot displacement on several quadrants and may encroach on wetlands in the northeast quadrant. The addition of turn lanes to the NE 12th Street/116th Avenue NE intersection likely would impact adjacent parcels, but buildings are well set back from the intersection and are part of large parcels less affected by loss of parking or landscaping. Replacing signalized intersections with traffic circles along Coal Creek Parkway (TFP-271) at I-405 would impact aesthetics but is not anticipated to affect adjacent land uses. A project such as adding a traffic signal to an already existing intersection at Lakemont Boulevard/Forest Drive (TFP-273) likely would have few impacts other than aesthetics (to the extent that a signal is a more “urban” look).

The impacts of pedestrian and bicycle projects in the TFP Network alternative are similar to CIP Network alternative projects and depend on the width of widening, whether multi-use paths involve less overall width and can be located with greater flexibility with respect to topography, and whether design features such as installation of retaining walls reduce grading. As with most projects, impacts ultimately will depend to a large extent on the tradeoffs incorporated in design choices. The TFP includes an additional section of West Lake Sammamish Parkway to be widened for shoulders and a multi-purpose trail (TFP-267 between NE 8th Street and the north city limits); it is likely to result in loss of native vegetation due to regrading of steep slopes, although without displacements of structures on adjacent parcels.

6.2.7 Plans and Policies

The projects included in the CIP Network alternative and TFP Network alternative are generally consistent with the city’s land use, transportation, and transportation-related subarea goals and policies.

Specific policies supported by the CIP and TFP and an integral part of its development include the following:

- **LU-20.** Support Downtown's development as a regional growth center, with the density, mix of uses and amenities, and infrastructure that maintain it as the financial, retail, transportation, and business hub of the Eastside.
- **LU-21.** Support development of compact, livable and walkable mixed-use centers in BelRed, Eastgate, Factoria, Wilburton and Crossroads.
- **TR-2.** Strive to reduce congestion and improve mobility.
- **TR-3.** Direct transportation investments and service to support the Urban Centers growth strategy of the Countywide Planning Policies.
- **TR-33.** Utilize concurrency standards that consider the available and intended mobility options for transportation corridors, Mobility Management Areas and implementation and management priorities.
- **TR-34.** Monitor the level-of-service for all modes and adjust programs and resources as necessary to achieve mobility targets and objectives.
- **UD-4.** Create a safe, engaging and attractive pedestrian environment throughout the city using appropriate urban design features.
- **UD-8.** Design collector arterials that go through residential neighborhoods to reduce traffic impacts and to support the existing residential character.
- **UD-9.** Enhance the appearance of neighborhoods with targeted city programs and right-of-way improvements.
- **UD-12.** Enhance and support a safe, active, connected and functional pedestrian environment for all ages and abilities.
- **UD-63.** Ensure continuous and safe sidewalks wide enough to serve current and planned uses along arterials that are integrated with abutting land uses. Consider alternative street and sidewalk designs that minimize environmental impacts and use permeable surfaces where appropriate.
- **UD-66.** Design streets to be visually appealing connections between different parts of the city for motorists, bicyclists and pedestrians.

The extent to which land use, transportation and urban design policies are balanced is a key component of the project design process and will be addressed in more detail in the future environmental review of specific projects.

Projects in the CIP and TFP are either specifically listed in a plan policy or subarea transportation facility plan, or are supported by more general land use and transportation policies related to mobility, access, and design. Projects included in both alternatives support the city's ability to meet its population and employment targets by providing capacity not just for automobile travel, but also for pedestrian and bicycle travel in many of Bellevue's fastest growing subareas. To the extent feasible, new streets and roadways, as well as improved streets and roadways, will comply with the city's urban design standards

for streetscapes and transportation corridors. In some situations, site constraints and impacts may limit the feasibility for a project to fully incorporate the urban design standard for an area.

6.2.7.1 CIP Network Alternative

The projects included in the CIP Network alternative are generally consistent with the city's land use, transportation, and transportation-related subarea goals and policies. Similarly, the projects contained in the proposed 2019-2030 TFP are either specifically listed in a plan policy or subarea transportation facility plan, or are supported by more general land use and transportation policies related to mobility, access, and design.

6.2.7.2 TFP Network Alternative

The projects included in the TFP Network alternative are consistent with the city's land use, transportation, and transportation-related subarea goals and policies. Similarly, the projects contained in the 2019–2030 TFP are either specifically listed in a plan policy or subarea transportation facility plan, or are supported by more general land use and transportation policies related to mobility, access, and design. The rationale for inclusion of TFP Network alternative projects not specifically listed in the Comprehensive Plan is available in the project file.

6.2.7.3 Aesthetics

The extent to which projects included in the CIP Network and the TFP Network alternatives result in aesthetic impacts depends on the extent of modification of the existing environment and the extent to which it alters desirable characteristics of the city provided for in urban design policies. In general, the most relevant policies include the following:

- **UD-1.** Enhance the appearance, image and design character to make Bellevue an inspiring place to be.
- **UD-4.** Create a safe, engaging and attractive pedestrian environment throughout the city using appropriate urban design features.
- **UD-6.** Encourage the green and wooded character of existing neighborhoods.
- **UD-8.** Design collector arterials that go through residential neighborhoods to reduce traffic impacts and to support the existing residential character.
- **UD-9.** Enhance the appearance of neighborhoods with targeted city programs and right-of-way improvements.
- **UD-64.** Use appropriate street tree species and provide adequate rooting space to limit damage to sidewalk and street infrastructure.
- **UD-66.** Design streets to be visually appealing connections between different parts of the city for motorists, bicyclists and pedestrians.
- **UD-67.** Give identity and continuity to street corridors by using a comprehensive street tree plan and other landscaping to enhance circulation routes, soften the appearance of pavement and separate pedestrians from traffic.

- **UD-68.** Design key city boulevards to be distinctive from other streets and to reinforce the image of Bellevue as a "City in a Park." Use features such as gateways, street trees, median plantings, special lighting, separated and wider sidewalks, crosswalks, seating, special signs, street names, landscaping, decorative paving patterns and public art both within the right-of-way and on adjacent private development.
- **UD-69.** Design boulevards adjacent to parks, natural areas and open spaces to reflect scenic elements of the surrounding areas and neighborhoods. Streetscape design should promote a safe and comfortable park-like experience for all users.
- **UD-71.** Work with the community to identify and develop a system of neighborhood greenways that offer safe alternative routes for pedestrians and bicyclists and provide local access to parks, schools and services.
- **UD-73.** Design enhanced streetscapes at designated intersections and key entry points into the city and into smaller districts.
- **UD-74.** Incorporate dramatic and imaginative landscape and art features when reconstructing streets and/or sidewalks at key intersections.
- **UD-75.** Minimize the removal of existing vegetation when improving streets to preserve the natural character of Bellevue.

At the non-project phase of analysis, only broad categories of impacts can be identified. These largely involve the removal of vegetation and the replacement of that vegetation as it relates to the natural character of the city and the "City in a Park" image of Bellevue.

In the design process for individual projects, land use, transportation, and urban design policies can meaningfully be balanced and practical features incorporated. Some projects will improve visual character by filling in missing elements of the streetscape such as landscaping, street trees, and sidewalks, and may incorporate amenities such as seating areas and art. The aesthetic impacts are an element to be addressed in more detail in the future environmental review of specific projects.

CIP Network Alternative

Projects in the CIP Network alternative for which aesthetic impacts can be identified, and which largely involve the removal of vegetation and the replacement of that vegetation as it relates to the natural character of the city and the "City in a Park" image, include the following:

- **R-184 (TFP-242).** Bellevue Way SE HOV lane
- **R-183 (TFP-256).** West Lake Sammamish Parkway – "North Central" segment: SE 2nd block to NE 8th block
- **R-194 (TFP-257).** Lake Sammamish Parkway/"South Central" & "Central" segment
- **R-185 (TFP-255).** Newport Way SE multi-use path and bike lane from Somerset Blvd SE to 150th Avenue SE
- **W/B-78 (TFP-243).** Multi-modal trail, Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard

- **G-103 (TFP-244).** Eastside Rail Corridor multi-use path/southern city limits to northern city limits on the former BNSF railroad right-of-way

All of these projects are located in areas with extensive vegetation adjacent to the existing roadway and involve potential removal of vegetation for proposed facilities, due largely to the topography of the area. The exact extent of impacts will be determined by the specific design details of the project.

TFP Network Alternative

Projects in the CIP Network alternative that are not part of the CIP Network for which aesthetic impacts can be identified, and which largely involve the removal of vegetation and the replacement of that vegetation as it relates to the natural character of the city and the "City in a Park" image, include the following:

- **TFP-267.** West Lake Sammamish Parkway/"North" segment; (Phase 5)
- **TFP-268.** Bellevue Way HOV lane, segments B and C from Winters House to 108th Avenue SE
- **TFP-251.** Coal Creek Parkway from 124th Avenue SE to the southern city limit off-street path

These projects are located in areas with extensive vegetation adjacent to the existing roadway and are likely to involve removal of vegetation for proposed facilities, due largely to the topography of the area and extensive adjacent native vegetation. The exact extent of impacts is less certain than CIP projects because design concepts are less developed and will be developed in more detail in the future.

6.3 Mitigation Measures

If an adverse impact is anticipated due to one of the TFP projects, one or more of the mitigation measures listed below could be implemented during the permit review of the specific project.

Mitigation measures often follow the guidance of the National Environmental Policy (NEPA) Act regulations in 40 CFR §1508.20 that include:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action.

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for the impact by replacing or providing substitute resources or environments.

A similar sequence of mitigation measures is included in federal regulations for implementing the Clean Water Act (33 CFR, Part 332 and 40 CFR 230), in the Washington State Shoreline Management Act Guidelines in WAC 173-26-201 (2)(e) and in Bellevue Critical Area regulations in Land Use Code (LUC) 20.25H.215.

6.3.1 Land Use

Land use mitigation measures that can be identified at the non-project level include the following:

- Prepare a relocation plan for displaced residential or commercial uses.
- Redesign and reconfigure parking areas to minimize the number of lost spaces. Potential parking lot redesign measures include providing a greater area for compact car spaces with smaller dimensions, reducing aisle width by designing one-way circulation systems within the lots, and reducing the width of perpendicular spaces by using angled stalls.
- Where possible, minimize the impact to existing buildings and land uses by designing projects to skirt buildings.
- Incorporate parcel remainders into roadway designs, including elements such as additional landscaping, gateway features, seating, special signs, and public art to reflect scenic elements of the surrounding areas and neighborhoods.
- Minimize the loss of landscaping and vegetation by shifting street alignments to avoid significant stands of vegetation, preserving significant specimen trees within sidewalk and planting strips by meandering sidewalks, and reducing the extent of cleared areas by using retention structures (where practical) in place of long fill slopes.

If transportation system demand associated with land use growth causes exceedance of transportation level-of-service standards, measures identified in Section 3.3 would be pursued.

6.3.2 Plans and Policies

Mitigation measures related to plans and policies can best be addressed at the design phase where the detailed decisions that balance competing goals can best be addressed.

6.3.3 Aesthetics

Mitigation measures to maintain or enhance the aesthetics of the project area could include the following:

- Preserve natural vegetation to the greatest extent possible.
- Replace landscaping, including street trees when roadway widening or re-alignment removes landscaping and street trees.
- Design and align new transportation corridors and other improvements to minimize adverse aesthetic impacts, particularly in residential neighborhoods.
- Implement consistent streetscapes along roadway corridors by using common designs for streets and freeway structures and common landscaping and street trees for visual unity.
- Coordinate closely with adjacent land owners to identify significant features that should be considered for retention or replacement in design improvements.
- Relocate utility lines underground.

- Consider use of retaining walls rather than extensive fill, which latter can affect aesthetics by widening the area of impact where native vegetation is removed.
- Incorporate interesting and attractive elements into retaining walls.
- Construct gateway elements at appropriate locations, in coordination with the city's boulevards program.
- Incorporate public art into streetscapes.

6.4 Significant Unavoidable Adverse Impacts

The areas most likely to be affected by the 2019-2030 TFP are Downtown (MMA 3), Wilburton (MMA 4), BelRed/Northup (MMA 12), and South Bellevue (MMA 7). These areas correspond to the major activity centers in Bellevue (except for South Bellevue, through which vehicular and transit routes pass to access Downtown). The infrastructure improvements focused in these areas are consistent with policies in the Comprehensive Plan.

The extent to which impacts can be avoided or minimized by specific design features cannot readily be identified in a nonproject analysis. Some loss of landscaping, parking and buildings can be expected, but the extent to which they can be mitigated versus being unavoidable impacts cannot be readily identified until project level design is completed. Projects will undergo additional project level environmental analysis, at which time unavoidable impacts can be more reliably identified.

Chapter 7. Natural Environment

This chapter describes the natural environment in Bellevue, natural resources that are present in the project area, and the potential direct, indirect and cumulative effects on these resources from the projects included in the CIP Network and the TFP Network alternatives. The analysis is at a nonproject level and describes a range of potential impacts, based on the location of the project and currently known details of the project.

Information on natural resources in this section is based on review of the following data sources:

- City of Bellevue Information Technology Department, Geographic Information System (GIS) Critical Areas Maps (Bellevue 2018c)
- Bellevue Urban Wildlife Habitat Literature Review (Bellevue 2009d)
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database (WDFW 2018a)
- Final EIS for the 2013–2024 TFP (Bellevue 2012)
- Bellevue Utilities, Storm and Surface Water System Plan, January 2016 (Bellevue 2016b)

Potential impacts from implementation of the TFP projects on the natural environment are addressed qualitatively in this chapter because a reasonable estimate of direct and indirect impacts of each project on the natural environment, as well as contribution to cumulative impacts, can be made only after preliminary project design has been completed and a project footprint more definitively established. When the preliminary design is developed for a project, a project-level analysis will be completed, which will include quantification of direct, indirect, and cumulative impacts on the natural environment. The project-level analysis also will identify project-specific design elements and mitigation measures to avoid or minimize impacts.

Implementation of the preliminary project design is conditional on the project's inclusion in the adopted 2019–2030 TFP, which is the subject of this Draft SEIS.

7.1 Affected Environment

This section presents an overview of the natural environment features in Bellevue, including critical areas, geology and soils, wetlands, aquatic resources, vegetation and wildlife, and shorelines. The affected environment is the foundation on which impacts are assessed.

7.1.1 Critical Areas

The Washington State Growth Management Act (GMA) requires local jurisdictions to adopt regulations protecting "critical areas" in order to preserve the natural environment, wildlife habitats, and sources of fresh drinking water. Critical areas regulation also encourage public safety by limiting development in areas prone to natural hazards like floods and landslides (RCW 36.70A.060). Bellevue has fulfilled this mandate in *Bellevue City Code* (BCC) Part 20.25.H, which regulates development in Critical Areas Overlay Districts. Critical Areas Overlay Districts include "any site that is in whole or in part designated as a critical area or critical area buffer." The function of the overlay district is to recognize natural

conditions that affect the use and development of property. The city designates and classifies ecologically sensitive and hazard areas and regulates development of these areas to protect their functions and values and to protect public health, safety, and welfare, while allowing reasonable use of private property.

The city regulates the following as critical areas:

- Geologic hazard areas – includes steep slopes, landslide hazard areas, coal mine hazard areas
- Wetlands
- Streams
- Habitat associated with species of local importance
- Areas of special flood hazard

The Critical Areas Overlay District does not apply to the Downtown subarea (Ordinance 5680, 6-26-06, Section 3).

Under the city's Shoreline Master Program (SMP), shorelines along Lake Washington, Lake Sammamish, Phantom Lake, and Lower Kelsey Creek are regulated separately from critical areas.

The major criteria for location or expansion of transportation facilities in streams, wetlands, and other critical areas is to demonstrate there is no technically feasible alternative with less impact on critical areas and buffers, as found in the following section of the *Bellevue City Code*:

> **20.25H.055.C.2.a.** New or expanded facilities and systems are allowed within the critical area or critical area buffer only where no technically feasible alternative with less impact on the critical area or critical area buffer exists. A determination of technically feasible alternatives will consider:
>
> i. The location of existing infrastructure;
>
> ii. The function or objective of the proposed new or expanded facility or system;
>
> iii. Demonstration that no alternative location or configuration outside of the critical area or critical area buffer achieves the stated function or objective, including construction of new or expanded facilities or systems outside of the critical area;
>
> iv. Whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact of proposed disturbance; and
>
> v. The ability of both permanent and temporary disturbance to be mitigated.
>
> b. If the applicant demonstrates that no technically feasible alternative with less impact on the critical area or critical area buffer exists, then the applicant shall comply with the following:
>
> i. Location and design shall result in the least impacts on the critical area or critical area buffer;

ii. Disturbance of the critical area and critical area buffer, including disturbance of vegetation and soils, shall be minimized;

iii. Disturbance shall not occur in habitat used for salmonid rearing or spawning or by any species of local importance unless no other technically feasible location exists;

iv. Any crossing over of a wetland or stream shall be designed to minimize critical area and critical area buffer coverage and critical area and critical area buffer disturbance, for example by use of bridge, boring, or open cut and perpendicular crossings, and shall be the minimum width necessary to accommodate the intended function or objective; provided, that the Director may require that the facility be designed to accommodate additional facilities where the likelihood of additional facilities exists, and one consolidated corridor would result in fewer impacts to the critical area or critical area buffer than multiple intrusions into the critical area or critical area buffer;

v. All work shall be consistent with applicable City of Bellevue codes and standards;

vi. The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume or flood storage capacity, or hydroperiod;

vii. Associated parking and other support functions, including, for example, mechanical equipment and maintenance sheds, must be located outside critical area or critical area buffer except where no feasible alternative exists; and

viii. Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC 20.25H.210.

After it is demonstrated that there is no technically feasible alternative, a proposal for new or expanded road improvements must meet the performance standards applicable to each type of critical area, which are intended to address minimizing impacts.

7.1.2 Geology and Soils

Bellevue's geology is characterized by pronounced north-south orientation of ridges and valleys that resulted from glacial actions ending about 11,000 years ago. The underlying geology of the area consists of glacial till with some areas of glacial outwash. Glacial till is an unsorted mixture of clay- to boulder-sized materials, while outwash tends to be more stratified and is generally sand- to gravel-sized materials. Soils in Bellevue are predominantly of the Alderwood association, consisting primarily of moderately well-drained, undulating to hilly, gravelly, loam soils. These soils have very dense, very slowly permeable glacial till at a depth of 20 to 40 inches. This relatively shallow, underlying till creates areas of seasonal high groundwater. In general, Alderwood soils are suitable for roadway construction without the use of specialized construction techniques. Recent soil mapping by the city has determined that additional soil types exist and suggests that there may be a higher incidence of glacial outwash soil types within Bellevue than currently mapped. Outwash soils have relatively high permeability that could facilitate low-

impact development. Soil types will be evaluated at the project-level analysis for consideration in construction design.

Landslide hazard areas and steep slopes of 40 percent or more are designated as critical areas under BCC 20.25H. Buffers from landslide hazard areas and steep slopes are 50 feet from the top of slope; structure setbacks of 75 feet are required from the toe of slope where mass slope movement has occurred or could occur. New or expanded public rights-of-way are an allowable use within critical areas under BCC 20.25H.055.B, subject to the specific performance standards described in BCC 20.25.H.055.C and 20.25H.125. Coal mine hazards are present in certain areas of South Bellevue, and development in such areas is subject to provisions of BCC 20.25.H.130.

7.1.3 Wetlands

Wetlands include the vegetated edges of ponds and areas commonly called swamps, marshes, and bogs. Wetlands provide rearing and foraging habitats for fish and wildlife, and food chain support for downstream waters. Wetlands provide natural water quality improvement, flood-flow reduction and storage, shoreline erosion protection, and opportunities for passive recreation. Many urban wetlands are heavily disturbed but still provide valuable water quality treatment and flood-flow reduction functions.

The city classifies wetlands into four categories in accordance with the State Department of Ecology Washington State Wetland Rating System for Western Washington, based on a combination of habitat, water quality, and flood-flow-reduction (hydrologic) functions. Generally, more biologically productive wetlands have more restrictive regulations and require wider buffers.

Where a wetland/wetland buffer is located within a previously-approved and recorded Native Growth Protection Area (NGPA) or Native Growth Protection Easement (NGPE), the extent of the regulatory buffer is assumed to be included within these areas, and therefore, no additional buffer is required (BCC 20.25H).

In addition, if an established right-of-way, such as a road, is located within a wetland buffer, the buffer is reduced to the edge of the developed right-of-way if the portion of the buffer located on the opposite side of the right-of-way does not contribute significant biological or hydrological function in relation to the portion of the buffer adjacent to the wetland.

Table 7-1 shows the range of buffer widths for each wetland category on undeveloped sites. Within the buffer range, the specific buffer width is determined by the habitat score for an individual wetland.

Table 7-1. Wetland Buffer Width Ranges by Wetland Type

Wetland Type	Buffer (feet)
Category I	75 to 225
Category II	75 to 225
Category III	60 to 110
Category IV over 2,500 ft^2	40

Source: City of Bellevue Land Use Code Part 20.25H.035.

Wetlands perform a variety of important functions in the landscape, including water storage (hydrologic), water filtration (water quality), and habitat for fish and wildlife (habitat). During periods of high water, wetlands can store water that otherwise might run off to streams and rivers, contributing to potential

flooding. Wetlands often also retain water during dry periods, providing a water source for terrestrial wildlife and habitat for aquatic species. Water stored in wetlands may move through the soil and contribute to flows in streams or rivers. Wetland soils filter many of the pollutants potentially contained in this water, thereby providing cleaner water for rivers and streams. This process of stream or river recharge is much slower than direct runoff and helps to modulate flows. Wetlands also provide habitat for a variety of species of fish, amphibians, birds, and mammals. Species that may inhabit wetlands in Bellevue include juvenile salmonids, Pacific chorus frog (*Pseudacris regilla*), northwestern salamander (*Ambystoma gracile*), long-toed salamander (*Ambystoma macrophyllum*), waterfowl including mallard *(Anas platyrhynchos*) and Canada goose (*Branta canadensis*), and mammals such as muskrat (*Ondatra zibethicus*).

The area surrounding wetlands, wetland buffers, function together with the wetland to provide functions of a single integrated ecosystem. In the context of human alteration, buffers can be envisioned as providing the following:

- Hydrologic recharging from the precipitation that falls within the buffer, infiltrates, and may travel laterally to the wetland;
- Maintaining water quality, including removing sediment generated by natural processes and removing nutrients such as phosphorous and nitrogen (these inputs, however, can increase dramatically with adjacent human use);
- Maintaining the microclimate in upland areas that influence wetlands functions and shade (and other features of the uplands on the wetland);
- Maintaining adjacent habitat that supports functions critical to certain stages of populations (such as the need for amphibians to spend part of their lifecycle in water);
- Maintaining an area of habitat sufficient for wetland-related species populations to be maintained; and
- Providing an area in which the effects of adjacent human use are reduced or ameliorated.

The individual functions and values of wetlands potentially affected by the proposed projects will be evaluated at the project level using Ecology's Wetland Rating System for Western Washington (Hruby 2014).

7.1.4 Aquatic Resources

7.1.4.1 Watersheds

The City of Bellevue is part of the larger Puget Sound drainage basin and is located in the Lake Washington/Cedar/Sammamish Water Resource Inventory Area (WRIA 8). Water originating in Bellevue either drains to Lake Washington to the west of the city or to Lake Sammamish to the east. Lake Sammamish itself is a tributary to Lake Washington via the Sammamish River. Lake Washington drains to the Puget Sound via the Lake Washington Ship Canal (Ship Canal) at Montlake, then to Lake Union, and eventually through the Hiram M. Chittenden Locks (Ballard Locks) in Seattle to the Puget Sound. Bellevue's watershed and stream pattern is a result of the geology, topography, current and historic land uses, and regulations of the area. The city covers approximately 32 square miles. There are about 79 miles

of streams within the city limits, approximately 13 miles of large-lake shoreline (Lake Washington and Lake Sammamish), and three small lakes (Larsen Lake, Lake Bellevue, and Phantom Lake). The city is in Water Resource Inventory Area (WRIA) 8, Lake Washington/Cedar/Sammamish Watershed. Each stream within a WRIA has a unique identifying number.

Figure 7-1 shows the 26 drainage basins within the city and major streams.

7.1.4.2 Land Cover and Impervious Area

Impervious surfaces such as roofs and parking lots have been directly linked to changes in surface water flows and to pollutant loading. Trees and other vegetation slow the overland movement of rainwater, prevent erosion and filter and cool the water on its way to the stream. Impervious surfaces, on the other hand, do not allow water to soak into the ground. They warm the water in summer and direct it quickly to a drain or pipe, collecting pollutants on the way.

The amount of intact vegetation and lack of impervious surface immediately adjacent to streams, as well as throughout stream drainage basins, has been directly correlated with the health of aquatic life at individual sites within those same drainage basins (Morley and Karr 2002). Figure 7-2 shows city averages for overall impervious within the stream basin (light grey), and the percent impervious surface within 100 feet of open streams (dark grey). Figure 7-3 shows overall forest cover (light green), and forest cover within 100 feet of open streams (dark green).

An analysis incorporating the results of 225 studies, including several in the Pacific Northwest, on the effects of impervious surface area on water quality found that, in general, watersheds with 1 to 10 percent impervious surface area had high water quality; watersheds with 11 to 25 percent impervious surface area had reduced water quality; and watersheds with greater than 25 percent impervious surface area had poor water quality (CWP 2003). The city has calculated that approximately 39 percent of citywide surface area is impervious under existing conditions. Table 7-2 summarizes the percentage of the total impervious surface area in each storm drainage basin located in Bellevue and the contribution of road right-of-way to the total impervious surface.

The existing amount of impervious surface and forest cover in each basin indicates the general magnitude of urban development influence on water quality and aquatic life within the drainage basins.

