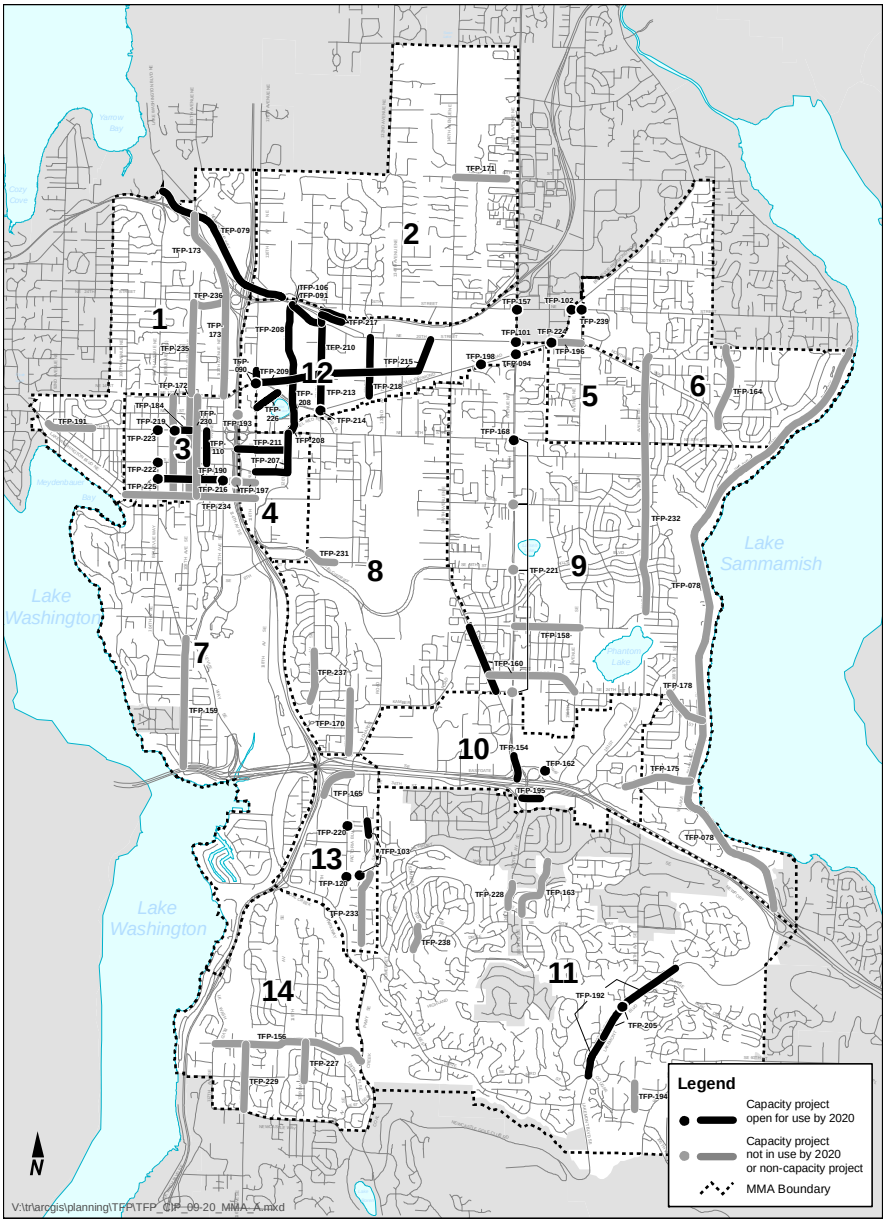
# FINAL ENVIRONMENTAL IMPACT STATEMENT
## 2009 – 2020 TRANSPORTATION FACILITIES PLAN




**MARCH 2009**

City of Bellevue

Post Office Box 90012 ▪ Bellevue, Washington ▪ 98009 9012

March 5, 2009

**TO: Recipients of the Final Environmental Impact Statement for the City of Bellevue 2009-2020 Transportation Facility Plan**

This Final Environmental Impact Statement (FEIS) analyzes the potential citywide impacts of two alternatives for implementation of transportation facilities by the year 2020 to meet the City's Comprehensive Plan, Transportation Element, Mobility Management goals. This programmatic, or "non-project" FEIS is part of a phased environmental review as defined under SEPA. Specific projects listed in the plan will undergo separate project level environmental review as they are funded for design and/or implementation.

Alternatives considered include:

**Alternative 1, the "No Action"** Alternative assumes no future investment in transportation facilities beyond those included in Bellevue's current 2009-2015 Capital Investment Program (CIP) Plan or other funded regional or local agencies' plans.

**Alternative 2, the Proposed 2009-2020 Transportation Facilities Plan** (TFP) Alternative assumes additional funding for transportation facilities through 2020. The projects selected for this alternative were prioritized based on the following criteria (taken from the goals of the Comprehensive Plan):

- Level-of-Service (i.e. congestion reduction)
- Safety (vehicular and pedestrian/bicycle)
- Transit (improving service, facilities and/or access)
- Non-motorized (identified benefit to non-SOV modes)
- Regional Partnerships & Outside Funding (regional corridor connection and likelihood of attracting non-local funds)

The Proposed 2009-2020 TFP includes projects supporting the planned further development of the Downtown and Bel-Red areas as well connections between the two areas and projects in each area of Bellevue. A portion of the available funding was targeted specifically at building out high-priority links in the Pedestrian and Bicycle Systems, as identified in the Pedestrian and Bicycle Transportation Plan.

**Next Steps**

Following the Environmental Impact Statement phase of the process, the Bellevue City Council is expected to adopt the 2009-2020 TFP in March 2009. Implementation of TFP projects will occur over the next 12 years. For further information about the transportation facilities planning and implementation processes in Bellevue, please contact Michael Ingram, Senior Transportation Planner, 425-452-4166 or via e-mail at mingram@bellevuewa.gov.

Sincerely,

Carol V. Helland

Carol V. Helland, Environmental Coordinator
Department of Development Services

# Final Environmental Impact Statement

## 2009–2020 Transportation Facilities Plan

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March 2009

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# Title VI Assurances

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# Fact Sheet

## Proposal Title

2009–2020 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

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## Required Licenses and Permits

City of Bellevue, City Council Adoption

## Final Environmental Impact Statement Authors and Principal Contributors

The Final EIS for the City of Bellevue 2009–2020 Transportation Facilities Plan 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 Development Services Department**

**ICF Jones & Stokes**
710 Second Avenue Suite 550
Seattle, WA 98104

## Date of Final Environmental Impact Statement Issuance

March 5, 2009

## Nature and Date of Final Action by City

Adoption of the 2009–2020 Transportation Facilities Plan
(Anticipated March 16, 2009).

## 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:

- 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 Determinations of Significance, Mitigated Determinations of Nonsignificance, Determinations of Non-significance,

adoption of this EIS, preparation of Supplemental EISs, preparation of new EISs, or review in 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 NEPA.

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

## Location of Background and Supporting Documents

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

City of Bellevue
Development Services Department
1st Floor West
Bellevue City Hall
450 110th Avenue NE
Bellevue, WA 98009

City of Bellevue
Transportation Department
2nd Floor East
Bellevue City Hall
450 110th Avenue NE
Bellevue, WA 98009

## Cost to the Public

$5.00

Copies may be purchased at the Service First Desk on the first floor of City Hall, 450 110th Avenue NE, Bellevue, WA 98004. Electronic copies may also be downloaded at http://www.bellevuewa.gov.

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Appendix E. Transportation System Impact Analysis Methodology
Appendix F. Air Quality Analysis Methodology
Appendix G. TNM Noise Modeling Results
Appendix H. Title VI and Environmental Justice Equity Analysis

# Acronyms and Abbreviations

| | |
|---|---|
| BCC | Bellevue City Code |
| BKR | Bellevue-Kirkland-Redmond |
| BMPs | best management practices |
| BROTS | Bel-Red/Overlake Transportation Study |
| CAA | Clean Air Act |
| CAFE | Corporate Average Fuel Economy |
| CAT | Climate Action Team |
| CIP | Capital Investment Program |
| City | City of Bellevue |
| CO | carbon monoxide |
| CO2 | carbon dioxide |
| CTR | Commute Trip Reduction |
| Ecology | Washington State Department of Ecology |
| EDNA | Environmental Designation for Noise Abatement |
| EIS | Environmental Impact Statement |
| EMFAC | Emissions FACtors |
| FEIS | Final Environmental Impact Statement |
| FHWA | Federal Highway Administration |
| GHG | greenhouse gas |
| GIS | geographic information services |
| GMA | Growth Management Act |
| HOV | high-occupancy vehicle |
| Hz | Hertz |
| I | Interstate |

| | |
|---|---|
| ICLEI | International Council for Local Environmental Initiatives |
| IPCC | Intergovernmental Panel on Climate Change |
| Leq | Equivalent Sound Level |
| LOS | level of service |
| MMA | Mobility Management Area |
| mph | miles per hour |
| MSATs | mobile source air toxics |
| NAAQS | National Ambient Air Quality Standards |
| NGPA | Native Growth Protection Area |
| NGPE | Native Growth Protection Easement |
| NO2 | nitrogen dioxide |
| NOx | nitrogen oxides |
| Pb | lead |
| PHS | Priority Habitats and Species |
| PM10 | particulate matter less than 10 micrometers in size |
| PM2.5 | 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 |
| SEPA | State Environmental Policy Act |
| SO2 | sulfur dioxide |
| SOV | single-occupant vehicle |
| SOx | sulfur oxides |
| SR | State Route |

| | |
|---|---|
| TDM | Transportation Demand Management |
| TFP | Transportation Facilities Plan |
| TIP | Transportation Improvement Program |
| TNM | Traffic Noise Model |
| V/C | volume to capacity ratio |
| VMT | vehicle miles traveled |
| VOC | volatile organic compounds |
| WAC | Washington Administrative Code |
| WASIST | Washington State Intersection Screening Tool |
| WDFW | Washington Department of Fish and Wildlife |
| WRIA | Water Resource Inventory Area |
| WSDOT | Washington State Department of Transportation |

# Corrections and Clarifications to Draft EIS

This section summarizes the corrections and clarifications reflected in this Final Environmental Statement (EIS) that were made to the text presented in the Draft EIS of the 2009-2020 Transportation Facilities Plan (TFP), issued for public review from January 22, 2009, through February 23, 2009. In addition to minor corrections and clarifications as noted, the following three revisions are reflected in this Final EIS:

- **Revision 1—Addition of TFP-239 –** The Final EIS includes one additional project in the Proposed Action, TFP-239, that was not included in the Draft EIS. The project is located at NE 24th Street/156th Avenue NE and consists of addition of an eastbound to southbound right-turn lane. Analysis performed by City traffic modeling staff show that the project will significantly improve the 2020 level of service (LOS) at this intersection under the Proposed Action, from a peak hour volume-to-capacity ratio (V/C) of 1.080 (LOS F) to a V/C of 0.980 (LOS E-). The added right turn lane would not affect broader traffic patterns in the area nor impact LOS at other, nearby intersections.

  Because this is a designated System intersection (#61), the LOS at this intersection affects the calculation for the area-wide LOS for the Mobility Management Area (MMA) of which it is a part, MMA 12 Bel-Red/Northup. With the addition of TFP-239, the year 2020 forecast for the Bel-Red/Northup MMA is projected to improve from an area-wide V/C of 0.873 (LOS D-) to 0.866 (LOS D-). The revised values are indicated in Appendix E, Table E-7. This intersection and the right-turn movement is located along the route of the planned King County Metro Rapid Ride transit service; through reduction in intersection delay, there is a notable projected benefit to transit operations from implementation of TFP-239.

  The land use immediately adjacent to the project location is currently a paved parking lot for a retail establishment; there are no identified sensitive environmental functions or elements at this location. Because TFP-239 would improve transportation operations as described above, and would result in no adverse impact in any of the environmental resource areas analyzed,

its addition to the Proposed Action does not change any of the impact conclusions presented in the Draft EIS.

- **Revision 2—Correction of LOS Standard for the Wilburton MMA** – The Final EIS contains a correction to the area-wide average LOS standard for MMA 4 Wilburton. The correct area-wide average LOS is a maximum volume/capacity ratio of 0.90 for System intersections in the MMA. The Draft EIS incorrectly stated the value as 0.85. The corrected figure for MMA 4 area-wide LOS is indicated in Chapter 3, Table 3-1, in the Section 3.2.2 discussion of traffic operations for MMA 4 and in Appendix E, Tables E-6 and E-7. An LOS level of 0.90 is consistent with the historical standard for the Bel-Red/Northup MMA of which the MMA 4 Wilburton was formerly a part. The incorrect standard presented in the Draft EIS was a result of internal miscommunication regarding the correspondence of LOS letter values to V/C ratios that occurred during the Bel-Red area planning process, in which the new MMA 12 Bel-Red/Northup was separated from the MMA 4 Wilburton. The technical analysis performed for the Draft EIS is not affected by the standard. The corrected standard is lower than what was analyzed for the Draft EIS, and as such, does not change any of the analysis results or impact conclusions presented in the Draft EIS.
- **Revision 3—Correction of Congestion Allowance for Bridle Trails MMA** – The Final EIS also contains a correction to the "congestion allowance" for MMA 2 Bridle Trails. The congestion allowance concerns the number of individual System intersections in an MMA at which the V/C is permitted to exceed the designated area-wide standard (0.80 in the case of MMA 2 Bridle Trails). The corrected figure for MMA 2 is a congestion allowance of four intersections; the Draft EIS incorrectly stated the value as three. The corrected MMA 2 Bridle Trails congestion allowance is indicated in Appendix E, Tables E-6 and E-7. The incorrect congestion allowance presented in the Draft EIS was a result of internal miscommunication concerning the revisions needed to accommodate the new MMA 12 Bel-Red/Northup, when it was separated from the MMA 4 Wilburton. Accommodating the new MMA 12 Bel-Red/Northup involved adjustments to boundaries for several adjacent MMAs, including MMA 2 Bridle Trails. The corrected congestion allowance is higher than what was analyzed for the Draft EIS, and as such, does not change any of the analysis results or impact conclusions presented in the Draft EIS.

Following is a summary of the corrections and clarifications made to the Draft EIS, reflected in this Final EIS document. Underlined text indicates text that has been added to the Final EIS; strike-outs indicate text that has been deleted from the Final EIS.