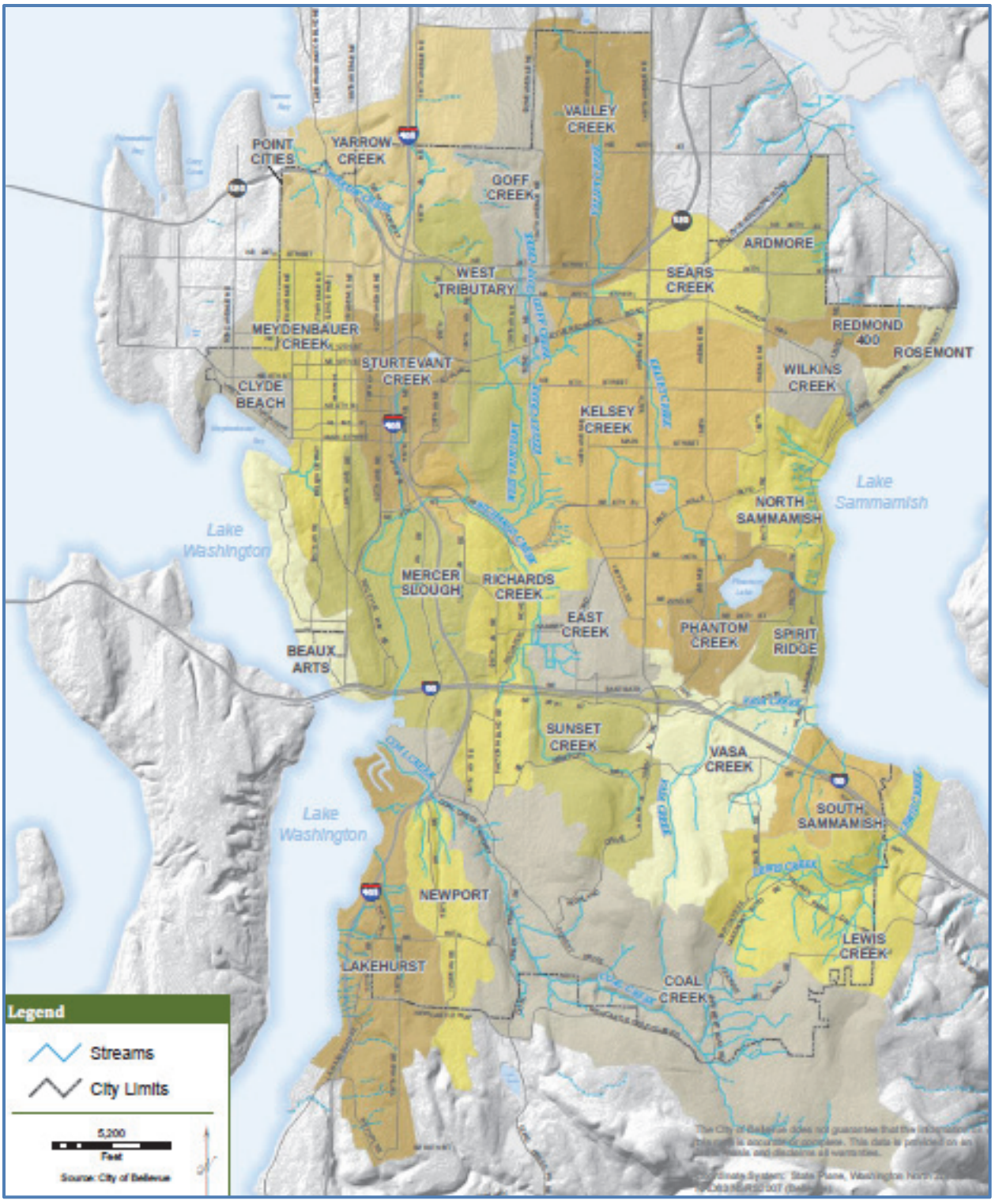
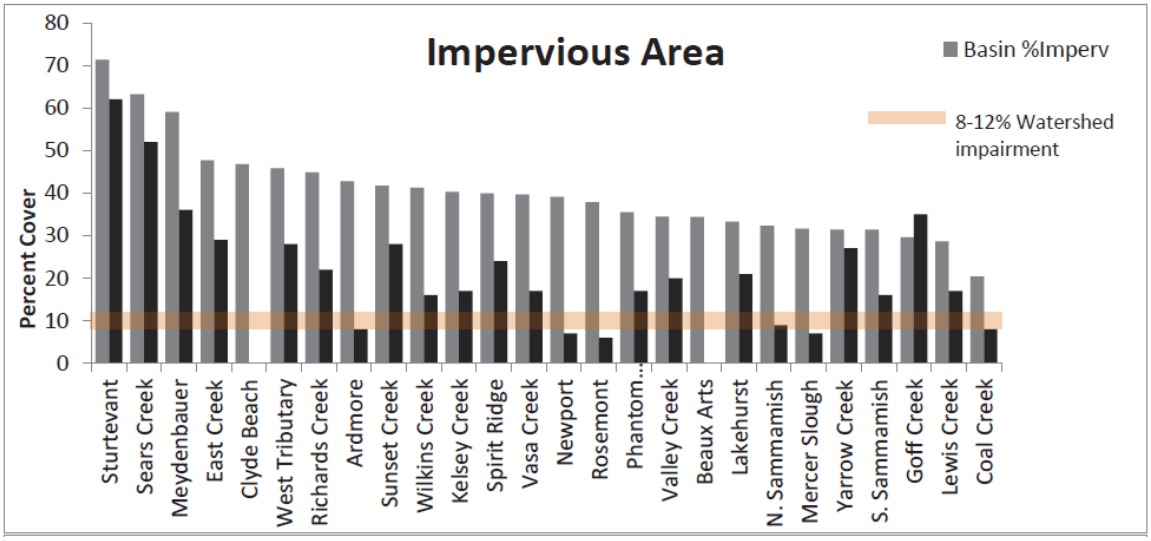
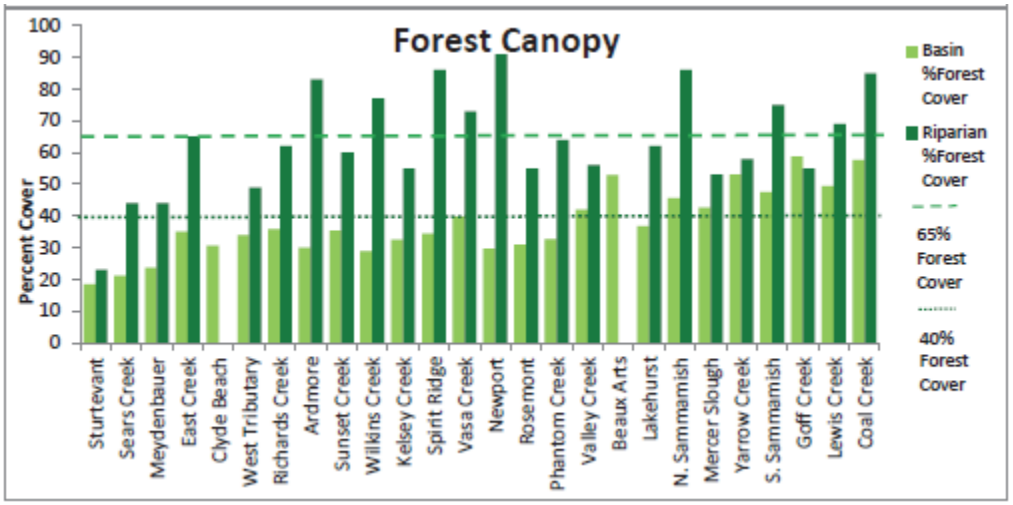


Figure 7-1. Bellevue Drainage Basins and Streams



Source: City of Bellevue Storm and Surface Water System Plan 2016 (Bellevue 2016b)

Figure 7-2. Impervious Area within Bellevue Stream Basins
(Percent impervious within 100-foot buffer)



Source: City of Bellevue Storm and Surface Water System Plan 2016 (Bellevue 2016b)

Figure 7-3. Forest Canopy within Bellevue Stream Basins
(Tree canopy cover within basin stream buffers)

Table 7-2. Percent Impervious Surface in Storm Drainage Basin

Storm Drainage Basin	Basin Area (acres)	Existing Impervious Surface (acres)	Existing Impervious Surface (percent)	Bellevue Right-of-Way Area (acres)	Bellevue Right-of-Way Area (percent)
Ardmore	451	193.06	43	67.06	15
Beaux Arts	419	143.98	34	32.57	8
Clyde Beach	292	136.84	47	33.12	11
Coal Creek	3,990	814.04	20	248.79	6
East Creek	462	220.34	48	37.20	8
Goff Creek	674	199.94	30	46.59	7
Kelsey Creek	2,822	1137.98	40	276.17	10
Lakehurst	1,284	427.21	33	79.33	6
Lewis Creek	1,004	416.26	29	100.51	7
Mercer Slough	1,327	419.67	32	174.07	13
Meydenbauer Creek	927	547.91	59	118.81	13
Newport	571	224.04	39	59.52	10
North Sammamish	621	200.43	32	64.38	10
Phantom Creek	537	190.38	35	38.70	7
Richards Creek	901	404.38	45	102.20	11
Rosemont	432	163.81	38	50.83	12
Sears Creek	358	365.06	63	35.40	6
South Sammamish	337	186.41	31	70.64	12
Spirit Ridge	193	77.17	40	20.62	11
Sturtevant Creek	773	551.45	71	137.37	18
Sunset Creek (includes Sunset Creek Island)	890	371.60	42	152.72	17
Valley Creek	1.307	478.72	34	80.63	6
Vasa Creek	1,085	430.63	40	150.54	14
West Tributary	1,006	460.52	46	94.91	9
Wilkins Creek	305	126.02	41	43.28	14
Yarrow Creek	926	524.45	31	139.91	8

Source: City of Bellevue Storm and Surface Water System Plan 2016 (Bellevue 2016b)

7.1.4.3 Classification

The city classifies streams into four types, depending on a variety of factors, and establishes stream buffer widths adjacent to streams depending on the type or classification of the stream. The stream classifications are as follows (BCC 20.25H.075.B.):

- "Type S water" means all waters, other than shoreline critical areas designated under LUC 20.25E.017, within their bankful width, as inventoried as "shorelines of the state" under Chapter 90.58 RCW and the rules promulgated pursuant to Chapter 90.58 RCW including periodically inundated areas of their associated wetlands.
- "Type F water" means all segments of waters that are not type S waters, and that contain fish or fish habitat, including waters diverted for use by a federal, state, or tribal fish hatchery from the

point of diversion for 1,500 feet or the entire tributary if the tributary is highly significant for protection of downstream water quality.

- "Type N water" means all segments of waters that are not type S or type F waters and that are physically connected to a type S or F waters by an above ground channel system, stream or wetland.
- "Type O water" means all segments of waters that are not type S, F or N waters and that are not physically connected to type S, F or N waters by an above ground channel system, stream, or wetland.

Buffer widths vary by stream type, depending on whether the stream is located on an undeveloped or a developed site. A developed site is a site that contains a primary structure. Open segments of the West Tributary of Kelsey Creek Basin have separate buffer requirements (BCC 20.25H.035, 20.25H.075). Table 7-3 shows the buffer widths of each type of open stream.

Table 7-3. Standard Stream Buffer Widths for Open Streams per Bellevue Land Use Code Part 20.25

Stream Type	Buffer, Undeveloped Site (feet)	Buffer, Developed Site[a] (feet)	West Tributary, Kelsey Basin (feet)
Type S	100	50	50
Type F	100	50	50
Type N	50	25	50
Type O	25	25	50

[a] The actual buffer is the greater of the buffer width shown in this table or the buffer established with the existing NGPE/NGPA.

Streams together with their buffers constitute the riparian areas where aquatic and terrestrial ecosystems interact. Riparian vegetation provides habitat functions for streams and fish such as shade, bank stability, sediment/nutrient filtering, and organic nutrient input. In addition, riparian vegetation interacts with natural erosional and depositional processes of streams within the riparian area to create pools, riffles, and off-channel habitats that are essential to support all life stages of aquatic species (Hawes 2005).

Closed stream segments, defined as segments of streams located in underground culverts, do not require a buffer but a 10-foot structure setback applies. In the Kelsey Creek drainage basin, closed stream segments require a 50-foot structure setback, to maintain opportunities for future day-lighting of streams.

If an established right-of-way, such as a road, is located within a stream buffer, the edge of the improved right-of-way shall be the extent of the buffer, if the portion of the buffer located on the opposite side of the right-of-way does not contribute significant biological or hydrological function in relation to the portion of the buffer adjacent to the stream.

7.1.4.4 Fish Presence

Fish species documented in streams located in potential project areas are Chinook salmon (*Oncorhynchus tshawytshca*), coho salmon (*Oncorhynchus kisutch*), sockeye salmon (*Oncorhynchus nerka*), Lake Sammamish kokanee (*Oncorhynchus nerka*), steelhead trout (*Oncorhynchus mykiss*), coast resident cutthroat trout (*Oncorhynchus clarki clarki*), and rainbow trout (*Oncorhynchus mykiss*) (WDFW 2018a). Figure 7-4 shows the location of these streams, and Table 7-4 lists the fish species present in these streams. Species of salmonid listed as threatened under the Endangered Species Act that affect Bellevue are Chinook salmon, bull trout, and steelhead. Streams within Bellevue generally exhibit limited productivity for fish habitat, as indicated in Table 7-5.

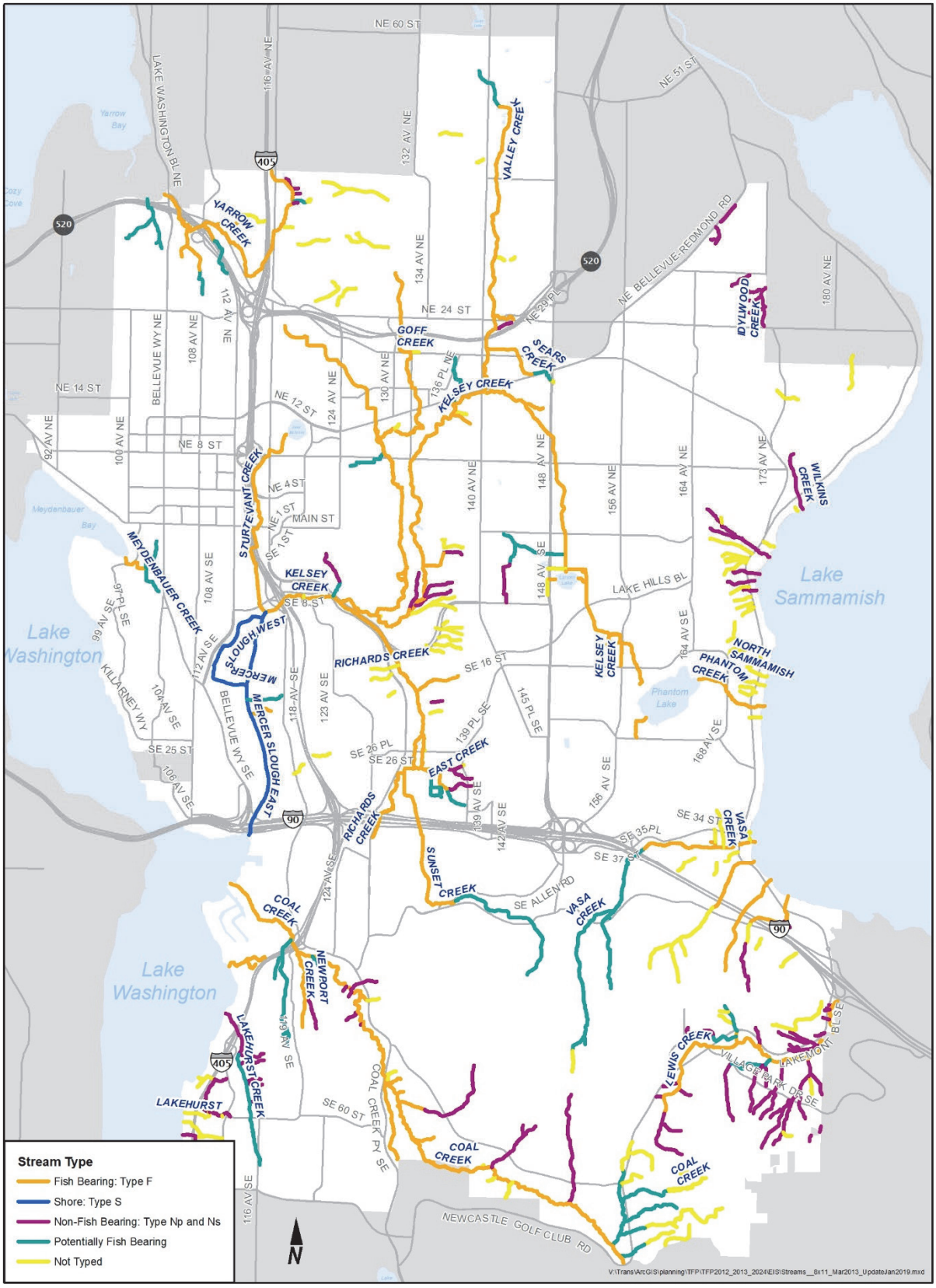


Figure 7-4. Bellevue Streams by Regulatory Classification

Table 7-4. Fish Species by Stream

Stream Name (WRIA Number)	Fish Species
Coal Creek (08-0268)	Chinook salmon Coho salmon Sockeye salmon Steelhead trout Coast resident cutthroat trout
Goff Creek (No WRIA number assigned)	Chinook salmon Coho salmon Sockeye salmon Coast resident cutthroat trout
Kelsey Creek (08-0259)	Chinook salmon Coho salmon Sockeye salmon Coast resident cutthroat trout
Lakehurst, Northern Stream (08-0281)	No observed fish use
Lewis Creek (08-0162)	Coast resident cutthroat trout Kokanee Sockeye salmon Chinook salmon
Phantom Creek (08-0162)	Unknown salmonid use Migratory fish use presumed in reaches downstream of West Lake Sammamish Parkway Warm- water fish found in lake outlet channel
Richards Creek (08-0261)	Chinook salmon Coho salmon Sockeye salmon Coast resident cutthroat trout
Sears Creek (08-0267)	Coast resident cutthroat trout Chinook salmon Sockeye salmon Coho salmon
South Sammamish Northern Stream (08-0160)	Unknown
South Sammamish Middle Stream (No WRIA number assigned)	Unknown
South Sammamish Southern Stream (08-0161)	Coast resident cutthroat trout (through Sunrise Park)
Sturtevant Creek (08-0260)	Coho salmon Sockeye salmon Coast resident cutthroat trout
Valley Creek (08-0266)	Coast resident cutthroat trout Chinook salmon Sockeye salmon Coho salmon
Vasa Creek (08-0156)	Coho salmon Kokanee Sockeye salmon Coast resident cutthroat trout
West Tributary (08-0264)	Chinook salmon Sockeye salmon Coho salmon Coast resident cutthroat trout
Wilkins Creek (08-0151)	Unknown
Yarrow Creek (08-0252)	Coho salmon Coast resident cutthroat trout

Table 7-5. Stream Habitat Quality Ratings Based on Habitat Suitability for Salmon from the Salmon and Steelhead Habitat Limiting Factors Report

Stream*	Riparian Condition	Floodplain Connectivity	LWD	Pools	Side Channel Habitat	Substrate Fines
Kelsey	Poor	Poor	Poor	Poor	ND	Poor
Mercer Slough	Poor	Poor	ND	ND	ND	ND
Sturtevant	Poor	ND	ND	ND	ND	ND
Valley	Poor	ND	Poor	Poor	ND	ND
West Tributary	Poor	ND	ND	ND	ND	ND
Goff	Poor	ND	ND	ND	ND	ND
Richards	Poor	ND	Poor	Poor	ND	ND
East	Poor	ND	Poor	Poor	ND	ND
Sunset	Poor	ND	Poor	Poor	ND	ND
Coal	Poor	Poor	Fair**	ND	Poor	ND
Meydenbauer	Poor	ND	ND	ND	ND	ND
Yarrow	Poor	ND	ND	ND	ND	ND
Lewis	Poor	Poor	ND	ND	ND	ND

*Ratings were not available for Ardmore, Wilkins, Vasa, or Phantom Creeks.

**Rating based on data not included in Habitat Limiting Factors Report.

ND = no data available.

Source: Kerwin 2001

7.1.4.5 Fish Passage Barriers

Salmon and other fish migrate up and down streams to access food, cover, and breeding sites. Of the 79 miles of stream in the city limits, approximately 31 percent are used by salmon, and 49 percent have non-migratory fish. Fish can jump some barriers, but others are considered either partial or complete blockages to fish passage. Some fish are better at passing through barriers than others; for example, peamouth were not able to spawn in great numbers above the Mercer Slough fish ladder until it was rebuilt with smaller jumps in 2003; coho salmon are able to reach higher places than other species in some watersheds because they are well adapted to passing around or jumping over beaver dams and other barriers. Culverts also often act as barriers to fish passage due to their length, slope, and resulting water velocity, and/or the vertical distance from the culvert's downstream end to the stream below. Fish passage barriers were initially surveyed in 1998 (Menconi 1998) with a follow-up survey in 2001. Since those surveys, however, additional fish passage barriers and culverts have been identified throughout the city. Culverts may be added to the inventory list as new information is identified or culvert conditions change. All known fish passage barriers and culverts in Bellevue streams, last updated in 2015, are shown in Figure 7-5.

City policy, as provided in BCC 20.25H.055C.3.e, requires that any new culverts be designed according to guidelines contained in the Water Crossing Design Guidelines (WDFW 2013). In May 2013, WDFW released updated guidance, the Water Crossing Design Guidelines (Barnard et al. 2013). Under *Bellevue City Code*, provisions of this newer guidance would typically apply for new project designs. Critical Areas Ordinance (CAO) requirements for new or improved culverts are described in detail in Section 7.2.3.

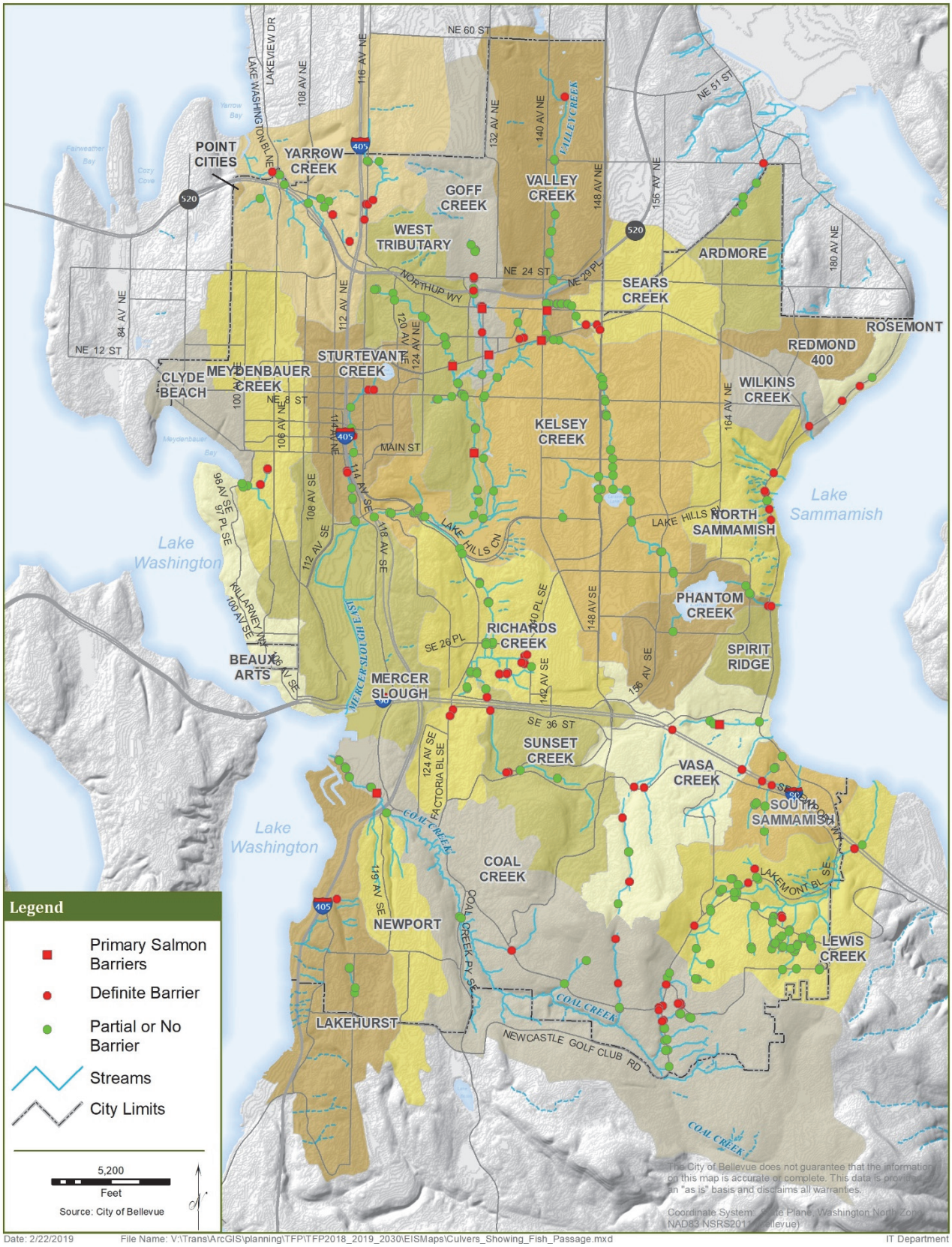


Figure 7-5. Bellevue Fish Passage Barriers

7.1.4.6 New Zealand Mudsnails

New Zealand mudsnails are present in Kelsey and Valley creeks. These tiny nonnative snails multiply quickly and disrupt the food chain, threatening native fish. To date, there is no way to eradicate mudsnails once they have infested a waterbody without damaging the aquatic habitat. This species of mudsnail is hearty, surviving in a variety of salinity, water temperature, and quality conditions. A movable cover at the opening of its shell (the "operculum") allows the mudsnail to protect itself from short-term exposure to most chemicals. The New Zealand mudsnail also survives out of water for quite some time and has no known predators or parasites in Washington state that can keep populations in check. A single female snail can rapidly reproduce through cloning, adding 230 snails to the population annually. That initial snail, along with its offspring, can build a population into the billions of snails within a four-year timeframe. These mudsnails feed on the primary food web of algae and detritus important to native aquatic insects. Reductions in native aquatic insects in turn threaten other species dependent on the food chain, including salmon, as those insects are critical as feed to juvenile salmonids. New Zealand mudsnails are not an alternative food source, as they have very low nutritional value, and most pass through a fish's digestive track unharmed. Mudsnails can be transported to other drainage systems through contaminated fishing gear, clothing, and construction equipment (WDFW 2018b).

7.1.5 Wildlife and Vegetation

Wildlife species expected to be present in Bellevue include those typically associated with urban environments, including mammals such as raccoon (*Procyon lotor*) and eastern gray squirrel (*Sciurus carolinensis*), and birds such as American robin (*Turdus migratorius*) and American crow (*Corvus brachyrhynchos*). There are several large patches of undeveloped wildlife habitat in Bellevue, primarily in the vicinity of Mercer Slough, in the large wetland complex that extends from NE 8th Street to Larsen and Phantom Lakes, and in the Coal Creek watershed that connects to the Cougar Mountain Regional Wildlands Park. Smaller areas of undeveloped wildlife habitat include the Lewis Creek Watershed, together with preserved tributary riparian corridors and a number of preserved riparian corridors in the Somerset area tributary to Coal Creek, as well as Wilburton Hill Park, Kelsey Creek Park, and Wewona Beach Park. In lower intensity residential neighborhoods, the presence of large conifer and hardwood trees provides habitat for a range of both urban tolerant species and species that are less common in urban environments. Species expected to occur include coyote (*Canis latrans*), beaver (*Castor canadensis*), red-tailed hawk (*Buteo jamaicensis*), and pileated woodpecker (*Dryocopus pileatus*). Species that have been documented in Bellevue include bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus*) (WDFW 2018a). The city has identified 23 species as species of local importance (Table 7-6); habitat for these species is regulated under BCC 20.25H.

Table 7-6. Species of Local Importance

Common Name	Scientific Name	Common Name	Scientific Name
Bald eagle	*Haliaeetus leucocephalus*	Western big-eared bat	*Plecotus townsendii*
Peregrine falcon	*Falco peregrinus*	Keen's myotis	*Myotis keenii*
Common loon	*Gavia immer*	Long-legged myotis	*Myotis volans*
Pileated woodpecker	*Dryocopus pileatus*	Long-eared myotis	*Myotis evotis*
Vaux's swift	*Chaetura vauxi*	Oregon spotted frog	*Rana pretiosa*
Merlin	*Falco columbarius*	Western toad	*Bufo boreas*
Purple martin	*Progne subis*	Western pond turtle	*Clemmys marmorata*
Western grebe	*Aechmophorus occidentalis*	Chinook salmon	*Oncorhynchus tshawytscha*
Great blue heron	*Ardea herodias*	Bull trout	*Salvelinus confluentus*
Osprey	*Pandion haliaetus*	Coho salmon	*Oncorhynchus kisutch*
Green heron	*Butorides striatus*	River lamprey	*Lampetra ayresi*
Red-tailed hawk	*Buteo jamaicensis*		

Source: City of Bellevue Land Use Code Part 20.25H.150

Of the species in Table 7-6, WDFW (2018a) has documented the presence of only the bald eagle, peregrine falcon, and osprey, although there is a high probability that most of the species do occur in areas of suitable habitat within Bellevue. Potential habitat for species of local importance will be identified during the project-level analysis for each of the projects included in the TFP.

There are two bald eagle nesting territories in Bellevue near Lake Washington. There is an osprey nest on Meydenbauer Bay. Their primary prey are fish, although eagles will take a large variety of animals, including waterfowl and small mammals, as well as scavenge from carcasses of marine and terrestrial mammals. Bald eagles and ospreys regularly perch in the scattered large shoreline trees and forage in the lake. Peregrine falcon been documented in Downtown Bellevue. Peregrines prey on a wide variety of small and medium sized birds, generally hunting them over open areas such as lakes, wetlands, and meadows. Typically, the peregrine will perch on a high cliff where it can see the prey as they fly into range below, although downtown buildings provide a similar habitat.

Many residential neighborhoods in Bellevue, particularly those developed in the 1950s and 1960s, are characterized by relatively large lot sizes and numerous residual trees, including both conifers and hardwoods. Douglas-fir is a common conifer in residential neighborhoods, with western red cedar and a variety of ornamental species also occurring. These trees, and an abundance of shrubs associated with private yards and gardens as well as public spaces, provide habitat for birds and small mammals. Pileated woodpeckers typically are found in urban habitats, including Bellevue, utilizing remnant habitat patches and individual trees. Pileated woodpeckers' nest and forage in large conifers, and remnant conifers within Bellevue provide habitat for them. They also forage in smaller coniferous and deciduous trees, downed logs, and stumps (Lewis 2018). Larger patches of suitable habitat for pileated woodpecker occur in city parks and green belts containing forested habitat and forested wetlands; however, the remaining trees in residential and commercial areas of Bellevue also provide habitat for this species. Slope areas often provide habitat for various species because they are less suitable for development and thus tend to have more extensive vegetation than more level areas.