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| **CHAPTER 1** | | |
| Section 1.3.2 / Page 1-5 | The additional ~~52~~ 53 projects include ~~33~~ 34 additional capacity projects, two safety/operational projects, and 17 additional pedestrian and bicycle projects. ~~33~~ 34 of the ~~41~~ 42 total capacity projects are designated as impact fee projects, as the improvement is expected to be implemented and open for use by 2020. | Correction of project totals to account for the addition of TFP-239. See discussion of Revision 1 at the beginning of this section. |
| Section 1.3.2 / Page 1-6 | *Updated version of Figure 1-1* | Figure was updated to include a legend, to improve readability.<br>TFP-239 was also added to the figure. See discussion of Revision 1 at the beginning of this section. |
| Section 1.4 / Table 1-1 / Page 1-7 | **Impacts / Transportation System Performance**<br>In Downtown, increases ~~greater than 60%~~ of 30% to 40% are projected on some roadways between now and 2020. In the Bel-Red area, increases at some locations are projected to exceed 100%. In the Bridle Trails area, traffic volume increases at many locations are projected to range between ~~30%~~ 20% and ~~50%~~ 44%. | Correction of percentages to reflect more precise interpretation of projected traffic growth trends. |
| Section 1.4 / Table 1-1 / Page 1-7 | **Impacts / Transportation System Performance**<br>~~MMA 11 is forecasted to exceed its V/C standard of 0.80 under both the NO Action and the Proposed Action alternatives, although it exceeds the standard by less under the Proposed Action.~~ Four MMAs (2, 6, 9 and 11) are projected to exceed area-wide LOS standards in 2020. In MMAs 2, 9, and 11, the Proposed Action is expected to improve area-wide LOS over No Action. In MMA 6, the Proposed Action is expected to have no discernable effect on area-wide LOS, as compared to No Action. | Clarification of four MMAs in which 2020 LOS is projected to exceed area-wide standards under both alternatives. In three of the four MMAs, the Proposed Action is projected to improve overall operating conditions; and in the fourth, the Proposed Action is expected to have no discernable effect on overall operating conditions. This was reflected in the analysis results presented in the Draft EIS, but was not explicitly summarized. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 1.4 / Table 1-1 / Page 1-8 | **Unavoidable Adverse Impacts**<br>Analysis of 2020 conditions indicates that V/C is projected to exceed area-wide LOS standards in four MMAs, under both the No Action and Proposed Action alternatives. Bridle Trails (MMA 2) is projected to exceed its standard of 0.80; Northeast Bellevue (MMA 6) is projected to exceed its standard of 0.80; East Bellevue (MMA 9) is projected to exceed its standard of 0.85; and South Bellevue (MMA 11) is projected to exceed its standard of 0.80. However, as compared to the No Action alternative, the Proposed Action is projected to improve the area-wide V/C in Bridle Trails, East Bellevue, and Newcastle; and is expected to have no effect on the area-wide V/C in Northeast Bellevue. Although the Proposed Action has no adverse effect on area-wide LOS of these MMAs, and improves conditions in three of four of them, the exceedance of the area-wide standard in itself can be considered an significant unavoidable adverse effect.~~MMA 11 in South Bellevue is forecast to exceed its adopted LOS standard of 0.80 V/C under both the No Action and the Proposed Action alternatives.~~ | Clarification of four MMAs in which 2020 LOS is projected to exceed area-wide standards under both alternatives. In three of the four MMAs, the Proposed Action is projected to improve overall operating conditions; and in the fourth, the Proposed Action is expected to have no discernable effect on overall operating conditions. This was reflected in the analysis results presented in the Draft EIS, but was not explicitly summarized. |
| **CHAPTER 2** | | |
| Section 2.3 / Page 2.4 | By using the same land use distributions, the effects of land use are assumed to be the same for both alternatives. Appendix D contains the land use projection tables. Capacity projects expected to be implemented by 2020 are identified as impact fee projects; these projects were included in the model scenarios developed for the TFP alternatives. | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 2.4 / Table 2-1 | **MMA Number** **Geographic Area**<br>4 ~~Wiburton~~ Wilburton | Correction of typographical error. |
| Section 2.4.1 / Table 2-2 | **MMA Number** **TFP Number** **CIP**<br>~~2 Bridle Trails~~ 079 R-146<br>1 North Bellevue | Correction of MMA in which project is located. |
| Section 2.4.1 / Table 2-2 | **MMA Number** **TFP Number** **CIP**<br>3 ~~Dowtown~~ 110 R-139<br>Downtown | Correction of typographical error. |
| Section 2.4.2 / Page 2-8 | The Proposed Action alternative (Alternative 2) of the TFP contains all of the 17 projects included in the No Action alternative plus an additional ~~52~~ 53 capacity, safety/operational, and non-motorized projects, for a total of ~~69~~ 70 projects (see Figure 2-3). The additional ~~52~~ 53 projects consist of ~~33~~ 34 capacity projects, two safety/operational projects, and 17 pedestrian and bicycle projects. Twenty-~~five~~ six of the capacity projects are designated as impact fee projects, as the improvement is expected to be implemented and open for use by 2020. | Correction of project totals to account for the addition of TFP-239. See discussion of Revision 1 at the beginning of this section. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 2.4.2 / Table 2-4 | **MMA Number** **TFP Number**<br>~~2 Bridle Trails~~ 079<br>1 North Bellevue | Correction of MMA in which project is located. |
| Section 2.4.2 / Table 2-4 | **TFP Number** **Project Location**<br>239 156th Avenue NE/NE 24th Street | Addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |
| Section 2.4.2 / Table 2-4 | *Addition of table note 2:*<br>2. Project is not planned for implementation by 2020, and thus was not included in the Proposed Action model.<br>*Note 2 added to TFP # 172, 197, 193, 215, 217, 218, 226, and 103* | Clarification regarding the projects that are not expected to be completed by 2020, and as such were not included in the traffic model completed for the EIS analysis. |
| Section 2.4.2 / Page 2-13 | Table 2-6 presents a list of full project descriptions. The table indicates the alternative, CIP number (if applicable) and whether the project is a capacity project, an impact fee project, or both. As discussed earlier, the impact fee projects are those expected to be implemented by 2020, and thus are included in the model developed for the analysis presented in this Final EIS. | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 2.4.2 / Table 2-6 | **TFP#** **MMA**<br>079 ~~2~~ 1 | Correction of MMA in which project is located. |
| Section 2.4.2 / Table 2-6 | TFP# Project Location MMA<br>239 156th Avenue NE/… 12 | Addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |
| Section 2.4.2 / Pages 2-26 through 2-39 | *Updated version of Figures 2-4 through 2-17* | Figure was updated to include a legend, to improve readability.<br>TFP-239 was also added to the Figure 2-15. See discussion of Revision 1 at the beginning of this section. |
| **CHAPTER 3** | | |
| Section 3.1.1 / Table 3-1 | **MMA** **LOS Standard** **Maximum V/C**<br>4 ~~Wiburton~~ D ~~0.85~~ 0.90<br>Wilburton | Correction of typographical error.<br>Correction of maximum V/C definition for MMA 4. See discussion of Revision 2 at the beginning of this section. |
| Section 3.2.1 / Page 3-9 | In Downtown, increases ~~greater than 60%~~ of 30% to 40% are projected on some roadways between now and 2020. In the Bel-Red area, increases at some locations are projected to exceed 100%. In the Bridle Trails area, traffic volume increases at many locations are projected to range between ~~30%~~ 20% and ~~50%~~ 44% (the latter percentage is for 148th Avenue NE). | Correction of percentages to reflect more precise interpretation of projected traffic growth trends. |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** **Roadway Location** **MMA**<br>11 NE 24th Street… ~~0~~ 1 | Correction of listed MMA location of roadway segment. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Roadway Location** / **MMA**<br>30 / Bellevue Way NE… / ~~1~~ 3 | Correction of listed MMA location of roadway segment. |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Roadway Location** / **MMA**<br>31 / 108th Avenue NE… / ~~3~~ 1 | Correction of listed MMA location of roadway segment. |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Roadway Location** / **MMA**<br>32 / 112th Avenue NE… / ~~3~~ 1 | Correction of listed MMA location of roadway segment. |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Roadway Location** / **MMA**<br>33 / 116th Avenue NE… / ~~2~~ 12 | Correction of listed MMA location of roadway segment. |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Roadway Location**<br>80 / ~~128th Avenue SE~~ Factoria Boulevard | Correction of roadway name |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Roadway Location** / **MMA**<br>80 / Factoria Boulevard… / ~~0~~ 13 | Correction of listed MMA location of roadway segment. |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Roadway Location**<br>103 / 124th Avenue NE, ~~north~~ south of NE 15th/16th Street | Correction of location of segment 103 |
| Section 3.2.1 / Table 3-2 | **Roadway Location Index** / **Average Traffic Volume Existing (2006)**<br>103 / ~~653~~ 597<br>**Future (2020) No Action**<br>~~1,371~~ 1,305<br>**Future (2020) Proposed Action**<br>~~1,656~~ 832<br>**Average Traffic Volume Existing (2006)**<br>~~110%~~ 119%<br>**Average Traffic Volume Existing (2006)**<br>~~154%~~ 39% | Correction of existing and projected future volumes for segment 103 at corrected location. Corrected volumes are lower than the values previously analyzed, and do not affect analysis results or impact conclusions. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 3.2.2 / Table 3-3 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 079* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 3.2.2 / Page 3-19 | The area-wide 2020 LOS for Bridle Trails is projected to exceed the 0.80 standard under both alternatives. ~~Overall~~ However, the area-wide V/C for this area is expected to improve under the Proposed Action alternative. | Clarification that the area-wide 2020 LOS is projected to exceed standards in this MMA under both alternatives, and that the Proposed Action will improve conditions, but they will still be below standards. This was reflected in the Draft EIS analysis, but was not specifically pointed out in the text. |
| Section 3.2.2 / Page 3-20 | This area encompasses the Downtown (MMA 3) subarea. Table 3-5 shows that ~~ten~~ 11 capacity projects are proposed in this area under the Proposed Action alternative. | Reflects correction of location of TFP 193 to MMA 3 (previously listed in MMA 4). |
| Section 3.2.2 / Table 3-5 | **TFP# MMA Project Location**<br>193 3 NE 10th Street / I-405… | Correction of location of TFP 193 to MMA 3 (previously listed in MMA 4) |
| Section 3.2.2 / Table 3-5 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 110, 184, 190, 216, 219, 222, 223,and 225* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 3.2.2 / Table 3-7 | **TFP# MMA Project Location**<br>~~193 3 NE 10th Street / I-405…~~ | Correction of location of TFP 193 to MMA 3 (moved to Table 3-5) |
| Section 3.2.2 / Table 3-7 | **TFP# MMA Project Location**<br>239 12 156th Avenue NE/NE 24th Street | Addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |
| Section 3.2.2 / Table 3-7 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 207, 211, 090, 091/106, 208, 209, 210, 213, 214, 239* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 3.2.2 / Page 3-22 | The Proposed Action alternative is expected to improve three locations to levels within LOS standards: 116th Avenue NE / Main Street is forecasted to be under the Wilburton V/C standard of ~~0.85~~ 0.90… | Correction of maximum V/C definition for MMA 4. See discussion of Revision 2 at the beginning of this section. |
| Section 3.2.2 / Table 3-9 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 224, 094, 101, 102, 157, and 198* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 3.2.2 / Page 3-23 | Three locations (148th Avenue NE / Bellevue-Redmond Road, Bellevue-Redmond Road / NE 24th Street, and 156th Avenue NE / NE 24th Street) are projected to exceed the Bel-Red standard of 0.95 under both the No Action and Propose Action alternatives. At 156th Avenue NE / NE 24th Street, the Proposed Action is projected to improve operations compared to the No Action Alternative. At ~~each of these three~~ the other two locations, the Proposed Action is projected to slightly worsen operations… | Revision of assessment to reflect the addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |
| Section 3.2.2 / Table 3-10 | **ID# Intersection** **No Action V/C** **No Action LOS** **Proposed Action V/C** **Proposed Action LOS** **V/C Diff**<br>61 156th… ~~1.075~~ 1.080 F ~~1.080~~ 0.980 ~~F~~ E- ~~+0.005~~ -0.100 | Revision of assessment to reflect the addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |
| Section 3.2.2 / Page 3-24 | At each of these three locations, the Proposed Action is projected to slightly worsen operations compared to the No Action alternative. ~~Overall, the area-wide V/C for this area is expected to be approximately the same between the No Action alternative and Proposed Action alternative~~ The area-wide 2020 LOS forecast for Northeast Bellevue is projected at 0.810 for both the No Action and Proposed Action alternatives, which exceeds the standard of 0.80. This indicates that the Proposed Action is projected to have no discernable effect on the area-wide average V/C in the Northeast Bellevue MMA. | Clarification that the area-wide 2020 LOS is projected to exceed standards in this MMA under both alternatives, and that Proposed Action is not expected to have any positive or negative effect on area-wide conditions. This was reflected in the Draft EIS analysis, but was not specifically pointed out in the text. |
| Section 3.2.2 / Table 3-12 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 160 and 168* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 3.2.2 / Page 3-25 | The area-wide 2020 LOS for the East Bellevue MMA is projected to exceed the 0.85 standard under both alternatives. However, the area-wide V/C for this area is expected to improve under the Proposed Action alternative. | Clarification that the area-wide 2020 LOS is projected to exceed standards in this MMA under both alternatives, and that the Proposed Action will improve conditions, but they will still be below standards. This was reflected in the Draft EIS analysis, but was not specifically pointed out in the text. |
| Section 3.2.2 / Table 3-14 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 154, 162, and 195* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 3.2.2 / Table 3-16 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 120 and 220* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |
| Section 3.2.2 / Table 3-18 | *Addition of table note 1:*<br>1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.<br>*Note 1 added to TFP # 192 and 205* | Clarification regarding the projects that are expected to be completed by 2020, and as such were included in the traffic model completed for the EIS analysis. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 3.4 | Analysis of 2020 conditions indicates that V/C is projected to exceed area-wide LOS standards in four MMAs, under both the No Action and Proposed Action alternatives. Bridle Trails (MMA 2) is projected to exceed its standard of 0.80; Northeast Bellevue (MMA 6) is projected to exceed its standard of 0.80; East Bellevue (MMA 9) is projected to exceed its standard of 0.85; and South Bellevue (MMA 11) is projected to exceed its standard of 0.80. However, as compared to the No Action alternative, the Proposed Action is projected to improve the area-wide V/C in Bridle Trails, East Bellevue, and Newcastle; and is expected to have no effect on the area-wide V/C in Northeast Bellevue. Although the Proposed Action has no adverse effect on area-wide LOS of these MMAs, and improves conditions in three of four of them, the exceedance of the area-wide standard in itself can be considered an significant unavoidable adverse effect.~~MMA 11 in South Bellevue is forecast to exceed its adopted LOS standard of 0.80 V/C under both the No Action and the Proposed Action alternatives.~~ | Clarification of four MMAs in which 2020 LOS is projected to exceed area-wide standards under both alternatives. In three of the four MMAs, the Proposed Action is projected to improve overall operating conditions; and in the fourth, the Proposed Action is expected to have no discernable effect on overall operating conditions. This was reflected in the analysis results presented in the Draft EIS, but was not explicitly summarized. |
| **CHAPTER 5** | | |
| Section 5.2.2. / Page 5-11 | The increase in noise levels will be nearly the same (~~1~~2 dB or less) for ~~all~~ most roadways shown in Table 5-7 under both ~~alternatives, and potential~~ alternatives. Potential impacts in year 2020 are predicted to be the same for both alternatives. | Clarification of text. |
| Section 5.2.2 / Table 5-7 | **MMA** **Segment Locations within MMA Predicted to Exceed 67 dBA Leq in 2020**<br>13 ~~128th Avenue SE~~ Factoria Boulevard SE | Correction of segment road name. |
| **CHAPTER 6** | | |
| Section 6.2.1. / Table 6-1 | **TFP Project #** **Potential Acquisition Affecting On-Site Parking and/or Landscaping**<br>239 X | Addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| **CHAPTER 7** | | |
| Introduction / Page 7-1 | The exact level of direct and indirect impact of each individual project on the natural environment, as well as contribution to cumulative impacts, can only be reliably established after preliminary project design has been completed and a project footprint established. Initiation of project design typically occurs following a project's inclusion in an adopted Capital Investment Program Plan, for which the TFP, which is the subject of this Final EIS, serves as an initial screen. Because TFP projects are still at the conceptual stage, their potential impacts on the natural environment are addressed more generally in this document. Future phased review will result in a more specific treatment of direct and indirect impacts on the natural environment; and will identify project-specific design elements and mitigation measures to avoid or minimize impacts. Notwithstanding the subsequent project-level review for most projects contained in the TFP, some cumulative impacts—notably increased impervious surface and concomitant hydrologic and habitat impacts—may nonetheless occur due to the addition of impervious surface associated with the projects identified in the TFP. | Text added to clarify the level of analysis that is feasible at the programmatic level reflected in this EIS; and also to clarify that more detailed project-level environmental analysis will be conducted for each project as part of its implementation. |
| Section 7.1.4. / Table 7-4 | **MMA** / **TFP Project Number** / **Stream Type** / **Stream Name**<br>4 Wilburton / 211, ~~216,~~ 324 / F / Sturtevant Creek | Correction. TFP 216 was removed from this table because it is not located near any mapped stream. |
| Section 7.1.4 / Page 7-9 | Watersheds with significant impervious surface areas typically show some impairment to fish habitat due to alterations in hydrology, sediment quality and dynamics, or pollutant loads, compared to undeveloped watersheds. An analysis incorporating the results of 225 studies, including several in the Pacific Northwest, on the effects of impervious surface on water quality found that, in general, watersheds with 1 to 10 percent impervious surface had high water quality; watersheds with 11 to 25 percent impervious surface had reduced water quality, and watersheds with greater than 25 percent impervious surface had poor water quality (Center for Watershed Protection 2003). The City has calculated that 38.6% of citywide surface area is impervious under existing conditions. Table 7-6 summarizes the percent of the total impervious surface area in each MMA. Although MMAs do not reflect hydrologic boundaries, the existing amount of impervious surface in each MMA and in the City as a whole indicates that fish habitat is currently impaired.<br><br>*Table 7-6 added, summarizing percent of impervious surface in each MMA. All subsequent tables renumbered to reflect addition of table at this location.* | Added to provide additional detail on existing impervious surface in Bellevue. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 7.1.4 / Page 7-9 | The City has conducted an inventory of culverts within the city limits and has evaluated each for its potential to act as a barrier to fish passage. This inventory is in the process of being updated. BCC 20.25H.055C.3.e requires that any new culverts be designed according to guidelines contained in the Design of Culverts for Fish Passage Manual (WDFW 2003). Critical areas ordinance requirements for new or improved culverts are described in detail in Section 7.2.3.<br><br>*Text describing BCC 20.25H.055 requirements regarding culverts was moved from the location following this text to Section 7.2.3.* | Text describing BCC 20.25H.055 requirements regarding culverts was moved from the location following this text to Section 7.2.3 (pages 7-18 and 7-19), in order to better clarify the Impact discussion, in response to comments provided in Comment Letter No. 1. |
| Section 7.2.3 / Page 7-18 | Because impervious surfaces can result in increased stormwater runoff, 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, compared to undeveloped watersheds. Potential changes in hydrology include increases in run-off volume, peak discharge rate, bankfull flow, and baseflow. These can in turn cause changes in bank erosion or bank stability, embeddedness, and the amount and distribution of large woody debris in the stream. | Text added to provide additional clarification on potential impacts on aquatic resources. |
| Section 7.2.3 / Page 7-18 | Prior to implementation of each individual TFP project, project-level environmental analysis will be required, which will identify streams and fish species that would be directly impacted by the project; and quantify the potential direct and indirect impacts to the species and their habitat, as well as their contribution to cumulative impacts. Specific required and recommended mitigation measures will also be identified in the project-level environmental analysis. | Text added to clarify the level of analysis that is feasible at the programmatic level reflected in this EIS; and also to clarify that more detailed project-level environmental analysis will be conducted for each project as part of its implementation. |
| Section 7.2.3 / Page 7-19 | Proposed projects that include new lighting may result in impacts to 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. Project-level analysis would identify potential impacts and appropriate avoidance or minimization measures would be determined at that time, in consultation with regulatory agencies. Projects impacting 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. These performance standards include requirements that lights be directed away from streams and planting of dense vegetation along the outer edge of stream buffers to limit pet or human use. | Text added to further clarify potential impacts to aquatic resources. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| Section 7.3.3 / Page 7-26 | The required replacement ratio of streams and stream buffers is 1:1, however the City may increase the ratio at its discretion.<br>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. | Text added to clarify the City's discretion in requiring a higher replacement ratio of stream and stream buffers than specified in City Code; and also to clarify that more detailed project-level environmental analysis and identification of mitigation will be conducted for each project as part of its implementation. |
| **CHAPTER 8** | | |
| Page 8-1 | Center for Watershed Protection. 2003. Impacts of Impervious Cover in Aquatic Systems. Center for Watershed Protection, Ellicot City, MD. | Reference added for citation included in added Chapter 7 text. |
| **APPENDIX E** | | |
| Appendix E / Page E-7 | *Updated version of Figure E-1* | Figure was corrected to include Intersection #79, which was missing from the Draft EIS version. |
| Appendix E / Table E-6 | **MMA** **Area-Average LOS**<br>4 Wilburton ~~0.850~~ 0.900 | Correction to standard. See discussion of Revision 2 at the beginning of this section. |
| Appendix E / Table E-6 | **MMA** **Area-Average LOS**<br>5 Crossroads ~~0.090~~ 0.900<br>10 Eastgate ~~0.090~~ 0.900 | Correction of typographical error. |
| Appendix E / Table E-6 | **MMA** **Congestion Allowance**<br>2 Bridle Trails ~~3~~ 4 | Correction to congestion allowance. See discussion of Revision 3 at the beginning of this section. |
| Appendix E / Table E-7 | *LOS values that exceed standards have been shaded.* | Revision made to help the readability of the table. |
| Appendix E / Table E-7 | **MMA** **Congestion Allowance**<br>2 Bridle Trails ~~3~~ 4 | Correction to congestion allowance. See discussion of Revision 3 at the beginning of this section. |
| Appendix E / Table E-7 | **MMA** **Area-Average LOS**<br>4 Wilburton ~~0.850~~ 0.900 | Correction to standard. See discussion of Revision 2 at the beginning of this section. |
| Appendix E / Table E-7 | **ID# Inter-section No Action V/C LOS Prop Action V/C LOS Difference NA PA**<br>61 156th… ~~1.075~~ 1.080 F ~~1.080~~ 0.980 ~~F~~ E- ~~41.6~~ 42.3 ~~42.3~~ 29.1 | Revision of assessment to reflect the addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |
| Appendix E / Table E-7 | **MMA 12 – Area-wide Average**<br>**No Action V/C LOS Prop Action V/C LOS Difference NA PA**<br>~~0.942~~ 0.873 ~~E+~~ D- ~~0.873~~ 0.866 D- ~~33.8~~ 24.0 ~~24.0~~ 23.0 | Revision of assessment to reflect the addition of TFP-239 in MMA 12 Bel-Red. See discussion of Revision 1 at the beginning of this section. |

| Location in Final EIS | Correction / Clarification | Notes |
|---|---|---|
| **APPENDIX G** | | |
| Appendix G / Table G-1 | **ID** / **Segment Location** / **Action dBA** / **Increase Over Existing** / **Increase Over No Action**<br>103 / 124th Ave NE, ~~north~~ south of NE 15th/16th / ~~66~~ 63 / ~~+4~~ +1 / ~~+1~~ -2 | Revision of noise assessment to reflect volume corrections for segment 103. Volumes are lower than those analyzed in the Draft EIS, and thus the impacts are lower. Correction does not affect the analysis results or impact conclusions presented in the Draft EIS. |
| **APPENDIX H** | | |
| Appendix H | *New appendix, Title VI and Environmental Justice Equity Analysis, was added, which provides a comprehensive summary of the demographic data and potential impacts on communities of concern, such as concentrations of those individuals living below the poverty level.* | Appendix added in response to comment from the City Transportation Department Title VI Coordination Team. See Comment Letter No. 3 in Appendix C. |

# Chapter 1. Background and Summary

The City of Bellevue (City) is proposing to adopt its 2009–2020 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, and 2006–2017. The 2009–2020 TFP is posted at the City website at http://www.bellevuewa.gov.

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 Final Environmental Impact Statement (EIS) has been prepared. This Final EIS will assist the public and agency decision–makers in considering the environmental effects of proposed changes to the City's current 2006–2017 TFP. The projects from the 2006-2017 TFP that have been completed, and additional projects that were not carried into the 2009–2020 TFP, are summarized in Appendix A.

## 1.1. Purpose of the Transportation Facilities Plan

The TFP serves as the City's 12-year, or intermediate-range, transportation planning document. It serves as a bridge between long range facility plans in the City's Comprehensive Plan and the fully-financed 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. Updated every two years, the TFP is a "financially constrained" plan; identified cost of the projects in the TFP is balanced with the City's transportation revenue projections for the 12-year planning period. Some

projects included 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 seven 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 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 through this EIS. Prepared in conjunction with each TFP update, this TFP EIS documents potential 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 Final EIS provides 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 non-project (i.e., programmatic) action. A non-project action is defined as an action that is broader than a single site-specific project, and involves decisions on policies, plans, or programs. An EIS for a non-project proposal does not require site-specific analyses; instead, the EIS discusses impacts and alternatives appropriate to the scope of the non-project proposal and to the level of planning for the proposal (Washington Administrative Code (WAC) 197-11-442).

The adoption of the TFP is classified under SEPA as a non-project action. Consistent with SEPA, the City issued *Notice of Determination of Significance, Notice of Environmental Impact Statement Scoping Period, and Notice of Public Meeting* on September 18, 2008. Appendix B contains a copy of this notice, as well the comments that were submitted during the scoping period, and responses to those comments. A Draft EIS for the 2009-2020 TFP was issued on January 22, 2009, and circulated for a 30-day public review period that ended on February 23, 2009. The purpose of the public review was to invite written comments from the general public, tribes, permitting agencies, and agencies with jurisdiction over areas where the TFP projects may have potential environmental impacts. Three comment letters were submitted to the City during the public review period. Appendix C contains copies of the comment letters, and a summary of responses to those submitted comments. Following completion of this Final EIS, the Bellevue City Council will make its decision on the TFP.

The analysis in this Final EIS 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 Non-Project Environmental Analysis

Based on comments received from the general public and decision-makers, the City determined that the scope of this environmental analysis should focus on potential impacts on the following resource areas:

- transportation;
- air quality;
- noise;
- land use and aesthetics; and
- the natural environment.

Chapters 3 through 7 of this document discuss potential impacts on these resources which may result from the Proposed Action. System-wide qualitative and quantitative analyses are presented in this document. Project-specific impacts are not addressed.

### 1.2.2. Previous Environmental Review

The Final EIS for the Bel-Red Corridor Project was published on July 19, 2007. The EIS included an analysis of the preliminary preferred alternative and a comparison of its environmental impacts to those of four land use and transportation alternatives studied in the draft EIS. The Bel-Red Corridor is a 900-acre area that stretches between SR 520 and Bel-Red Road, extending from I-405 to 148th Avenue NE. The study area corresponds to Mobility Management Area 12 (described later in this document). Environmental assessment was completed in the areas of air quality, watershed processes, noise, environmental health, land use, recreation, population, housing and employment; aesthetics; transportation; and public services and utilities. The Final EIS for the Bel-Red Corridor Project (City of Bellevue 2007) is incorporated by reference.

### 1.2.3. Relationship to Growth Projections

This EIS presents the potential citywide impacts that could occur if or when two things happen:

1. The City's 12-year land use growth projections are realized (See Appendix D); and
2. The City's transportation facilities are upgraded based on the projects identified in the City's adopted CIP and/or the proposed TFP.

City staff and developers rely on the TFP EIS for disclosure of the cumulative impacts of growth on the built and natural environment. This analysis is used for the review and approval of development applications. However, because this is a non-project EIS, it is not possible to predict the exact location or amount of new development between 2009 and 2020. 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 projection. Actual land use growth and its impacts on the transportation system and other elements of the built and natural environment are not likely to exceed the cumulative land use projections and impacts disclosed in this TFP EIS.

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 two 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.
- Issue a supplement to the 2009–2020 TFP EIS to incorporate the additional land use growth and its associated impacts.
- Require the 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.

## 1.3. Summary of Alternatives

Two alternatives are considered for the 2009–2020 TFP and are analyzed in this environmental document. These alternatives are described in detail in Chapter 2 of this Final EIS.

### 1.3.1. No Action Alternative

The No Action alternative (Alternative 1) encompasses all of the projects that the City, along with its local jurisdiction and regional agency partners, has presently committed to fund and implement within the city limits. There are 17 projects proposed as part of the No Action alternative, of which nine are focused on pedestrian and bicycle improvements and eight are focused on roadway capacity improvements. The No Action alternative does not include the unfunded projects in the 2006–2017 TFP. Because this alternative is based on existing project plans with secured funding, it is considered a “no action” alternative. The Bellevue City Council is not required to take any additional action to implement the No Action alternative if it chooses not to adopt the proposed 2009–2020 TFP. This is consistent with the No Action alternatives defined in the 2004–2015 TFP and the 2006–2017 TFP.

### 1.3.2. Proposed Action Alternative

The Proposed Action alternative (Alternative 2) contains all the projects included in the No Action alternative (17 projects) plus additional capacity, safety/operational and non-motorized projects. Revenue available to fund the additional projects is approximately 65% of the total

available funding for the 12-year plan period. The additional 53 projects include 34 additional capacity projects, two safety/operational projects, and 17 additional pedestrian and bicycle projects. 34 of the 42 total capacity projects are designated as impact fee projects, as the improvement is expected to be implemented and open for use by 2020. Figure 1-1 shows the location of these proposed 2009–2020 TFP projects. The figure also indicates the Mobility Management Area (MMA) in which the proposed projects are located. An MMA is a geographic area used to analyze transportation systems. The city is divided into 14 MMAs, which are described further in Chapter 2 of this Final EIS.

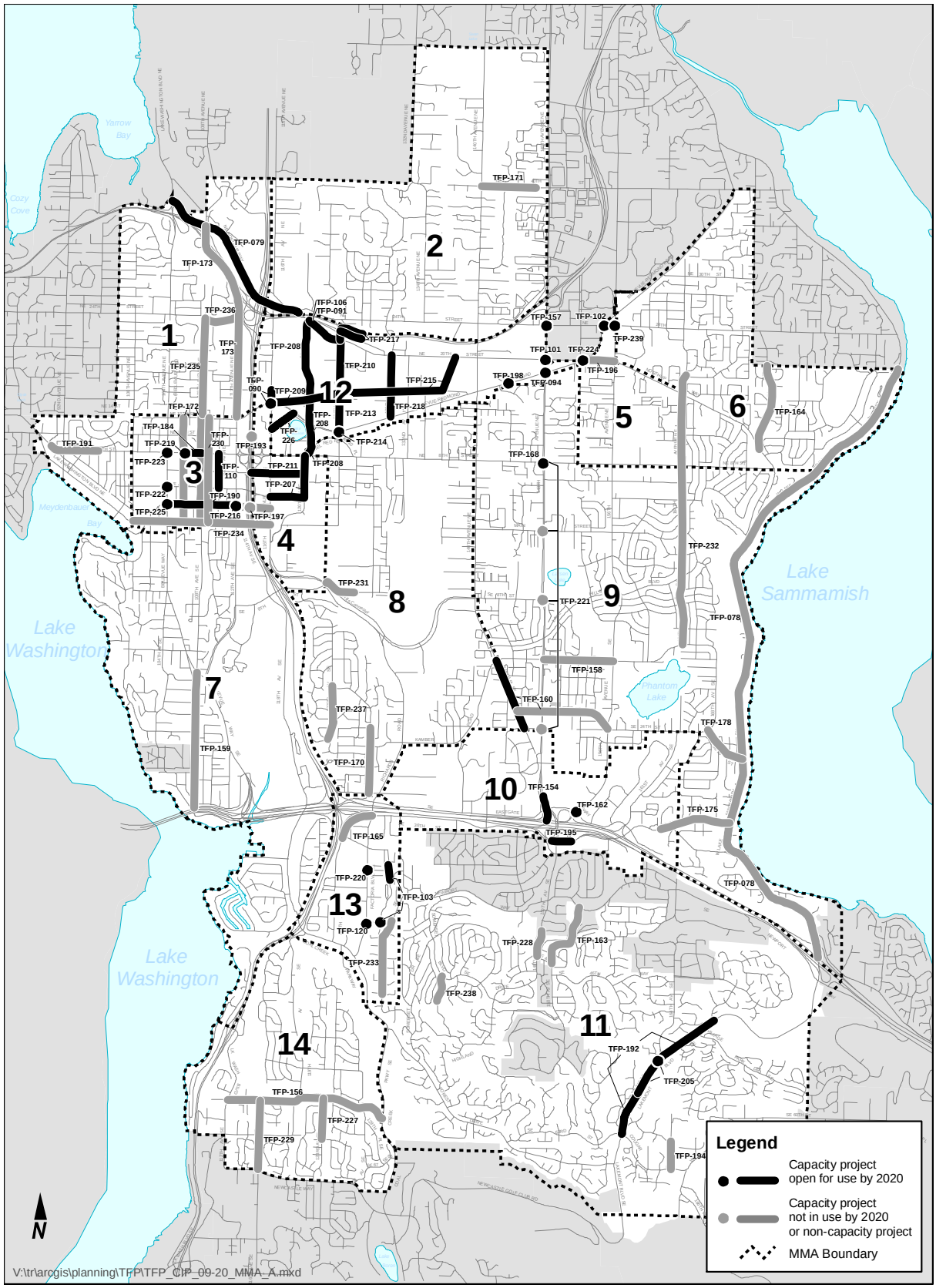



Figure 1-1. Proposed 2009-2020 Transportation Facilities Plan Projects

## 1.4. Summary of Potential Impacts and Mitigation Measures

The full text of the Affected Environment, Impacts, and Mitigation Measures section of the Final SEIS is presented in Chapters 3 through 7. Summary statements presented in Table 1-1 are considerably abbreviated from the full discussion and do not include explanations of terminology. Summary statements of the potential impacts also appear here in the absence of the context of existing environmental conditions (the Affected Environment). For those 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 Proposed Action and No Action alternatives.

### Table 1-1. Summary of Potential Impacts of the No Action Alternative and Proposed Action Alternative

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| **Transportation** | | |
| Impacts | **System Performance**<br>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 Mobility Management Areas are predicted to operate at worsened LOS between now and 2020.<br><br>Areas with the greatest increase in traffic volumes are the Downtown, Bel-Red/Northup and Bridle Trails MMAs. In Downtown, increases of 30% to 40%are projected on some roadways between now and 2020. In the Bel-Red area, increases at some locations are projected to exceed 100%. In the Bridle Trails area, traffic volumes at many locations are projected to range between 20% and 44%.<br><br>In general, the change of 2020 roadway volumes over existing are projected to be within 5% of each other, under the No Action and the Proposed Action alternatives; with No Action volumes a little higher at some locations, and Proposed Action volumes a little higher at others. Four MMAs (2,6, 9 and 11) are projected to exceed area-wide LOS standards in 2020. In MMAs 2, 9, and 11, the Proposed Action is expected to improve area-wide LOS over No Action. In MMA 6, the Proposed Action is expected to have no discernable effect on area-wide LOS, as compared to No Action.<br><br>**Neighborhood Impacts**<br>The proposed capacity projects under | **System Performance**<br>As described under the No Action alternative.<br><br>**Neighborhood Impacts**<br>Because there are more capacity projects under the Proposed Action alternative, it may reduce neighborhood cut-through traffic to a greater extent than the No Action alternative.<br><br>**Safety**<br>As described under No Action. Proposed action projects that address safety issues are TFP-196 (NE 20th St U-turn) and TFP 221 (148th Ave intersection safety and reliability).<br><br>**Pedestrian/Bicycle Impacts**<br>The greater number of projects included under the Proposed Action alternative may result in greater improvement to non motorized mobility than under No Action. |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| | the No Action alternative and Proposed Action alternative do not directly respond to residents' concerns about speeding on their neighborhood streets. Capacity projects can reduce spillover traffic onto local streets by improving the traffic flow on the City's main arterials Because there are fewer capacity projects than under the Proposed Action alternative, the No Action alternative may reduce neighborhood cut-through traffic to a lesser extent than the Proposed Action alternative.<br><br>**Safety**<br>The TFP identifies projects at specific locations to address inherent design or engineering deficiencies that may result in accidents. In some cases, capacity projects help resolve hazards resulting from traffic congestion; or 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. In addition, some projects are specifically designed to correct problems in high accident areas.<br><br>**Pedestrian/Bicycle Impacts**<br>Fewer projects are included under the No Action alternative, potentially leading to less improvement to non motorized mobility than under the Proposed Action. | |
| Mitigation Measures | Overall, the capacity, safety/operational and non-motorized projects included in both alternatives would reduce congestion, improve mobility, and improve safety for vehicular traffic, bicyclists and pedestrians. The Proposed Action alternative includes more projects than the No Action alternative, and thus is expected to improve overall safety and mobility conditions to a greater extent. Since the projects included in both alternatives would be expected to improve transportation conditions, no mitigation is recommended. | |
| Unavoidable Adverse Impacts | Analysis of 2020 conditions indicates that V/C is projected to exceed area-wide LOS standards in four MMAs, under both the No Action and Proposed Action alternatives. Bridle Trails (MMA 2) is projected to exceed its standard of 0.80; Northeast Bellevue (MMA 6) is projected to exceed its standard of 0.80; East Bellevue (MMA 9) is projected to exceed its standard of 0.85; and South Bellevue (MMA 11) is projected to exceed its standard of 0.80. However, as compared to the No Action alternative, the Proposed Action is projected to improve the area-wide V/C in Bridle Trails, East Bellevue, and Newcastle; and is expected to have no effect on the area-wide V/C in Northeast Bellevue. Although the Proposed Action has no adverse effect on area-wide LOS of these MMAs, and improves conditions in three of four of them, the exceedance of the area-wide standard in itself can be considered an significant unavoidable adverse effect. No other significant unavoidable adverse impacts on the transportation system were identified as a result of either alternative. | |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| **Air Quality** | | |
| Impacts | Future Mobile Source Air Toxic (MSAT) emissions likely to be lower in most cases. Compared to the Proposed Action alternative, the No Action alternative would result in fewer roadway and intersection widening improvements, resulting in a lower potential for localized areas of ambient concentrations of MSAT emissions.<br><br>**Greenhouse Gases**<br>Estimated (Green House Gas) GHG Emissions: 607,129 metric tons/year<br><br>**Construction Impacts**<br>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.<br><br>**Transportation Conformity Analysis**<br>Modeled ambient carbon monoxide (CO) concentrations at all intersections are below the allowable federal limits under 2020 conditions. The No Action alternative would have no significant impacts on localized air quality. | Future MSAT emissions likely to be lower in most cases. The proposed roadway and intersection widening improvements in the Proposed Action alternative would move some traffic closer to homes and businesses; therefore, there may be localized areas where ambient concentrations of MSAT emissions could be higher with the Proposed Action alternative than under the No Action alternative.<br><br>**Greenhouse Gases**<br>Estimated GHG Emissions: 606,764 metric tons/year<br><br>**Construction Impacts**<br>As described under No Action.<br><br>**Transportation Conformity Analysis**<br>Modeled ambient CO concentrations for the Proposed Action alternative are less than those for the No Action alternative. Modeled ambient CO concentrations at all intersections are below the allowable federal limits under 2020 conditions. The Proposed Action alternative would have no significant impacts on localized air quality. |
| Mitigation Measures | **Incorporated Plan Features**<br>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.<br><br>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 adopted fugitive dust control measures specified in the brochure “Guide to Handling Fugitive Dust from Construction Project” published by the Washington Associated General Contractors of Washington. The following BMPs would be used to control fugitive dust.<br>▪ Use water sprays or other non-toxic dust control methods on unpaved roadways.<br>▪ Minimize vehicle speed while traveling on unpaved surfaces.<br>▪ Prevent track-out of mud onto public streets.<br>▪ Cover soil piles when practical.<br>▪ Minimize work during periods of high winds when practical.<br><br>Typical mitigation measures to minimize air quality and odor issues caused by tailpipe emissions include the following:<br>▪ Maintain the engines of construction equipment according to manufacturers’ specifications.<br>▪ Minimize idling of equipment while the equipment is not in use.<br>▪ Locate stationary equipment as far as practical from sensitive receptors. | |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| | **Applicable Regulations and Commitments**<br>As part of future project-specific SEPA and NEPA documentation for individual new roadway improvement projects, the City would 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.<br>**Other Potential Reduction Measures**<br>The City could identify GHG reduction measures in their 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 are anticipated. Temporary, localized dust and odor impacts could occur during the construction activities. | |
| **Noise** | | |
| Impacts | Construction of roadways would temporarily increase noise levels at residential locations in the vicinity of the construction site. Noise increases would result both from on-site construction activities, especially during site preparation, grading, and other earthmoving activities, as well as from construction-related vehicle traffic delivering materials to and from the construction site<br>The increase in noise levels will be nearly the same (1 dB or less) for roadways under both alternatives, and potential impacts in year 2020 are predicted to be the same for both alternatives. Background growth between the years 2006 and 2020 is a more significant driver of traffic noise levels in the future than demand for specific projects.<br>For all roadway segments, none of the traffic noise levels are predicted to increase by 5 dB or more due to implementation of the Proposed Action alternative.<br>Traffic noise levels at residential locations are predicted to exceed the City threshold of 67 dBA Leq along certain arterial roadways under existing conditions as well as under the No Action or Proposed Action alternatives.<br>Since noise levels are predicted to exceed City thresholds for arterial improvement projects along certain roadways, this impact is considered potentially significant, and a detailed acoustical analysis of the proposed projects affecting these roadways may be required. | |
| Mitigation Measures | **Construction Noise**<br>Roadway construction occurring outside of exempt hours should follow noise-reducing construction practices ensuring that City noise ordinance standards are not exceeded. Measures to limit noise include, but are not limited to:<br>▪ locating equipment as far as practical from noise sensitive uses;<br>▪ using equipment that is quieter than standard equipment;<br>▪ selecting haul routes that affect the fewest number of people;<br>▪ using noise-reducing enclosures around noise-generating equipment;<br>▪ constructing barriers between noise sources and noise sensitive land uses;<br>▪ establishing a 24-hour complaint hotline; and<br>▪ in exceptionally loud cases where nighttime noise limits can't be achieved, offer temporary hotel rooms.<br>**Traffic Noise**<br>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:<br>▪ Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project;<br>▪ Constructing noise barriers;<br>▪ Acquiring property to serve as a buffer zone; | |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| | ▪ Using traffic management measures to regulate types of vehicles and speeds; and<br>▪ Acoustically insulating public-use or nonprofit institutional structures.<br><br>Sound walls are generally the most common and effective measure to reduce noise levels. However, in the project area, sound walls may not be desirable because of their effects on community cohesion, safety, 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 this project because since travel speeds on surface streets are lower than on highways, the primary source of vehicle noise is expected to be car and truck engines and exhaust, not tire noise.<br><br>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 determine that they do not conflict with existing utility and safety requirements. | |
| 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 from 2006 to 2020. Future traffic noise levels are basically equivalent between the two alternatives.<br><br>Most residential areas within the city require access to the roadways where traffic noise impacts are predicted to occur under the either alternative. This access requirement would conflict with placement of a noise barrier as a potential mitigation measure for impacted residences that have driveway access to these roadways. Therefore, detailed analyses could conclude that future traffic noise impacts might be significant and unavoidable. | |
| **Land Use and Aesthetics** | | |
| Impacts | **Land Use Patterns**<br>During construction, short- term impacts could include vehicular and pedestrian detours, loud noise, and construction dust. These impacts could impact localized uses and activities over the short term.<br><br>Long term land use impacts could result from the following:<br>▪ If traffic noise and pollution levels become intrusive for nearby structures, they could make affected buildings less desirable for tenants and/or could lead to the need for investment in abatement measures.<br>▪ Displacement of driveways, removal of parking areas, landscaping and public facilities may require reorienting entrances or similar features.<br>▪ Direct displacement or removal of parking spaces, especially parking areas located between streets and buildings.<br>▪ Acquisition of entire parcels or large parts of existing parcels for rights-of-way, especially for construction of new roadways.<br>▪ Two projects under both alternatives have the potential for right-of-way acquisition to affect | **Land Use Patterns**<br>Impacts would be as described under No Action. However, the Proposed Action includes 51 projects not included in No Action, so greater potential for these impacts. Nine additional projects have the potential for right-of-way acquisition to affect buildings and land uses, as compared to No Action.<br><br>**Plans and Policies**<br>The transportation projects included in the Proposed Action alternative but not considered under the No Action alternative are consistent with the City’s vision statement and the goals and policies of the City’s land use and transportation elements of the Comprehensive Plan.<br><br>**Aesthetics**<br>Generally, the Proposed Action is expected to improve consistency and character by filling in missing segments of streetscape, sidewalk and/or bicycle lanes. May transform character from lower intensity suburban to the urbanized standard envisioned in the Comprehensive Plan. |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| | buildings and land uses.<br><br>**Plans and Policies**<br>The No Action alternative projects are consistent with the City's vision statement and goals and policies of the land use and transportation elements of the Comprehensive Plan.<br><br>**Aesthetics**<br>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 by the observer from the roadway. This can occur by adding elements of an urban environment to an area with a more rural character, reduce landscaping and change road configurations, or affect view corridors. | |
| Mitigation Measures | **Land Use Patterns**<br>▪ Prepare a relocation plan for displaced residential or commercial uses.<br>▪ Remove or relocate underground storage tanks and other hazardous materials if displacement of gas station occurs.<br>▪ 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.<br>▪ Where possible, minimize the loss of existing buildings and land uses in development of new transportation corridors and/or realignment of existing transportation corridors.<br>▪ Mitigate land acquisition impacts by combining parcels that are not used for sale with adjacent parcels and incorporating undeveloped parcels into roadway designs.<br>▪ 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; preserving significant stands of vegetation adjacent to roadways by installing sidewalks on one side of the street, where pedestrian volumes and hazard potentials are low; and reducing the extent of cleared areas by using retention structures, where practical in place of long, fill slopes.<br><br>**Plans and Policies**<br>▪ Any transportation facility projects not identified within the City's Comprehensive Plan or associated subarea plans should be included in a Comprehensive Plan amendment to maintain consistency between the 2009–2020 TFP and the City's Comprehensive Plan.<br><br>**Aesthetics**<br>▪ Preserve natural vegetation to the greatest extent possible.<br>▪ Replace landscaping, including street trees when roadway widening or realignment removes landscaping and street trees.<br>▪ Design and align new transportation corridors and other improvements to minimize adverse aesthetic impacts, particularly in residential neighborhoods.<br>▪ Implement consistent streetscapes along roadway corridors by using common designs for streets and freeway structures and common landscaping and street trees to provide visual unity.<br>▪ Coordinate closely with adjacent land owners to identify significant features that should be considered for retention or replacement in design | |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| | improvements.<br>▪ Relocate utility lines underground. | |
| Unavoidable Adverse Impacts | The areas most likely to be impacted by the 2009–2020 TFP are Downtown (MMA 3), Bel-Red (MMA 12) and Wilburton (MMA 4). These areas correspond to the major activity centers in the city. It is consistent with Comprehensive Plan policies that infrastructure improvements are focused in these areas. However, it is likely that any adverse impact generated by the projects in the Proposed Action alternative could be mitigated to be consistent with City policies.<br><br>Permanent effects to buildings related to transportation projects are considered a potential significant adverse impact. Two projects under the No Action and Proposed Action alternatives, TFP-094 and TFP-184, have the potential for right-of-way acquisition to affect land uses. Under the Proposed Action alternative, nine additional projects have the potential to displace land uses by creating new roads and/or re-aligning existing. Four of these projects (TFP-197, TFP-207, TFP-211, and TFP-216) continue the Downtown street grid and/or provide access to/from I-405 to the northern portion of the Wilburton area. Five of these projects (TFP-193, TFP-208, TFP-209, TFP-215 and TFP-226) create a street grid or realign streets in the Bel-Red area, or make I-405 access improvements in support of anticipated growth and redevelopment of this area. All nine projects hold the greatest possibility for acquiring property for right-of-way which may result in displacing pre-existing buildings, on-site parking, and/or landscaping.<br><br>No other significant unavoidable adverse impacts on land use and aesthetics were identified as a result of either alternative. | |
| **Natural Environment** | | |
| Impacts | **Geology and Soils**<br>Construction activity in potentially unstable ground could destabilize hillsides, if mitigating measures, such as groundwater interception, engineered retaining systems, or bridges, are not employed. Specific projects located in the vicinity of slopes greater than 40% included portions of TFP-159 and several segments of TFP-178. Additional areas may be identified during project-level review.<br><br>**Wetlands**<br>None of the proposed projects are anticipated to impact wetlands.<br><br>**Aquatic Resources**<br>Potential impacts resulting from implementation of proposed projects included under the No Action alternative will be the same as impacts associated with the Proposed Action alternative. Specific projects which may impact aquatic resources are TFP-078, TFP-079, TFP-091, TFP-106, TFP-156, TFP-163, and TFP-175. Additional areas may be identified during project-level review. Most of the proposed projects would result in an increase in impervious surface, specifically those that would provide additional lanes for traffic on existing roads, new road segments, and the construction of bicycle lanes and sidewalks. The potential for increased pollution from stormwater runoff is greater for those projects that would | **Geology and Soils**<br>As described under the No Action alternative.<br><br>**Wetlands**<br>Under the Proposed Action alternative, eleven proposed projects could potentially impact wetlands. These projects are TFP-158, TFP-168, TFP-171, TFP-173, TFP-197, TFP-208, TFP 210, TFP-221, TFP-231, TFP-234, and TFP-236. The actual extent of on-site wetlands, as well as wetland functions and values, would be assessed at the time of project-level environmental review for each of the proposed projects.<br><br>**Aquatic Resources**<br>As described under the No Action alternative.<br><br>**Wildlife and Vegetation**<br>As described under the No Action Alternative.<br><br>**Shorelines**<br>Project-level analysis will be conducted on individual projects to determine impacts on shorelines and whether a conditional use permit would be required for the proposed activity. Project TFP 221 is the replacement of traffic signals and so is unlikely to result in shoreline impacts. Project TFP-078 is being designed to allow for improvements to fish passage, water quality, and storm drainage and so may improve shoreline |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| | provide for additional motorized capacity (i.e. an increase in pollution generating surfaces). As there are fewer projects included in the No Action alternative, a lower level of impact related to increased impervious surface would result, as compared to the Proposed Action alternative.<br><br>**Wildlife and Vegetation**<br>Potential impacts resulting from implementation of proposed projects included under the No Action alternative will be the same as impacts associated with the Proposed Action alternative. TFP-159 could potentially impact bald eagles. Additional areas may be identified during project-level review<br><br>**Shorelines**<br>Project-level analysis will be conducted on individual projects to determine impacts on shorelines and whether a conditional use permit would be required for the proposed activity. Project TFP 078 is being designed to allow for improvements to fish passage, water quality, and storm drainage and so may improve shoreline conditions. | conditions. Cumulatively, the increase in impervious surface from the proposed projects may negatively impact shoreline functions by increasing run-off and associated pollutant loads to receiving water bodies. Stormwater treatment will be evaluated at the project level. |
| Mitigation Measures | **Geology and Soils**<br>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 20.25H125. 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.<br><br>**Wetlands**<br>If a project results in impacts on wetlands, performance standards described in BCC 20.25H.100 would be implemented.<br><br>**Aquatic Resources**<br>If a project results in impacts on 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.<br><br>**Wildlife and Vegetation**<br>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 the WDFW.<br><br>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.<br><br>**Shorelines**<br>No impacts on shorelines are anticipated at this time; therefore, no mitigation is suggested. However, if during project specific review, impacts on shorelines are identified, mitigation measures would be put in place. Project TFP-078 is being designed to allow for improvements to fish passage, water quality, and storm drainage and so may improve shoreline conditions. If other projects result in similar impacts, similar design features could be considered. | |