In urban areas, much native habitat is displaced by impervious surfaces and introduced vegetation such as lawns and ornamental trees; in addition, the habitat that remains is fragmented into isolated patches. Biodiversity is greatly reduced when large areas of natural habitat are fragmented. Small habitat patches are unable to support the same level of food chain, reproductive, and cover functions. In addition, the balance between prey and predators may result in some species increasing significantly in the absence of natural predators, which then affects food supply and other needed functions for other species. Human introduced predators such as cats can also affect the mix of species. The extent to which species can move between patches also affects the extent to which fragmentation is a negative impact. Birds generally can move readily between habitat patches, as can some small mammals such as raccoons and opossums. Other species may become isolated in patches too small to provide all lifecycle functions and become locally extinct. Even birds, which are relatively mobile, have been found to have higher levels of parasitism and predation and decreased reproductive success in small forest patches. In those areas where habitat is present, native species are often replaced with nonnative, invasive, and cosmopolitan species (Gomes 2011).

7.1.6 Floodplains

The Washington GMA identifies "frequently flooded areas" as one of five critical areas that must be designated and protected by local jurisdictions.

Flooding of low-lying areas occurs when runoff exceeds the capacity of rivers and streams to convey water within their banks. Flooding can also occur in urban areas when stormwater systems become overwhelmed. Numerous studies have linked urbanization with increased peak discharge and channel degradation. The storage capacity of a floodplain determines the degree to which floodplain inundation may buffer upstream fluctuations in discharge. The storage capacity of a floodplain may vary according to valley confinement, gradient, local relief, and flow resistance provided by vegetation. The construction of levees, filling low lying areas, and other encroachment into floodplains can dramatically reduce the local storage capacity of a floodplain and impact the hydrologic regime of a basin (Bellevue 2005).

Floodplains perform numerous ecological functions by providing critical habitat requirements for fish, birds, and other wildlife. The complex vegetation structure found in riparian areas contributes to the high biodiversity of floodplains. Shade offered by riparian vegetation reduces water temperature. Riparian vegetation also provides organic debris to stream and rivers that creates in-stream structures and cover. Woody debris creates habitat complexity in channels by trapping sediment and forming pools. Sediment storage and hydraulic roughness created by logjams can raise the elevation of both the channel bed and water surface, which may force additional channel migration and increase the frequency of flooding (Bellevue 2005).

Floodplains also sustain wetlands, which provide feeding and breeding habitat for birds and off- channel refuge and rearing habitat for migrating salmonids

Frequently flooded areas in Bellevue include several streams:

- Kelsey Creek is the largest creek in Bellevue and includes several tributaries. Kelsey Creek originates in the Phantom and Larsen Lake wetlands and flows through the Mercer Slough before draining into Lake Washington near I-90. Several frequently flooded areas have been delineated along Kelsey Creek.

- Sunset, Richards, and East creeks are tributaries to Kelsey Creek and include several narrow corridors delineated as frequently flooded areas. These creeks were included in the 1999 update to the Kelsey Creek Basin.
- Valley Creek is a tributary to Kelsey Creek and flows south along 150th Avenue NE within a narrow valley with floodplains along the narrow riparian corridor of the lower reach.
- West Tributary and Goff Creek flow south and join Kelsey Creek at Kelsey Creek Park with floodplains along the lower reach of West Tributary above the confluence with Kelsey Creek.
- Yarrow Creek is located in northwest Bellevue and drains into Lake Washington with floodplains along a portion within the city.
- Coal Creek originates on Cougar Mountain East of the City of Bellevue and drains into Lake Washington at Newport Shores. Confinement of Coal Creek by a steep ravine through Coal Creek Park limits the extent of flooding upstream of I-405 to the immediate riparian corridor. West of l-405, the stream flows through a flat area and has a floodplain and has formed a delta at the mouth.
- Vasa Creek drains into Lake Sammamish and includes reaches delineated as frequently flooded areas on both sides of l-90.

The following lakes also have designated floodplains:

- Lake Bellevue is located at the headwaters of Sturtevant Creek. The immediate shoreline of Lake Bellevue is designated as a floodplain.
- Larsen Lake is located at the headwaters of Kelsey Creek with portions of the Greenbelt Park surrounding the lake are designated as floodplain.
- The immediate shoreline of Phantom Lake is designated as a frequently flooded area.
- The Lake Sammamish shoreline is designated as a floodplain.

Individual studies may identify additional floodplains not on the Flood Insurance Maps on a case-by-case basis.

The Bellevue Critical Areas codes designates Areas of Special Flood Hazard through Flood Insurance Rate Maps. Regulations in LUC 20.25H.180.A.4. prohibits development that would result in a rise in the Base Flood Elevation (BFE). Regulations in LUC 20.25H.180.D.4 allows new or expanded public rights-of-way, private roads, access easements and driveways, subject to:

- The low chord on the bridge structure will be no less than the elevation of the BFE.
- Access to essential public facilities must be elevated to or above the BFE to the nearest maintained public street or roadway.

7.1.7 Shorelines

The city's LUC contains requirements and guidelines that preserve Bellevue's shorelines in accordance with the State Shoreline Management Act. The Shoreline Overlay District defines the shoreline areas in Bellevue (BCC 20.25E). It includes the following:

- Lakes that are 20 acres in size or greater, streams with a mean annual water flow exceeding 20 cubic feet per second, and the lands underlying them.

- The lands extending landward for 200 feet in all directions as measured on a horizontal plane from the ordinary high-water mark.
- Floodways and contiguous floodplain areas landward 200 feet from such floodways associated with such streams and lakes.
- Marshes, bogs, swamps, and river deltas associated with such streams and lakes.

This Shoreline Overlay District specifically includes the following water resources:

- **Lake Washington (including Mercer Slough upstream to I-405).** Lake waters, underlying lands, and the area 200 feet landward of the ordinary high-water mark, plus associated floodways, floodplains, marshes, bogs, swamps, and river deltas;
- **Lake Sammamish.** Lake waters, underlying lands, and the area 200 feet landward of the ordinary high-water mark, plus associated floodways, floodplains, marshes, bogs, swamps, and river deltas;
- **Lower Kelsey Creek.** Creek waters, underlying lands, and territory between 200 feet on either side of the top of the banks, plus associated floodways, floodplains, marshes, bogs, swamps, and river deltas;
- **Phantom Lake.** Lake waters, underlying lands, and the area 200 feet landward of the ordinary high-water mark, plus associated floodways, floodplains, marshes, bogs, swamps, and river deltas.

Shoreline performance standards relevant to TFP projects are included in the Shoreline Master Program, LUC 20.25E.070.D.

7.2 Impacts

This section presents the potential impacts that might result from implementation of the alternatives, including construction of the CIP and TFP projects.

The analysis is at a nonproject level and describes a range of potential impacts, based on the location of the project and currently known details of the project. Where a project involves study or evaluation of alternatives, potential impact assessment is based on a reasonable projection of the greatest extent of area disturbed. Since the No Action option consists of the 2019 to 2025 CIP projects, all of which are included in the TFP, the difference in alternatives differs primarily in the greater number of projects and greater extent of impacts under the TFP.

Impacts considered include the assumption that provisions in local, state, and federal regulations will be applied to specific project applications. The most substantial regulations are found in the Bellevue 2006 CAO updated with the SMP in 2018 contained in LUC Part 20.25H and requires buffers and building setbacks to protect critical areas, requires mitigation sequencing to avoid and minimize impacts, and specifies mitigation for impacts to critical areas.

Under *Bellevue City Code*, new or expanded public rights-of-way are an allowable use within critical areas (BCC 20.25H.055.B); however, they must meet the specific performance standards described in BCC 20.25H.055.C. Under these performance standards, right-of-way corridors may be located or expanded in critical areas or critical area buffers only where there is no technically feasible alternative

with less impact on the critical area and buffer. The specific criteria are outlined in Subsection 7.1.1. If additional roadway development is allowed, a Restoration and Mitigation Plan also must be developed and mitigated pursuant to BCC 20.25H.220.

A provision important to transportation projects limits the extent of required buffers for wetlands and streams to the edge of a legally established, improved right-of-way, if the part of the critical area buffer on the other side of the right-of-way provides insignificant biological or hydrological function in relation to the portion of the buffer adjacent to the resource (BCC 20.25H.075.C.2.b; 20.25H.095.C.2.b).

Table 7-7 lists the TFP projects that may have potential impacts on natural resources designated for protection in the project area by the city's *Critical Areas Code*. General impacts that occur in areas not regulated as Critical Areas are also described in each subsection, below.

7.2.1 Critical Areas

The city regulates the following as critical areas:

- Geologic hazard areas
- Wetlands
- Streams
- Habitat associated with species of local importance
- Areas of special flood hazard

As described in Section 7.1.1. above, new or expanded public rights-of-way are an allowable use within critical areas under BCC 20.25H.055.B. The city will comply with the applicable land use requirements for development in shoreline and floodplain areas.

The provisions of BCC20.25H.055.C.2.a. allow new or expanded facilities and systems within the critical area or critical area buffer only where no technically feasible alternative with less impact on the critical area or critical area buffer exists.

For projects that are determined to meet this criteria, BCC 20.25H.055.C.2.c.viii. requires that areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan.

The *Critical Areas Code* requires a permit process and set of criteria and performance standards to all projects, and will be supplemented by other city codes, such as Storm and Surface Water Code (BCC 24.06), Clearing & Grading Codes and Guidelines (BCC Title 23.76), and Clearing & Grading Development Standards. Together, these standards and requirements will assure a thorough review of projects and implementation of mitigation standards.

Table 7-7. TFP Projects with Potential Impacts on Natural Resources

TFP Project Number	CIP Project Number		None	Geology and Soils	Wetlands	Aquatic Resources	Wildlife and Vegetation	Flood Hazard	Shorelines
TFP-110		Complete 5-lane roadway section 110th Avenue NE/NE 6th Street to NE 8th Street	X						
TFP-175		Curb, gutter sidewalk, and bike lane SE 34th Street/162nd Pl SE to West Lake Sammamish Pkwy		X		X	X		
TFP-190		Widen road to 5 lanes NE 2nd Street/Bellevue Way to 112th Avenue NE	X						
TFP-193		Add southbound off ramp NE 10th Street at I-405		X		X	X		
TFP-194		Pave existing gravel road 164th Ave SE/SE Cougar Mountain Way to SE 63rd Street				X	X		
TFP-195		Intersection reconfiguration 150th Avenue SE/SE 37th Street/I-90 off-ramp	X						
TFP-197		Extend across I-405, 112 Ave NE to 116th Ave NE NE 2nd Street Extension and I 405 interchange			X	X	X		
TFP-209	R172	New multi-modal arterial street NE Spring Blvd/116th Avenue NE to 120th Avenue NE (Zone 1)		X					
TFP-210	R-166	Roadway expansion to 5 lanes 124th Avenue NE/NE Spring Boulevard to Ichigo Way (NE 18th Street)			X	X			
TFP-211	R-162	NE 6th Street Extension I-405 to 116th Avenue NE				X			
TFP-213	R-169	Roadway expansion to five lanes 124th Avenue NE/NE 12th Street to NE Spring Boulevard	X						
TFP-215	R-174	New multi-modal arterial street NE Spring Blvd/130th to 132nd Avenues NE (Zone 4)				X			
TFP-216		Intersection reconfiguration 112th Avenue NE/NE 2nd Street	X						

Table 7-7. TFP Projects with Potential Impacts on Natural Resources (continued)

TFP Project Number	CIP Project Number		None	Geology and Soils	Wetlands	Aquatic Resources	Wildlife and Vegetation	Flood Hazard	Shorelines
TFP-217		New ramps to the east 124th Avenue NE at SR 520		X					
TFP-218	R-170	Multi-modal improvements 130th Avenue NE/NE 20th Street to NE Bel-Red Road	X						
TFP-219		Intersection reconfiguration Realign NE 8th Street/106th Avenue NE	X						
TFP-222		Intersection reconfiguration Bellevue Way/NE 4th Street	X						
TFP-223		Intersection reconfiguration Bellevue Way/NE 8th Street	X						
TFP-225		Intersection reconfiguration Bellevue Way/NE 2nd Street	X						
TFP-242	R-184	Roadway expansion Bellevue Way HOV lane/107th Ave SE Segment A: Park & Ride to Winters House		X	X		X		
TFP-246		Roadway expansion 150th Avenue SE/south of SE 38th Street to Newport Way		X					
TFP-250		Roadway widening (evaluation) 148th Avenue NE Master Plan improvements at Bel-Red Road, NE 20th Street, and NE 24th Street	X						
TFP-252	R-177	Roadway reconstruction, multi-use path Bellevue College Connection: Kelsey Creek Road/Snoqualmie River Road/142nd Pl SE from 145th Place SE to SE 36th St	X						
TFP-253		Intersection reconfiguration (evaluation) 150th Avenue SE/Eastgate Way SE	X						
TFP-254		Roadway widening to 5 lanes Bel-Red Road/NE 20th Street to NE 24th Street	X						
TFP-255	R-185	Multi-use path, bike lane, turn lanes Newport Way SE/Somerset Blvd SE to 150th Avenue SE		X	X	X	X		

Table 7-7. TFP Projects with Potential Impacts on Natural Resources (continued)

TFP Project Number	CIP Project Number		None	Geology and Soils	Wetlands	Aquatic Resources	Wildlife and Vegetation	Flood Hazard	Shorelines
TFP-256	R-183	Widen for shoulders, multi-purpose trail West Lake Sammamish Parkway Improvements – "North Central" segment: SE 2nd block to NE 8th block (Phase 2)		X	X	X	X		
TFP-257	R-194	Widen for shoulders, multi-purpose trail West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4)		X	X	X	X		
TFP-259	R-173	New multi-modal arterial NE Spring Blvd/120th Avenue NE to 124th Avenue NE (Zone 2)	X						
TFP-260	R-186	Roadway widening and reconfiguration 120th Avenue NE (Stage 4)/NE 16th Street to Northup Way		X	X	X	X		
TFP-263		Intersection reconfiguration 148th Avenue NE/NE 8th Street		X	X	X	X		
TFP-265	R191	Roadway reconfiguration, multi-purpose path 124th Avenue NE/Ichigo Way (NE 18th Street) to Northup Way		X	X	X	X		
TFP-266	W/B-83	Multi-purpose trail, expand off ramp Mountains to Sound Greenway – Factoria Crossing (includes I-90 exit expansion)	X	X		X			
TFP-267		Widen for shoulders, multi-purpose trail West Lake Sammamish Parkway/"North" segment; (Phase 5)		X		X	X		X
TFP-268		Roadway expansion Bellevue Way HOV lane/107th Ave SE Segment B: Winters House to 112th Ave SE & Segment C: 112th to 108th Avenues SE		X	X		X		
TFP-269	R-190	Multi-purpose pathways 124th Avenue NE/NE 8th Street to NE 12th Street	X						
TFP-270		New multi-modal arterial Spring Blvd – 124th Ave NE to 130th Ave NE (zone 3)			X	X	X		
TFP-271		Convert intersections to roundabouts Coal Creek Parkway/120th Ave SE – I-405 – 119th Ave SE		X			X		

Table 7-7. TFP Projects with Potential Impacts on Natural Resources (continued)

TFP Project Number	CIP Project Number		None	Geology and Soils	Wetlands	Aquatic Resources	Wildlife and Vegetation	Flood Hazard	Shorelines
TFP-272		Intersection reconfiguration study NE 12th St/116th Ave NE	X						
TFP-273		Intersection reconfiguration, traffic light Lakemont Blvd/Forest Dr				X			
Pedestrian – Bicycle Implementation Initiative Reserve Projects Projects below are candidates for funding through the allocation of a portion of the city's ongoing Pedestrian & Bicycle Implementation Initiative.									
TFP-158		Bicycle lanes SE 16th Street/148th Avenue SE to 156th Avenue SE			X				
TFP-173	W/B-81	Bicycle lanes 108th/112th Avenue NE/north city limit to NE 12th Street		X		X	X		
TFP-230		Multi-modal improvements study 108th Avenue NE/NE 12th Street to Main Street	X						
TFP-232		Bicycle facilities 164th Avenue NE/SE-NE 18th Street to SE 14th Street	X						
TFP-234		Multi-modal improvements study Main Street/100th Avenue to 116th Avenue			X	X			
TFP-243	W/B-78	Multi-modal trail Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard		X	X	X	X		
TFP-244	G-103	Off-street path Eastside Rail Corridor multi-use path/southern city limits to northern city limits		X	X	X			
TFP-245		Off-street multi-use path study 140th Avenue NE/NE 24th Street to NE 8th Street		X	X	X	X		
TFP-247		Bicycle lanes Eastgate Way/Richards Road to SE 35th Place		X		X			
TFP-249		Pedestrian access to light rail station Wilburton/NE 8th Street Station Access Improvements				X			
TFP-251		Off-street path Coal Creek Parkway/124th Avenue SE to the southern city limits		X	X	X	X		

7.2.2 Geology and Soils

This section discusses the potential impacts related to geology and soils that might result from implementation of the alternatives. Such impacts could include landslides in steep slope areas, liquefaction of soils due to earthquakes, and settlement of soils. The geological conditions in the project area are a factor in the occurrence of these types of impacts.

Transportation projects that involve new or expanded facilities can be expected to disturb surface soils within the area of permanent facilities and for a distance adjacent where access and staging will disturb soils. In many cases, improvements would occur where soils are already disturbed by paving. Many of the adjacent properties are also likely to have been disturbed for urban development, such as residential, commercial, and industrial areas. The areas where native soils are likely to be found are on never-developed privately owned parcels (which are few), areas designated for preservation as critical areas, and publicly owned open space. Regardless of the character of soils, construction activities, such as clearing, excavation, grading, and filling activities could result in erosion of exposed soils. Soils normally protected by vegetation or pavement could be worn away when exposed to wind and rain during earthwork operations. These eroded soils then become sediments entering surface waters (streams, wetlands, and lakes) and can damage both physical and biological functions of the water body.

City of Bellevue Clearing & Grading Codes and Guidelines in BCC Title 23.76, as well as the 2017 Clearing & Grading Development Standards and 2017 Clearing & Grading Best Management Practices, are likely to result in mitigation of most potential impacts of soil disturbance to acceptable levels.

Construction activity in potentially unstable ground could destabilize hillside slopes, if mitigating measures, such as groundwater interception, engineered retaining systems, or bridges, are not employed. Moderate amounts of excavation and fill would be required for most of the proposed roadway widening projects and intersection improvements. In most cases, the earthwork volumes are not anticipated to be substantial. Site-specific earth resource impacts will be evaluated and mitigated through the environmental and code-review process for individual projects when detailed plans are available.

Liquefaction occurs when loose sand and silt that is saturated with water behaves like a liquid. This tends to occur when an earthquake causes water pressures to increase in the sediment and the sand grains to lose contact with each other. The soil can lose its ability to support structures, flow down even very gentle slopes, and erupt at the ground surface to form sand boils. Many of these phenomena are accompanied by settlement of the ground surface, usually in uneven patterns that damage structures, roads, and other facilities. Several existing roads in Bellevue cross areas subject to liquefaction, including the Lake Hills Connector and Lake Hills Blvd SE which cross areas of alluvial deposits. Mitigation of potentially liquefiable soil can be accomplished by removing the soils if they are shallow, or densification of soils by several methods, including grouting or installation of piles or stone columns to support structures.

The city will comply with the applicable Critical Areas requirements for development in geologic hazard areas. These standards will ensure that engineering solutions address potential stability and erosion impacts. Some projects, however, may not fully comply with performance standards that require conformance to existing topography and preservation of natural landforms and vegetation because of limited right-of-way, the desire to minimize impacts on adjacent land uses, and the lack of feasible

alternatives. Where projects are allowed in Landslide Hazard Areas, a Critical Areas Report required by BCC 20.25H.145 requires documentation that the modification:

- Will not increase the threat of the geological hazard to adjacent properties;
- Will not adversely impact other critical areas;
- Is designed so that the hazard to the project is eliminated or mitigated to a level equal to or less than would exist if the provisions of this part were not modified;
- Is certified as safe by a qualified engineer or geologist;
- Complies with recommendations of the geotechnical report; and
- Does not significantly impact habitat associated with species of local importance.

With observation of clearing and grading, and critical areas codes in the design and construction of transportation projects, it is likely that most potential impacts of erosion, slope destabilization, landslide, and hazards from liquefaction can be avoided or reduced to an acceptable level.

7.2.2.1 CIP Network Alternative

The CIP Network alternative has several projects in areas with geologic hazards. Projects in the vicinity of slopes subject to landslide hazards that may involve cutting into slopes to expand roadways or other facilities include the following:

- **R-184 (TFP-242)** Bellevue Way HOV lane/107th Ave SE Segment A: Park & Ride to Winters House
- **R-185 (TFP-255)** Newport Way SE/Somerset Blvd SE to 150th Avenue SE
- **R-183 (TFP-256)** West Lake Sammamish Parkway Improvements – "North Central" segment: SE 2nd block to NE 8th block (Phase 2)
- **R-194 (TFP-257)** West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4)
- **W/B-78 (TFP-243)** Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard

Projects that cross areas of identified liquefaction risk include the following:

- **R-186 (TFP-260)** 120th Avenue NE (Stage 4)/NE 16th Street to Northup Way
- **R191 (TFP-265)** 124th Avenue NE/Ichigo Way (NE 18th Street) to Northup Way

7.2.2.2 TFP Network Alternative

Projects in the TFP that are not part of the CIP identified above and are in the vicinity of slopes subject to landslide hazards that may involve cutting into slopes to expand roadways or other facilities include the following:

- **TFP-175** SE 34th Street/162nd Pl SE to West Lake Sammamish Pkwy
- **TFP-217** 124th Avenue NE at SR 520, new ramps to the east

- **TFP-271** Coal Creek Parkway/120th Ave SE – I-405 – 119th Ave SE

Projects in the TFP not included in the CIP that include a portion crossing areas of identified liquefaction risk include the following:

- **TFP-263** 148th Avenue NE/NE 8th Street
- **TFP-271** Coal Creek Parkway/120th Ave SE – I-405 – 119th Ave SE

Additional areas may be identified during project-level review.

7.2.3 Wetlands

This section discusses the potential impacts on wetlands greater than or equal to 20,000 ft^2 that may result from implementation of the alternatives and potential unmapped wetlands likely to be present along riparian corridors. If wetlands of a smaller size are within proposed project areas, they will be identified and potential project impacts evaluated during project-level environmental review. Development in a wetland would result in the direct filling and subsequent loss of the resource. Development in a wetland buffer may reduce the buffer width and impact vegetation that provides the following functions:

- Maintains hydrologic processes
- Removes sediments and pollutants, maintaining the microclimate
- Maintains adjacent habitat critical to certain stages of animal populations
- Provides an area in which the effects of adjacent human use are reduced or ameliorated

Development outside the wetlands and buffers but immediately adjacent to the resource would likely result in some indirect impacts on the wetlands. These could include sedimentation from stormwater runoff, increased nutrient loading from road and lawn runoff, changes in the amount of or time that water is in the wetland, and associated changes to wetland vegetation and habitat. Development would also increase the probability of nonnative plant species' invading the wetland and buffer vegetation communities. Potential impacts on individual wetlands and changes in the functions and values of these wetlands from the proposed projects will be further evaluated at the individual project level.

This analysis includes identification of projects that are within five hundred feet of wetlands (wetlands 20,000 SF or larger) and buffers, since projects outside of regulated areas still can have impacts on the resource.

As described in Section 7.1 above, new or expanded public rights-of-way are an allowable use in critical areas under BCC 20.25H.055.B. The city will comply with the applicable land use requirements for development in critical areas. The individual functions and values of wetlands and buffers potentially affected by the proposed projects will be evaluated at the project level using Ecology's wetland rating system for Western Washington (Hruby 2014).

7.2.3.1 CIP Network Alternative

The CIP Network alternative projects that may have potential wetland impacts near mapped wetlands with potential proximity or runoff issues include the following:

- **CIP W/B-82 (TFP-158)** SE 16th Street/148th Avenue SE to 156th Avenue SE; bicycle path is near wetlands within Lake Hills Greenbelt to the east of the project
- **CIP R-186 (TFP-260)** 120th Avenue NE (Stage 4)/NE 16th Street and to Northup Way; roadway widening and reconfiguration is adjacent to streamside wetlands
- **CIP R-166 (TFP-210)** 124th Avenue NE/NE Spring Boulevard to Ichigo Way (NE 18th Street); roadway expansion to five lanes is adjacent to streamside wetland
- **CIP R-184 (TFP-242)** Bellevue Way HOV lane/107th Ave SE Segment A: Park & Ride to Winters House is adjacent to the Mercer Slough wetland complex to the east

Projects in the vicinity of probable unmapped riparian wetlands along stream courses include the following:

- **CIP G-103 (TFP-244)** Off-street path, Eastside Rail Corridor multi-use path
- **CIP R-183 and 194 (TFP-256 and 257)** West Lake Sammamish Parkway "North Central" segment: SE 2nd block to NE 8th block (Phase 2) and "South Central" & "Central" segment (Phases 3 & 4) shoulder and multi-purpose path
- **CIP R-185 (TFP-255)** Newport Way SE/Somerset Blvd SE to 150th Avenue SE; bike lanes and multi-use path

Additional smaller wetlands, and potential impacts on the functions and values of these wetlands from the proposed projects, will be identified and evaluated at the individual project level.

7.2.3.2 TFP Network Alternative

TFP Network alternative projects not included in the CIP that may have potential wetland impacts near mapped wetlands with potential proximity or runoff issues include the following:

- **TFP-270** Spring Blvd – 124th Ave NE to 130th Ave NE (zone 3); new multi-modal arterial is adjacent to streamside wetlands
- **TFP-263** 148th Avenue NE/NE 8th Street; intersection reconfiguration is adjacent to wetlands to the east

Projects in the vicinity of probable unmapped riparian wetlands along stream courses include the following:

- **TFP 243** Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard; multi-modal trail
- **TFP 251** Coal Creek Parkway/124th Avenue SE to the southern city limits; off-street path

- **TFP 245** 140th Avenue NE/NE 24th Street to NE 8th Street; bicycle facilities, and off-street multi-use path study
- **TFP-273** Lakemont Blvd/Forest Dr; intersection reconfiguration and traffic light

The extent of onsite wetlands affected, as well as wetland functions and values, would be assessed during project-level environmental review for each of the proposed projects.

7.2.4 Aquatic Resources

This section discusses the potential impacts on aquatic resources that might result from implementation of the alternatives. Table 7-8 identifies the watersheds and streams in the project area that would be potentially affected by the alternatives.

7.2.4.1 Impervious Area

Most of the proposed projects would result in an increase in impervious surface, through providing new roadways and additional lanes for traffic on existing roads, and the construction of bicycle lanes, multi-use paths, and sidewalks. Impervious surfaces result in increased stormwater runoff; therefore, watersheds with significant impervious surface areas typically show some impairment of fish habitat due to alterations in hydrology, sediment quality and dynamics, or pollutant loads, as compared to undeveloped watersheds. Changes in hydrology include increases in runoff volume, peak discharge rate, bankful flow, and base flow. These increases can in turn cause changes in bank erosion or bank stability, embeddedness, and the amount and distribution of large woody debris (LWD) in the stream. In addition, the peak flows resulting from increased stormwater runoff are typically stronger, last longer, and occur with a different timing. This can result in concentrated flows, increased stream channel and bank erosion, and a concentration of pollutants being transported into streams. As shown in Table 7-8, however, the additional impervious surfaces resulting from projects in the TFP generally range from less than one tenth of a percent to up to one half percent of the area of any drainage basin and therefore result in relatively little additional impact, particularly in streams that already have a large percentage of impervious area.

The smaller drainage basins such as Rosemont, North Sammamish, South Sammamish, Spirit Ridge, and Goff Creek suffer the greatest potential impact because of their small size and relatively low percentages of impervious surface; however, the cumulative impact in these basins is still very small in terms of total impervious surfaces. Some basins, such as Goff Creek, have very low impervious surfaces overall because of the low intensity of development in the northerly upstream portion of the basin. This basin, however, is affected very little by TFP projects because the projects occur in downstream commercial and industrial areas that already have a high proportion of impervious surface. Sturtevant Creek has the greatest number of projects but also the highest proportion of existing impervious surfaces, at 71 percent. Because the TFP projects in this basin largely replace existing impervious surface devoted to parking and buildings, there is little net increase in impacts from additional impervious surface.