| Subject | No Action Alternative | Proposed Action Alternative |
|---|---|---|
| Unavoidable Adverse Impacts | Although proposed projects will 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 vegetative cover available. Although stormwater would be treated to the extent possible, and current best management practices would be employed to reduce volumes of stormwater runoff from reaching streams or rivers, 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 erosion and habitat impacts. If no feasible mitigation measures are identified during project-level environmental analysis to mitigate these effects, a significant unavoidable adverse impact would occur. | |

# Chapter 2. Description of Alternatives

This chapter describes the two alternatives considered in this EIS: the No Action alternative and the Proposed Action alternative. In addition, background information about the TFP, its relationship to the City's other plans, and potential funding sources are discussed.

## 2.1. Background

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

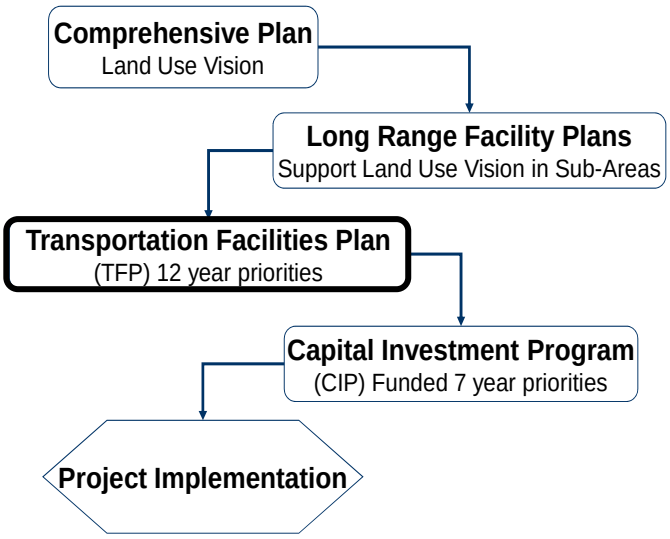



Figure 2-1. Transportation Planning Process

The components of the transportation planning process are described 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 serves as a guideline for designating land uses and infrastructure development as well as developing community services. The Comprehensive Plan is organized into two volumes: Volume 1 contains framework goals and general elements and Volume 2 contains subarea and long-range facility plans. The City updates its Comprehensive Plan in accordance with the Washington State Growth Management Act (GMA). (City of Bellevue 2008a)
- Long range facility plans, which are adopted into the Comprehensive Plan for various subareas of the city or for specific components of the transportation system, include a wide range of improvement projects designed to meet the mobility goals of the subarea (as established in the Comprehensive Plan). The Comprehensive Plan currently includes transportation facility plans for the Bel-Red/Overlake, Bridle Trails/Crossroads, Downtown, East Bellevue (including Factoria) and Newcastle areas. It also includes the Pedestrian and Bicycle Transportation Plan.
- The Transportation Facilities Plan (TFP) serves as the City's transportation implementation plan, constrained by identified City 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 is comprised of priority projects detailed in the long-range facility plans and other projects that represent emerging transportation facility needs and opportunities.
- The Capital Investment Program (CIP) provides a minimum six-year period (the City adopts a seven-year CIP every two 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 2009–2020 TFP is consistent with the recently adopted 2009-1015 CIP.

## 2.2. Funding Sources Supporting the Transportation Facilities Plan

### 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, including:

- Transportation-dedicated taxes and fees such as fuel and real estate excise taxes.

- General CIP revenue comprised of that 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, the state, King County, and the City of Redmond (under the terms of the Bel-Red/Overlake Transportation Study [BROTS]).
- Impact fees and other developer contributions required from new development.
- Local Improvement Districts collect property assessments based upon an increase in property value attributable to specific transportation facility improvements.

During the late 1990s, the City spent about 55% of new transportation revenues on capacity projects and 45% on safety, maintenance, and other non-capacity projects such as walkways and bikeways. The distribution of funding began to shift with the 2001–2012 TFP, which saw a four percentage point increase in capacity spending. The focus on capacity funding continued with the 2004–2015 TFP with 66% of funding dedicated to capacity projects. This increase was due primarily to an emphasis on pre-design only funding for the non-capacity projects, while capacity projects received construction funding. In the proposed 2009–2020 TFP, the percentage of capacity funding remains higher than the historical average because the mix of projects has been prioritized to meet emerging capacity needs associated with the current development boom.

### 2.2.2. Developer Impact Fees

The Traffic Standards Code requires a developer to upgrade an intersection or make other capacity improvements when projected vehicle trips from a proposed development exceed a certain threshold and contribute to a substandard level of service. While the TFP is a 12-year program, the Code requires the approval of development projects be based on roadway improvements fully funded in the City's CIP. The City will construct the projects in the CIP without additional participation by the developer, except for payment of impact fees. For development approval, the developer must fund any other needed facility improvements that are not included in CIP. Facility improvements or the value of real property dedicated for improvements included in the TFP that are implemented or provided by a developer (roadway or intersection capacity projects only) may be credited against the impact fee owed by that developer. However, if the improvement is not in the TFP, the developer does not get a fee credit for its implementation.

All TFP capacity projects, 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:

1. If an alternative includes significant capacity improvements, there may be fewer requirements that developers provide their own congestion mitigation. In this scenario calculated impact fees will be higher to help fund the implementation of the TFP alternative.
2. 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 imposed directly on specific development projects.

The remaining discussion in this chapter focuses on the TFP project strategies analyzed in this Final EIS.

## 2.3. Traffic and Land Use Forecasts

For the purpose of this Final EIS, it is assumed that each alternative set of transportation projects will be built upon the transportation network that existed at the end of 2006. Future traffic counts were forecasted using the 2020 Bellevue-Kirkland-Redmond (BKR) model, which is based on the 2020 Land Use forecast provided by the Department of Planning and Community Development. Both alternatives have been evaluated using two land use scenarios: the 2008 existing land use distribution was used as a benchmark to test the 2020 land use projections. By using the same land use distributions, the effects of land use are assumed to be the same for both alternatives. Appendix D contains the land use projection tables. Capacity projects expected to be implemented by 2020 are identified as impact fee projects; these projects were included in the model scenarios developed for the TFP alternatives.

## 2.4. Alternative Descriptions

Two alternatives are considered for the 2009–2020 TFP and are analyzed in this environmental document: the No Action alternative and the Proposed Action alternative. This section presents a description of each alternative and associated projects. The locations of the projects are shown in Figure 1-1. Capacity and non-motorized projects for each alternative are presented by Mobility Management Area (MMA), which is a geographic area the City uses to analyze transportation systems. The City is divided into 14 MMAs, which are shown in Figures 1-1 and E-1 (see Appendix E) and listed in Table 2-1.

### Table 2-1. Mobility Management Areas

| MMA Number | Geographic Area |
|---|---|
| 1 | North Bellevue |
| 2 | Bridle Trails |
| 3 | Downtown |
| 4 | Wilburton |
| 5 | Crossroads |
| 6 | Northeast Bellevue |
| 7 | South Bellevue |
| 8 | Richards Valley |
| 9 | East Bellevue |
| 10 | Eastgate |
| 11 | Newcastle |
| 12 | Bel-Red |

| | |
|---|---|
| 13 | Factoria |
| 14 | Newport Hills |

Following the discussion of each alternative and its associated projects, Table 2-6 presents a list of full project descriptions. The table indicates the alternative, CIP number (if applicable) and whether the project is a capacity project, an impact fee project, or both. The table also indicates the project's MMA. Maps illustrating the location of the projects in each MMA follow the project descriptions at the end of this chapter.

### 2.4.1. No Action Alternative (Alternative 1)

The No Action alternative (Alternative 1) encompasses all the projects that the City, along with its local jurisdiction and regional agency partners, has presently committed to fund and implement within the City limits. There are 17 projects proposed as part of the No Action alternative, of which nine are focused on pedestrian and bicycle improvements and eight are focused on roadway capacity improvements (see Figure 2-2). It does not include the unfunded projects in the 2006–2017 TFP. 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 No Action alternative if it chooses not to adopt the proposed 2009–2020 TFP. This is consistent with the No Action alternatives used in the 2004–2015 TFP and the 2006–2017 TFP.

The No Action alternative projects are primarily projects from the previous 2007–2013 CIP that have not yet been completed. All eight of the No Action capacity projects are designated as having an input into the City's impact fee calculations (i.e., projects with impact fee capacity elements). Figure 2-2 shows the distribution of those capacity elements among roadway widening projects and intersection projects. The remaining nine projects focus primarily on enhancing the pedestrian and bicycle networks. Figure 2-2 shows the distribution of non-motorized projects between walkway only and combined walkway/bikeway.

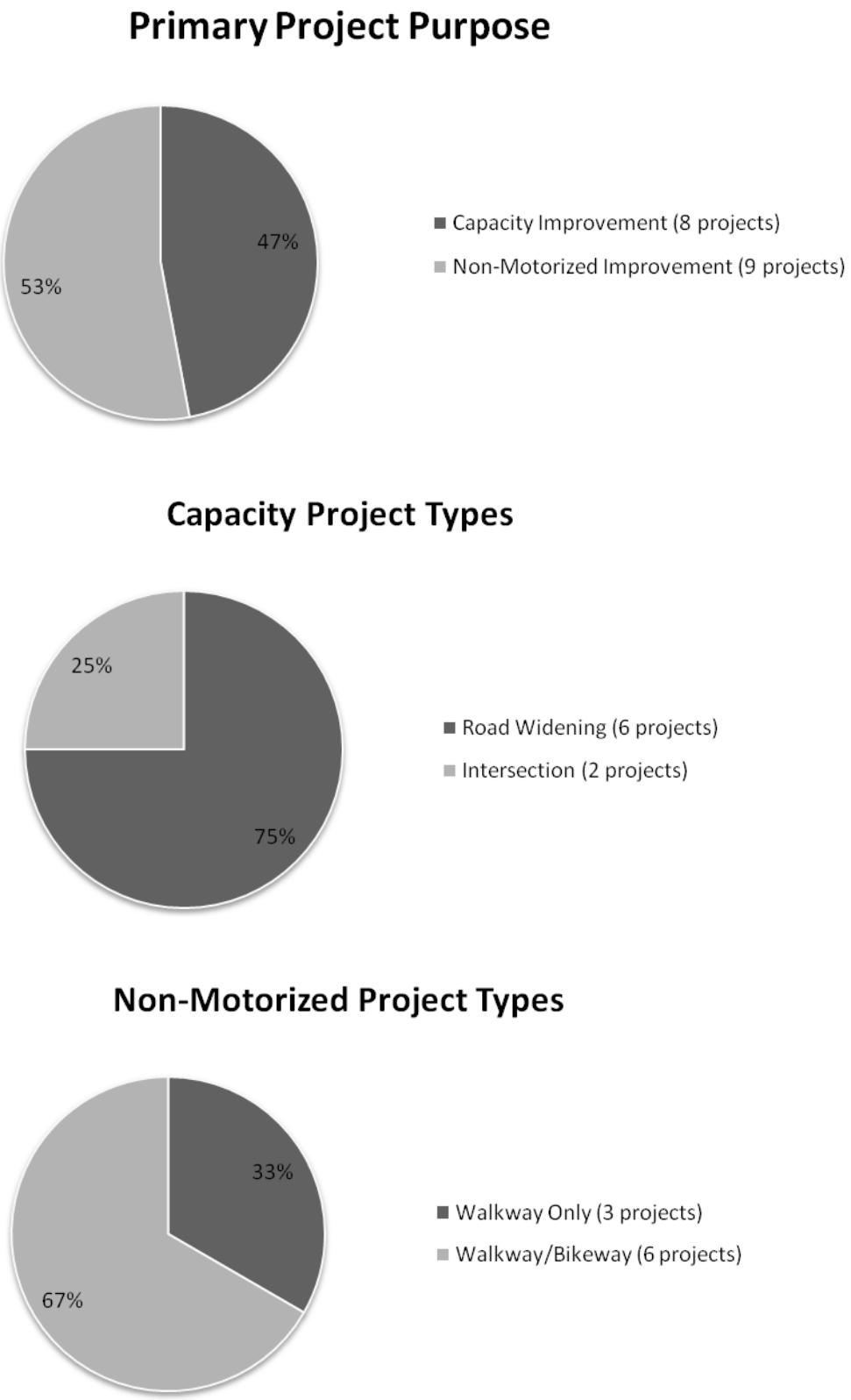



Figure 2-2. Distribution of Project Types under the No Action Alternative

Table 2-2 summarizes capacity projects by MMA under the No Action alternative. The table shows that capacity projects under the No Action alternative are primarily located in the Downtown and Bel-Red MMAs.

### Table 2-2. Capacity Projects–No Action Alternative

| MMA | TFP Number | CIP Number | Project Location |
|---|---|---|---|
| 1 North Bellevue | 079 | R-146 | Northup Way / Bellevue Way NE—NE 24th Street |
| 3 Downtown | 110 | R-139 | 110th Ave NE / NE 4th Street—NE 8th Street |
| | 190 | R-150 | NE 2nd Street / Bellevue Way NE—112th Avenue NE |
| | 184 | R-152 | NE 8th Street / 108th Avenue NE—106th Avenue NE |
| 9 East Bellevue | 160 | R-151 | 145th Place SE / SE 16th Street to SE 24th Street; and SE 22nd St / 145th Place SE—156th Avenue SE |
| 12 Bel-Red | 091/106 | R-133 | Northup Way / 120th Avenue NE—124th Avenue NE |
| | 094 | I-76 | 148th Avenue NE / Bel-Red Road |
| | 101 | I-78 | 148th Avenue NE / NE 20th Street |

Table 2-3 summarizes non-motorized projects by MMA under the No Action alternative.

### Table 2-3. Non-Motorized Projects–No Action Alternative

| MMA | TFP Number | CIP Number | Project Location |
|---|---|---|---|
| 1 North Bellevue | 191 | WB-73 | NE 8th Street / Lake Washington Boulevard—96th Avenue NE |
| 7 South Bellevue | 159 | WB-71 | 108th Avenue SE / Bellevue Way SE—I-90 |
| 8 Richards Valley | 170 | WB-76 | 128th Avenue SE / SE 25th Street—SE 32nd Street |
| 9 East Bellevue | 078 | R-141 | West Lake Sammamish Parkway / North city limit—I-90 |
| | 175 | WB-75 | SE 34th Street / 162nd Place—West Lake Sammamish Parkway |
| | 178 | WB-76 | SE 26th Street / SE 24th Street—West Lake Sammamish Parkway |
| 11 Newcastle | 163 | WB-74 | 152nd Avenue and SE 45th Street / SE 46th Street—SE Newport Way |
| | 238 | WB-76 | Somerset Avenue SE / SE Somerset Boulevard—136th Place SE |
| 14 Newport Hills | 156 | WB-72 | SE 60th Street / Lake Washington Boulevard—Coal Creek Parkway |

Often, non-motorized system enhancements are made in conjunction with other improvements. Under the No Action alternative, three capacity projects (TFP-079, TFP-091/106, and TFP-160) also include pedestrian and/or bicycle improvements.

### 2.4.2. Proposed Action Alternative 2009–2020 Transportation Facilities Plan (Alternative 2)

The Proposed Action alternative (Alternative 2) of the TFP contains all of the 17 projects included in the No Action alternative plus an additional 53 capacity, safety/operational, and non-motorized projects, for a total of 70 projects (see Figure 2-3). The additional 53 projects consist of 34 capacity projects, two safety/operational projects, and 17 pedestrian and bicycle projects. Twenty-six of the capacity projects are designated as impact fee projects, as the improvement is expected to be implemented and open for use by 2020.

Figure 2-3 shows the distribution of those capacity elements among roadway widening projects, intersection projects, and new or extended roads. The 26 non-motorized projects focus primarily on enhancing the pedestrian and bicycle networks. Figure 2-3 shows the distribution of non-motorized projects between walkway only, bikeway only, and combined walkway/bikeway.

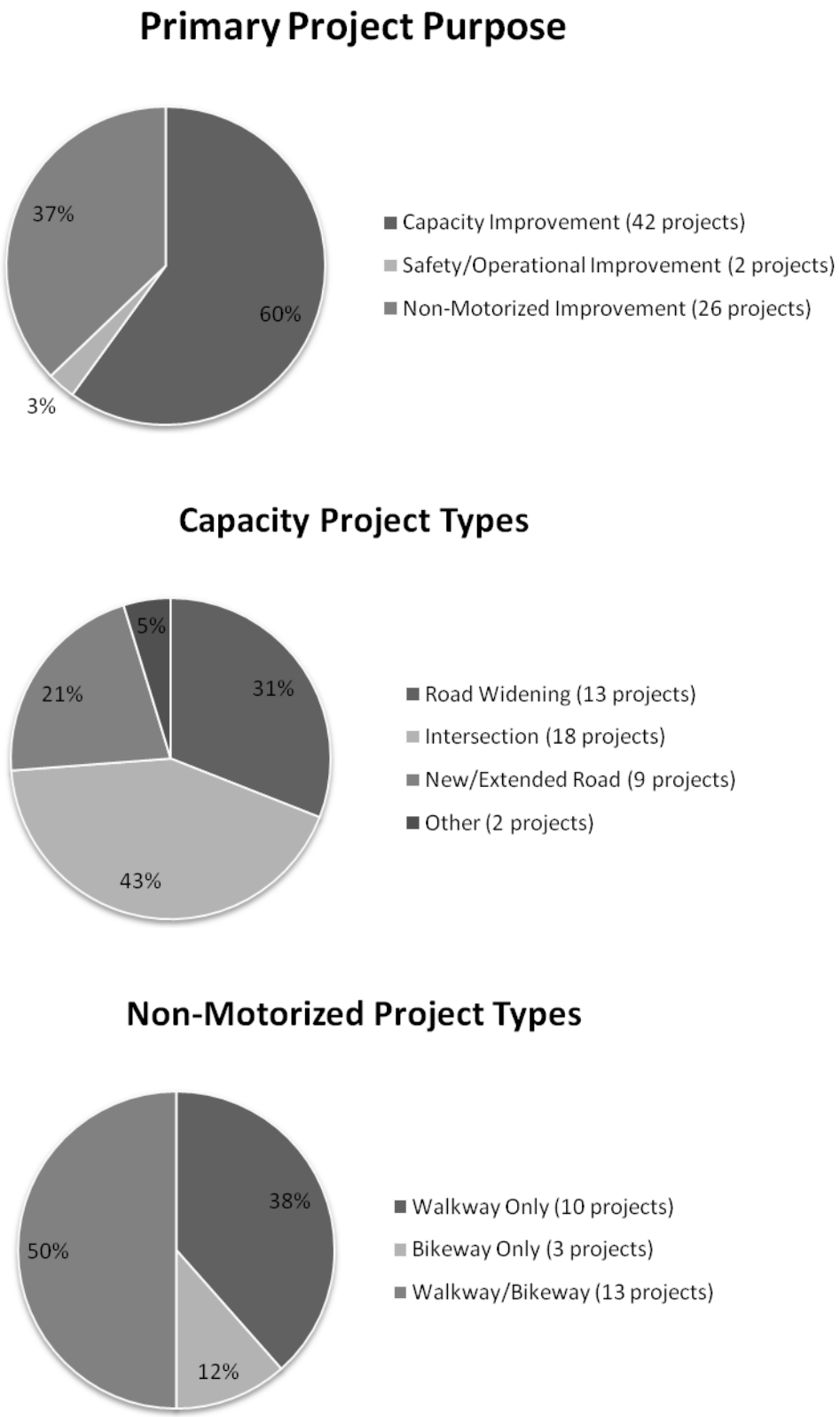



Figure 2-3. Distribution of Project Types under the Proposed Action Alternative

Table 2-4 summarizes capacity projects by MMA under the Proposed Action alternative. The table shows that capacity projects under the No Action alternative are primarily located in the Downtown and Bel-Red MMAs. The No Action alternative also includes funding for design reports for other roadway locations.

## Table 2-4. Capacity Projects–Proposed Action Alternative

| MMA | 2009–2020 TFP# | Project Location | Also in No Action Alternative |
|---|---|---|---|
| 1 North Bellevue | 079 | Northup Way / Bellevue Way NE—NE 24th Street | X |
| 3 Downtown | 110 | 110th Avenue NE / NE 4th Street—NE 8th Street | X |
| | 172[2] | 106th Avenue NE/108th Avenue NE One Way Couplet | |
| | 184 | NE 8th Street / 106th Avenue NE—108th Avenue NE | X |
| | 190 | NE 2nd Street / Bellevue Way NE—112th Avenue NE | X |
| | 197[1,2] | NE 2nd Street and I-405 interchange | |
| | 216[1] | 112th Avenue / NE 2nd Street | |
| | 219[1] | NE 8th Street / 106th Avenue | |
| | 222[1] | Bellevue Way NE / NE 4th Street | |
| | 223[1] | Bellevue Way NE / NE 8th Street | |
| | 225 [1] | Bellevue Way NE / NE 2nd Street | |
| 3 Downtown, and 4 Wilburton | 193[1,2] | NE 10th Street / I-405 interchange | |
| 4 Wilburton | 207 | NE 4th Street / I-405 to 120th Avenue | |
| | 211 | NE 6th Street / I-405 to 120th Avenue | |
| 5 Crossroads | 224 | Bel-Red Road / NE 20th Street | |
| 9 East Bellevue | 160 | 145th Place SE / SE 16th Street—SE 24th Street; and SE 22nd St / 145th Place SE—156th Avenue SE | X |
| | 168 | 148th Avenue NE / NE 8th Street | |
| 10 Eastgate | 154 | 148th/150th Avenue SE / I-90 westbound on-ramp—westbound off-ramp | |
| | 162 | 156th Avenue SE / Eastgate Way / I-90 off-ramp | |
| | 195 | 150th Avenue SE / SE 37th Street / I-90 Off ramp widening | |
| 11 Newcastle | 192 | Lakemont Boulevard SE / Cougar Mountain Way—Lewis Creek Park | |
| | 205 | Lakemont Boulevard SE / Lewis Creek Park—164th Avenue | |
| 12 Bel-Red | 090 | 116th Avenue NE / NE 12th Street—1600 block | |
| | 091/106 | Northup Way / 120th Avenue NE—124th Avenue NE | X |
| | 094 | 148th Avenue NE / Bel-Red Road | X |

| MMA | 2009–2020 TFP# | Project Location | Also in No Action Alternative |
|---|---|---|---|
| | 101 | 148th Avenue NE / NE 20th Street | X |
| | 102 | Bel-Red Road / NE 24th Street | |
| | 157 | 148th Avenue NE / NE 24th Street | |
| | 198 | Bel-Red Road / NE 20th Place | |
| | 208 | 120th Avenue / NE 8th Street—Northup Way | |
| | 209 | NE 15th Street/NE 16th Street / 116th Avenue—124th Avenue NE | |
| | 210 | 124th Avenue NE / NE 15th/16th Street—Northup Way | |
| | 213[1] | 124th Avenue NE / Bel-Red Road—NE 15th/16th Street | |
| | 214 | 124th Avenue / Bel-Red Road / Old Bel-Red Road | |
| | 215[1,2] | NE 15th Street/NE16th Street (Phase II) / 124th Avenue NE—136th Place NE; and 136th Place NE / NE 16th Street—NE 20th Street | |
| | 217[1,2] | 124th Avenue NE / SR 520 interchange | |
| | 218[1,2] | 130th Avenue NE / NE 20th Street—Bel-Red Road | |
| | 226[1,2] | New NE 11th Street/NE 12th Street / Overlake Hospital—NE 12th Street | |
| | 239 | 156th Avenue NE/NE 24th Street | |
| 13 Factoria | 103[1,2] | 129th Place SE / SE 38th Street—SE Newport Way | |
| | 120[1] | Factoria Boulevard SE / SE Newport Way | |
| | 220 | Factoria Boulevard SE / SE 40th Lane | |

1. Projects that have placeholder funding only. Full implementation contingent upon additional funding from City or other sources and/or redevelopment of adjacent property.
2. Project is not planned for implementation by 2020, and thus was not included in the Proposed Action model.

The Proposed Action alternative includes only those Redmond Bel-Red/Overlake Transportation Study (BROTS) projects currently funded in the City of Redmond's adopted CIP and only those Bellevue BROTS projects that are a high priority and are likely to be implemented in the next 12 years. An update of the BROTS planning was underway in late 2008; outcomes of that process will be considered in the next TFP planning cycle.

The Proposed Action alternative provides added funding to more fully implement two capacity projects partially funded in the No Action alternative. It funds full implementation of TFP-190 NE 2nd Street/Bellevue Way to 112th Avenue NE, which also includes pedestrian improvements; and provides funding to implement phase 1 of TFP-079 Northup Way/Bellevue Way to NE 24th Street (phase 1 is the part east of NE 33rd Place), which also includes pedestrian and bicycle improvements. It also provides additional funding for implementation of TFP-078, improvements on Lake Sammamish Parkway.

Table 2-5 summarizes non-motorized projects included under the Proposed Action alternative.

## Table 2-5. Non-Motorized Projects–Proposed Action Alternative

| MMA | 2009–2020 TFP# | Project Name, Location, and Limits | Also in No Action Alternative |
|---|---|---|---|
| 1 North Bellevue | 173 | 108th/112th Avenue NE / south of SR 520—NE 12th Street | |
| | 191 | NE 8th Street / Lake Washington Blvd—96th Avenue NE | X |
| | 235 | 108th Avenue NE / NE 24th Street—NE 12th Street | |
| | 236 | NE 24th Street / 108th Avenue NE—112th Avenue NE | |
| 2 Bridle Trails | 171 | NE 40th Street / 140th Avenue NE—14500 block | |
| 3 Downtown | 230 | 108th Avenue NE / NE 12th Street—Main Street | |
| | 234 | Main Street / 100th Avenue NE—116th Avenue NE | |
| 6 Northeast Bellevue | 164 | 173rd Avenue NE / Northup Way—north city limit | |
| 7 South Bellevue | 159 | 108th Avenue SE / Bellevue Way SE—I-90 | X |
| 8 Richards Valley | 170 | 128th Avenue SE / SE 25th Street—SE 32nd Street | X |
| | 231 | SE 7th Place / Lake Hills Connector—culs-de-sac | |
| | 237 | 123rd Avenue SE / SE 20th Street—SE 26th Street | |
| 9 East Bellevue | 078 | West Lake Sammamish Parkway / north city limit—I-90 | X |
| | 158 | SE 16th Street / 148th Avenue SE—156th Avenue SE | |
| | 175 | SE 34th Street / 162nd Place SE—West Lake Sammamish Parkway | X |
| | 178 | SE 26th Street / SE 24th Street—West Lake Sammamish Parkway | X |
| | 232 | 164th Avenue NE/SE / NE 18th Street—SE 14th Street | |
| 11 Newcastle | 163 | 152nd Avenue SE / SE 45th Street/SE 46th Street—Newport Way | X |
| | 194 | 164th Ave SE / SE Cougar Mountain Way—SE 63rd Street | |
| | 228 | 148th Avenue SE / SE 44th Street—SE 46th Street | |
| | 238 | Somerset Ave SE / SE Somerset Boulevard—136th Place SE | X |
| 13 Factoria | 165 | 124th Avenue Bicycle Trail / SE 38th Street—I-90 Bicycle Trail | |

| MMA | 2009–2020 TFP# | Project Name, Location, and Limits | Also in No Action Alternative |
|---|---|---|---|
| | 233 | 130th Place SE/130th Avenue SE / SE Newport Way—SE 47th Place | |
| 14 Newport Hills | 156 | SE 60th Street / Lake Washington Boulevard—Coal Creek Parkway | X |
| | 227 | 123rd Avenue SE / SE 60th Street—SE 64th Place | |
| | 229 | 116th Avenue SE / SE 60th Street—Newcastle Way | |

Non-motorized improvements are also included as elements of TFP-079, TFP-091/106, TFP-157, TFP-160, TFP-192, TFP-198, TFP-205, TFP-207, TFP-208, TFP-209, TFP-210, TFP-211, TFP-213, TFP-214 and TFP-218 listed in Table 2-4.

Under the Proposed Action alternative, projects with operations and safety as their primary objective are TFP-196 (U-turn and access management on NE 20th Street in Crossroads) and TFP 221 (upgrade signals at four locations on 148th Ave). One non-motorized project, TFP-194 (placeholder funding for upgrading four blocks of 164th Ave SE from gravel to asphalt) has also been identified as having a safety objective.

Table 2-6 presents a list of full project descriptions. The table indicates the alternative, CIP number (if applicable) and whether the project is a capacity project, an impact fee project, or both. As discussed earlier, the impact fee projects are those expected to be implemented by 2020, and thus are included in the model developed for the analysis presented in this Final EIS. The table also indicates the MMA in which the project is located. Following Table 2-6, Figures 2-4 through 2-17 show the location of the projects in each of the MMAs (MMA 1 through MMA 14, respectively). Figure 1-1 also shows a citywide map with the locations of all of the TFP projects.