Table 7-8. Streams Potentially Affected by the Proposed Alternatives

Drainage Basin	Basin Area (acres)	Existing Impervious Surface (acres)	Existing Impervious Surface (percent)	Bellevue Right-of-Way Area (acres)	Bellevue Right-of-Way Area (percent)	TFP Projects (CIP Projects)		Increase in Impervious Surface (percent)
Ardmore	451	193.06	43%	67.06	15%	None		0%
Beaux Arts	419	143.98	34%	32.57	8%	None		0%
Clyde Beach	292	136.84	47%	33.12	11%	None		0%
Coal Creek	3,990	814.04	20%	248.79	6%	TFP-194	Pave existing gravel road, 164th Ave SE/SE Cougar Mountain Way to SE 63rd Street	>0.01%
						TFP-244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
						TFP 251	Off-street path, Coal Creek Parkway/124th Avenue SE to the southern city limits	>0.01%
						TFP 271	Convert intersections to roundabouts, Coal Creek Parkway/120th Ave SE – I-405 – 119th Ave SE	>0.01%
						TFP 273	Intersection reconfiguration, traffic light, Lakemont Blvd/Forest Dr	>0.01%
East Creek	462	220.34	48%	37.20	8%	None		0%
Goff Creek	674	199.94	30%	46.59	7%	TFP 215 (R174)	New multi-modal arterial street, NE Spring Blvd/130th to 132nd Avenues NE (Zone 4)	>0.5%
						TFP-218 (R-170)	Multi-modal improvements, 130th Avenue NE/NE 20th Street to NE Bel-Red Road	>0.1%
Kelsey Creek	2,822	1137.98	40%	276.17	10%	TFP 158 (W/B-82)	Bicycle lanes, SE 16th Street/148th Avenue SE to 156th Avenue SE	>0.01%
						TFP 232	Bicycle facilities, 164th Avenue NE/SE-NE 18th Street to SE 14th Street	>0.01%
						TFP-244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
						TFP 245	Bicycle facilities, off-street multi-use path study, 140th Avenue NE/NE 24th Street to NE 8th Street	>0.01%
						TFP 263	Intersection reconfiguration, 148th Avenue NE/NE 8th Street	>0.01%

Table 7-8. Streams Potentially Affected by the Proposed Alternatives (continued)

Drainage Basin	Basin Area (acres)	Existing Impervious Surface (acres)	Existing Impervious Surface (percent)	Bellevue Right-of-Way Area (acres)	Bellevue Right-of-Way Area (percent)	TFP Projects (CIP Projects)		Increase in Impervious Surface (percent)
Lakehurst	1,284	427.21	33%	79.33	6%	TFP-244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
Lewis Creek	1,004	416.26	29%	100.51	7%	TFP-194	Pave existing gravel road, 164th Ave SE/SE Cougar Mountain Way to SE 63rd Street	>0.01%
						TFP-244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
Mercer Slough	1,327	419.67	32%	174.07	13%	TFP 242 (R-184)	Roadway expansion, Bellevue Way HOV lane/107th Ave SE Segment A: Park&Ride to Winters House	>0.01%
						TFP-244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
						TFP 268	Roadway expansion, Bellevue Way HOV lane/107th Ave SE, Segment B: Winters House to 112th Ave SE & Segment C: 112th to 108th Avenues SE	>0.01%
Meydenbauer Creek	927	547.91	59%	118.81	13%	TFP 190	Widen road to 5 lanes, NE 2nd Street/Bellevue Way to 112th Avenue NE	>0.01%
						TFP 219	Intersection reconfiguration, realign NE 8th Street/106th Avenue NE	>0.01%
						TFP 222	Intersection reconfiguration, Bellevue Way/NE 4th Street	>0.01%
						TFP 223	Intersection reconfiguration, Bellevue Way/NE 8th Street	>0.01%
						TFP 225	Intersection reconfiguration, Bellevue Way/NE 2nd Street	>0.01%
						TFP 230	Multi-modal improvements study, 108th Avenue NE/NE 12th Street to Main Street	>0.1%
						TFP 234	Multi-modal improvements study, Main Street/100th Avenue to 116th Avenue	>0.1%

Table 7-8. Streams Potentially Affected by the Proposed Alternatives (continued)

Drainage Basin	Basin Area (acres)	Existing Impervious Surface (acres)	Existing Impervious Surface (percent)	Bellevue Right-of-Way Area (acres)	Bellevue Right-of-Way Area (percent)	TFP Projects (CIP Projects)		Increase in Impervious Surface (percent)
Newport	571	224.04	39%	59.52	10%	TFP-244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
North Sammamish	621	200.43	32%	64.38	10%	TFP 256 (R-183)	Widen for shoulders, multi-purpose trail, West Lake Sammamish Parkway Improvements – "North Central" segment: SE 2nd block to NE 8th block (Phase 2)	>0.1%
						TFP 257 (R-194)	Widen for shoulders, multi-purpose trail, West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4)	>0.1%
Phantom Creek	537	190.38	35%	38.70	7%	None		0%
Richards Creek	901	404.38	45%	102.20	11%	TFP 247	Bicycle lanes, Eastgate Way/Richards Road to SE 35th Place	>0.01%
						TFP 252 (R-177)	Roadway reconstruction, multi-use path, Bellevue College Connection: Kelsey Creek Rd/Snoqualmie River Road/142nd Pl SE from 145th Place SE to SE 36th St	>0.01%
Rosemont	432	163.81	38%	50.83	12%	TFP 256 (R-183)	Widen for shoulders, multi-purpose trail, West Lake Sammamish Parkway Improvements – "North Central" segment: SE 2nd block to NE 8th block (Phase 2)	>0.1%
						TFP 267	Widen for shoulders, multi-purpose trail West Lake Sammamish Parkway/"North" segment; (Phase 5)	>0.1%
Sears Creek	358	225.54	63%	35.40	6%	TFP-250	Roadway widening (evaluation), 148th Avenue NE Master Plan improvements at Bel- Red Road, NE 20th Street, and NE 24th Street	>0.01%
						TFP-254	Roadway widening to 5 lanes Bel-Red Road/NE 20th Street to NE 24th Street	>0.01%
South Sammamish	337	186.41	31%	70.64	12%	TFP-243	Multi-modal trail, Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard	>0.01%

Table 7-8. Streams Potentially Affected by the Proposed Alternatives (continued)

Drainage Basin	Basin Area (acres)	Existing Impervious Surface (acres)	Existing Impervious Surface (percent)	Bellevue Right-of-Way Area (acres)	Bellevue Right-of-Way Area (percent)	TFP Projects (CIP Projects)		Increase in Impervious Surface (percent)
Spirit Ridge	193	77.17	40%	20.62	11%	TFP-257	Widen for shoulders, multi-purpose trail, West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4)	>0.01%
Sturtevant Creek	773	551.45	71%	137.37	18%	TFP 110	Complete 5-lane roadway section, 110th Avenue NE/NE 6th Street to NE 8th Street	>0.05%
						TFP 190	Widen road to 5 lanes, NE 2nd Street/Bellevue Way to 112th Avenue NE	>0.05%
						TFP 197	Extend across I-405, 112 Ave NE to 116th Ave NE, NE 2nd Street Extension and I 405 interchange	>0.05%
						TFP 209 (R172)	New multi-modal arterial street, NE Spring Blvd/116th Avenue NE to 120th Avenue NE (Zone 1)	>0.1%
						TFP 211 (R-162)	NE 6th Street Extension, I-405 to 120th Avenue NE	>0.02%
						TFP 216	Intersection reconfiguration, 112th Avenue NE/NE 2nd Street	>0.01%
						TFP 230	Multi-modal improvements, study, 108th Avenue NE/NE 12th Street to Main Street	>0.01%
						TFP 234	Multi-modal improvements, study, Main Street/100th Avenue to 116th Avenue	>0.01%
						TFP 244 (G-103)	Off-street path, Eastside Rail Corridor multi- use path	>0.01%
						TFP 249	Pedestrian access to light rail station, Wilburton/NE 8th Street Station Access Improvements	>0.01%
						TFP 259 (R-173)	New multi-modal arterial, NE Spring Blvd/120th Avenue NE to 124th Avenue NE (Zone 2)	>0.05%
						TFP 272	Intersection reconfiguration study, NE 12th St/116th Ave NE	>0.01%

Table 7-8. Streams Potentially Affected by the Proposed Alternatives (continued)

Drainage Basin	Basin Area (acres)	Existing Impervious Surface (acres)	Existing Impervious Surface (percent)	Bellevue Right-of-Way Area (acres)	Bellevue Right-of-Way Area (percent)	TFP Projects (CIP Projects)		Increase in Impervious Surface (percent)
Sunset Creek	890	371.60	42%	152.72	17%	TFP 243 (W/B-78)	Multi-modal trail, Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard	>0.01%
						TFP 246	Roadway expansion, 150th Avenue SE/south of SE 38th Street to Newport Way	>0.01%
						TFP 255 (R-185)	Multi-use path, bike lane, turn lanes, Newport Way SE/Somerset Blvd SE to 150th Avenue SE	>0.05%
						TFP 266 (W/B-83)	Multi-purpose trail, expand off-ramp, Mountains to Sound Greenway – Factoria Crossing (includes I-90 exit expansion)	>0.01%
Valley Creek	1.307	478.72	34%	80.63	6%	TFP 245	Off-street multi-use path study, 140th Avenue NE/NE 24th Street to NE 8th Street	>0.01%
						TFP 250	Roadway widening (evaluation), 148th Avenue NE Master Plan improvements at Bel-Red Road, NE 20th Street, and NE 24th Street	>0.01%
Vasa Creek	1,085	430.63	40%	150.54	14%	TFP 195	Intersection reconfiguration, 150th Avenue SE/SE 37th Street/I-90 off-ramp	>0.01%
						TFP 243 (W/B-78)	Multi-modal trail, Mountains to Sound Greenway/132nd Avenue SE to Lakemont Boulevard	>0.01%
						TFP 246	Roadway expansion, 150th Avenue SE/south of SE 38th Street to Newport Way	>0.01%
West Tributary	1,006	460.52	46%	94.91	9%	TFP 209 (R-172)	New multi-modal arterial street, NE Spring Blvd/116th Avenue NE to 120th Avenue NE (Zone 1)	>0.05%
						TFP 210 (R-166)	Roadway expansion to 5 lanes, 124th Avenue NE/NE Spring Boulevard to Ichigo Way (NE 18th Street)	>0.01%
						TFP 213 (R-169)	Roadway expansion to five lanes, 124th Avenue NE/NE 12th Street to NE Spring Boulevard	>0.01%

Table 7-8. Streams Potentially Affected by the Proposed Alternatives (continued)

Drainage Basin	Basin Area (acres)	Existing Impervious Surface (acres)	Existing Impervious Surface (percent)	Bellevue Right-of-Way Area (acres)	Bellevue Right-of-Way Area (percent)	TFP Projects (CIP Projects)		Increase in Impervious Surface (percent)
West Tributary (continued)						TFP 217	New ramps to the east, 124th Avenue NE at SR 520	>0.05%
						TFP 218 (R-170)	Multi-modal improvements, 130th Avenue NE/NE 20th Street to NE Bel-Red Road	>0.01%
						TFP 244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
						TFP 260 (R-186)	Roadway widening and reconfiguration, 120th Avenue NE (Stage 4)/NE 16th Street and to Northup Way	>0.01%
						TFP 270	New multi-modal arterial, Spring Blvd – 124th Ave NE to 130th Ave NE (Zone 3)	>0.05%
						TFP 272	Intersection reconfiguration study, NE 12th St/116th Ave NE	>0.01%
Wilkins Creek	305	126.02	41%	43.28	14%	None		
Yarrow Creek	926	524.45	31%	139.91	8%	244 (G-103)	Off-street path, Eastside Rail Corridor multi-use path	>0.01%
						173 (W/B-81)	Bicycle lanes, 108th/112th Avenue NE/north city limit to NE 12th Street	>0.01%

Urban roadways typically produce runoff with a variety of specific pollutants related to the traffic carried on the streets and include oil, grease, road salts, and heavy metals. In addition, roadways produce thermal pollution from dark impervious surfaces that heat runoff during late spring, summer, and early autumn when radiant heat is greatest. Recent research has found that highway and dense urban street runoff is toxic to coho salmon at acute (lethal) and chronic levels. If the coho eggs and juveniles survive, common sublethal effects include developmental delays, reduced eye size, swelling around the heart, and deformed jaws and hearts (Bellevue 2016b).

Bicycle lanes and sidewalks would increase impervious surface and may increase the amount of stormwater runoff, but these surfaces do not generate the pollutant loads that roadways do; therefore, they would contribute comparably less to pollutants entering the environment. Many of the proposed projects include plans to create a vegetated median or to provide a planted strip between new sidewalks and existing roadways. Such features would provide pervious surface areas that could infiltrate stormwater, which could offset (albeit minimally) increases in impervious surfaces created by the projects.

Potential project impacts from increased stormwater runoff would be minimized through implementation of the city's Stormwater Management Program and specific standards in the Storm and Surface Water Code (BCC 24.06), which adopts the State Department of Ecology Stormwater Management Manual for Western Washington. All new facilities and expansion of existing facilities of 5,000 ft^2 are required to incorporate design features to limit the amount of runoff and minimize pollutants in the runoff (BCC 24.06.065). Ecology's Western Washington Phase II Municipal Stormwater Permit, with which the city must comply, provides that stormwater drainage basins that have been urbanized for 40 years or more need only address impacts of added impervious surface, not total impervious surface.

Before implementation of each individual project, project-level environmental analysis will identify potential impacts from the generation of additional stormwater runoff, and will identify appropriate avoidance or minimization measures in consultation with regulatory agencies. This analysis also will identify the streams and fish species that would be directly affected by the project, quantify the potential direct and indirect impacts to the species and their habitat, and assess their contribution to cumulative impacts. Specific required and recommended mitigation measures will also be identified.

The proposed projects that would potentially have direct impacts on streams or stream buffers could have direct impacts on salmonid species and other fish species. Direct impacts may be caused by changes in water temperature due to vegetation removal, changes in water quality due to stormwater runoff, and changes in sedimentation from construction and maintenance activities. The proposed projects that include new lighting could also affect fish. Construction of new sidewalks could also increase pedestrian use of an area, which could allow increased human or pet activity in or near streams, potentially increasing disturbance to species. The project-level analyses will identify potential impacts, and appropriate avoidance or minimization measures will be determined at that time in consultation with regulatory agencies. Projects affecting Type S or F streams or associated buffers must incorporate performance standards listed in BCC 20.25H.080, and under Mitigation, Section 7.3.3 (Aquatic Resources).

7.2.4.2 Fish Passage Barriers

The removal of fish passage barriers could increase the amount of habitat available in a watershed, and may help to increase productivity of the watershed. Bridges and improved culvert design may also improve habitat in the stream system by facilitating the transport of wood, water, and sediment within the system. Project-level analysis would assess the feasibility of bridging streams, and would also identify culverts that would be replaced or improved, and would identify mitigation measures necessary for culverts that are extended.

BCC 20.25H.055C.3.e requires that any new culverts be designed according to guidelines contained in the Water Crossing Design Guidelines (WDFW 2013); as noted in Section 7.1.4 above, the recently released Water Crossing Design Guidelines (Barnard 2013) will apply to design of future projects. Depending on the individual transportation project, existing culverts may be extended in length, rather than replaced; however, they would be considered a new culvert and so are subject to the guidelines if they meet the following criteria:

- There are fish present downstream,
- There is potential fish habitat upstream, and
- The benefits of so designing the culvert are substantial when compared to expanding the culvert based on its then-existing design.

In addition, new or expanded public right-of-way projects, which do not demonstrate a technically feasible alternative with less critical area impact, are prohibited from disturbing habitat used for salmonid rearing or spawning (or by any species of local importance), unless no other technically feasible location exists (BCC 20.25H.055.C.2b). Similarly, any crossings over a stream must be designed to minimize stream and stream buffer disturbance, and be the minimum width necessary to accommodate the function or objective (BCC 20.25H.055.C.2b). Minimizing aerial coverage and disturbance can reduce impacts on riparian forest habitat and the recruitment of large woody debris into streams from such habitats.

Stream channel crossings are also required to have no significant adverse impact on overall peak flows, duration, volume of flood storage capacity, or hydroperiod (BCC 20.25H.055.C.2b). Such hydraulic requirements can be met by bridging stream channels.

Typically, relocating a stream channel or closing a stream channel in a culvert or pipe is not allowed under the city's CAO. As an allowed use under BCC 20.25H.055, however, new or expanded public right-of-way projects can be allowed to relocate an open stream channel or close a channel in a culvert or pipe (BCC 20.25H.080B) by completing a critical areas report process. The critical areas report process requires projects to demonstrate that the proposal would lead to equivalent or better protection of critical area functions (for example, stream functions) than would occur under the standard application of the code (that is, if no relocation or piping were allowed).

Any stream channel modification, including in-stream structures such as culverts, would require a critical areas report to be completed. A critical areas report requires the use of best available science to identify impacts to critical areas, including cumulative impacts, and to describe both required and recommended mitigation (BCC 20.25H.250). Project-level analysis will be conducted for each TFP project in light of these requirements. Bridging and the WDFW culvert design guidelines will be applied as appropriate.

As described in Section 7.1.2, new or expanded public rights-of-way are an allowable use within critical areas under BCC 20.25H.055.B. The city will comply with the applicable land use requirements for development in critical areas that contain aquatic resources in the project area.

Potential impacts to critical areas by the proposed projects will be evaluated at the individual project level.

7.2.4.3 New Zealand Mudsnails

New Zealand mudsnails are present in Kelsey and Valley creeks, multiply quickly and disrupt the food chain, threatening native fish. Construction equipment that works in the water, for operations such as culvert installation, extension or replacement can spread snails and larvae. To address this hazard, BMPs should be implemented for construction where work in infested streams may occur including (MDNR 2013):

- Project plans or documents should identify Designated Infested Waters located in or near the project area.
- Prior to transportation along roads into or out of any worksite, or between water bodies within a project area, all equipment must be free of any aquatic plants, water, and prohibited invasive species.
- Drain all water from equipment where water may be trapped, such as tanks, pumps, hoses, silt curtains, etc.
- Remove all visible aquatic remnants (plants, seeds and animals).
- On-site or off-site treatment of equipment may be required depending on the presence of mudsnails in the water and duration of contact.

7.2.4.4 CIP Network Alternative

Projects that include bridges or new culverts may benefit fish species by removing barriers to passage. The CIP Network alternative includes three projects that cross streams or widen existing stream crossings; this will result in evaluation of whether replacement of culverts is warranted if they currently are fish passage barriers.

- **R-183 (TFP 256)** West Lake Sammamish Parkway Improvements – "North Central" segment: SE 2nd block to NE 8th block (Phase 2) shoulders, multi-purpose trail. This project crosses Wilkins Creek, which is categorized as “non-fish bearing.” The project design does not involve lengthening the existing culvert and no replacement is planned.
- **R-185 (TFP 255)** Newport Way SE/Somerset Blvd SE to 150th Avenue SE: multi-use path, bike lane, turn lanes. This project crosses an upstream segment of Sunset Creek that is categorized as “potentially fish-bearing.” The project design does not involve lengthening the existing the culvert and no replacement is planned.
- **R-191 (TFP-265)** 124th Avenue NE/Ichigo Way (NE 18th Street) to Northup Way: Improve street with added travel lanes, non-motorized facilities, urban design features. This project crosses the West Tributary, which is categorized as a “fish-bearing” stream. This project will remove an

existing, substandard culvert and replace with a new crossing that provides for passage of fish and small animals.

Fewer projects are included in the CIP Network alternative; therefore, there would be less impact on aquatic resources resulting from increased impervious surface, as compared to the TFP Network alternative.

Since all CIP projects are also in the TFP, specific impacts are identified in the discussion of TFP projects below.

7.2.4.5 TFP Network Alternative

A larger number of streams could potentially be affected by the proposed projects included in the TFP Network alternative compared to those included in the CIP Network. These projects are listed in Table 7-8 and involve the range of impacts on aquatic resources discussed above.

The TFP Network alternative would result in more new impervious surface area than there is today, and more than with the CIP Network alternative, because this alternative includes more projects proposing improvements that require new impervious surface.

Projects that include bridges or new culverts may benefit fish species by removing barriers to passage. The TFP Network alternative includes three projects that cross streams or widen existing stream crossings; this will result in evaluation of whether replacement of culverts are warranted if they currently are fish passage barriers.

- **TFP 257** West Lake Sammamish Parkway/"South Central" & "Central" segment (Phases 3 & 4): shoulders, multi-purpose trail. Project area includes Phantom Creek, which is categorized as "fish-bearing" and several small, unnamed creeks that are categorized as "non-fish-bearing."
- **TFP-260** 120th Ave NE/NE 16th St to Northup Way – conduct an alignment study, expand roadway to a 4-lane section, with sidewalks and a bike path on the west side. This segment of roadway includes a crossing of the West Tributary, which is categorized as "fish-bearing."
- **TFP-270** Spring Boulevard/124th Ave NE to 130th Ave NE – new roadway link in the BelRed area. Project area include a crossing of the West Tributary, which is categorized as "fish-bearing."

Projects TFP-266/CIP-W/B-83 and TFP-243 involve bicycle facilities (Mountain to Sound Greenway Trail) adjacent to I-90 cross multiple streams with fish barriers associated with the interstate highway stream crossings. These barriers are not affected by the trail construction (which either crosses streams currently enclosed or proposes bridges to cross open streams). Fish barriers caused by I-90 are addressed by the WSDOT Fish Passage program in coordination with the WDFW (WSDOT 2018c).

7.2.5 Wildlife and Vegetation

Vegetation in Bellevue that may be affected by the proposed projects includes wetland vegetation, vegetated stream and wetland buffers, open space in parks and steep slope areas. Introduced sidewalk trees, landscaping, and right-of-way vegetation are discussed in Chapter 6, Land Use. Wetland, stream,

and buffer impacts for each project are discussed above in the Wetlands and Aquatic Resources impact discussions.

Vegetation removal would result in the loss of habitat for wildlife species in Bellevue. Where vegetated medians and planting strips between new sidewalks and existing roads are provided, some replacement habitat would be created, limited to very mobile species such as flying insects and birds. Several of the projects would, however, result in the loss of large residual trees such as Douglas fir and western red cedar, and it is unlikely that these would be replaced due to their size when mature. These native species that attain a large size are important habitat for a variety of species, including bald eagles that often use them as nesting trees.

Loss and fragmentation of habitat is not expected to be substantially affected by TFP projects because they largely occur on existing roadway corridors and in areas of generally urban character where limited habitat is available. In most cases, widening of streets or intersections or construction of bicycle facilities will not substantially add barriers to wildlife movement. One project that could fragment habitat is TFP-270, a new segment of Spring Boulevard from 124th Ave NE to 130th Ave NE in the BelRed area. Projects including bridges or new culverts that benefit fish species by removing barriers to passage (discussed above) also may allow passage of small mammals, reptiles, and invertebrates. Improved culvert design may also improve habitat in the stream system by facilitating the transport of wood, water, and sediment within the system. The projects that could include the construction of new bridges or culverts are discussed above in the Aquatic Resources impact section.

Removal of large trees, particularly conifers, would reduce the amount of habitat available for pileated woodpecker and would further fragment existing habitat. Removal of large conifers may affect other cavity-nesting birds as well, reducing the amount of available habitat.

Impacts on the peregrine falcon are not expected because the existing aerie is located on a building ledge in Downtown Bellevue. It is therefore assumed that the peregrine falcons associated with it are accustomed to noise and activity from construction activities.

A project-level analysis would also determine the presence or potential presence of other species of local importance within areas that would be affected by the proposed projects; appropriate avoidance or minimization measures would be determined at that time.

As described in Section 7.1 above, new or expanded public rights-of-way are an allowable use within critical areas under BCC 20.25H.055.B. The city will comply with the applicable land use requirements for development in critical areas that could affect wildlife and vegetation in the project area.

7.2.5.1 CIP Network Alternative

Bald eagle and osprey may perch and forage in the vicinity of projects adjacent to Mercer Slough and may be affected by R-184 (TFP-242) Bellevue Way HOV lane. Great Blue Heron also may be present in the Mercer Slough vicinity. Projects that may have similar projects near Lake Sammamish and Lake Washington include R-183 (TFP-256) Lake Sammamish Parkway), and G-103 (TFP-244) Eastside Rail Corridor multi-use path runs along the east side of Mercer Slough.

These resources, however, are not likely to be adversely affected, provided that construction avoid nesting areas during peak construction noise periods. Additional potential impacts of projects may be identified during project-level review.

There are no CIP Network alternative projects that encroach on large patches of undeveloped wildlife habitat in the city. Additional potential impacts may be identified during project-level review.

7.2.5.2 TFP Network Alternative

Peregrine falcon, a WDFW priority species, is found in Downtown Bellevue, in the vicinity of several TFP Network projects; however, the birds that nest and perch there are accustomed to a variety of human activities and noise and would not likely to be affected by construction projects or additional traffic related noise.

Bald eagle and osprey may perch and forage in the vicinity of projects adjacent to Mercer Slough and may be affected by additional projects not in the CIP including TFP-268 Bellevue Way HOV lane); on Lake Sammamish projects TFP– 257 and 267 Lake Sammamish Parkway. These resources are not likely to be adversely affected provided that construction avoids nesting areas during peak construction noise periods.

As indicated in Table 7-7, 10 of the TFP Network alternative projects potentially affect wildlife or vegetation resources. Project TFP-251 (off-street path on Coal Creek Parkway from 124th Avenue SE to the southern city limits) passes through one of the large areas of relatively undisturbed vegetation in the city. Additional potential impacts of projects may be identified during project-level review.

7.2.6 Floodplains

This section discusses the potential impacts on floodplains mapped in Special Flood Hazard through Flood Insurance Rate Maps.

As described in Section 7.1 above, new or expanded public rights-of-way are an allowable use in critical areas under BCC 20.25H.055.B. The city will comply with the applicable land use requirements for development in critical areas.

7.2.6.1 CIP Network Alternative

The CIP Network alternative projects that may have potential wetland impacts near mapped floodplains:

- **CIP W/B-82 (TFP-158)** SE 16th Street/148th Avenue SE to 156th Avenue SE; bicycle path is near floodplains within Lake Hills Greenbelt to the east of the project.
- **CIP R-186 (TFP-260)** 120th Avenue NE (Stage 4)/NE 16th Street and to Northup Way; roadway widening and reconfiguration crosses the North Fork which may have undesignated floodplains subject to identification at the project phase.
- **CIP R-166 (TFP-210)** 124th Avenue NE/NE Spring Boulevard to Ichigo Way (NE 18th Street); roadway expansion to five lanes crosses the North Fork which may have undesignated floodplains subject to identification at the project phase.

- **CIP R-184 (TFP-242)** Bellevue Way HOV lane/107th Ave SE Segment A: Park & Ride to Winters House is adjacent to the Mercer Slough wetland complex with an extensive floodplain.
- **CIP G-103 (TFP-244)** Off-street path, Eastside Rail Corridor multi-use path crosses Coal Creek and Kelsey Creek, both of which have floodplains.

Additional smaller floodplains may be identified and evaluated at the individual project level.

7.2.6.2 TFP Network Alternative

TFP Network alternative projects not included in the CIP that may have potential wetland impacts near mapped floodplains with potential proximity or runoff issues include the following:

- **TFP-270** Spring Blvd – 124th Ave NE to 130th Ave NE (zone 3); new multi-modal arterial is crossing the West Tributary which may have undesignated floodplains subject to identification at the project phase.
- **TFP-263** 148th Avenue NE/NE 8th Street; intersection expansion is adjacent to floodplains to the east.

Projects in the vicinity of probable unmapped riparian wetlands along stream courses include the following:

- **TFP 251** Coal Creek Parkway/124th Avenue SE to the southern city limits; off-street path is adjacent to Coal Creek and may encroach on the floodplain, particularly at crossings.

The extent of onsite floodplains affected, as well as effects on BFE and floodplain ecological values, would be assessed during project-level environmental review for each of the proposed projects.

7.2.7 Shorelines

One project appears to be within jurisdiction of the Shoreline Management Act, which covers the shoreline of Lake Washington (including Mercer Slough upstream to I-405), Lake Sammamish, Lower Kelsey Creek, and Phantom Lake. A small portion of TFP-267 West Lake Sammamish Parkway/"North" segment (Phase 5) involves widening for shoulders, and a multi-purpose trail is within 200 feet of Lake Sammamish. Because of intervening single family lots between the road and Lake Sammamish, it is unlikely that it will directly affect the shoreline. A portion of TFP 242 and TFP 268 (Bellevue Way HOV lane) is adjacent to the Mercer Slough, but is likely outside of shoreline jurisdiction, which extends to the edge of associated wetlands. This project is on the opposite side of the street from Mercer Slough and is separated from the resource by both the roadway and the Sound Transit light rail line under construction. (Sound Transit 2011)

7.2.7.1 CIP Network Alternative

A project-level analysis will be conducted to determine impacts on shorelines and whether a conditional use permit would be required for the proposed activity.

7.2.7.2 TFP Network Alternative

A project-level analysis will be conducted on individual projects to determine whether and how shorelines would be affected and what regulations would apply, if any.

7.3 Mitigation

Where unavoidable impacts to critical areas are identified in association with a project, mitigation is required in accordance with BCC 20.25H.210 through 20.25H.225. More detailed mitigation will be identified at the project implementation level. Priorities for mitigation are specified for Critical Areas in LUC 20.25H.215. with the first priority to avoid the impact, if possible, by not constructing the project. The second priority is to minimize impacts by limiting the degree or magnitude of the project or using other measures to reduce the impact; or to perform the following mitigation activities:

- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action'
- Compensating for the impact by replacing, enhancing, or providing substitute resources or environments; and
- Monitoring and taking remedial action as needed.

If unavoidable impacts are identified, a mitigation and restoration plan must be prepared. This plan must identify plan phases; provide the mitigation and restoration plan details; provide the timing of the work; and include a monitoring program, contingency plan, and assurance devices. Temporary impacts must also be mitigated, but a mitigation and restoration plan may not be required.

Any necessary project mitigation will be in accordance with the city's Environmental Best Management Practices & Design Standards (Bellevue 2012b).

If an adverse impact is anticipated from one of the TFP projects included in either of the proposed alternatives, one or more of the mitigation measures described below could be implemented.

7.3.1 Geology and Soils

Site-specific earth resource impacts will be evaluated and mitigated through the environmental review process for individual projects. It is assumed that all road improvements proposed will conform to city policies and regulations, particularly in accordance with BCC 20.25H.125 (Critical Areas, Performance standards for landslide hazards and steep slopes). Roadway development in areas of potentially unstable slopes would be mitigated to ensure stability and safety during and after construction. As part of project-specific design and review, alternative alignments within the same basic corridors that reduce disturbance to critical areas would be examined.

7.3.2 Wetlands

If a project results in impacts on wetlands, performance standards described in BCC 20.25H.100 would be implemented. Performance standards applicable to transportation projects within wetland areas include the following:

- Directing lights away from wetlands;
- Routing toxic runoff away from wetlands;
- Potentially allowing treated runoff to enter the wetland buffer;
- Planting the outside edge of buffers with dense vegetation to limit pet or human use; and
- Applying pesticides, insecticides, and fertilizers within 150 feet of the edge of the buffer in accordance with the city's Environmental Best Management Practices & Design Standards (Bellevue 2012b).

Direct impacts on wetlands would be mitigated according to BCC 20.25H.105, with mitigation selected in the following order of preference:

1. Restore wetlands on upland sites that were formerly wetlands.
2. Create wetlands on disturbed upland sites, such as those supporting primarily nonnative vegetation, in areas where existing hydrology would support a wetland.
3. Enhance significantly degraded wetlands.

Direct impacts on wetland buffers would be mitigated in the following order of preference:

1. On-site, through replacement of lost critical area buffer;
2. On-site, through enhancement of the functions and values of remaining critical area buffer;
3. Off-site, through replacement or enhancement, in the same sub-drainage basin; or
4. Off-site, through replacement or enhancement, out of the sub-basin drainage basin but in the same drainage basin.

Table 7-9 shows the mitigation ratios for wetlands that would be directly affected. These ratios may be increased if the proposed mitigation would result in a lower category of wetland or reduced functions compared to the affected wetland.

Table 7-9. Wetland Mitigation Ratios

Wetland Category	Acreage Affected	Replacement Acreage
Category I	1	6
Category II	1	3
Category III	1	2
Category IV	1	1.5

Source: BCC 20.25H.105.C.1.

7.3.3 Aquatic Resources

If a project affects aquatic resources, performance standards described in BCC 20.25H.080 would be implemented on sites with a Type S or F stream or associated buffer. Performance standards applicable to transportation projects include the following:

- Directing lights away from streams;
- Routing toxic runoff from new impervious areas away from streams;
- Allowing treated water to enter the critical area buffer of streams;
- Planting the outer edge of the stream critical area buffer with dense vegetation to limit pet or human use; and
- Applying pesticides, insecticides, and fertilizers within 150 feet of the edge of the stream critical area buffer in accordance with the city's Environmental Best Management Practices & Design Standards (Bellevue 2012c), as currently published or hereafter amended (Ordinance 5680).

Direct impacts on streams must be mitigated, and a mitigation plan is required. Direct impacts on streams or associated buffers would be mitigated in the following order of preference, as required by BCC 20.25H.085:

- On-site, through replacement of lost critical area buffer;
- On-site, through enhancement of the functions and values of remaining critical area buffer;
- Off-site, through replacement or enhancement, in the same sub-drainage basin; or
- Off-site, through replacement or enhancement, out of the sub-basin drainage basin but in the same drainage basin.

The required replacement ratio of streams and stream buffers is one-to-one (1:1); however, the city may increase the ratio at its discretion.

Project-specific mitigation measures will be developed during individual project-level analysis. Depending on project impacts, fish habitat restoration may be included in mitigation plans. Examples of habitat restoration projects include enhancement or creation of pools and side channel habitat, installation of large woody debris, and wetland enhancement projects.

7.3.4 Wildlife and Vegetation

A project-level analysis would also be conducted to determine the presence or potential presence of other species of local importance within areas that would be affected by the proposed projects; appropriate avoidance or minimization measures would be determined at that time. The potential presence would be determined by the presence of potentially suitable habitat for these species, even if the species itself is not documented. If it is found that a species of local importance, or potentially suitable habitat for a species of local importance, is present in a project area, performance standards described in BCC 20.25H.160 would be implemented. If performance standards cannot be met due to infeasibility, mitigation measures would be implemented, as described in BCC 20.25H.210 through 20.25H.225. This would require the development of a wildlife management plan in consultation with WDFW.

A habitat assessment consisting of an investigation of the site to evaluate the potential presence or absence of designated species of local importance or habitat for species of local importance would also be required. A habitat assessment includes preparation of a critical areas report assessing habitat for species of local importance, including the following site- and proposal-related information at a minimum:

- A detailed description of vegetation on and adjacent to the site;
- Identification of any species of local importance that has a primary association with habitat on or adjacent to the site, and assessment of potential project impacts on the use of the site by the species;
- A discussion of any federal, state, or local special management recommendations, including WDFW habitat management recommendations, that have been developed for species or habitats located on or adjacent to the site;
- A detailed discussion of the direct and indirect potential impacts on habitat by the project, including potential impacts on water quality;
- A discussion of measures, including avoidance, minimization, and mitigation, proposed to preserve existing habitats and restore any habitat that was degraded prior to the current proposed use or activity, and to be conducted in accordance with the mitigation sequence set forth in BCC 20.25H.215; and
- A discussion of ongoing management practices that will protect habitat after the site has been developed, including proposed monitoring and maintenance programs (Ordinance 5680).

Additional species may be added to the list of species of local importance prior to project-level analysis for individual TFP projects. Habitat assessments prepared for individual projects will use the most current list available in BCC 20.25H for analysis purposes.

7.3.5 Floodplains

If a project results in allowable development within a floodplain, the city will implement performance standards described in BCC 20.25H.180. If mitigation is required, it will comply with the requirements in BCC 20.25H.220, which could include a mitigation and restoration plan as part of the project's permit or approval process. Mitigation of floodplain impacts would require a detailed project-level analysis to determine the risk both to roadway structures and upstream and downstream flooding.

Measures commonly employed include:

- Measures to prevent displacement of flood storage, which may include compensatory storage elsewhere; and
- Measures to protect the road or structure from damage during flood events, particularly if the facility provides access to emergency facilities such as hospitals.

Project-specific mitigation measures will be developed during individual project-level analysis.

7.3.6 Shorelines

Adverse impacts on areas under the jurisdiction of the Shoreline Management Act, if they occur, would be mitigated in accordance with BCC 20.25H.118. Direct impacts on shorelines and shoreline critical area buffers would be mitigated in the following order of preference:

- On-site, through replacement of lost critical area buffer;
- On-site, through enhancement of the functions and values of the remaining critical area buffer;
- Off-site, through replacement or enhancement, in the same sub-drainage basin; or
- Off-site, through replacement or enhancement, out of the sub-basin drainage basin but in the same drainage basin.

Mitigation off-site and out of the drainage basin will be permitted only through a critical-areas report. Shoreline critical area buffers that are disturbed or affected would be replaced at a ratio of one-to-one (1:1).

7.4 Significant Unavoidable Adverse Impacts

Significant adverse impacts would be avoided or minimized through implementation of mitigation measures as described in Section 7.3. Although the proposed projects would be designed to minimize or avoid adverse impacts, it is possible that all impacts cannot be mitigated and unavoidable adverse impacts may occur. This is particularly likely for cumulative impacts where small impacts are not significant individually but add up to substantial impacts when combined. The proposed projects generally would increase pollution-generating impervious surfaces within Bellevue and would reduce the amount of vegetative cover available. Stormwater would be treated as required, and current BMPs would be employed to reduce volumes of stormwater runoff from reaching streams or rivers; however, the increase in impervious surface would likely result in an increase in stormwater volumes entering streams and rivers and could result in a corresponding increase in bank erosion from longer duration flows and associated pollutants.

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Chapter 9. Distribution List

A notice of availability or a copy of the Draft EIS was sent to the following agencies and organizations. A notice of availability was also published in the city's Weekly Permit Bulletin. The Bulletin is posted on the city website at: http://www.bellevuewa.gov/weekly_permit_bulletin.htm. An alert email is sent to those who sign up for the alert service when a new Bulletin is posted, and the city mails hard copies of the Bulletin to anyone who requests to be on the city's permit mailing list.

Federal Agencies

U.S. Environmental Protection Agency, Region 10
Federal Highway Administration, Washington Division
U.S. Department of Housing and Urban Development, Region 10

Tribal, State, and Regional Agencies

Muckleshoot Indian Tribe/Fisheries Department
Suquamish Tribe
Snoqualmie Nation
The Tulalip Tribes
Washington State Department of Commerce
Washington State Department of Ecology
Washington State Department of Fish and Wildlife
Washington State Department of Social and Health Services
Washington State Department of Transportation
Puget Sound Clean Air Agency
Puget Sound Partnership
Sound Transit
Puget Sound Regional Council

County Agencies

King County Department of Development and Environmental Services
Office of the King County Executive
King County Department of Transportation
King County Department of Transportation, Metro Transit Division

Cities and Towns

City of Issaquah
City of Kirkland, Planning Department
City of Medina
City of Mercer Island
City of Newcastle
City of Redmond, Planning Department
City of Renton
Town of Clyde Hill
Town of Hunts Point
Town of Yarrow Point
Beaux Arts Village

Libraries and School Districts

Bellevue Regional Library, Main Branch
Lake Hills Library
Newport Way Library
Seattle Public Library, Documents Unit
University of Washington College of Architecture and Urban Planning Library
Bellevue School District
Issaquah School District

City Associations

Bellevue Chamber of Commerce
Bellevue Downtown Association
East Bellevue Community Council
Seattle Chamber of Commerce

Utilities

Puget Sound Energy

Media

Daily Journal of Commerce
Seattle Times
Seattle Post Intelligencer
Bellevue Reporter

Other Parties (Commenters on 2013-2024 TFP EIS)

Kemper Development Company
Wright Runstad & Company

Appendix A

Scoping Determination

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City of Bellevue Transportation Facilities Plan
Supplemental Environmental Impact Statement
Scoping Determination

The adoption of the 2019 to 2030 Transportation Facilities Plan (TFP) is classified under SEPA as a nonproject action. It is being prepared in accordance with the State Environmental Policy Act (SEPA) Chapter 197-11 of the *Washington Administrative Code* (WAC), the SEPA Rules.

Provisions governing the preparation of a Supplemental Environmental Impact Statement (SEIS) are found in WAC 197-11-600, When to use existing environmental documents.

WAC 197-11-600(3)(d) for preparation of a SEIS when there are:

(i) Substantial changes so that the proposal is likely to have significant adverse environmental impacts; or

(ii) New information indicating a proposal's probable significant adverse environmental impacts.

WAC 197-11-600(3) (e) If a proposal is substantially similar to one covered in an existing EIS, that EIS may be adopted; additional information may be provided in an addendum or SEIS

Pursuant to WAC 197-11-620(1) the scoping process in WAC 197-11-408 is not required, however the city, as lead agency, still has the responsibility to "narrow the scope of every EIS to the probable significant adverse impacts and reasonable alternatives, including mitigation measures."

Alternatives: WAC 197-11-440 (5) requires discussion of alternatives, including the proposed action.

(a) This section of the EIS describes and presents the proposal (or preferred alternative, if one or more exists) and alternative courses of action.
(b) Reasonable alternatives shall include actions that could feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation.
  (i) The word "reasonable" is intended to limit the number and range of alternatives, as well as the amount of detailed analysis for each alternative.
  (ii) The "no-action" alternative shall be evaluated and compared to other alternatives.
  (iii) Reasonable alternatives may be those over which an agency with jurisdiction has authority to control impacts either directly, or indirectly through requirement of mitigation measures.

Proposed Action: In this case, the "Proposed Action" is adoption of the 2019 to 2030 TFP, which is the project list endorsed by the City Council at its July 9, 2018 study session to carry forward into the SEPA analysis process. The TFP project list was developed by city staff and the Bellevue Transportation Commission and recommended by the Commission to the City Council for advancing to the environmental analysis phase, in accordance with provisions of SEPA. The development of the TFP project list was informed by scoring and ranking projects according to criteria developed by staff and the Commission and by public input, solicited via a series of public open houses held at three locations in late March 2018, along with an online survey available from March 16 to April 16, 2018. A report on Public Outreach and Public Comments was completed and presented to the Transportation Commission, which continued deliberations until making a recommendation to the City Council. The TFP project list consists

of 51 specific projects, including those that add capacity to the circulation system as well as non-motorized and multi-modal projects.

No-Action Alternative: The No-Action Alternative is not adopting the 2019 to 2030 TFP and instead relying on a transportation network that consists of the adopted 2019 to 2025 Capital Improvement Program.

A No Action Alternative consisting of the current transportation network with 2030 growth was not considered a "reasonable alternative" for several reasons:

- The city does not realistically have the option to not adopt the 2019-2025 CIP. Adoption of a 6-Year Transportation Program is mandated for every city by RCW 35.77.010 and is required by the Growth Management Act to adopt a transportation element as a required element of a comprehensive plan by RCW 36.70A.070(6).
- The city receives a portion of statewide fuel taxes and is mandated to spend that revenue on transportation projects by RCW 46.68.090. It is not realistic to project that the city would not expend those revenues on transportation improvement projects; therefore, it is not realistic to project no improvements in the transportation system by 2030.
- It would be inconsistent both with the powers granted to a city by the Washington State Constitution Article 11 and the legislative enactment of provisions for city governance in RCW 35 for the city not to make investments in transportation improvement, given the mandate to serve the public interest of its citizens.

Other Reasonable Alternatives: Other reasonable alternatives must meet the criteria of WAC 197-11-440 (5)(b) that they could "feasibly attain or approximate a proposal's objectives, but at a lower environmental cost or decreased level of environmental degradation." Given the fiscal constraints of the city, adding projects beyond the budget capacity of the city would not be reasonable, even if they could improve operation of the transportation system. A variety of alternative investment strategies could be pursued; however, in the public involvement process, Transportation Commission deliberations, and City Council deliberations, no alternative investment strategy was shown to better attain the objectives of the proposed TFP. There are no specific environmental impacts identified as a result of analysis in this Draft SEIS that have demonstrated that deleting a specific project would materially lower the environmental consequences.

Elements of the Environment: WAC 197-11-444, Elements of the environment, defines the subject matter of an environmental review under SEPA.

The rationale for inclusion and exclusion of specific elements is provided below. An EIS is mandated by WAC 197-11-440(6)(a) to describe the existing environment that will be affected by the proposal, analyze significant impacts of alternatives including the proposed action, and discuss reasonable mitigation measures that would significantly mitigate these impacts. Elements of the environment that are not significantly affected need not be discussed.

WAC 197-11-440(6)(b)(ii) provides that "the responsible official shall have the flexibility to organize this section in any manner useful to decision makers and the public." Thus, the EIS focuses on categories of impacts that make sense for this nonproject EIS, with categories and subcategories that depart from the

listing of Elements of the Environment in WAC 197-11-444. These are also more useful to decision makers and the public.

Natural Environment: The elements of the environment (including earth, air, water, plants and animals, and natural resources, including scenic resources) are discussed in this SEIS. As provided in WAC 197-11-444(3), to simplify the EIS format, reduce paperwork and duplication, improve readability, and focus on the significant issues, some or all of the elements of the environment are combined. Further, as provided for a Non-Project EIS in WAC 197-11-442, the lead agency has more flexibility in preparing EISs on nonproject proposals, because there is normally less detailed information available on their environmental impacts and on any subsequent project proposals. Impacts are discussed in the level of detail appropriate to the scope of the nonproject proposal.

Earth: This section discusses the potential impacts related to geology and soils that might result from implementation of the alternatives. Such impacts could include erosion and landslides in steep slope areas, liquefaction of soils due to earthquakes, and settlement of soils.

Water: This section addresses impacts on water and aquatic species including the increase in impervious surface and resulting increased stormwater runoff, impairment of fish habitat due to alterations in hydrology, sediment quality and dynamics, or pollutant loads and fish passage barriers.

Wetlands: This section discusses the potential impacts on wetlands that may result in the direct filling or reduction of the area of the buffer and impacts on functions of maintaining hydrology, removing sediments and pollutants, maintaining the microclimate; maintaining habitat critical to wetland dependent populations, and reducing the effects of adjacent human use.

Plants and Animals: This section discusses terrestrial vegetation and wildlife habitat and impacts that would result in the loss of habitat for wildlife species in Bellevue including loss and fragmentation of habitat.

Air: This section discusses air quality standards and climate change from greenhouse gas and assesses the contribution of Bellevue traffic to regional air quality trends.

Elements excluded from discussion because they are not likely to be significantly affected include public water supply and source availability of energy.

Built Environment: The elements of the environment discussed include environmental health/noise, land and shoreline use, housing (as an element of land use), light and glare (as an element of aesthetics), and transportation.

Noise: This section addresses potential noise impacts from construction and from traffic utilizing the roadway system.

Land Use and Aesthetics: This section provides an integrated analysis of potential contributions that transportation projects may make to changes in land use patterns, displacement of land uses, and aesthetic impacts on the existing visual character of an area. Included are impacts on parking, housing, historic resources, and recreation.

Transportation: This section analyzes the performance of the vehicular circulation network in terms of mobility standards for intersection and roadway operations, neighborhood conditions, traffic safety, travel alternatives, and the pedestrian and bicycle network.

Elements excluded from discussion because they are not likely to be significantly affected, or that are not readily assessed in a non-project EIS include risk of explosion, toxic or hazardous materials, agricultural crops, public services and utilities.

Appendix B

Completed or Deleted Projects from the Previous 2013-2014 and 2016–2027 Transportation Facilities Plan

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Tables B-1 and B-2 summarize the projects that were included in the previous 2013-2024 and/or 2016-2027 TFP but are not included in the CIP Network alternative nor the 2019-2030 TFP Network alternative. Table B-1 lists projects that have been completed since the adoption of the 2013-2024 TFP. Table B-2 lists projects that were not completed but are not proposed for inclusion in the 2019-2030 TFP Network.

Table B-1. Completed 2013-2024 & 2016-2027 TFP Projects

TFP #	CIP #	Project Name/Location
078	R-141	West Lake Sammamish Parkway/north city limit to I-90. Partially completed: segment SE 34th St to I-90 complete. Remaining elements included in 2019-2030 TFP as projects TFP-256, TFP-257, TFP-267.
079	R-146	Northup Way/NE 33rd Pl to NE 24th St and NE 24th St to the SR520 Regional Trail.
192	I-92	Lakemont Blvd (Phase 1)/Cougar Mtn Way to Lewis Creek Park and 164th Ave SE to 171st Ave SE. – Partially complete. Remaining element is the pedestrian segment on the eastside of Lakemont Blvd from SE 62nd to Lewis Creek Park.
207	R-160	NE 4th St Extension/116th Ave NE to 120th Ave NE.
208	R-164	120th Ave NE (Stage 2)/south of NE 8th St to NE 12th St.
240	R-161	120th Ave NE Improvements (Stage 1)/south of NE 4th Street to south of NE 8th Street
241	R-168	120th Avenue NE (Stage 3)/NE 12th to NE 16th Streets
258	M-20	164th Avenue SE/Lakemont Blvd signalized intersection

Table B-2. Deleted 2013-2024 & 2016-2027 TFP Projects

TFP #	CIP #	Project Name/Location
103		129th Place SE/SE 38th St to Newport Way
248	R-171	134th Avenue NE/NE 20th Street to NE Spring Blvd
261	R-261	NE Spring Boulevard & 136th Place NE - 132nd Avenue to NE 20th Street
262		Bellevue Way NE/NE 12th Street to the north city limits at SR-520
264		143rd Place NE/NE 20th Street to Bel-Red Road/NE 20th Place signal

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Appendix C

Transportation System Impact Analysis Methodology

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This appendix supports Chapter 3, Transportation, and contains background on existing conditions and the results of the transportation system analysis.

Background on the Analysis

The analysis of transportation system impacts includes the following considerations pertaining to each of the alternatives:

- Changes in arterial traffic volumes
- Changes in intersection operating conditions
- Use of high occupancy vehicles.

The analysis of impacts is based on a comparison of conditions expected in 2030 with and without the different sets of transportation improvements included in the Transportation Facilities Plan (TFP) alternatives. Rather than predicting future conditions, the analysis compares the differences in impacts between the two alternatives. This analysis recognizes that the context in which future impacts occur will be defined by a combination of three factors: economic development, investment in infrastructure, and transportation operating conditions.

Economic development in the region and within Bellevue will generate trip demand, that is, the type and number of trips using the transportation system. Economic development is represented in the transportation model by land use projections. The projections include residential dwelling units – where people live – and industrial, office, and commercial land uses – where people work. Commercial and service uses are also used to determine the destinations for other types of trips. All together, these projections are used in the transportation model to estimate the trip demand between these various locations of economic activity. The model produces trip tables that project the destinations for trips of various types, such as home-to-work trips, home-to-service trips (such as shopping), and non-home-based trips, such as trips from one business to another.

Investment in infrastructure includes the planned and committed investments in transportation improvements by the city, the State Department of Transportation and other entities. It also includes investments in transit and programs to encourage alternatives to the automobile. Together, these investments provide the circulation system on which trips are made.

Transportation operating conditions are commonly measured by level of service (LOS). This is a measure of performance of the transportation system based on driver perceptions of acceptable delay. LOS standards have been adopted by various agencies and jurisdictions to measure the adequacy of transportation system operations. The standards for levels of service adopted by the City of Bellevue in its Comprehensive Plan and *Traffic Standards Code* are expressed in terms of volume (of traffic) to capacity (of the roadway) ratios. Using volume/capacity (V/C) ratios allows measuring the extent to which a facility is operating close to its theoretical capacity. This EIS presents V/C ratios following the process set out in the Highway Capacity Manual and described below.

These three factors are closely interrelated. The decision to maintain a given level of service may affect economic development, as severe traffic congestion can suppress economic development. The cost of development and economic returns enjoyed may also be affected by regulations to restrict growth in

congested areas or increase the cost of development through transportation impact fees. For this analysis, economic conditions have been held constant among the alternatives so that the results could reflect the extent to which differences in the circulation system affect future operating conditions.

Travel Demand Model

The City of Bellevue uses a standard 4-step travel demand model. The model is known as the Bellevue-Kirkland-Redmond (BKR) Travel Demand Model and is maintained under terms of an inter-local agreement between those three cities. The BKR model includes land use projections from the Puget Sound Regional Council (PSRC) for King, Snohomish, Pierce and Kitsap counties, but the focus of the model is King County in general and specifically the three cities. The base year model used for development of the 2030 horizon year forecasts was developed and validated to match 2017 traffic counts.

The first step in forecasting travel demand is the identification of land use information for transportation analysis zones (TAZs) in the study area. A table with Bellevue's land uses by TAZ can be found in Appendix D. The land use information for each TAZ is translated from square feet of office, commercial, residential and other land uses to trips, using different trip generation rates for each type of land use. Some are generated as trips produced by the land use and others as trips that the land use will attract.

The next step in transportation modeling is to link trips generated between productions and attractions. This is done using a gravity model that has been calibrated with survey data on how far people travel for work, shopping, school, etc. The survey information comes from the PSRC and U.S. census data.

The model then evaluates how many trips are made by each motorized travel mode (single-occupant vehicle, carpool, transit, etc.) between each pair of transportation analysis zones in the study area. Person trips are attributed to a particular mode for each trip based on a variety of factors including convenience, cost, travel time, household income, number of autos available, etc. At this time the BKR model does not represent trips made by walk or bike modes due to a lack of robust and consistent data sources on these modes.

PSRC's survey data also provide information about the proportions of daily trips made during peak periods and the balance of the day, for different trip purposes, direction and travel modes. These data are used to construct peak-hour vehicle and transit trip tables. The traffic model is then used to determine route choices for trips made between zone pairs. This procedure considers roadway speeds and delay due to congestion on each section of roadway. It also represents how transit is accessed and each element of the transit trip is represented. These steps cycle back and iterate until they are balanced to a standard whereby supply and demand converge.

At this point, the base year model results are compared to actual counts to test the model accuracy. This is done by comparing the total model volume and actual counts crossing an imaginary line, or 'screenline'. The model and observed volumes should closely match at the screenline level. The BKR model has an overall correlation (commonly referred to as R^2 in statistic term) between counts and model volumes of 0.91, with 1.00 being perfect correlation. A R^2 value above 0.9 is considered as good and acceptable in the modeling community. At this point the volume capacity V/C ratio can be measured for reference to city standards.

Upon validation that the base year model properly replicates travel in current conditions it is then deemed reasonable to use it for future horizon year forecasts. For this TFP the 2030 model platform was built to evaluate the improvements called for in the 12-year cycle. The early evaluations of projects were done on this new 2030 model. During this final step, intersection turn movement volumes are prepared using a 'post-processing' technique. At the time of final analysis, 2017 traffic counts and land use were available. These values were then used to develop the final refined intersection turn volumes upon which the LOS calculations are based. Current year model turn forecasts are compared to observed turn movement counts, and the difference between the two is defined as 'calibration error'. These values are then used in a mathematically rigorous process to adjust future-year model forecast volumes in a manner to account for model error.

Land Use Projections

City of Bellevue projections of future commercial and residential development begin with the regional economic forecasts of jobs and population developed by the PSRC (Puget Sound Regional Council, the region's metropolitan planning organization). PSRC allocates forecasted jobs and population to forecast analysis zones (FAZs) throughout the region. Job and population forecasts for each FAZ are then distributed by the city into smaller transportation analysis zones (TAZs) that are used for modeling purposes. (For example: Downtown Bellevue is one PSRC FAZ, but 43 TAZs as defined by the City of Bellevue.) These distributions are based primarily on development opportunities and growth trends. Parcels that are currently vacant are projected to have the highest potential for future development, followed by properties in which the difference between the current intensity of development and future potential intensity is the greatest. This procedure provides a reasonable basis for projecting the location of future development trends, but will not exactly match future development decisions made by specific property owners and developers. Land use projections are not necessarily equal to the total capacity for development within an area, but instead they forecast the amount of development that will likely occur within an area by a given horizon year. [2]

The land use projections used in this EIS are for the year 2030. The 2030 land use projections are applied to both the CIP Network alternative and the TFP Network alternative. Refer to Table C-1 for 2017 (existing) and Table C-2 (projected 2030) for land use by major category for each Mobility Management Area. Table C-3 summarizes the projected change in land use in each Mobility Management Area between 2017 and 2030. See Figure C-1 for a map of Mobility Management Areas.

[2] Land use projections by TAZ are found in Appendix D. The Bellevue 2030 land use projections are scaled from the PSRC projections for 2035 land use. Generally, the rate of growth is assumed to be linear, with the 2030 value being an intercept on the 2035 value. However, projected office development in Downtown is front-loaded to 2030 (the full 2035 level of office development is included in the 2030 projection), to reflect the level of current development interest. Projections outside Bellevue are also based on PSRC projections, with additional detail provided by the staffs of Kirkland and Redmond. Per input from Redmond staff, the projected growth values used for the Redmond Overlake area exceed PSRC projections.