## Table 2-6. Proposed 2009–2020 Transportation Facilities Plan Project List

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 078 | West Lake Sammamish / north city limit—I-90 | R-141 | 9 | The ultimate project will provide a consistent 4-foot shoulder on the east side, a 10.5-foot northbound vehicle travel lane, a 10-foot southbound vehicle travel lane, a 10-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' shy distance space and a 2-foot- or 5-foot-wide landscaped buffer where space is available, a signal at SE 34th Street, pedestrian crossings at SE 26th Street, Northup Way, NE 24th Street and at five other locations along the parkway. The project will also make storm drainage, water quality and fish passage improvements throughout the corridor. Options for undergrounding existing overhead utilities and various project implementation phasing scenarios will be evaluated during the initial design process. The recommended funding allocation would significantly increase the existing CIP funding placeholder and make substantial progress toward implementation of corridor improvements ($6,560K is funded in the current 2007–2013 CIP). | X | | |
| 079 | Northup Way / Bellevue Way NE—NE 24th Street | R-146 | 1 | A Pre-Design process completed in 2008 has refined the project scope and implementation phasing options. Project elements include completion of sidewalks and bike lanes on both sides and a two-way center turn lane. The project may be divided in two phases: Phase 1, east of NE 33rd Place; and Phase 2, west of NE 33rd Place. The recommended funding allocation would fully fund Phase 1 only (A pre-design and implementation placeholder of $1,467K is funded in the current 2007–2013 CIP). | X | X | X |
| 090 | 116th Avenue NE / NE 12th Street—1600 block | --- | 12 | Widen to five lanes north of the existing intersection. Add a second eastbound left turn and northbound right turn at 116th Avenue NE and NE 12th Street. Project implementation will be coordinated with potential future private development in the immediate vicinity. The $5,000K funding allocation is a magnitude of cost estimate to be used until an engineer's estimate can be developed. | | X | X |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 091/ 106 | Northup Way / 120th Avenue NE—124th Avenue NE | R-133 | 12 | Construct a second eastbound lane, and widen Northup Way/124th Avenue NE intersection to provide a northbound right turn lane and a second eastbound left-turn lane to the SR-520 ramp. | X | X | X |
| 094 | 148th Avenue NE / Bel-Red Road | I-76 | 12 | Construct an eastbound right turn lane and second westbound left turn lane. Scope and cost may be modified based on ongoing analysis and coordination with City of Redmond associated with development of a BROTS successor agreement. | X | X | X |
| 101 | 148th Avenue NE / NE 20th Street | I-78 | 12 | Construct second eastbound and westbound left turn lanes. Scope and cost may be modified based on ongoing analysis and coordination with City of Redmond associated with development of a BROTS successor agreement. | X | X | X |
| 102 | Bel-Red Road / NE 24th Street | --- | 12 | Add southbound right turn and northbound left turn lanes. Scope and cost may be modified based on ongoing analysis and coordination with City of Redmond associated with development of a BROTS successor agreement. | | X | X |
| 103 | 129th Place SE / SE 38th Street—Newport Way | --- | 13 | Extend 129th Place SE north to SE 38th Street. Investigate traffic operations at the intersection of 129th Place SE and SE Newport Way. Consider signalization and channelization improvements if warranted. Project implementation will be coordinated with potential future private development in the immediate vicinity. The $500K funding allocation is a placeholder that may be used to initiate project pre-design or early implementation. | | X | |
| 110 | 110th Avenue NE / NE 4th Street—NE 8th Street | R-139 | 3 | Incomplete segment remains between NE 6th and NE 8th Streets. Funding allocation may be used to finalize project design only for a five-lane roadway section with sidewalks where missing. Project implementation will be coordinated with approved and potential future private development in the immediate vicinity. | X | X | X |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 120 | Factoria Boulevard / SE Newport Way | --- | 13 | Construct a second southbound left-turn lane at Newport Way and modify the channelization on the eastern leg of the Factoria Blvd/Newport Way intersection to receive the two lanes of turning traffic; reconfigure the intersection between Factoria Blvd and the access to Newport High School, including relocation of the Factoria Blvd access to St. Margaret's church to become an eastern leg of the intersection. The $500K funding allocation is a placeholder that may be used to initiate project pre-design or early implementation. | | X | X |
| 154 | 148th/150th Avenue SE / I-90 westbound on-ramp—I-90 westbound off-ramp | --- | 10 | Widen by extending the third southbound lane on 148th Avenue SE from the on-ramp to westbound I-90 to south of Eastgate Way at the I-90 westbound off ramp. Scope and cost may be modified based on ongoing analysis and coordination with the WSDOT I-90 Corridor Study. | | X | X |
| 156 | SE 60th Street / Lake Washington Boulevard—Coal Creek Parkway | WB-72 | 14 | Construct bike lanes and sidewalks on both sides where missing; sidewalk on one side between Coal Creek Parkway and 129th Avenue SE. | X | | |
| 157 | 148th Avenue NE / NE 24th Street | --- | 12 | Lengthen the westbound right turn lane on NE 24th Street and provide second westbound left turn lane; widen NE 24th Street to allow wide curb lanes for cyclists. Scope and cost may be modified based on ongoing analysis and coordination with City of Redmond associated with development of a BROTS successor agreement. | | X | X |
| 158 | SE 16th Street / 148th Avenue SE—156th Avenue SE | --- | 9 | Add 5 foot bike lanes outside of 11-foot vehicles lanes on both sides of SE 16th Street. Construct new curb, gutter and 6' sidewalk and 4' planter, on north side between 148th and 154th Avenues NE. | | | |
| 159 | 108th Avenue SE / Bellevue Way SE—I-90 | WB-71 | 7 | Construct bike lanes on both sides and sidewalk on one side where missing, the side to be determined in the initial design process which will include community outreach/involvement facilitation. | X | | |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 160 | 145th Place SE / SE 16th Street to SE 24th Street; and SE 22nd St / 145th Place SE—156th Avenue SE | R-151 | 9 | Construct five foot bike lanes, curb, gutter and 6-foot sidewalk along both sides, a two-way center left-turn lane where needed, planted median islands and other landscaping where feasible on 145th Place SE from SE 16th Street (Kamber Road) to SE 24th Street. The project will modify the 145th Place SE/SE 24th Street intersection. This project will also provide curb, gutter and 6-foot sidewalks where missing along the north side SE 22nd from 145th Place SE to 156th Avenue SE. Other improvements include storm water drainage, detention and water quality treatment improvements, signing, striping, illumination enhancements, and irrigation. | X | X | X |
| 162 | 156th Avenue SE / SE Eastgate Way (I-90 westbound off-ramp) | --- | 10 | Widen the I-90 westbound off-ramp to provide two dedicated left turn lanes and a shared through/right lane with a channelized right turn. Scope and cost may be modified based on ongoing analysis and coordination with the WSDOT I-90 Corridor Study. | | X | X |
| 163 | 152nd Avenue SE / SE 45th Street/SE 46th Street—Newport Way | WB-74 | 11 | Construct sidewalk on west side; perform roadway stabilization maintenance. Evaluate feasibility of wide curb lane for bikes on uphill segment. | X | | |
| 164 | 173rd Avenue NE / Northup Way—north city limit | --- | 6 | Construct curb, gutter and 6-foot sidewalk on east side where missing; accommodate future bike lane. | | | |
| 165 | 124th Avenue Bicycle Trail / SE 38th Street—I-90 Bicycle Trail | --- | 13 | Construct a 10-foot wide multi-use trail connecting the north end of 124th Avenue SE near SE 38th Street to the existing Mountains to Sound Greenway trail along I-90. A midblock crossing on 124th Avenue SE, just south of SE 38th Street, will be constructed, including a small island for refuge. | | | |
| 168 | 148th Avenue NE / NE 8th Street | --- | 9 | Add second eastbound and westbound left turn lanes on NE 8th Street. All widening would be done to the north side of the roadway. | | X | X |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 170 | 128th Avenue SE / SE 25th Street—SE 32nd Street | WB-76 | 8 | Construct curb, gutter and 6-foot sidewalk on one side of the street from SE 25th Street to SE 32nd Street, side to be determined during the design phase which will include community outreach facilitation. Where feasible, construct planter strip between the curb and sidewalk and stripe shoulders on both sides to accommodate bicycles. | X | | |
| 171 | NE 40th Street / 140th Avenue NE—14500 block | | 2 | Construct curb, gutter and 6-foot sidewalk on north side of NE 40th Street from 140th Avenue NE to east of the 14500 block. Wide curb lanes. Planter strip where feasible. | | | |
| 172 | 106th Avenue NE/108th Avenue NE One Way Couplet | --- | 3 | Convert roadways to function as a one-way couplet. 106th Avenue will function as a northbound one-way street and 108th Avenue will function as a southbound one-way street. 108th will include a single northbound contraflow lane between NE 4th and NE 8th Streets for transit buses only. Widen sidewalks along 106th Avenue. The $200K funding allocation represents only a placeholder that may be used to initiate project pre-design or evaluate alternatives to the project scope developed through the DIP process. | | X | |
| 173 | 108th Avenue NE/112th Avenue NE / south of SR 520—NE 12th Street | --- | 1 | Add 5-foot bike lanes on both sides of 108th/112th Avenue NE from Northup Way to NE 12th Street. Construct a 6 foot-wide sidewalk along the west side of 112th Avenue NE from end of transportation trail south to existing sidewalk 400 feet south of NE 24th Street. Widen for turn pockets at NE 24th Street intersection. | | | |
| 175 | SE 34th Street / 162nd Pl SE—West Lake Sammamish Pkwy | WB-75 | 9 | Construct sidewalk on north side where missing; widen curb lanes. | X | | |
| 178 | SE 26th Street / SE 24th Street—West Lake Sammamish Parkway | WB-76 | 9 | Construct curb, gutter and 6-foot sidewalk on the south side; accommodate future bike lane(s). Construct planter strip between the curb and sidewalk where feasible. Project construction will be coordinated with a street pavement overlay planned for summer 2009. | X | | |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 184 | NE 8th Street / 106th Avenue NE—108th Avenue NE | R-152 | 3 | Construct third westbound lane on NE 8th Street becoming right turn lane at 106th Avenue NE; no widening west of 106th Avenue NE. Sidewalks will be reconstructed adjacent to the new lane. | X | X | X |
| 190 | NE 2nd Street / Bellevue Way NE—112th Avenue NE | R-150 | 3 | Widen from three lanes with parking and turn pockets to five lanes. The design will accommodate left turn movements with a center turn lane where needed and dedicated right-turn pockets are also possible at some intersections. ($7,454K is currently funded in the 2007–2013 CIP.)The final design will be consistent with the outcomes of a currently ongoing NE 2nd Street and Main Street Pre-Design process. | X | X | X |
| 191 | NE 8th Street / Lake Washington Boulevard—96th Avenue NE | WB-73 | 1 | This project will design and construct curb, gutter, 6-foot sidewalk and three foot planter strip where missing on the north side. Include bus pads and an updated signal system at the NE 8th Street/92nd Avenue NE intersection. | X | | |
| 192 | Lakemont Boulevard (Phase 1) / Cougar Mountain Way—Lewis Creek Park and 164th Avenue SE—171st Avenue SE | --- | 11 | Install signal and turn lanes at Cougar Mtn. Way/Lakemont Blvd. intersection; construct northbound left turn lane on Lakemont Blvd. at SE 62nd Street; add sidewalk and bike lanes on east side between Cougar Mtn. Way and park; install planted medians where feasible. | | X | X |
| 193 | NE 10th Street / I-405 | --- | 3, 4 | Add half interchange (ramps) to/from the north. (Northbound ramp funded through WSDOT Braided ramp project). This project would likely be a regional or outside agency-led effort in which the City may choose to participate financially. The $500K funding allocation is a placeholder that may be used to initiate project pre-design or early implementation. | | X | |
| 194 | 164th Avenue SE / SE Cougar Mountain Way—SE 63rd Street | --- | 11 | Improve gravel road with pavement curb, gutter and sidewalk on one side. Cost estimate entails only placeholder funding for implementation. Consider cost sharing with benefiting property owners through the use of a Local Improvement District (LID). The $100K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | | |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 195 | 150th Avenue SE / SE 37th Street / I-90 off-ramp widening | --- | 10 | Widen I-90 off-ramp 300 feet west of 150th Avenue SE and add a through lane. Widen SE 37th Street approximately 500 feet to the east of 150th Avenue SE to allow for a bypass lane on the right side of the street. Scope and cost may be modified based on ongoing analysis and coordination with the WSDOT I-90 Corridor Study. | | X | X |
| 196 | NE 20th Street / Bel-Red Road—156th Avenue NE | --- | 5 | Construct an east to west U-turn on NE 20th Street at 156th Avenue NE; provide access management along NE 20th Street. | | | |
| 197 | NE 2nd Street Extension and I-405 interchange | --- | 3 | Extend NE 2nd Street across I-405 from 112th Avenue NE to 116th Avenue NE; add 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 $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | |
| 198 | Bel-Red Road / NE 20th Place | --- | 12 | Install signal, eastbound left turn pocket and pedestrian crossing. | | X | X |
| 205 | Lakemont Boulevard (Phase 2) / Lewis Creek Park—164th Avenue SE | --- | 11 | Install signal at 164th Ave SE/Lakemont Blvd; construct sidewalk and bike lane on east side; add planted medians where feasible. | | X | X |
| 207 | NE 4th Street Extension / 116th Avenue NE—120th Avenue NE; and widening of 120th Avenue / NE 4th Street—NE 8th Street | --- | 4 | The 4th Street Extension will consist of 5 vehicle lanes, bike lanes, sidewalks and will require construction of a sunken roadway and bridge(s) for BNSF RR tracks and Pedestrian over crossings. Neighborhood traffic mitigation will be evaluated to discourage cut through traffic on NE 5th Street east of 120th. 120th Avenue NE will be widened to five lanes with bike lanes between the 4th St. Ext. and NE 8th Street. This project does not included improvements to the intersection with NE 8th St. This project will be coordinated with potential private development in the immediate vicinity. | | X | X |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 208 | 120th Avenue NE / NE 8th Street—Northup Way | --- | 12 | Widen to five lanes with sidewalks and bike lanes. Extend/realign roadway between NE 8th Street and Old Bel-Red Rd. Key intersection improvements at NE 8th St, NE 12th St, the proposed 15th/16th St, and Northup Way. | | X | X |
| 209 | NE 15th Street/NE 16th Street (Phase I) / 116th Avenue NE—124th Avenue NE | --- | 12 | Construct a five-lane roadway from 116th Avenue NE to 124th Avenue NE. Key intersections at 116th, 120th and 124th Avenues NE. The overall roadway cross-section will also include a frontage road, parking strips, pedestrian/bike facilities, landscaping elements and an HOV transit corridor. | | X | X |
| 210 | 124th Avenue NE / NE 15th/16th Street Extension—Northup Way | --- | 12 | Widen to five lanes with sidewalks. Key intersections at proposed NE 15th/16th Street (TFP # 209) and Northup Way. | | X | X |
| 211 | NE 6th Street Extension | --- | 4 | Extend NE 6th Street, as an HOV only facility, from the I-405 HOV interchange to the east over 116th Avenue NE, crossing BNSF right-of-way, and terminating at 120th Ave NE. Improvements include two lanes in each direction with left turn lanes at signalized intersections of I-405 and 120th Avenue NE, a 14-foot-wide non-motorized pathway adjacent to and along the south side of the extension between 112th Ave NE and 120th Ave NE, I-405 corridor design standards, illumination system, retaining walls, landscaping for at-grade locations, underground utilities, detention/water quality treatment, and provisions that do not preclude future regional trail or other improvements within the BNSF corridor. | | X | X |
| 213 | 124th Avenue NE / Bel-Red Road—NE 15th/16th Street Extension | --- | 12 | Widen to five lanes with sidewalks between Bel-Red Road and proposed NE 15th/16th Street (TFP # 209). The $500K funding allocation is a placeholder that may be used to initiate project pre-design or early implementation. | | X | X |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 214 | 124th Avenue NE / Bel-Red Road / Old Bel-Red Road | --- | 12 | Project scope is currently being analyzed/refined through continued Bel-Red Corridor Plan work. Until completion of the continued analysis, the project scope may be defined as follows: Provide a second westbound left turn lane, a southbound right turn lane and widen 124th Avenue NE to provide a second southbound lane between Bel-Red Rd. and Old Bel-Red Rd; upgrade signal equipment; and provide new curb, gutter, and sidewalk adjacent to widening. The $3,000K funding allocation is a magnitude of cost estimate to be used until an engineer's estimate can be developed. | | X | X |
| 215 | NE 15th Street/NE16th Street (Phase II) / 124th Avenue NE—136th Place NE; and 136th Place NE / NE 16th Street—NE 20th Street | --- | 12 | Extend five lane roadway from 124th Avenue NE to 136th Place NE with a key intersection at 130th Avenue NE. Widen 136th Place NE five to three lanes between NE 16th Street and NE 20th Street (reduction occurs at the intersection); add a double westbound left turn on NE 20th Street. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | |
| 216 | 112th Avenue NE / NE 2nd Street | --- | 3 | Straighten and realign NE 2nd Street between 112th and 114th Avenues NE, add dual southbound left turn lanes and a northbound right turn lane. Project implementation will be coordinated with potential future private development in the immediate vicinity. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | X |
| 217 | 124th Avenue NE / SR-520 | --- | 12 | 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 $500K funding allocation is a placeholder that may be used to initiate project pre-design or early implementation. | | X | |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 218 | 130th Avenue NE / NE 20th Street—NE Bel-Red Road | --- | 12 | Construct turn lanes, shared bike lanes, on-street parking and sidewalks between NE 16th and NE 20th Streets and widen to three lanes with shared bike lanes and sidewalks between NE 16th Street and Bel-Red Road. Key intersections at NE 20th, NE 16th and Bel-Red Road. Project implementation will be coordinated with potential future private development in the immediate vicinity. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | |
| 219 | NE 8th Street / 106th Avenue NE | --- | 3 | Realignment of the roadway to the south will better utilize the new westbound travel lane (between 108th and 106th Avenues NE; funded in CIP) 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. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | X |
| 220 | SE 40th Lane / Factoria Boulevard | --- | 13 | Lengthen the southbound to eastbound left turn lane and lengthen the westbound left turn lane. | | X | X |
| 221 | 148th Avenue NE / SE 24th Street, SE 8th Street, Main Street, and NE 8th Street | --- | 9 | This project would improve the safety and reliability at four signalized intersections along the 148th Avenue corridor, including SE 24th Street, SE 8th Street, Main Street, and NE 8th Street. The project would remove and replace aging wiring and poles to increase reliability and reduce signal malfunctions at these intersections that have not had any major upgrades since their construction in 1975. | | | |
| 222 | Bellevue Way NE / NE 4th Street | --- | 3 | Add a southbound right turn lane and a westbound right turn lane. Dual westbound left turn lanes. Project implementation will be coordinated with potential future private development in the immediate vicinity. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | X |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 223 | Bellevue Way NE / NE 8th Street | --- | 3 | Add southbound right turn lane. Project implementation will be coordinated with potential future private development in the immediate vicinity. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | X |
| 224 | Bel-Red Road / NE 20th Street | --- | 5 | Add southbound right turn lane; convert westbound lanes on NE 20th Street to provide left turn, left turn/through and through/right turn lanes. Scope and cost may be modified based on ongoing analysis and coordination with City of Redmond associated with development of a BROTS successor agreement. | | X | X |
| 225 | Bellevue Way NE / NE 2nd Street | --- | 3 | Add a northbound right turn lane and a second southbound left turn lanes. Project implementation will be coordinated with potential future private development in the immediate vicinity. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | X |
| 226 | NE 11th/12th Street—116th Avenue NE Connection (across from Overlake Hospital) | --- | 12 | Construct new 4/5 lane connection. The $500K funding allocation represents only a placeholder that may be used to initiate project pre-design or early implementation. | | X | |
| 227 | 123rd Avenue SE / SE 60th Street—SE 64th Place | --- | 14 | Construct curb, gutter and 6-foot sidewalk on west side where missing between SE 60th Street and SE 64th Place; sign bike route. | | | |
| 228 | 148th Avenue SE / SE 44th Street—SE 46th Street | --- | 11 | Construct curb, gutter and 6-foot sidewalk, 14-foot (15 feet uphill) travel lane on the west side of street. Connect to existing sidewalk north of SE 44th St (within King county) to existing sidewalk south of SE 46th St. | | | |
| 229 | 116th Avenue SE / SE 60th Street—Newcastle Way | --- | 14 | Construct curb, gutter and 6-foot sidewalk on the east side of the street. Curb 14 feet from center of roadway. | | | |

| TFP# | Project Location | CIP # | MMA | Project Description | Included in No Action Alternative | Capacity Project | Impact Fee Project |
|---|---|---|---|---|---|---|---|
| 230 | 108th Avenue NE / NE 12th Street—Main Street | --- | 3 | 108th Avenue NE Downtown corridor enhancement consisting of Great Streets, Midblock Crossing, Pedestrian Corridor interface and bike lanes. This funding would cover the estimated shortfall and allow for the inclusion of bike lanes between NE 12th and NE 8th Streets and between NE 4th and Main Street. | | | |
| 231 | SE 7th Place / Lake Hills Connector — culs-de-sac | --- | 8 | Construct curb, gutter and 6-foot sidewalk on one side, the side to be determined in the initial design process which will include community outreach/involvement facilitation. | | | |
| 232 | 164th Avenue NE/164th Avenue SE / NE 18th Street—SE 14th Street | --- | 9 | Designate bike shoulder on both sides between NE 18th Street and Northup Way and between NE 8th Street and SE 14th Street. Stripe and sign 5 foot bike lanes between Northup Way and NE 6th Street. Accommodate on-street parking on the east side of the street from NE 6th Street to SE 14th Street. | | | |
| 233 | 130th Place SE/130th Avenue SE / Newport Way SE—SE 47th Place | --- | 13 | Construct curb, gutter and 6-foot sidewalk, where missing, on the east side of the street. | | | |
| 234 | Main Street / 100th Avenue—116th Avenue | --- | 3 | Funding to support pedestrian and bicycle facility components of Main Street project - currently in a pre-design process. | | | |
| 235 | 108th Avenue NE / NE 24th Street—NE 12th Street | --- | 1 | Add wide bike shoulder on both sides where not complete. Construct a 6-foot sidewalk on east side from NE 24th Street to north of NE 19th Street. | | | |
| 236 | NE 24th Street / 108th Avenue NE—112th Avenue NE | --- | 1 | Add a wide bike shoulder on both sides of NE 24th from 108th to 112th Avenues NE. | | | |
| 237 | 123rd Avenue SE / SE 20th Street—SE 26th Street | --- | 8 | Construct curb, gutter and 5-foot sidewalk, place curb 14 feet from center of the roadway on the east side of the street. Parking bays where feasible. | | | |
| 238 | Somerset Avenue SE / SE Somerset Boulevard—136th Place SE | WB-76 | 11 | Construct curb, gutter and 5-foot sidewalk on the west side; locate curb 12 feet from center of roadway. | X | | |
| 239 | 156th Avenue NE/NE 24th Street | | 12 | Construct an eastbound right turn lane | | X | X |