Table C-1. Land Use by Major Category–Year 2017

MMA	2017 Square Footage			2017 Dwelling Units	
	Office	Retail	Others*	Single Family	Multi-Family
1 North Bellevue	1,444,680	211,292	218,333	2,173	2,183
2 Bridle Trails	732,690	430,806	399,079	1,688	3,254
3 Downtown	10,412,088	3,818,653	2,218,627	0	9,794
4 Wilburton	1,235,264	657,212	1,034,217	76	605
5 Crossroads	153,453	625,868	176,686	49	3,559
6 Northeast Bellevue	426,608	14,393	630,458	3,310	255
7 South Bellevue	1,210,925	251,247	1,188,067	2,610	2,001
8 Richards Valley	218,610	81,761	209,470	2,491	3,523
9 East Bellevue	545,181	463,595	1,173,275	6,793	2,513
10 Eastgate	4,034,738	495,329	1,846,308	240	654
11 Southeast Bellevue	147,087	126,164	704,970	8,361	1,017
12 BelRed/Northup	2,406,373	2,491,025	3,685,942	1	880
13 Factoria	1,467,633	856,218	316,028	347	1,188
14 Newport Hills	10,439	96,830	152,517	2,680	472
Totals	24,445,769	10,620,393	13,953,977	30,819	31,898

*"Other" commercial includes institutional, industrial, hotel and recreation uses.

Table C-2. Land Use by Major Category–Year 2030

MMA	2030 Square Footage			2030 Dwelling Units	
	Office	Retail	Others*	Single-Family	Multi-Family
1 North Bellevue	1,444,680	225,043	218,333	2,179	2,318
2 Bridle Trails	787,782	431,420	399,079	1,689	3,254
3 Downtown	15,698,702	4,093,695	3,247,685	0	14,284
4 Wilburton	1,235,524	658,196	1,364,110	76	636
5 Crossroads	158,052	644,046	179,333	59	4,124
6 Northeast Bellevue	426,608	14,393	630,458	3,310	255
7 South Bellevue	1,692,354	292,794	1,223,360	2,612	2,333
8 Richards Valley	218,610	81,761	209,470	2,491	3,523
9 East Bellevue	550,852	460,399	1,235,569	6,799	2,543
10 Eastgate	5,100,297	520,599	2,278,728	237	1,100
11 Southeast Bellevue	147,087	126,804	715,425	8,403	1,122
12 BelRed/Northup	5,149,814	2,669,142	3,681,602	23	3,690
13 Factoria	1,582,833	861,397	409,395	381	1,468
14 Newport	10,439	96,830	152,517	2,681	481
Totals	34,203,634	11,176,519	15,945,063	30,940	41,132

*"Other" commercial includes institutional, industrial, hotel and recreation uses.

Table C-3. Change in Land Use by Major Category–[Change from 2017 to 2030]

MMA	Delta Square Footage			Delta Dwelling Units	
	Office	Retail	Other*	Single-Family	Multi-Family
1 North Bellevue	0	13,751	0	6	135
2 Bridle Trails	55,092	614	0	1	0
3 Downtown	5,286,614	275,042	1,029,058	0	4,490
4 Wilburton	260	984	329,893	0	31
5 Crossroads	4,599	18,178	2,647	10	565
6 Northeast Bellevue	0	0	0	0	0
7 South Bellevue	481,429	41,547	35,293	2	332
8 Richards Valley	0	0	0	0	0
9 East Bellevue	5,671	-3,196	62,294	6	30
10 Eastgate	1,065,559	25,270	432,420	-3	446
11 Southeast Bellevue	0	640	10,455	42	105
12 BelRed/Northup	2,743,441	178,117	-4,340	22	2,810
13 Factoria	115,200	5,179	93,367	34	280
14 Newport	0	0	0	1	9
Totals	9,757,865	556,126	1,991,086	121	9,234

*"Other" commercial includes institutional, industrial, hotel and recreation uses.

The analysis presented here must be regarded as a comparison of probable impacts of alternative transportation network improvements – rather than a strict prediction of future conditions – because of the following factors:

- The amount of development which occurs in the future may not exactly match projections;
- It is not possible to exactly predict the location of new development; and
- The potential amount of development allowed by land use codes is much greater than the demand projected for the future. (This may result in the location of development on parcels where growth was not predicted.)

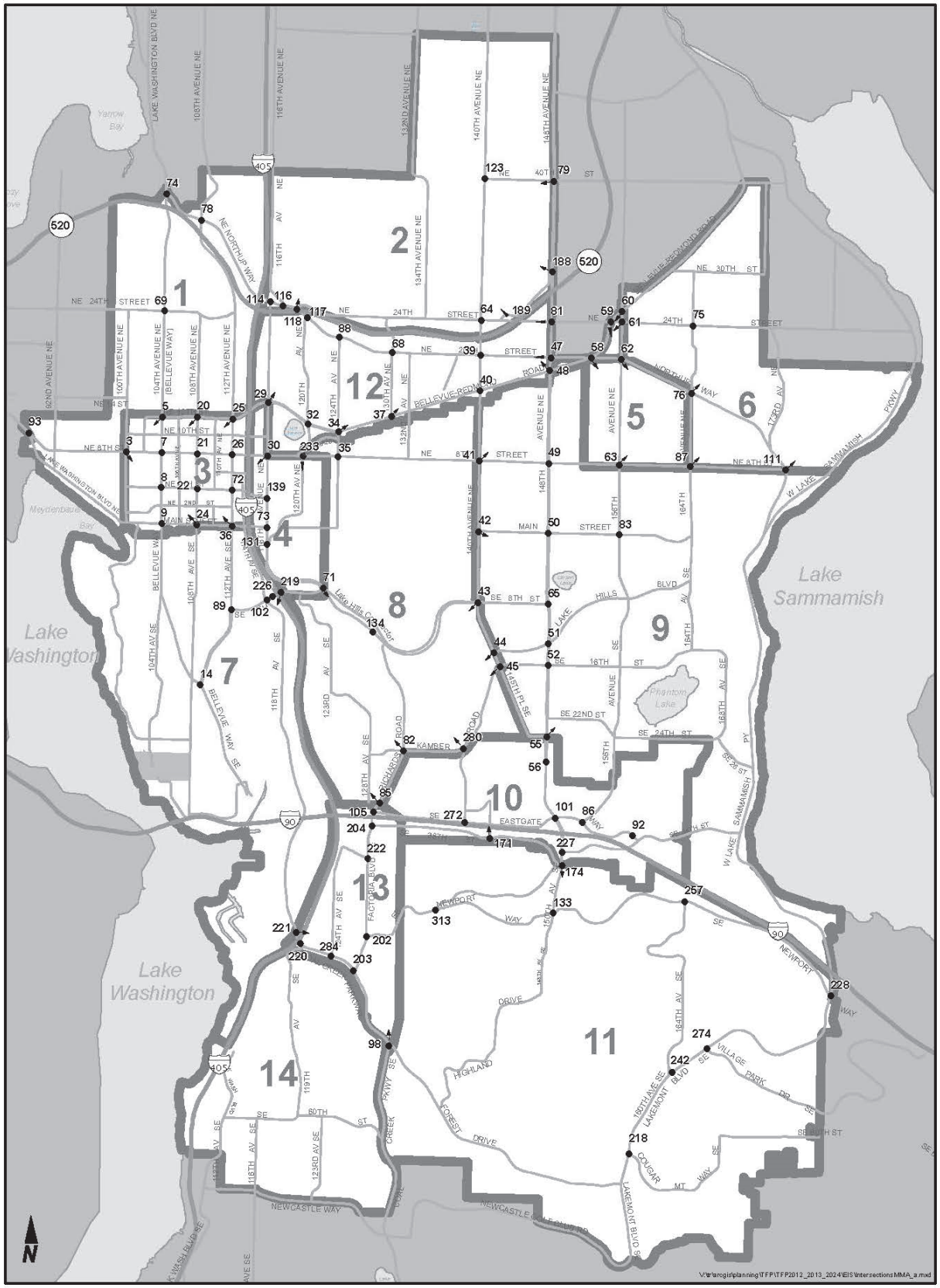

Figure C-1. Mobility Management Areas and System Intersections

Trip Generation/Mode Choice

As the first step in the traditional four-step transportation demand forecasting process, trip generation takes land use data as input and produces a number of motorized person trips by purpose entering and exiting a TAZ. Trip purpose categories are Home-based work trips, Home-base School trips, Home-based Other trips and Non-home-based trips. Modes explicitly considered within the model include bus, train, ferry, SOV and HOV.

Because land use patterns and availability of travel modes differ in different parts of the city, mode choices and travel patterns differ. Thus, Downtown Bellevue will have different trip generation/mode choice characteristics than more suburban employment centers. The traffic model assigns modal choice for each trip based on a variety of factors, including roadway conditions and transit service characteristics (route directness, frequency, cost), level of vehicle availability in households in origin area, parking costs at destination and other factors.

Reference for existing patterns of mode use for commute trips is provided by the US Census American Community Survey. This does not directly relate to the traffic model, but can provide an external reference for use in initial development of the model.

The U.S. Census American Community Survey (ACS) provides citywide information on commute modes used by residents and workers in the city. ACS data are collected by surveying a sample of residents, and, because sample sizes are limited, results are best cited in terms of5-year averages of the data. Most recent available five-year average survey results (for the years2012-2016) are summarized in Table C-4.

Table C-4. Commute Modes for Bellevue Residents and Workers

	Drive Alone	Carpool/Vanpool	Public Transportation	Walked	Other	Worked at Home
Residents of Bellevue	65%	9%	13%	5%	1%	7%
Workers in Bellevue	73%	11%	8%	3%	2%	4%

Census Bureau2012-2016; American Community Survey Tables B08101, B08501.

Regional Network

Regional background roadway transportation projects are included in all future-year scenarios. In addition, the transit network includes Eastlink Light Rail to Downtown Redmond, and the transit system changes included in the Sound Transit Eastlink Integration table. Regional roadway network assumptions include implementation of various freeway improvement projects, detailed in Table C-5.

Table C-5. Freeway Projects Assumed in 2030 Roadway Network

	Freeway Improvement Project Name	Location	Agency	Improvement
1	Bellevue Way SE HOV	Bellevue Way SE from S Bellevue P&R to I-90	Sound Transit	Added SB HOV lane
2	I-90 WB Auxiliary lane	Lakemont Blvd to Eastgate	WSDOT	Added lane
3	I-90 WB extended off-ramp to West Lake Sammamish Pkwy	I-90, east of West Lake Sammamish Parkway/Lakemont Blvd exit	WSDOT	Added lane
4	I-90 EB Auxiliary lane	Eastgate to Lakemont Blvd	WSDOT	Added lane
5	SR 520 at 148th Ave NE Overlake Access Ramp	SR 520 at 148th Ave NE EB off-ramp	WSDOT	Realign EB off-ramp and provide direct access to new Overlake Village area
6	132nd St Half Diamond Ramps to I-405	132nd St & I-405	WSDOT	New ramps to/from the north
7	I-405 EL-Tolling, SR-167 (Renton) to I-90- Open Access	NB/SB Add one GP lane to HOV lane for 2ETL, allow unrestricted weaving	WSDOT	Tolling/added lane
8	I-405 EL-Tolling lanes through Bellevue I-90 to NE 6th St - Open Access	NB/SB Change HOV lane to 1ETL, allow unrestricted weaving	WSDOT	Tolling
9	NE 6th St (112th-116th Ave) HOV and access to I-405	With Tolling, change from HOV only to also allow GP to access ramps	WSDOT	Tolling and added access to I-405 (ETL)

Traffic Operating Conditions

The city's standards for mobility on roadways are based on an average of V/C measurements at designated "system" intersections within each of 14 zones or Mobility Management Areas (MMAs). "System" intersections are a subset of the signalized intersections, selected for their critical function in the roadway network. (See Figure C-1 for a map of MMAs and locations of system intersections.) For each MMA, there are two parameters to the performance standard:

- An areawide average of the LOS level at the designated system intersections; and
- A limit on the number of system intersections permitted to exceed the designated LOS standard for the area. This is termed the "Congestion Allowance."

Table C-6 shows the Level of Service and Congestion Allowance levels for the MMAs in Bellevue.

Table C-6. Level of Service Standards and Congestion Allowances[1]

Mobility Management Area	Area-Average LOS Standard (Maximum V/C Ratio)	Congestion Allowance
Regional Center		
3 Downtown	0.950	9
Mixed Commercial/Residential Areas		
12 BelRed/Northup	0.950	7
4 Wilburton	0.900	3
5 Crossroads	0.090	2
10 Eastgate	0.090	4
13 Factoria	0.950	5
Residential Group 1		
1 North Bellevue	0.850	3
7 South Bellevue	0.850	4
8 Richards Valley	0.850	5
9 East Bellevue	0.850	5
Residential Group 2		
2 Bridle Trails	0.800	4
6 Northeast Bellevue	0.800	2
11 Southeast Bellevue	0.800	3
14 Newport[2]	0.800	--[2]

1. Excerpted from BCC 14.10.030
2. No system intersections are currently identified in this mobility management area.

The intersection analysis presented in this report is based on the planning methodology found in the latest Highway Capacity Manual Using the city's adopted LOS analysis procedure as outlined in the *Traffic Standards Code* (BCC 14.10). The analysis method takes into account of intersection-specific geometric, traffic and signal conditions for a performance rating, or level of service. Parameters used for the analysis include:

- Peak-hour traffic by movement is calculated by dividing by two the 2-hour volume for each movement between the hours of 4 p.m. and 6 p.m. which generally represents the most congested traffic conditions.
- Uniform traffic demand is assumed over the 2-hour period (as represented by a peak-hour factor [PHF] of 1).
- Intersection utilization is reported as a ratio of critical movement volume to available intersection capacity (V/C).

For this TFP cycle the analysis includes consideration of delay associated with pedestrian activity at intersections, for those locations where pedestrian count data is available. This is an analytical refinement that was also used for the 2018 Concurrency Update report. Transportation analysis for previous TFP cycles did not include consideration of delay associated with pedestrian activity.

For areawide analysis, the intersection V/C ratios are averaged for the System intersections in each MMA and then compared with the adopted standards for each MMA to estimate available reserve capacity. For each area, an additional check is made against the "congestion allowance," which is the maximum number of System intersections allowed to exceed the standard V/C ratio for that MMA.

Table C-7 provides information on existing and projected levels of service at all system intersections for one-hour average traffic in the two-hour PM peak period. Table C-7 also shows the applicable mobility targets (in terms of volume-to-capacity ratios) for each of the MMAs.

Table C-7. Existing and Projected Levels of Service (Two-Hour Averaged PM Peak)

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 1 – North Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 3						
69	Bellevue Way NE - NE 24th St	0.56	0.66	17.9%	0.66	17.9%
74	Bellevue Way NE - Northup Way NE	0.63	0.60	-4.8%	0.61	-3.2%
78	108th Ave NE - Northup Way NE	0.62	0.71	14.5%	0.71	14.5%
93	Lake Washington Blvd - NE 1st/NE 10th	0.32	0.31	-3.1%	0.31	-3.1%
	Areawide LOS Average	**0.53**	**0.57**	7.5%	**0.57**	7.5%
	# of Intersections over Standard	**0**	**0**		**0**	
MMA 2 – Bridle Trails – LOS Standard C or V/C 0.80; Congestion Allowance: 4						
64	140th Ave NE – NE 24th St	0.79	0.91	15.2%	0.91	15.2%
79	148th Ave NE – NE 40th St	0.65	0.97	49.2%	0.95	46.2%
114	116th Ave NE – Northup Way NE	0.74	0.75	1.4%	0.76	2.7%
116	115th Pl NE – Northup Way	0.81	1.05	29.6%	1.06	30.9%
118	Northup Way - NE 24th St	0.52	0.65	25.0%	0.66	26.9%
123	140th Ave NE - NE 40th St	--	--	--	--	--
188	148th Ave NE – NE 29th Pl	0.85	1.08	27.1%	1.07	25.9%
189	NE 29th Pl – NE 24th St	0.36	0.46	27.8%	0.45	25.0%
	Areawide LOS Average	**0.67**	**0.84**	25.4%	**0.83**	23.9%
	# of Intersections over Standard	**2**	**4**		**4**	
MMA 3 – Downtown – LOS Standard E+ or V/C 0.95; Congestion Allowance: 9						
3	100th Ave NE - NE 8th St	0.64	0.68	6.3%	0.67	4.7%
5	Bellevue Way NE - NE 12th St	0.70	0.78	11.4%	0.78	11.4%
7	Bellevue Way NE - NE 8th St	0.78	0.85	9.0%	0.84	7.7%
8	Bellevue Way NE - NE 4th St	0.69	0.78	13.0%	0.67	-2.9%
9	Bellevue Way - Main St	0.96	1.08	12.5%	1.08	12.5%
20	108th Ave NE - NE 12th St	0.45	0.59	31.1%	0.59	31.1%
21	108th Ave NE - NE 8th St	0.61	0.85	39.3%	0.85	39.3%
22	108th Ave NE - NE 4th St	0.68	0.97	42.6%	0.95	39.7%
24	108th Ave - Main St	0.52	0.66	26.9%	0.65	25.0%

Table C-7. Existing and Projected Levels of Service (Two-Hour Averaged PM Peak) (continued)

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
25	112th Ave NE - NE 12th St	0.74	0.95	28.4%	0.95	28.4%
26	112th Ave NE - NE 8th St	1.05	1.09	3.8%	0.93	-11.4%
36	112th Ave - Main St	0.98	1.15	17.3%	1.12	14.3%
72	112th Ave NE - NE 4th St	0.67	0.75	11.9%	0.80	19.4%
	Areawide LOS Average	**0.72**	**0.86**	19.4%	**0.83**	15.3%
	# of Intersections over Standard	**3**	**4**		**2**	
MMA 4 – Wilburton – LOS Standard D+ or V/C 0.90; Congestion Allowance: 3						
30	116th Ave NE - NE 8th St	0.71	0.75	5.6%	1.03	45.1%
73	116th Ave - Main St	0.65	0.69	6.2%	0.68	4.6%
131	116th Ave SE - SE 1st St	0.80	0.90	12.5%	0.90	12.5%
139	116th Ave NE - NE 4th St	0.82	1.06	29.3%	0.80	-2.4%
233	120th Ave NE - NE 8th St	0.62	0.84	35.5%	0.91	46.8%
	Areawide LOS Average	**0.72**	**0.85**	18.1%	**0.86**	19.4%
	# of Intersections over Standard	**0**	**1**		**2**	
MMA 5 – Crossroads – LOS Standard D- or V/C 0.90; Congestion Allowance: 2						
58	Bellevue-Redmond- NE 20th St	0.62	0.80	29.0%	0.80	29.0%
62	156th Ave NE - Northup Way	0.83	0.92	10.8%	0.84	1.2%
63	156th Ave NE - NE 8th St	0.70	0.81	15.7%	0.80	14.3%
	Areawide LOS Average	**0.72**	**0.84**	16.7%	**0.81**	12.5%
	# of Intersections over Standard	**0**	**1**		**0**	
MMA 6 – Northeast Bellevue – LOS Standard C or V/C 0.80; Congestion Allowance: 2						
75	164th Ave NE - NE 24th St	0.70	0.91	30.0%	0.90	28.6%
76	164th Ave NE - Northup Way	0.72	0.89	23.6%	0.89	23.6%
87	164th Ave NE - NE 8th St	0.74	0.91	23.0%	0.91	23.0%
111	Northup Way - NE 8th St	--	--	--	--	--
	Areawide LOS Average	**0.72**	**0.90**	25.0%	**0.90**	25.0%
	# of Intersections over Standard	**0**	**3**		**3**	
MMA 7 – South Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 4						
14	112th Ave SE - Bellevue Way SE	0.77	0.80	3.9%	0.85	10.4%
89	112th Ave SE - SE 8th St	0.64	0.66	3.1%	0.71	10.9%
102	118th Ave SE - SE 8th St	0.76	0.87	14.5%	0.87	14.5%
219	I-405 NB Ramps - SE 8th St	0.63	0.85	34.9%	0.85	34.9%
226	I-405 SB Ramps - SE 8th St	0.59	0.74	25.4%	0.74	25.4%
	Areawide LOS Average	**0.68**	**0.78**	14.7%	**0.80**	17.6%
	# of Intersections over Standard	**0**	**1**		**1**	
MMA 8 – Richards Valley – LOS Standard D+ or V/C 0.85; Congestion Allowance: 5						

Table C-7. Existing and Projected Levels of Service (Two-Hour Averaged PM Peak) (continued)

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
35	124th Ave NE - NE 8th St	0.62	0.90	45.2%	0.92	48.4%
43	140th Ave SE - SE 8th St	0.76	0.96	26.3%	0.95	25.0%
44	145th Pl SE - Lake Hills Blvd	0.64	0.74	15.6%	0.74	15.6%
45	145th Pl SE - SE 16th St	0.69	0.86	24.6%	0.84	21.7%
71	Lake Hills Connect - SE 8th St/7th St	0.94	1.11	18.1%	1.09	16.0%
82	Richards Rd - Kamber Rd	0.87	0.90	3.4%	0.90	3.4%
85	Richards Rd - SE 32nd St	0.51	0.59	15.7%	0.59	15.7%
134	Richards Rd - Lake Hills Connector	0.60	0.68	13.3%	0.68	13.3%
280	139th Ave SE - Kamber Rd	0.59	0.70	18.6%	0.70	18.6%
	Areawide LOS Average	**0.69**	**0.82**	18.8%	**0.82**	18.8%
	# of Intersections over Standard	**2**	**5**		**4**	
MMA 9 – East Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 5						
41	140th Ave NE - NE 8th St	0.79	0.91	15.2%	0.90	13.9%
42	140th Ave NE - Main St	0.63	0.76	20.6%	0.76	20.6%
49	148th Ave NE - NE 8th St	0.94	1.08	14.9%	1.07	13.8%
50	148th Ave NE - Main St	0.91	0.95	4.4%	0.94	3.3%
51	148th Ave SE - Lake Hills Blvd	0.85	0.96	12.9%	0.96	12.9%
52	148th Ave SE - SE 16th St	0.87	0.97	11.5%	0.97	11.5%
55	148th Ave SE - SE 24th St	0.77	0.82	6.5%	0.82	6.5%
65	148th Ave SE - SE 8th St	0.74	0.84	13.5%	0.84	13.5%
83	156th Ave - Main St	0.76	0.90	18.4%	0.90	18.4%
	Areawide LOS Average	**0.81**	**0.91**	12.3%	**0.91**	12.3%
	# of Intersections over Standard	**3**	**6**		**6**	
MMA 10 – Eastgate – LOS Standard D- or V/C 0.90; Congestion Allowance: 4						
56	148th Ave SE - SE 27th St	0.67	0.65	-3.0%	0.64	-4.5%
86	156th Ave SE - SE Eastgate Way	0.59	0.50	-15.3%	0.43	-27.1%
92	161st Ave SE - SE Eastgate Way	0.46	0.61	32.6%	0.61	32.6%
101	150th Ave SE - SE Eastgate Way	1.06	1.16	9.4%	1.16	9.4%
171	142nd Ave SE - SE 36th St	0.80	0.83	3.7%	0.84	5.0%
227	150th Ave SE - I-90 EB Off-Ramp	0.86	0.85	-1.2%	1.00	16.3%
272	139th Ave SE - SE Eastgate Way	0.45	0.56	24.4%	0.57	26.7%
	Areawide LOS Average	**0.70**	**0.74**	5.7%	**0.75**	7.1%
	# of Intersections over Standard	**1**	**1**		**2**	

Table C-7. Existing and Projected Levels of Service (Two-Hour Averaged PM Peak) (continued)

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
MMA 11 – Southeast Bellevue– LOS Standard C or V/C 0.80; Congestion Allowance: 3						
133	150th Ave SE - SE Newport Way	0.96	0.96	0.0%	1.00	4.2%
174	150th Ave SE – SE 38th St	1.02	1.09	6.9%	1.20	17.6%
218	Lakemont Blvd – SE 63rd St/Cougar Mtn Way	0.66	0.68	3.0%	0.68	3.0%
228	Lakemont Blvd SE- SE Newport Way	0.82	0.74	-9.8%	0.74	-9.8%
242	164th Ave SE - Lakemont Blvd	0.68	0.70	2.9%	0.71	4.4%
257	164th Ave SE - SE Newport Way	--	--	--	--	--
274	Lakemont Blvd SE – Village Park Drive	0.55	0.48	-12.7%	0.48	-12.7%
313	Allen Rd/Somerset Blvd – Newport Way SE	0.60	0.71	18.3%	0.69	15.0%
	Areawide LOS Average	**0.75**	**0.76**	1.3%	**0.78**	4.0%
	# of Intersections over Standard	**3**	**2**		**2**	
MMA 12 – BelRed/Northup – LOS Standard E+ or V/C 0.95; Congestion Allowance: 7						
29	116th Ave NE - NE 12th St	0.69	1.21	75.4%	1.02	47.8%
32	120th Ave NE - NE 12th St	0.55	0.91	65.5%	0.95	72.7%
34	124th Ave NE - Bellevue-Redmond Rd	0.79	1.00	26.6%	1.02	29.1%
37	130th Ave NE - Bellevue-Redmond Rd	0.58	0.73	25.9%	0.74	27.6%
39	140th Ave NE - NE 20th St	0.67	0.84	25.4%	0.83	23.9%
40	140th Ave NE - Bellevue-Redmond Rd	0.69	0.81	17.4%	0.81	17.4%
47	148th Ave NE - NE 20th St	0.88	1.07	21.6%	1.07	21.6%
48	148th Ave NE - Bellevue-Redmond Rd	0.89	1.05	18.0%	1.05	18.0%
59	Bellevue-Redmond - NE 24th St	0.64	0.76	18.8%	0.75	17.2%
60	156th Ave NE - Bellevue-Redmond Rd	0.74	0.92	24.3%	0.92	24.3%
61	156th Ave NE - NE 24th St	0.80	1.05	31.3%	1.05	31.3%
68	130th Ave NE - NE 20th St	0.60	0.86	43.3%	0.84	40.0%
81	148th Ave NE - NE 24th St	0.89	1.08	21.3%	1.08	21.3%
88	124th Ave NE - Northup Way NE	0.58	0.99	70.7%	1.08	86.2%
117	120th Ave NE - NE 20th St	0.31	0.52	67.7%	0.53	71.0%
	Areawide LOS Average	**0.68**	**0.92**	35.3%	**0.91**	33.8%
	# of Intersections over Standard	**0**	**7**		**7**	
MMA 13 – Factoria – LOS Standard E+ or V/C 0.95; Congestion Allowance: 5						
98	Coal Creek Parkway - Forest Drive	0.86	0.91	5.8%	0.92	7.0%
105	Richards Rd - SE Eastgate Way	0.67	0.80	19.4%	0.80	19.4%
202	Factoria Blvd - SE Newport Way	0.74	0.86	16.2%	0.87	17.6%
203	SE Newport Way - Coal Creek Parkway	0.73	0.82	12.3%	0.81	11.0%
204	Factoria Blvd - SE 36th St	1.04	1.06	1.9%	1.06	1.9%

Table C-7. Existing and Projected Levels of Service (Two-Hour Averaged PM Peak) (continued)

ID No	Intersection	Existing (2017)	CIP Network (2030)		TFP Network (2030)	
		V/C	V/C	% Change Over Existing	V/C	% Change Over Existing
220	I-405 NB Ramps - Coal Creek Parkway	0.68	0.87	27.9%	0.87	27.9%
221	I-405 SB Ramps - Coal Creek Parkway	0.78	0.97	24.4%	0.97	24.4%
222	Factoria Blvd - SE 38th Pl	0.88	0.99	12.5%	0.98	11.4%
284	124th Ave SE - Coal Creek Parkway	0.83	1.02	22.9%	1.02	22.9%
	Areawide LOS Average	**0.80**	**0.92**	15.0%	**0.92**	15.0%
	# of Intersections over Standard	**1**	**4**		**4**	
MMA 14 – Newport Hills – LOS Standard C or V/C 0.80; Congestion Allowance: 0						
	No Analysis Intersections	-----	-----		-----	

Notes: Shaded cells exceed standard.
Locations with no V/C value do not have a traffic signal.

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Appendix D

Land Use Projections

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The first step in forecasting travel demand is the identification of land use information for TAZs in the study area.

Figures D-1 and D-2 illustrate the TAZs that have been defined for the City of Bellevue transportation analysis.

Table D-1 presents existing (2017) and projected 2030 land use that has been allocated to each TAZ. For each TAZ:

- Projected 2030 land use is presented in the shaded row.
- Existing (2017) land use is presented in the unshaded row.