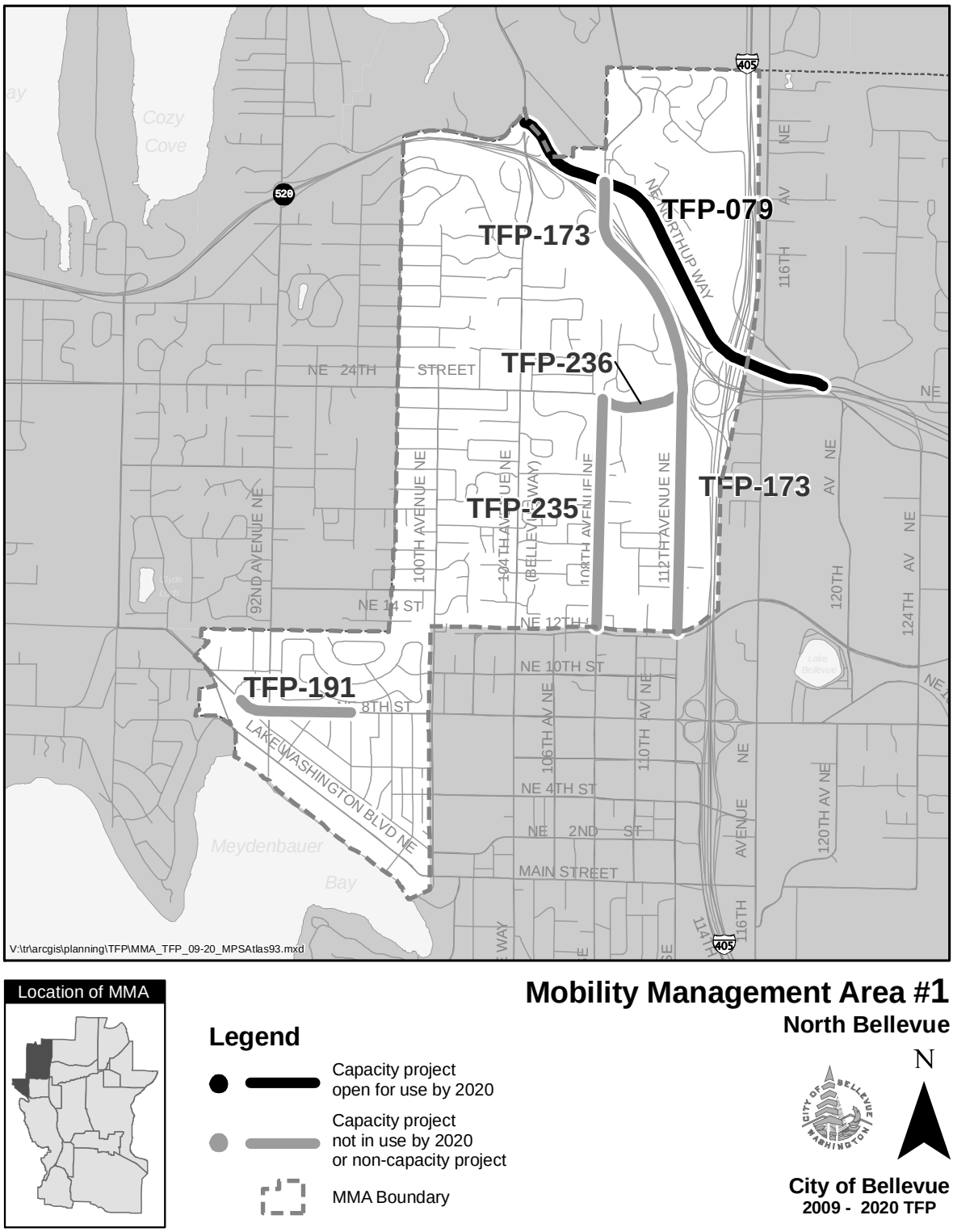
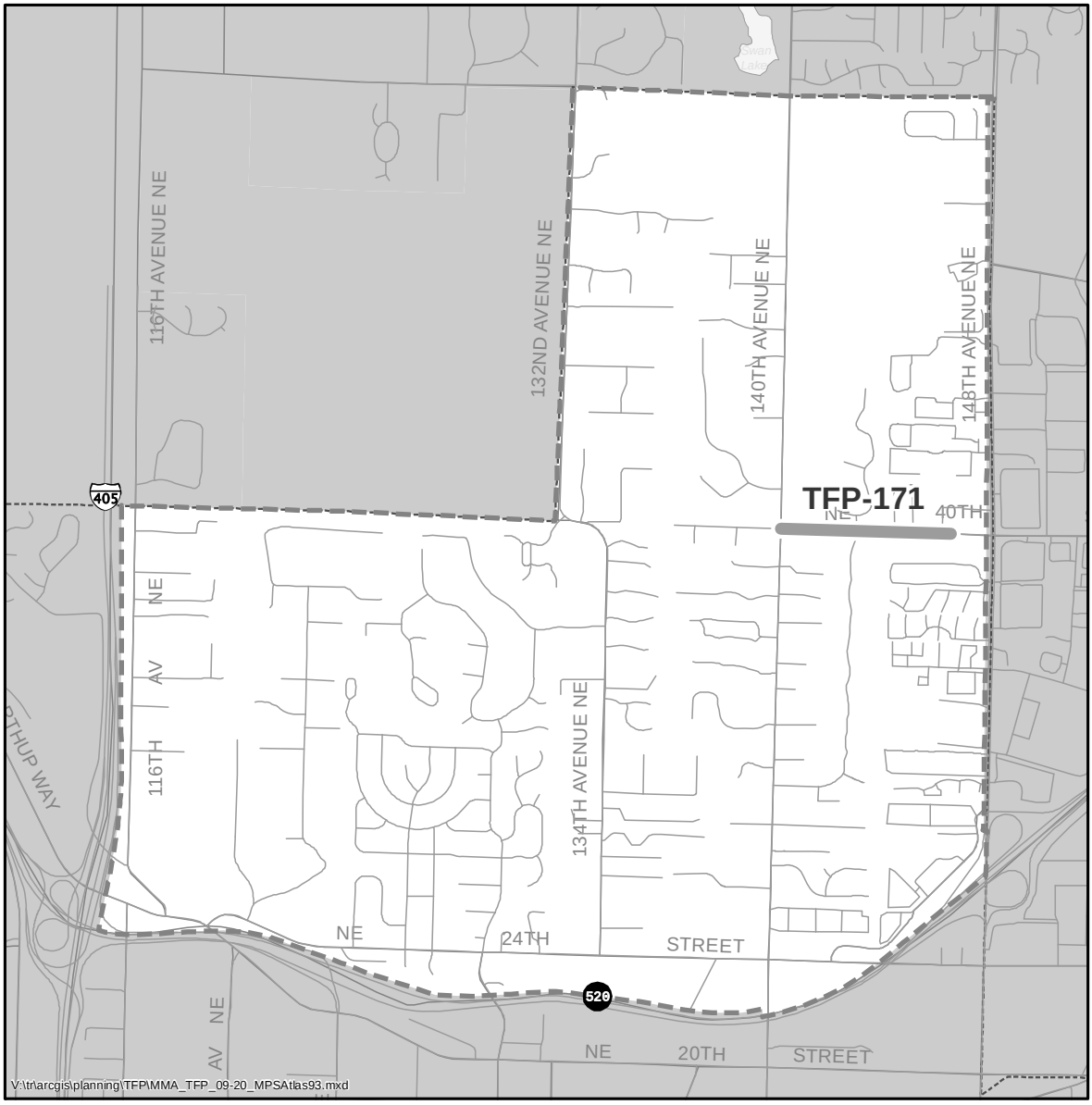
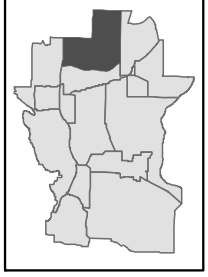



Figure 2-4. Transportation Facilities Plan Projects in MMA #1 (North Bellevue)




Location of MMA



**Legend**

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

# Mobility Management Area #2

**Bridle Trails**

N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-5. Transportation Facilities Plan Projects in MMA #2 (Bridle Trails)

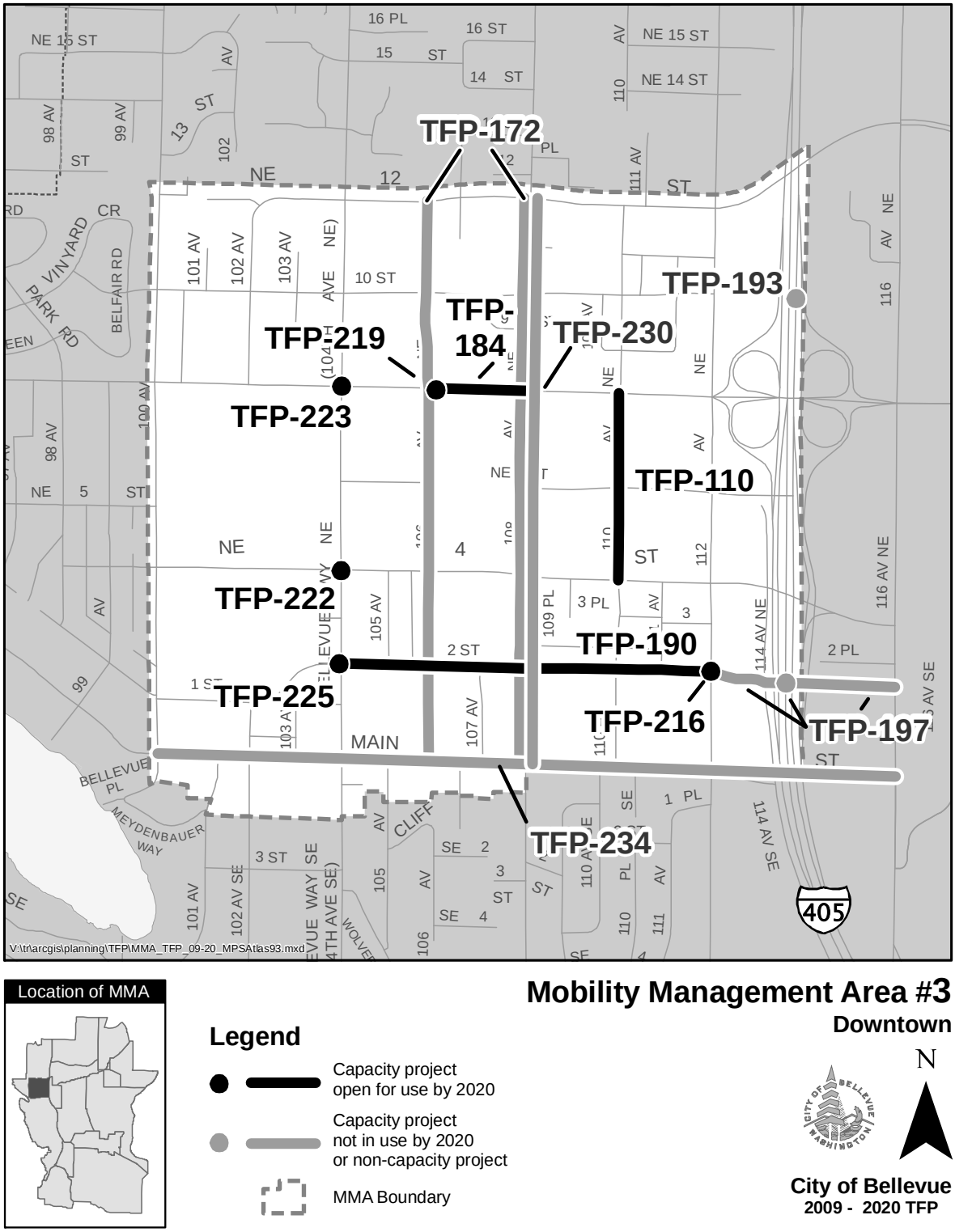
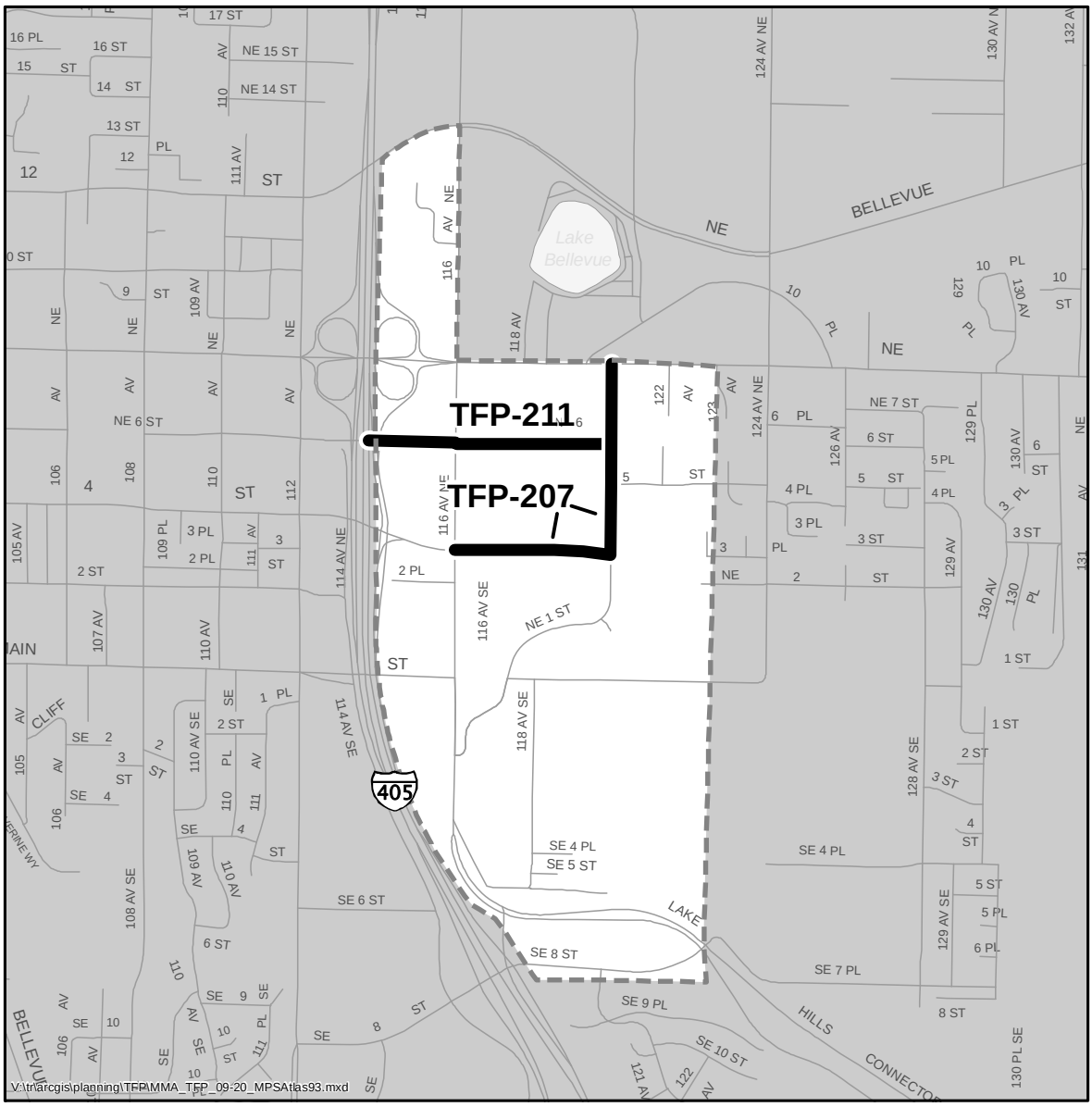
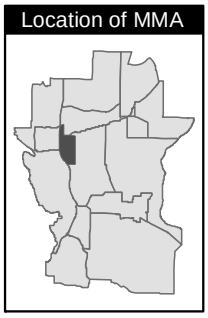



Figure 2-6. Transportation Facilities Plan Projects in MMA #3 (Downtown)




Location of MMA



## Legend

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

# Mobility Management Area #4

**Wilburton**

N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-7. Transportation Facilities Plan Projects in MMA #4 (Wilburton)

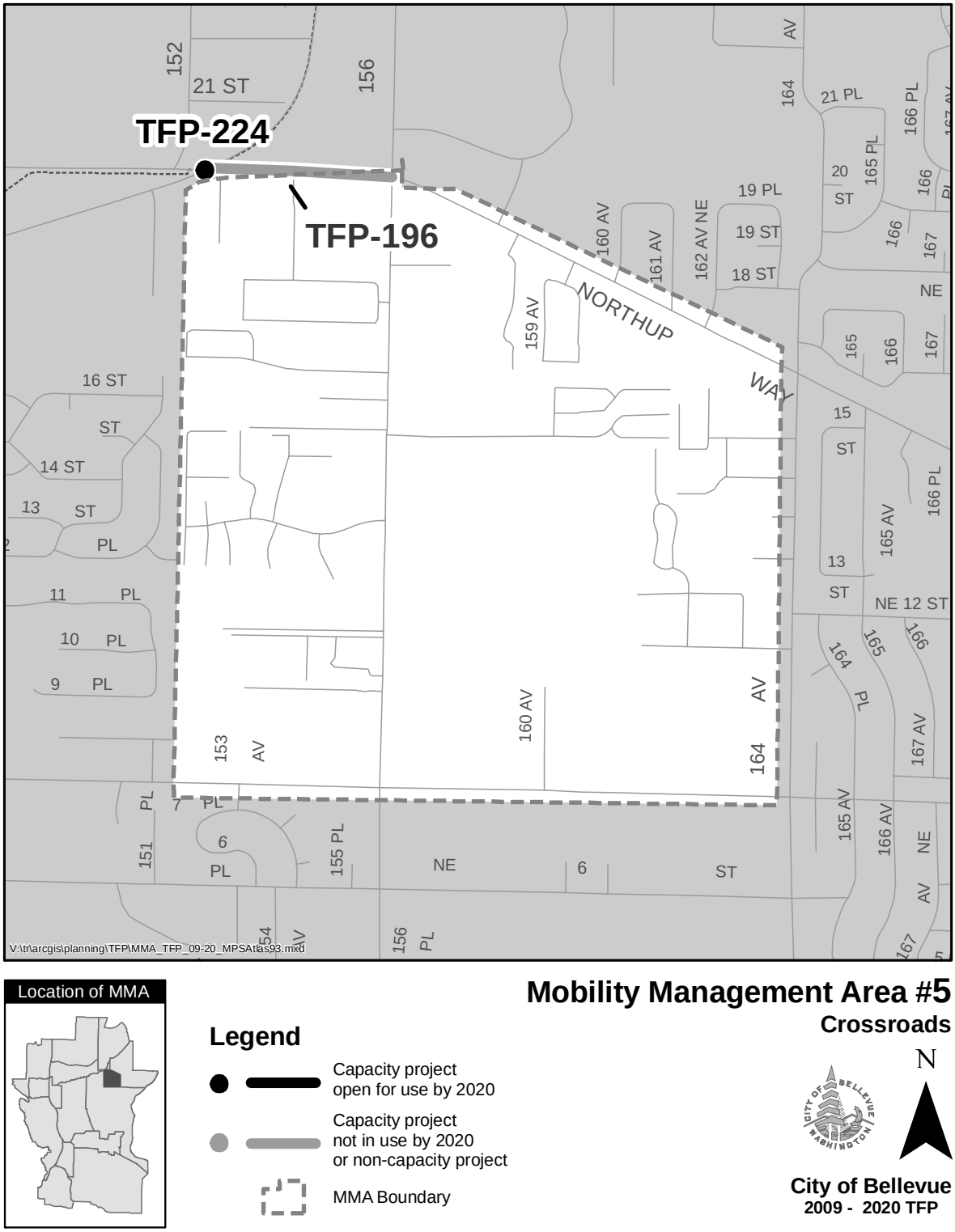
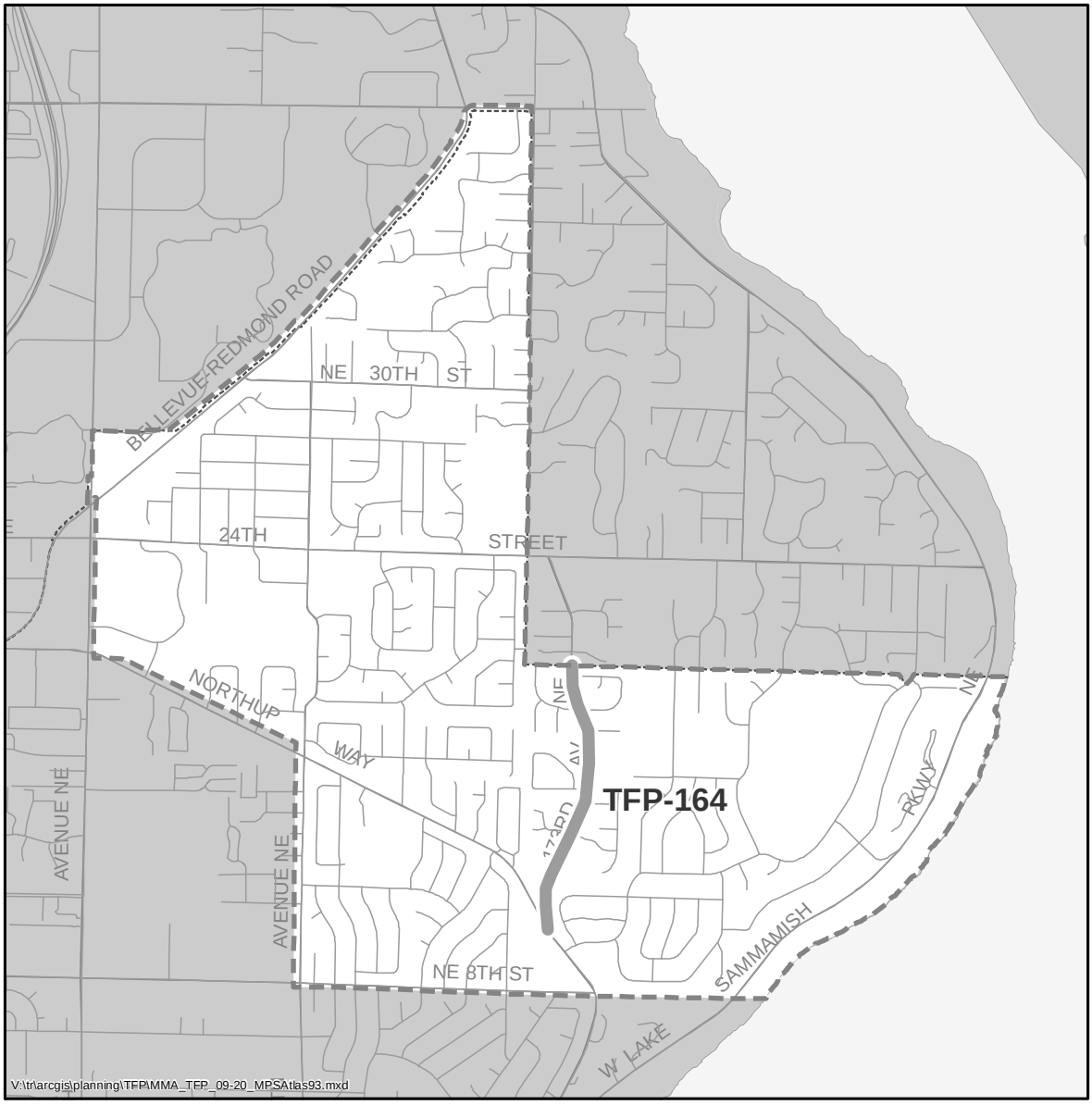
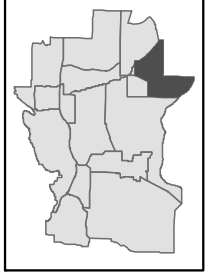