As explained in Appendix C, City of Bellevue projections of future commercial and residential development begin with the regional economic forecasts of jobs and population developed by the Puget Sound Regional Council (PSRC, the region's metropolitan planning organization). PSRC allocates forecasted jobs and population to forecast analysis zones (FAZs) throughout the region. Job and population forecasts for each FAZ are then distributed by the city into smaller TAZs that are used for modeling purposes. (For example: Downtown Bellevue is one PSRC FAZ, but 43 TAZs as defined by the City of Bellevue.) These distributions are based primarily on development opportunities and growth trends. Parcels that are currently vacant are projected to have the highest potential for future development, followed by properties in which the difference between the current intensity of development and future potential intensity is the greatest. This procedure provides a reasonable basis for projecting the location of future development trends, but will not exactly match future development decisions made by specific property owners and developers. Land use projections are not necessarily equal to the total capacity for development within an area, but instead they forecast the amount of development that will likely occur within an area by a given horizon year.

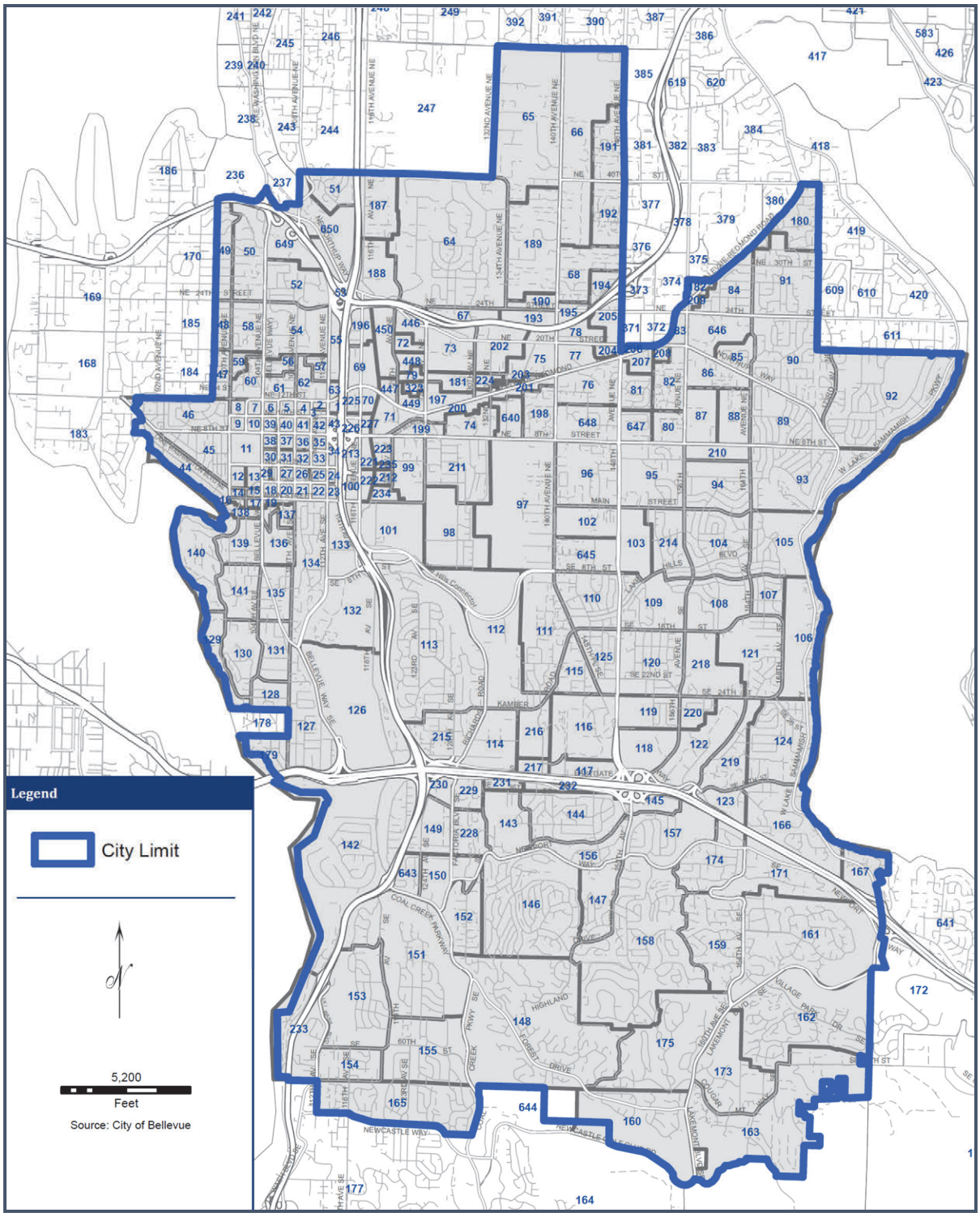

Figure D-1. Citywide Transportation Analysis Zones

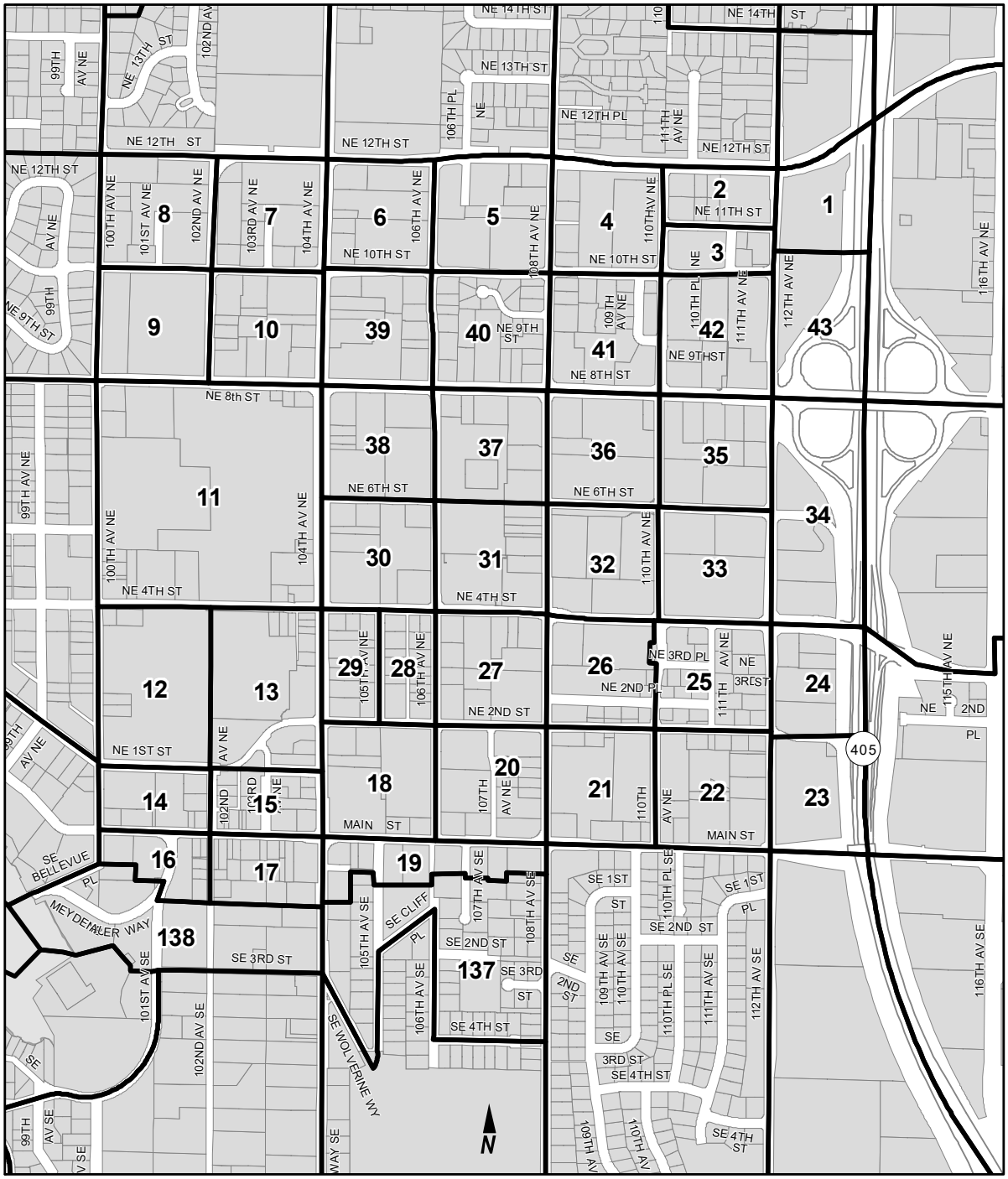

Figure D-2. Downtown Transportation Analysis Zones (Detail from Figure D-1)

Table D-1. Existing (2017) and Projected Future (2030) Land Use

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2017	1	475,550	0	0	0	0
2030	1	475,550	0	0	0	0
2017	2	6,764	4,513	0	0	432
2030	2	6,764	4,513	0	0	432
2017	3	0	2,869	0	0	202
2030	3	0	28,764	2,756	0	462
2017	4	3,073	32,259	86,467	0	159
2030	4	3,073	32,259	86,467	0	159
2017	5	24,605	36,643	83,242	0	800
2030	5	24,605	36,643	83,242	0	800
2017	6	4,623	90,392	0	0	0
2030	6	604,835	40,392	12,661	0	0
2017	7	25,139	69,890	24,659	0	162
2030	7	25,139	39,890	54,692	0	312
2017	8	17,031	0	0	0	242
2030	8	17,031	44,143	1,535	0	344
2017	9	12,120	60,633	0	0	79
2030	9	12,120	60,633	0	0	79
2017	10	6,012	141,845	8,084	0	397
2030	10	6,012	216,845	22,891	0	727
2017	11	17,062	1,234,118	0	0	0
2030	11	17,062	1,234,118	0	0	0
2017	12	0	0	600	0	20
2030	12	0	0	2,760	0	20
2017	13	820	44,723	2,641	0	0
2030	13	820	44,723	2,641	0	0
2017	14	1,345	18,873	1,464	0	381
2030	14	1,345	18,873	1,464	0	381
2017	15	9,480	61,861	6,780	0	581
2030	15	9,480	61,861	6,780	0	581
2017	16	814	23,520	0	0	100
2030	16	814	23,520	0	0	100
2017	17	4,134	62,194	0	0	396
2030	17	4,134	62,194	0	0	396
2017	18	0	119,401	0	0	0
2030	18	1,003,895	139,080	9,086	0	758
2017	19	29,513	28,485	975	0	334
2030	19	29,513	40,235	8,203	0	644
2017	20	264,243	77,907	0	0	345
2030	20	264,243	77,907	0	0	345
2017	21	3,800	123,623	0	0	0

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2030	21	3,800	43,623	13,933	0	0
2017	22	314,434	2,170	0	0	417
2030	22	314,434	2,170	0	0	417
2017	23	0	17,947	98,380	0	0
2030	23	0	17,947	98,380	0	0
2017	24	87,449	4,730	0	0	0
2030	24	87,449	4,730	0	0	0
2017	25	21,901	43,084	212,442	0	695
2030	25	21,901	43,084	232,288	0	695
2017	26	524,130	17,936	0	0	402
2030	26	898,106	41,005	3,652	0	402
2017	27	821,964	63,508	110,156	0	273
2030	27	1,241,964	63,508	114,344	0	273
2017	28	6,620	46,239	11,717	0	0
2030	28	6,620	46,239	11,717	0	0
2017	29	0	92,861	0	0	368
2030	29	0	92,861	0	0	445
2017	30	1,057,642	230,357	214,137	0	218
2030	30	1,057,642	230,357	225,212	0	218
2017	31	447,813	152,372	0	0	540
2030	31	1,384,813	185,372	6,899	0	540
2017	32	1,491,242	44,898	0	0	0
2030	32	1,491,242	44,898	0	0	0
2017	33	376,789	0	0	0	0
2030	33	376,789	0	0	0	0
2017	34	120,254	5,563	0	0	0
2030	34	120,254	5,563	0	0	0
2017	35	761,767	299,943	134,019	0	455
2030	35	761,767	299,943	142,792	0	455
2017	36	273,498	0	0	0	0
2030	36	764,498	132,028	499,485	0	693
2017	37	917,456	69,730	0	0	0
2030	37	1,867,282	83,158	246,671	0	1,380
2017	38	680,421	295,567	377,999	0	148
2030	38	680,421	295,567	377,999	0	148
2017	39	478,726	87,764	647,482	0	0
2030	39	478,726	87,764	647,482	0	0
2017	40	472,538	41,820	0	0	377
2030	40	984,556	58,810	130,400	0	377
2017	41	502,187	5,150	10,000	0	210
2030	41	500,874	45,210	13,872	0	640
2017	42	149,129	63,265	187,383	0	1,061
2030	42	149,129	63,265	187,383	0	1,061

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2017	43	0	0	0	0	0
2030	43	0	0	0	0	0
2017	44	25,785	4,860	1,800	116	201
2030	44	25,785	6,507	1,800	116	201
2017	45	0	24,920	20,550	172	265
2030	45	0	24,920	20,550	175	271
2017	46	0	0	0	264	0
2030	46	0	0	0	264	0
2017	47	0	0	0	89	7
2030	47	0	0	0	89	7
2017	48	900	0	4,766	76	0
2030	48	900	0	4,766	76	0
2017	49	0	0	0	161	0
2030	49	0	0	0	163	0
2017	50	0	0	0	266	0
2030	50	0	0	0	266	0
2017	51	0	0	0	110	108
2030	51	0	0	0	110	108
2017	52	0	56,333	12,053	193	0
2030	52	0	56,333	12,053	193	0
2017	53	137,530	0	30,292	0	0
2030	53	137,530	0	30,292	0	0
2017	54	137,328	0	65,272	136	48
2030	54	137,328	0	65,272	137	48
2017	55	296,727	0	4,067	0	0
2030	55	296,727	0	4,067	0	0
2017	56	0	0	0	71	3
2030	56	0	0	0	71	3
2017	57	0	0	0	57	0
2030	57	0	0	0	57	0
2017	58	5,611	0	0	176	33
2030	58	5,611	0	0	176	33
2017	59	0	0	0	32	17
2030	59	0	0	0	32	17
2017	60	0	0	0	43	527
2030	60	0	0	0	43	527
2017	61	0	0	0	110	181
2030	61	0	0	0	110	186
2017	62	0	0	0	101	0
2030	62	0	0	0	101	0
2017	63	114,061	1,112	9,338	0	0
2030	63	114,061	1,112	9,338	0	0
2017	64	0	0	77,572	796	56

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2030	64	0	0	77,572	797	56
2017	65	0	1,248	0	269	0
2030	65	0	1,248	0	269	0
2017	66	0	5,608	185	202	75
2030	66	0	5,608	185	202	75
2017	67	186,258	0	1,426	22	24
2030	67	186,258	0	1,426	22	24
2017	68	0	0	0	98	621
2030	68	0	0	0	98	621
2017	69	366,301	7,065	28,671	0	0
2030	69	426,555	8,097	144,176	0	1
2017	70	117,076	86,150	0	0	0
2030	70	126,417	86,832	697	0	0
2017	71	206,483	170,659	13,854	0	72
2030	71	209,760	169,719	3,465	0	161
2017	72	12,440	133,184	66,592	0	0
2030	72	11,916	7,776	94,866	0	0
2017	73	151,463	148,218	424,653	0	9
2030	73	151,947	148,218	426,596	0	68
2017	74	0	0	0	68	201
2030	74	0	0	0	67	201
2017	75	201,893	337,318	437,735	0	0
2030	75	203,377	342,600	429,434	0	51
2017	76	115,995	0	0	163	38
2030	76	115,995	0	0	164	38
2017	77	49,207	171,754	21,598	0	0
2030	77	49,329	173,119	21,598	0	33
2017	78	75,294	204,167	74,861	0	0
2030	78	79,444	216,965	37,263	0	61
2017	79	0	0	0	0	0
2030	79	588,907	107,749	332,941	0	0
2017	80	42,393	0	0	26	686
2030	80	42,393	0	0	26	686
2017	81	0	0	0	150	0
2030	81	0	0	0	150	0
2017	82	40,910	63,980	0	2	1,230
2030	82	40,910	63,980	0	2	1,233
2017	83	0	66,456	0	0	451
2030	83	930	145,348	689	0	1,069
2017	84	12,347	0	0	243	0
2030	84	12,347	0	0	244	0
2017	85	0	3,117	0	101	0
2030	85	0	3,117	0	101	0

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2017	86	0	0	0	21	938
2030	86	0	0	0	31	957
2017	87	16,102	536,991	56,222	0	112
2030	87	20,701	555,169	58,869	0	655
2017	88	0	24,897	112,214	0	478
2030	88	0	24,897	112,214	0	478
2017	89	0	0	5,720	464	88
2030	89	0	0	5,720	464	88
2017	90	0	5,279	55,489	802	38
2030	90	0	5,279	55,489	802	38
2017	91	0	0	70,333	467	0
2030	91	0	0	70,333	467	0
2017	92	0	0	113,805	892	0
2030	92	0	0	113,805	891	0
2017	93	0	0	0	732	0
2030	93	0	0	0	732	0
2017	94	0	720	30,802	315	0
2030	94	0	720	30,802	315	0
2017	95	22,991	40,528	39,202	287	160
2030	95	22,991	40,528	39,202	287	160
2017	96	7,363	14,583	158,215	247	542
2030	96	7,363	14,583	158,215	247	542
2017	97	9,593	38,318	9,020	215	164
2030	97	9,593	38,318	9,020	215	164
2017	98	0	0	90,319	203	0
2030	98	0	0	90,319	203	0
2017	99	298,581	21,396	42,377	70	256
2030	99	298,841	22,380	126,102	70	287
2017	100	0	3,542	141,630	0	0
2030	100	0	3,542	141,630	0	0
2017	101	291,795	143,354	52,085	6	349
2030	101	291,795	143,354	52,085	6	349
2017	102	18,070	1,600	360,330	73	138
2030	102	18,070	1,600	360,330	73	138
2017	103	30,858	173,190	3,453	4	0
2030	103	34,686	175,088	3,453	4	0
2017	104	0	0	0	572	33
2030	104	0	0	0	572	33
2017	105	0	0	0	301	0
2030	105	0	0	0	302	0
2017	106	0	0	0	158	0
2030	106	0	0	0	158	0
2017	107	0	0	0	172	0

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2030	107	0	0	0	172	0
2017	108	0	0	180,973	223	0
2030	108	0	0	180,973	223	0
2017	109	33,783	22,187	22,880	264	167
2030	109	33,783	22,187	22,880	264	167
2017	110	0	55,525	43,276	380	21
2030	110	0	55,525	43,276	380	21
2017	111	1,857	20,535	5,625	273	304
2030	111	1,857	20,535	5,625	273	304
2017	112	16,015	0	8,579	120	651
2030	112	16,015	0	8,579	120	651
2017	113	5,768	2,400	65,519	898	0
2030	113	5,768	2,400	65,519	898	0
2017	114	269,876	69,181	645,635	0	0
2030	114	990,718	48,564	618,456	0	0
2017	115	0	1,721	0	146	54
2030	115	0	1,721	0	146	54
2017	116	160,515	54,440	524,553	41	296
2030	116	346,427	75,967	980,318	38	693
2017	117	320,878	48,117	152,885	0	0
2030	117	362,557	46,626	151,642	0	49
2017	118	419,848	197,488	48,810	0	0
2030	118	411,155	209,081	48,060	0	0
2017	119	8,253	4,595	2,610	126	0
2030	119	8,253	4,595	2,610	126	0
2017	120	20,546	0	47,326	359	156
2030	120	20,546	0	47,326	359	156
2017	121	0	0	0	327	0
2030	121	0	0	0	327	0
2017	122	1,721,025	3,644	250,257	1	5
2030	122	1,838,723	16,666	250,257	1	5
2017	123	0	0	0	23	153
2030	123	0	0	0	23	153
2017	124	0	1,694	0	579	29
2030	124	0	1,694	0	581	29
2017	125	0	4,885	37,919	180	149
2030	125	0	4,885	41,411	180	149
2017	126	31,237	8,512	54,616	0	308
2030	126	31,237	8,512	54,616	0	308
2017	127	0	0	0	423	0
2030	127	0	0	0	427	0
2017	128	0	0	54,943	77	0
2030	128	0	0	54,943	77	0

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2017	129	0	0	0	84	0
2030	129	0	0	0	85	0
2017	130	9,350	0	13,728	167	0
2030	130	9,350	0	13,728	167	0
2017	131	0	7,182	1,200	169	0
2030	131	0	7,182	1,200	169	0
2017	132	737,793	37,450	147,113	0	50
2030	132	737,793	37,450	147,113	0	50
2017	133	346,398	175,905	687,121	0	0
2030	133	827,827	217,452	722,414	0	324
2017	134	29,132	0	850	356	104
2030	134	29,132	0	850	343	104
2017	135	6,207	6,790	0	155	73
2030	135	6,207	6,790	0	155	73
2017	136	14,873	0	155,014	24	87
2030	136	14,873	0	155,014	24	87
2017	137	16,605	0	0	42	168
2030	137	16,605	0	0	42	176
2017	138	12,506	10,708	67,824	0	286
2030	138	12,506	10,708	67,824	0	286
2017	139	824	0	3,460	90	731
2030	139	824	0	3,460	90	731
2017	140	0	0	0	175	116
2030	140	0	0	0	176	116
2017	141	0	0	470	138	0
2030	141	0	0	470	142	0
2017	142	6,000	4,700	1,728	593	78
2030	142	6,000	4,700	1,728	596	78
2017	143	260	18,526	242,519	114	10
2030	143	260	18,526	242,519	117	10
2017	144	71,733	5,295	0	526	14
2030	144	71,733	5,295	0	527	14
2017	145	49,356	95,530	0	8	0
2030	145	50,415	96,925	4,163	8	0
2017	146	0	2,816	142,983	1,020	0
2030	146	0	2,816	142,983	1,020	0
2017	147	0	34,917	368	189	0
2030	147	0	34,917	368	189	0
2017	148	0	0	34,279	1,236	0
2030	148	0	0	34,279	1,236	0
2017	149	3,884	528,618	69,675	0	294
2030	149	3,884	528,618	69,675	0	574
2017	150	11,865	14,556	235,346	19	330

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2030	150	11,865	14,556	235,346	20	330
2017	151	1,344	4,733	3,107	641	30
2030	151	1,344	4,733	3,107	641	39
2017	152	4,490	0	1,666	203	0
2030	152	4,490	0	1,666	210	0
2017	153	9,095	27,677	100,937	362	0
2030	153	9,095	27,677	100,937	362	0
2017	154	0	0	0	261	0
2030	154	0	0	0	261	0
2017	155	0	64,420	41,596	378	442
2030	155	0	64,420	41,596	378	442
2017	156	16,890	0	8,690	191	65
2030	156	16,890	0	8,690	191	65
2017	157	35,110	5,038	93,104	293	52
2030	157	35,110	5,038	93,104	297	157
2017	158	0	0	68,629	1,171	68
2030	158	0	0	68,629	1,173	68
2017	159	0	0	2,050	557	4
2030	159	0	0	2,050	560	4
2017	160	0	0	0	329	0
2030	160	0	0	0	329	0
2017	161	0	12,444	52,882	734	0
2030	161	0	13,084	63,337	737	0
2017	162	20,857	47,128	0	490	400
2030	162	20,857	47,128	0	490	400
2017	163	2,237	0	37,133	358	232
2030	163	2,237	0	37,133	377	232
2017	165	0	0	6,877	841	0
2030	165	0	0	6,877	841	0
2017	166	0	0	11,908	349	0
2030	166	0	0	11,908	351	0
2017	167	3,098	9,588	92,953	66	112
2030	167	4,941	9,588	105,372	66	112
2017	171	0	0	0	164	0
2030	171	0	0	0	170	0
2017	173	0	0	0	216	0
2030	173	0	0	0	216	0
2017	174	0	0	11,850	304	9
2030	174	0	0	11,850	304	9
2017	175	0	0	10,483	469	163
2030	175	0	0	10,483	470	163
2017	179	0	0	0	117	0
2030	179	0	0	0	119	0

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2017	180	0	0	0	341	0
2030	180	0	0	0	341	0
2017	181	16,734	15,576	312,147	0	0
2030	181	42,300	48,100	336,000	0	242
2017	182	67,465	0	59,569	0	0
2030	182	67,465	0	59,569	0	0
2017	187	0	0	0	54	0
2030	187	0	0	0	54	0
2017	188	207,280	21,348	36,038	34	0
2030	188	207,280	21,348	36,038	34	0
2017	189	0	0	0	209	0
2030	189	0	0	0	209	0
2017	190	113,055	0	0	4	0
2030	190	113,055	0	0	4	0
2017	191	34,212	254,820	24,457	0	1,089
2030	191	87,977	254,820	24,457	0	1,089
2017	192	5,938	0	0	0	1,389
2030	192	7,265	614	0	0	1,389
2017	193	3,132	120,095	0	0	0
2030	193	3,132	120,095	0	0	0
2017	194	151,701	0	233,338	0	0
2030	194	151,701	0	233,338	0	0
2017	195	31,114	27,687	26,063	0	0
2030	195	31,114	27,687	26,063	0	0
2017	196	170,187	1,775	84,136	0	0
2030	196	172,223	1,775	84,136	0	0
2017	197	17,789	56,724	239,271	0	0
2030	197	17,922	57,572	239,025	0	0
2017	198	15,200	6,158	0	0	1,288
2030	198	15,200	6,158	0	0	1,288
2017	199	127,346	7,650	0	0	292
2030	199	127,346	7,650	0	0	292
2017	200	242,482	0	3,585	1	0
2030	200	278,009	2,913	6,806	1	80
2017	201	107,881	14,386	0	0	39
2030	201	150,037	27,530	28,854	22	39
2017	202	309,723	207,877	296,898	0	0
2030	202	304,151	211,845	303,827	0	79
2017	203	3,445	85,929	113,473	0	0
2030	203	3,445	85,929	116,861	0	0
2017	204	0	116,182	0	0	0
2030	204	3,800	130,727	5,654	0	0
2017	205	145,966	226,855	73,975	0	0

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2030	205	146,353	226,855	73,975	0	0
2017	206	0	23,040	7,628	0	0
2030	206	0	23,040	7,628	0	0
2017	207	7,026	5,174	6,865	0	123
2030	207	7,026	5,174	6,865	0	123
2017	208	54,048	0	8,250	0	115
2030	208	54,048	0	8,250	0	115
2017	209	48,729	5,997	68,830	0	129
2030	209	48,729	5,997	68,830	0	129
2017	210	76,565	40,406	2,456	25	100
2030	210	76,565	40,406	2,456	25	100
2017	211	2,812	4,979	9,576	349	77
2030	211	2,812	4,979	9,576	349	77
2017	212	0	105,700	0	0	0
2030	212	0	105,700	0	0	0
2017	213	2,373	50,114	93,159	0	0
2030	213	2,373	50,114	93,159	0	0
2017	214	69,386	81,237	85,731	264	89
2030	214	69,386	81,237	85,731	264	90
2017	215	40,019	0	20,832	180	492
2030	215	40,019	0	20,832	180	492
2017	216	320,965	6,560	48,807	0	48
2030	216	321,079	6,560	50,471	0	48
2017	217	302,311	8,954	98,230	0	0
2030	217	304,038	8,795	98,230	0	0
2017	218	0	1,104	112	78	0
2030	218	0	1,104	112	78	0
2017	219	90,725	0	69,698	167	152
2030	219	90,725	0	69,698	167	152
2017	220	0	0	0	74	0
2030	220	0	0	0	74	0
2017	221	11,927	151,907	1,484	0	0
2030	221	11,927	151,907	1,484	0	0
2017	222	5,307	13,271	0	0	0
2030	222	5,307	13,271	0	0	0
2017	223	11,038	116,909	16,000	0	0
2030	223	11,038	116,909	16,000	0	0
2017	224	32,377	78,753	97,516	0	0
2030	224	32,377	78,070	98,238	0	43
2017	225	400,809	5,499	512,683	0	0
2030	225	400,809	5,499	758,851	0	0
2017	226	0	0	174,799	0	0
2030	226	0	0	174,799	0	0

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2017	227	0	50,673	0	0	0
2030	227	0	50,673	0	0	0
2017	228	96,854	65,613	3,757	35	564
2030	228	96,854	65,613	3,757	61	564
2017	229	1,052,816	147,378	0	1	0
2030	229	1,052,816	147,378	0	1	0
2017	230	297,724	100,053	5,584	0	0
2030	230	412,924	105,232	98,951	0	0
2017	231	152,454	11,415	7,221	0	0
2030	231	155,068	11,415	7,221	0	0
2017	232	226,785	0	212	0	0
2030	232	229,392	0	212	0	0
2017	233	0	0	0	197	0
2030	233	0	0	0	198	0
2017	234	213,434	0	0	0	0
2030	234	213,434	0	0	0	0
2017	235	0	45,520	0	0	0
2030	235	0	45,520	0	0	0
2017	323	0	16,354	325,660	0	0
2030	323	360,000	27,750	0	0	0
2017	446	38,564	42,192	374,541	0	0
2030	446	39,407	40,518	365,436	0	11
2017	447	65,072	0	61,926	0	0
2030	447	400,000	6,000	0	0	435
2017	448	1,000	0	244,320	0	0
2030	448	16,823	691	234,030	0	15
2017	449	13,800	13,024	86,839	0	309
2030	449	675,059	53,739	122,738	0	802
2017	450	61,196	216,714	296,063	0	0
2030	450	659,326	188,992	166,667	0	500
2017	640	0	0	0	39	0
2030	640	0	0	0	40	0
2017	643	0	0	0	89	0
2030	643	0	0	0	89	0
2017	645	2,580	0	0	63	637
2030	645	2,580	0	0	63	637
2017	646	298,067	0	256,712	0	0
2030	646	298,067	0	256,712	0	0
2017	647	0	0	0	120	0
2030	647	0	0	0	120	0
2017	648	128,667	6,579	46,264	142	19
2030	648	128,667	1,485	92,647	142	49
2017	649	228,224	0	0	0	317

Table D-1. Existing (2017) and Projected Future (2030) Land Use (continued)

Year	TAZ	Commercial (Square Footage)			Dwelling Units	
		Office	Retail	Others*	SFDU	MFDU
2030	649	228,224	12,104	0	0	441
2017	650	438,514	124,067	70,195	0	476
2030	650	438,514	124,067	70,195	0	476

*"Other" commercial includes institutional, industrial, hotel and recreational uses.

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Appendix E

Title VI and Environmental Justice Analysis

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Introduction

Bellevue is an increasingly diverse community. About 50 percent of Bellevue residents identified themselves as people of color in the 2013-2017 American Community Survey, up from 41 percent in 2010, 25 percent in 2000 and 13 percent in 1990. Consistent with Title VI of the Civil Rights Act and Executive Order 12898 (Environmental Justice), the Transportation Department monitors its programs, projects, and activities to ensure the benefits and impacts are shared by all population groups in the affected area. This appendix will summarize the results of an Equity Analysis conducted on the proposed 2019-2030 Transportation Facilities Plan.

Demographic Summary

This analysis divides the city into eight subareas:

A. Northwest Bellevue/Bridle Trails/BelRed

B. Downtown

C. West Bellevue/Woodridge

D. Wilburton

E. Crossroads/West Lake Hills

F. Northeast Bellevue/Sammamish/East Lake Hills

G. Factoria/Eastgate

H. Newport Hills/Somerset/Cougar Mountain

The subareas align with Census boundary geography; they generally do not match the zones used for transportation system analysis in other parts of this document. See Figure E-1 for indication of zone locations and boundaries. For this analysis, data on race/ethnicity and age are derived from the U.S. Census Bureau's 2013-2017 American Community Survey Census along with housing unit data from the King County Assessor. It should be noted that American Community Survey estimates are derived from samples of the population not complete counts. Therefore, margins of error exist.

Table E-1 summarizes the general concentrations of protected classes across the sub-areas. The shaded figures reflect areas where Title VI/Environmental Justice thresholds are exceeded and therefore, consideration of the impacts on the group's housing, employment, and transportation needs is warranted. In general, thresholds are established based on reported concentrations greater than the citywide average minus the margin of error or when the number of individuals is significant enough to trigger extra consideration. Thresholds for each category are described in Table E-2.

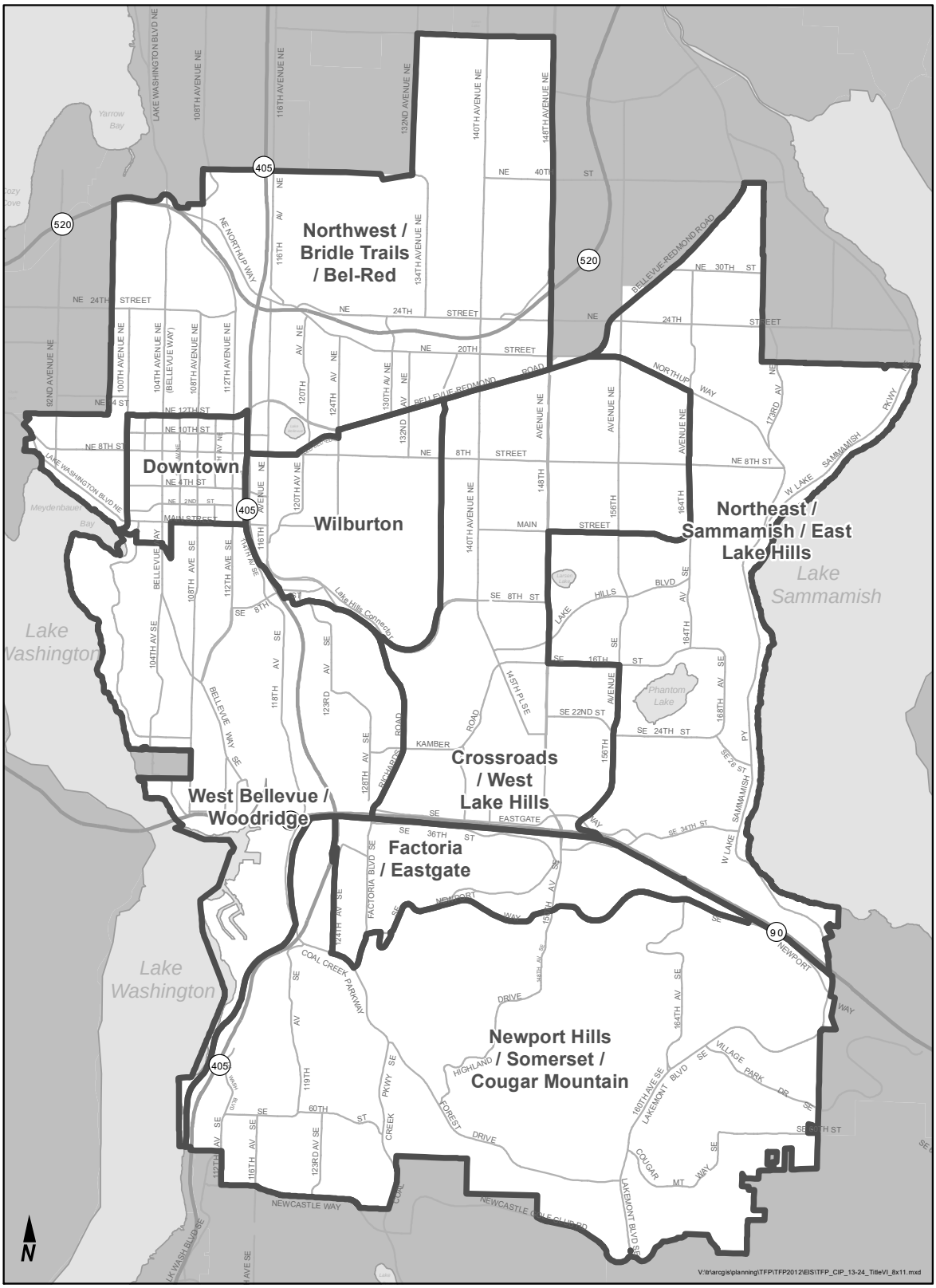

Figure E-1. Demographic Impact Analysis Subareas

Table E-1. Demographic Summary by Subarea

Subarea	Total Population	Total Households	% Minority	% Older Adults (65+)	% Living in Poverty*	% Speak a Language Other Than English at Home*	% of People with a Disability**	# of Capacity Projects: TFP Network	# of Non-Capacity Projects: TFP Network
Northwest Bellevue/Bridle Trails/BelRed	20,112	8,742	**49%**	12%	3%	**44%**	6%	12	3
Downtown	13,131	7,721	**51%**	**14%**	**8%**	**48%**	**8%**	7	2
Wilburton	4,082	1,854	**51%**	12%	**9%**	**43%**	6%	2	2
West Bellevue/Woodridge	13,549	5,660	38%	**17%**	**8%**	30%	**9%**	2	0
Crossroads/West Lake Hills	27,115	10,922	**61%**	12%	**13%**	**56%**	**10%**	2	1
Northeast Bellevue/Sammamish/East Lake Hills	23,352	8,694	33%	**17%**	**8%**	34%	**10%**	1	6
Factoria/Eastgate	6,200	2,274	**57%**	12%	**9%**	**46%**	**9%**	4	2
Newport Hills/Somerset/Cougar Mtn.	31,386	11,206	43%	**14%**	3%	33%	6%	3	1

Sources: U.S. Census Bureau 2013-2017 American Community Survey and King County Assessor parcel data on the number of housing units as of November 19,2018.

Note: **Bold** figures indicate areas where Title VI/Environmental Justice thresholds are exceeded.

Table E-2. Title VI/Environmental Justice Threshold Definitions

Category	Threshold Triggers			Considerations
	Concentration Exceeds:		Size Exceeds:	
Race and Ethnicity	2.2%	Black or African American	300	• Avenues for community-based outreach • Housing and employment commute impacts
	0.1%	American Indian and Alaska Native	20	
	32.6%	Asian	4,600	
	0.1%	Native Hawaiian and Other Pacific Islander	40	
	0.1%	Some Other Race	40	
	3.8%	Two or More Races	600	
	6.4%	Hispanic or Latino	1,000	
With a Disability	7.6%	Any disability that exceeds 7.6% of the population or 500 people. Disabilities tracked are: sensory, physical, mental, self-care, go-outside home, and employment.	500	• Non-motorized and transit access • Noise • Housing impacts
Primary Language Spoken at Home	40%	Speak a language other than English	1,000	• Peer to Peer outreach • Translation of key project information
	5%	Spanish or Spanish Creole	500	
	11%	Other Indo-European languages	500	
	22%	Asian and Pacific Island languages	500	
	1%	Other languages	500	
Individuals in Poverty	6.5%	Concentration exceeds 6.5%	500	• Non-motorized and transit connections • Housing and employment commute impacts
Older Adults (65 or older)	13.5%	Concentration exceeds 13.5%		• Non-motorized and transit connections • Noise • Housing impacts

Summary of Subarea Characteristics, Project Distribution, and Program Impacts

Northwest Bellevue/Bridle Trails/Bel-Red

Land Use

In terms of overall area, Northwest Bellevue and Bridle Trails are comprised primarily of single-family residential development with some multi-family housing located along 148th Ave NE, Bellevue Way and northwest of SR 520 and I-405. A small neighborhood business zone is located along Bellevue Way and office and other commercial uses are located along I-405 and SR 520. The 481-acre Bridle Trails State Park is also located adjacent to the area to the north.

The BelRed area, in contrast, is zoned entirely for commercial and mixed commercial-residential use. It was designated as one of the city's mixed-use centers in the city's Comprehensive Plan and is anticipated to accommodate a significant portion of the city's projected housing and job growth. Having recently been rezoned in 2009, BelRed has begun transforming into a transit-oriented area with several hundred multi-family housing units and the Global Innovation Exchange college building having been recently constructed at the transit node at 120th Ave NE in what is referred to as the Spring District. The future REI headquarters and other office buildings are permitted for construction here along with additional residential development at the transit node at 130th Ave NE. By 2030, the BelRed area is projected to continue transforming gradually leading to higher housing and employment densities as light right construction is completed by 2023. BelRed is also home to the city's medical district and has convenient access to freeways and to several of the city's major arterials.

Demographics

Currently, multi-family housing comprises 59 percent of residential units in the area, 58 percent of households and 51 percent of the area's population. The population's racial distribution closely matches the citywide distribution with slightly higher percentages of Asians and people of two or more races and slightly lower percentages of Blacks or African Americans and Hispanic or Latinos. Commensurate with the area's high racial diversity, it has a high percentage of people who speak a language other than English at home, and about 14 percent of the population over five, speak English less than very well.

In contrast, this area has lower percentages of older adults, people in poverty and people with one or more disabilities than the city as a whole.

As transportation and other investments occur in this area, it will be important to ensure all protected classes benefit from these investments by ensuring inclusive housing opportunities exist in the area for all economic, racial and age segments of the population as well as facilities and services that provide access and enable all to successfully navigate and take full advantage of these investments.

The CIP Network alternative includes nine projects in this area. TFP-210, TFP-213, TFP-260 and TFP-265 support the anticipated growth in this area by expanding segments of 124th and 120th Avenue NE to provide additional capacity, add pedestrian and bicycle facilities and are timed to coordinate with the construction of the East Link light rail line that will cross these two roads. In addition, TFP-209, TFP-215

and TFP-259 will design and construct a new multi-modal roadway along Spring Boulevard that will extend between 116th and 124th Avenues NE and 130th and 132nd Avenues NE. TFP-218 will construct multi-modal improvements along 130th Avenue NE between BelRed Road and NE 20th Street. TFP-244 (CIP G-103) involves supporting the development of multiuse pedestrian and bicycle trail along the Eastside Rail Corridor. King County is the owner of most of the rail corridor (with Sound Transit owning the remainder) and is leading the design and development of the trail. City resources will support development of key crossings along the corridor and connections into the corridor.

The TFP Network alternative includes seven additional projects in this area. TFP-217, TFP-270 and TFP-272 are capacity projects to build, advance design or initiate design for roadway segments (and associated pedestrian and bicycle facilities) in the Bel-Red area. These are consistent with the growth planned and anticipated in the area and provide necessary coordination with East Link light rail construction. TFP-250 is intended to address congestion on 148th Avenue NE, along the border with Redmond in the Overlake area. TFP-173 and TFP-245 involve preliminary scoping and public engagement for north-south pedestrian and bicycle facilities through the area. TFP-249 involves scoping options for improving access—especially for pedestrians—to the planned East Link station at NE 8th Street.

Impacts of these projects include property acquisition (partial and, potentially, whole parcels). Because of the planned and anticipated growth in the Bel-Red area as well as East Link light rail, there is a concentration of projects in this area. And, because several of the capacity projects include building entirely new roadways or widening existing roadways, the potential impact of the projects is proportionately greater than in other subareas. In general, impacts are not deemed disparate.

Downtown

Downtown Bellevue is a regional growth center, characterized by a mix of high-rise office and residential buildings along with major concentrations of retail and a variety of cultural uses. This subarea also hosts Downtown Park.

One of the most notable demographic elements of Downtown is its high concentration of individuals with one or more disabilities: 26 percent versus a citywide average of 15 percent. This concentration is likely correlated to Downtown's relatively high percentage of older adults who live in retirement homes and assisted living facilities. It also has one of the highest percentages of individuals living in poverty, with 13 percent versus a citywide average of 5 percent. Downtown has higher concentrations of minorities, specifically Black or African Americans, Asians and Native Hawaiians and Pacific Islanders, as well as higher concentrations of people who speak Asian, other Indo-European and other languages.

The CIP Network alternative includes no projects in this area. The TFP Network in Downtown includes five projects to add turn lanes at intersections: TFP-216, TFP-219, TFP-222, TFP-223 and TFP-225. It is envisioned that these projects also would be implemented in conjunction with redevelopment of adjacent properties, so impacts would be limited. TFP-110 will widen 110th Avenue NE to the west to accommodate an additional lane and standard sidewalks, would be implemented in conjunction with redevelopment of properties along the west side of the street, so impacts would be limited. TFP-190 will widen NE 2nd Street to five lanes between Bellevue Way and 112th Avenue NE and improve sidewalks. Adjacent development built in the last two decades or so has been set back and/or can be accommodated in this planned widening but portions of property may need to be acquired for right-of-way and some

older buildings may lose parking. TFP-230 and TFP-234 would revise roadway channelization and improve pedestrian and/or bicycle accommodation on 108th Avenue and Main Street (from Bellevue Way to 116th Avenue). TFP-193 and TFP-197 involve coordination with the State to add access to or from I-405 at NE 10th Street and NE 2nd Street, respectively.

Impacts of these projects include may include property acquisition (partial and, potentially, whole parcels). In general, impacts are not deemed disparate. City staff must take care during the property acquisition phase of these projects to ensure that the senior population is not disproportionately affected.

Wilburton

In Wilburton, the mix of residential and commercial uses is balanced by expansive open space in Bellevue Botanical Gardens, Glendale Golf and Country Club, and Kelsey Creek and Wilburton Hill Community Parks.

The current population is comprised of 36 percent minorities, somewhat less than the citywide average. Concentrations of Black and American Indian/Alaska Native residents, slightly higher than average, trigger the minority threshold. Despite relatively few racial triggers, Wilburton triggers every language category, with upwards of 24 percent of the population speaking an Asian language, 15 percent speaking other Indo-European languages, 12 percent speaking Spanish, and 6 percent speaking other languages. About 10 percent of Wilburton's population lives in poverty compared to 5 percent citywide, and 17 percent have one or more disabilities. Notably, this area has the highest percentage of older adults, with 16.7 percent compared to the citywide average of 13.9 percent.

The CIP Network includes one project in this area, TFP-244, the Eastside Rail Corridor, described in the Northwest Bellevue/Bridle Trails/BelRed section above.

The TFP Network includes two capacity projects in this area. TFP-211 extends NE 6th Street to 116th Avenue NE, creating an additional linkage to I-405 and downtown. This will support planned development in Wilburton and Bel-Red as well as bring increased traffic volumes to the adjacent segment of 116th Avenue NE. TFP-197 (also discussed in the Downtown section, above) involves coordinating with the State to add access to I-405 and could include extending NE 2nd Street to 116th Avenue NE.

Two non-capacity projects are included in the TFP Network. TFP-269 will add a multi-purpose pathway on both sides of 124th Avenue NE from NE 8th Street to NE 12th Street. TFP-234 (also discussed in the Downtown section, above) will add bike lanes on Main Street from 116th Avenue to Bellevue Way.

Impacts include increased traffic volumes at locations along 116th Avenue NE and changes to intersection LOS (better at 116th Avenue NE/NE 4th Street, worse at 116th Avenue NE/NE 8th Street), and may include significant property acquisition (whole and partial parcels). Because the capacity projects include extending roadways or widening existing roadways, the potential impacts of the projects is greater than in other subareas. These projects are consistent with the long-range subarea plan and place no undue burden, in general, on any one population group. As with the Downtown, however, care must be taken during the property acquisition phase of the projects to not disproportionately impact the minority or low-income residents of the area.

West Bellevue/Woodridge

West Bellevue and Woodridge are primarily residential with higher concentrations of single-family homes. Multi-family residential is concentrated south of Downtown, along I-405 and 112th Ave SE. Most commercial activity is concentrated in hotel and office buildings south of Downtown, in the Bellefield Office Park, and on industrial lands along the west side of I-405.

The area's population has relatively low concentrations of people of a minority race or ethnicity, exceeding only the threshold for populations of two or more races. The area exceeds, however, the thresholds for people who speak other Indo-European languages and other languages. It also has one of the highest estimates of people living in poverty, with 11 percent compared to a citywide average of 5 percent. It also exceeds the threshold for older adults with 15.6 percent. Though the area has a relatively low concentration of people with a disability at 12 percent, the area also exceeds the threshold of 10 percent.

The CIP Network includes two projects in this area: TFP-242 to add a southbound HOV lane on Bellevue Way from the future South Bellevue light rail station to the Winter's House. However, the funding allocation is for initial project development only; it is not sufficient for actual implementation. Also, in this area is TFP-244, the Eastside Rail Corridor, described in the Northwest Bellevue/Bridle Trails/BelRed section above.

The TFP Network alternative includes full funding for implementation of TFP-242 and adds TFP-268, which involves scoping and initial development of up to two additional segments of HOV lane on Bellevue Way SE, north of the Winter's House.

Impacts include property acquisition, particularly in the case of full implementation of TFP-268 under the TFP Network, where the HOV lane between the 112th Avenue SE "Y" and the Winter's House would (it is anticipated) involve several residential displacements and multiple partial acquisitions for right-of-way. There would also be aesthetic impacts for residents associated with the removal of screening vegetation and introduction of retaining walls and noise walls.

Crossroads/West Lake Hills

The Crossroads/West Lake Hills area runs north to south from Bel-Red Road down to I-90 encompassing two major hubs of activity including Crossroads Mall and Bellevue College as well as several smaller commercial centers and industrial lands in Richards Valley. In the south, it is an axis of travel between eastside communities and Seattle with the Eastgate Park & Ride. Single-family and multi-family residential areas surround these hubs with schools and parks interspersed among them.

Demographically, this is the most racially diverse area in the city with nearly 56 percent of its population being of a minority race or ethnicity. It has the highest concentrations of every minority racial category except for some other race and two or more races. Most notably, the area has the highest proportion of Hispanic or Latino residents, with nearly 15 percent compared to the citywide average of seven percent. Commensurately, every language category is triggered as well, with upwards of 23 percent of the population speaking an Asian language, 18 percent speaking Spanish, 13 percent speaking other Indo-European languages and 4 percent speaking other languages. This area also has the second highest percentage of people living in poverty and the second highest percentage of people with one or more

disabilities. Despite having pockets with high concentrations of older adults, the area as whole does not exceed the threshold for older adults.

Due to its high concentrations of protected classes, it will be important to compare transportation investment and impacts in this area with other areas, to ensure protected classes are receiving their fair share of investment dollars and not receiving an undue level of impacts.

The CIP Network includes no projects in this area. The TFP Network includes three capacity and three non-capacity projects in this area. TFP-253 is a capacity project that expands the 150th Avenue SE/Eastgate Way intersection to reduce congestion. TFP-252 involves coordination with Bellevue College and King County Metro to develop an alternative transit routing and multi-use trail through the college campus. TFP-263 will evaluate potential intersection improvements at the 148th Avenue NE/NE 8th Street intersection. TFP-158 will construct sidewalk on the north side and bike lanes on both sides where missing along SE 16th Street between 156th Avenue SE and 148th Avenue SE. TFP-245 will involve preliminary scoping and public engagement for pedestrian and bicycle facility improvements along 140th Avenue between NE 8th Street and NE 24th Street (also discussed in Bel-Red section, above). TFP-247 will install sidewalks where missing and bike lanes along Eastgate Way. As envisioned, TFP-252 will place transit routing closer to a multi-family residential condominium complex, potentially impacting residents.

Northeast Bellevue/Sammamish/East Lake Hills

This area spans the eastern edge of Bellevue north of I-90 hugging the shores of Lake Sammamish to the east. It includes predominantly single-family homes with pockets of commercial office in the north by Overlake and in the south by I-90, including the Boeing complex and Advanta office buildings housing high-tech companies. The Lake Hills Greenbelt and Phantom Lake are also significant features in this subarea.

Compared to other areas in the city, this area has relatively low concentrations of people of a minority race or ethnicity, exceeding only the thresholds for populations of American Indian/Alaska Native and two or more races. The area exceeds, however, the thresholds for people who speak other Indo-European languages and other languages. It has one of the lowest estimates of people living in poverty, yet still exceeds the threshold, and the proportion of people with a disability matches the citywide average of 15 percent. Notably, this area has one of the highest percentages of older adults with 16.5 percent compared to the citywide average of 13.9 percent.

The CIP Network includes one project in this area. TFP-256 will rebuild a segment of West Lake Sammamish Parkway and include improved pedestrian and bicycle accommodation. The TFP Network adds two additional segments along West Lake Sammamish Parkway, TFP-257 and TFP-267 and five additional projects. TFP-232 will add bike lanes/bike shoulder along 164th Avenue from NE 18th Street to SE 14th Street. TFP-158 (also discussed in the West Lake Hills section, above) will construct sidewalk on the north side and bike lanes on both sides where missing along SE 16th Street between 156th Avenue SE and 148th Avenue SE. TFP-247 will add bike lanes on Eastgate Way (as discussed in the West Lake Hills section, above). TFP-254 will add a center turn lane and bike lanes to Bel-Red Road between NE 20th Street and NE 24th Street. TFP-175 will construct sidewalk on the north side, where missing and a wide curb lane on the north side of SE 34th Street. TFP-232 is expected to displace parking along the east

side of 164th Avenue for at least part of the segment. TFP-254 will involve widening the roadway (the west side of which is in Redmond) and, potentially, some property acquisition (partial parcels). No displacements or significant impacts for residents are anticipated and the impact is not deemed disparate.

Factoria/Eastgate

The Factoria/Eastgate subarea comprises the Factoria Mall and commercial lands eastward, which are home to major corporations and community shopping centers. The remainder of the subarea is primarily residential, with a mix of single-family and multi-family homes including most of the recent Eastgate annexation area.

This area is one of the most racially diverse in the city, having the highest percentage of Asian residents at 34 percent compared to the citywide average of 28 percent, and the highest percentage of people of two or more races at 4 percent. It also exceeds the thresholds for Black and African American, and Native Hawaiian and Pacific Islander populations. Language thresholds are triggered for residents who speak Asian languages, Spanish and other languages. This area has one of the higher proportions of people living in poverty with 10 percent compared to the citywide average of 5 percent. The proportion of people with a disability is slightly higher, at 16 percent, than the citywide average. This area has the lowest percentage of older adults, however, with 11 percent compared to the citywide average of nearly 14 percent.

The CIP Network includes three projects in this area. TFP-246 involves constructing a 600-foot southbound right turn pocket on 150th Avenue SE and sidewalk the length of the pocket. TFP-255 will construct non-motorized improvements along SE Newport Way from Somerset Blvd to 150th Avenue SE. TFP-266 adds storage capacity to the eastbound I-90 off-ramp at Factoria Blvd as well as the first phase of the Mountains to Sound Greenway Trail from I-405 to 132nd Avenue SE. The TFP Network includes one capacity project and one non-capacity project in this area. TFP-195 will expand capacity at the I-90 eastbound off-ramp exiting to 150th Avenue SE. TFP-243 involves advancing design and construction of the Mountains to Sound Greenway trail where a gap exists between 132nd Avenue SE and the east city limit. No adverse or disparate impacts to residents are noted.

Newport Hills/Somerset/Cougar Mountain

The Newport Hills/Somerset/Cougar Mountain subarea covers the major portion of the city south of I-90. It is primarily residential with pockets of neighborhood-serving commercial areas. Several neighborhoods within the subarea are characterized by steep terrain and ravines, which provide for a more extensive tree canopy than other subareas. The subarea has relatively newer housing developments than other areas, especially in the east.

Race/ethnicity thresholds are exceeded for the concentration of Asian residents and residents of two or races. Thresholds for Asian and other languages are also exceeded. Despite having the lowest proportion of residents with one or more disabilities, the area exceeds the threshold of 10 percent. It is the only subarea in the city that does not exceed the poverty threshold; nor does it exceed the threshold for older adults.

The CIP Network alternative includes no projects in this area. The TFP network alternative includes four projects. TFP-194 will evaluate options for improving 164th Avenue SE, a gravel-surfaced road with

pavement, curb, gutter and sidewalk or alternative non-motorized facility. TFP-251 will involve preliminary scoping and public engagement for a separated multi-use path adjacent to Coal Creek Parkway between 124th Avenue SE (in Factoria) and the south city limit. TFP-272 is a capacity project that will convert three signalized intersections on Coal Creek Parkway at I-405 (2) and 119th Avenue SE and also the intersection of 120th Avenue SE into a series of roundabouts. TFP-273 will provide a new traffic signal and left turn lane on Forest Drive and Lakemont Blvd.

Overall, project distribution and impacts in this area are not deemed disproportionate in the citywide context.

Conclusion

Citywide programs of capital improvements are influenced by a variety of factors that may alter the assumed equitable distribution of projects. Those factors include, but are not limited to:

- Recent completion of updated subarea plans (such as those for BelRed. Wilburton, East Main and Downtown) that identify desired and anticipated levels of growth and identify high-priority projects;
- Growth Management Act requirements to not allow development if sufficient infrastructure is not available to accommodate increased housing and employment densities; and
- Available capital funding.

Given these factors, the program of projects within the proposed 2019-2030 TFP is not deemed disproportionate (i.e., more projects serving non-protected classes or protected classes shouldering more of the project impacts). It is important to track citywide plans over time, however, to ensure that longer term trends demonstrate an equitable balance.

Given the diverse characteristics of Bellevue, it is recommended that future TFP development processes include a robust community outreach component. Targeted efforts should be made to garner comment and input from all segments of the population through all stages of the process, from project identification through evaluation of the draft environmental impact statement.

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