Figure 2-8. Transportation Facilities Plan Projects in MMA #5 (Crossroads)




Location of MMA



## Mobility Management Area #6

**Northeast Bellevue**

**Legend**

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-9. Transportation Facilities Plan Projects in MMA #6 (Northeast Bellevue)

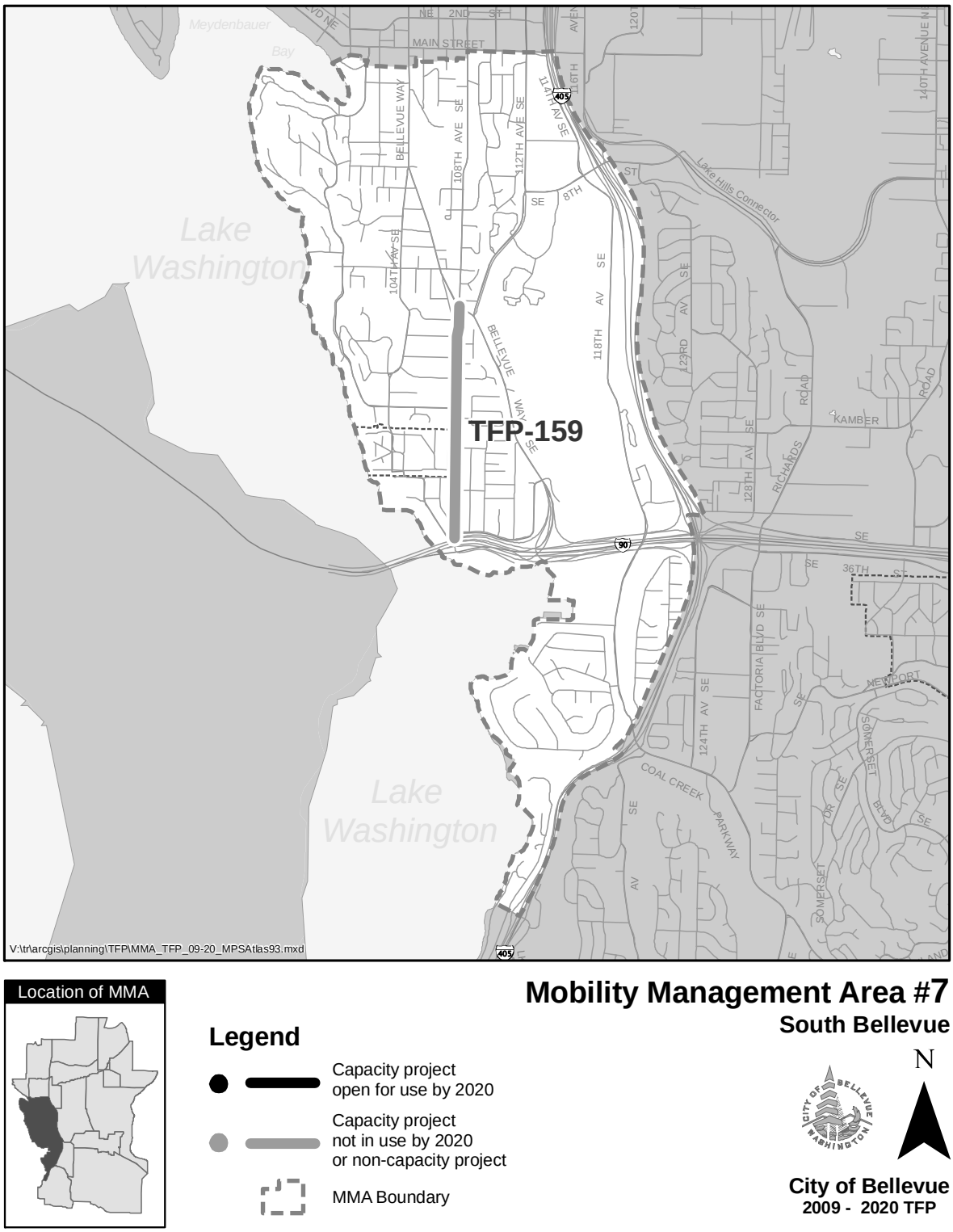
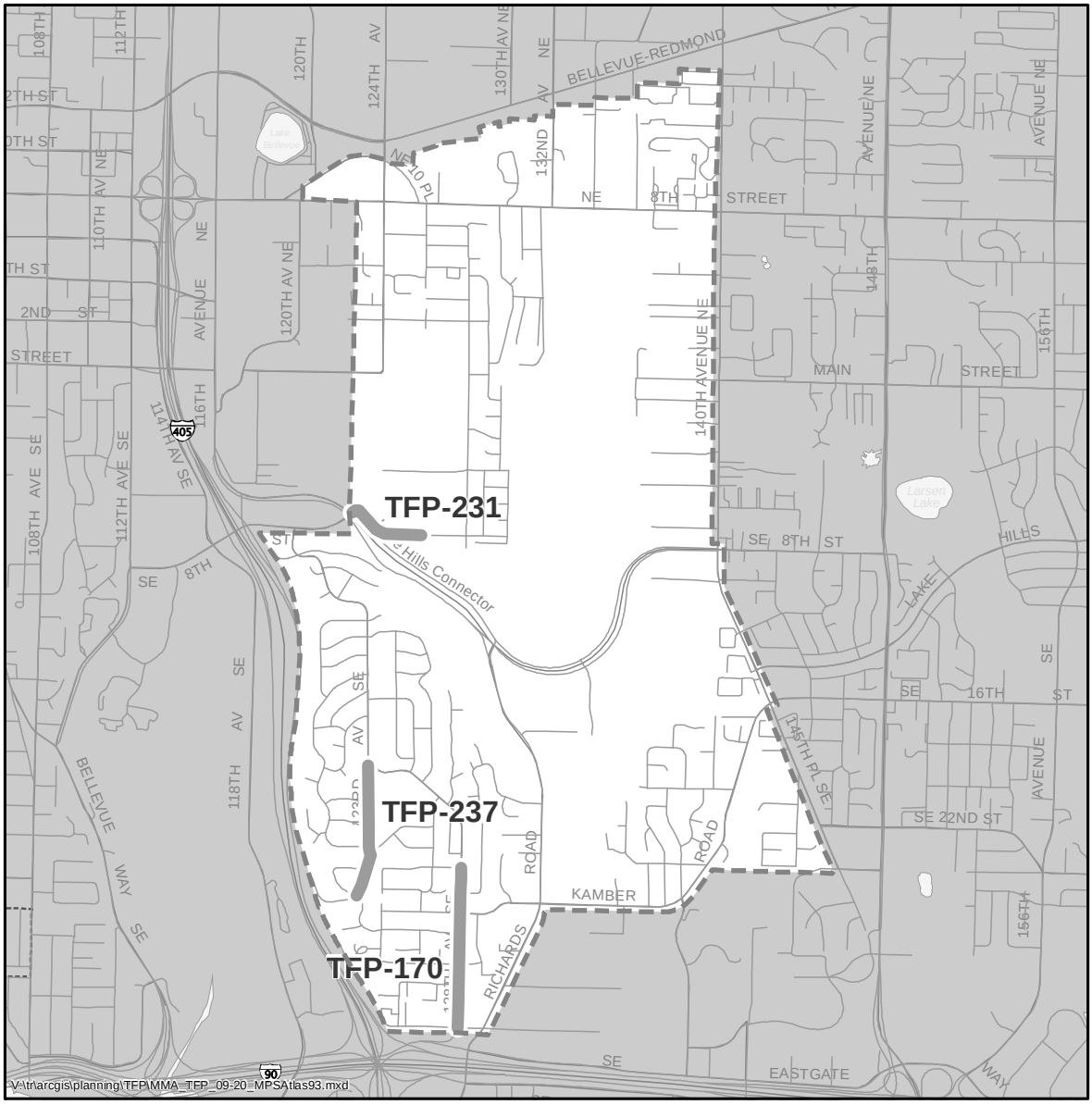
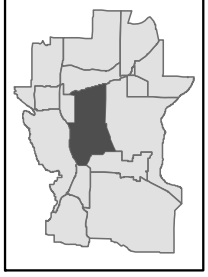



Figure 2-10. Transportation Facilities Plan Projects in MMA #7 (South Bellevue)




Location of MMA



## Mobility Management Area #8

### Richards Valley

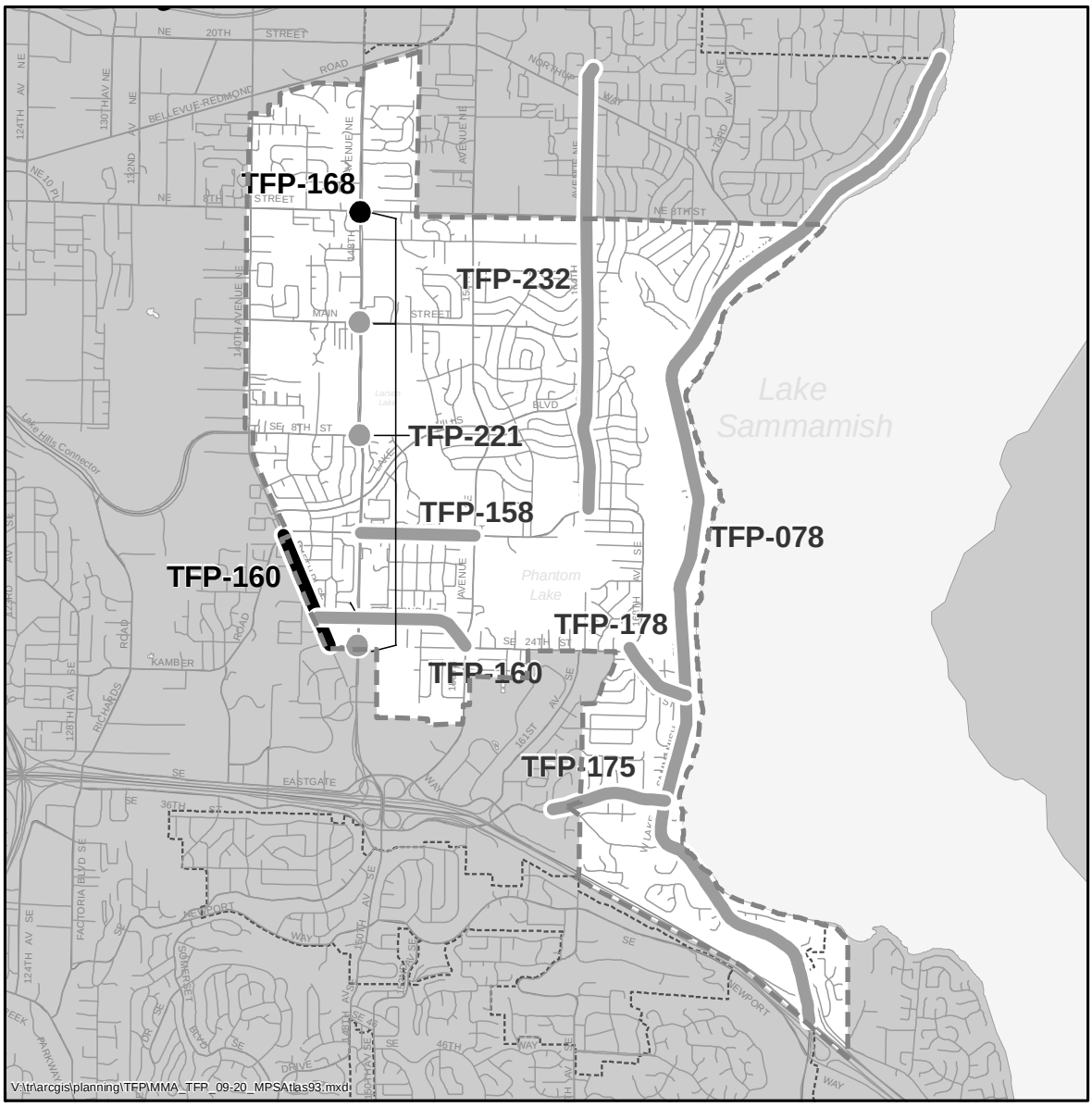
**Legend**

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

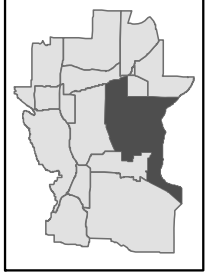
N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-11. TFP Projects in MMA #8 (Richards Valley)




Location of MMA



## Mobility Management Area #9

**East Bellevue**

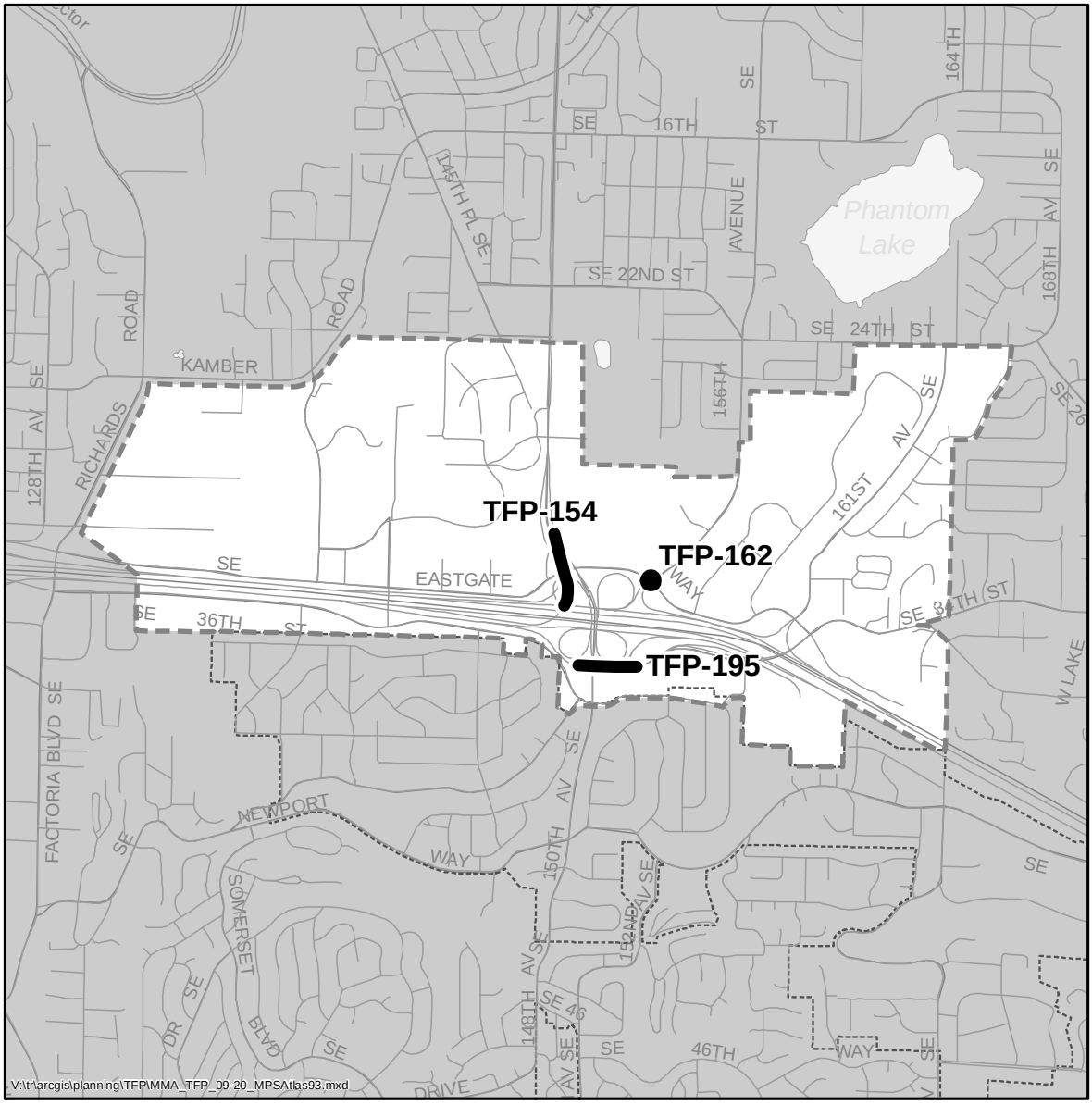
**Legend**

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

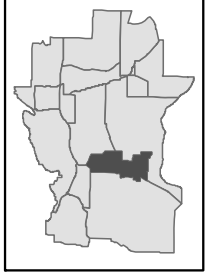
N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-12. Transportation Facilities Plan Projects in MMA #9 (East Bellevue)




Location of MMA



## Mobility Management Area #10

**Eastgate**

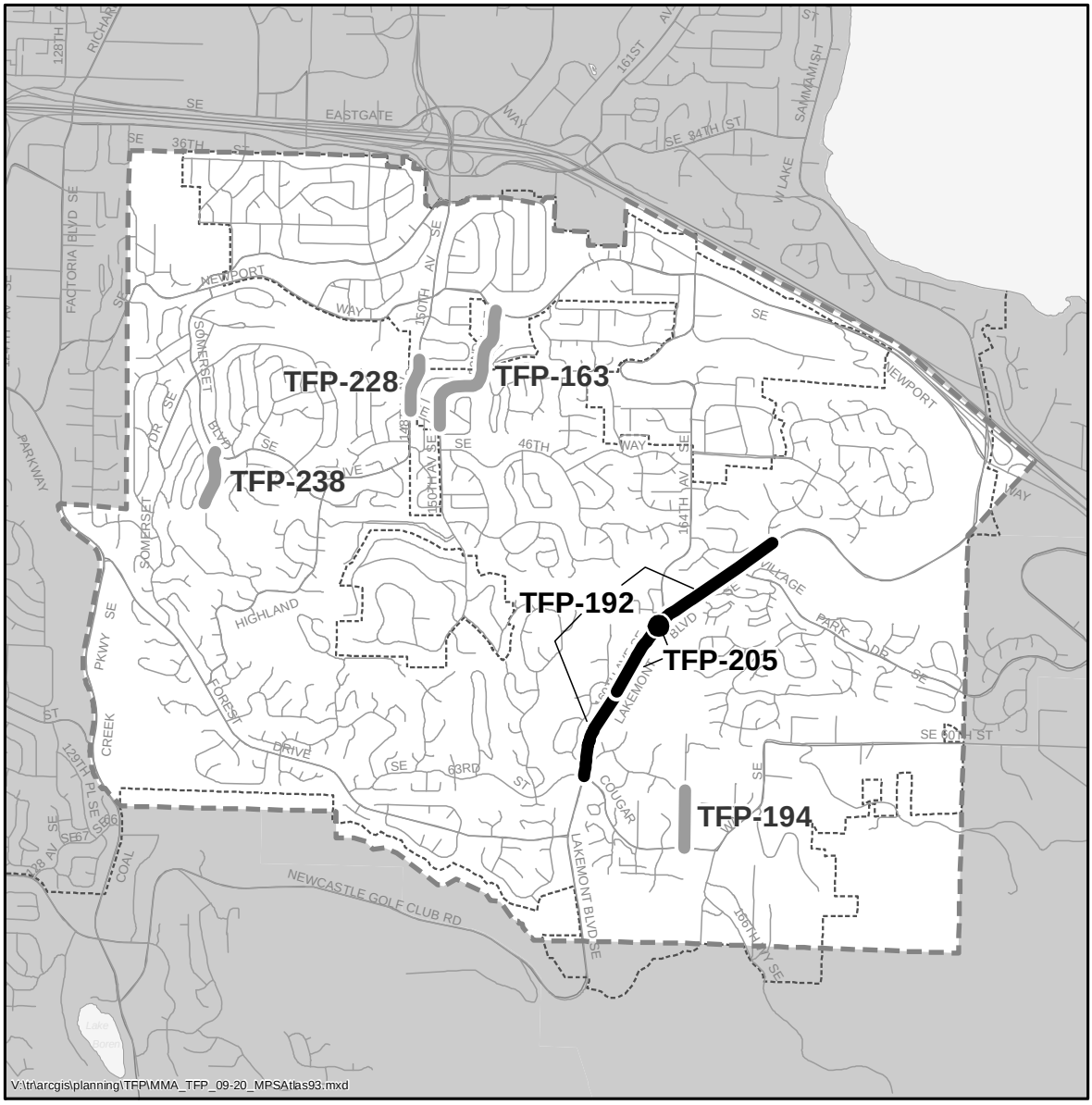
### Legend

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

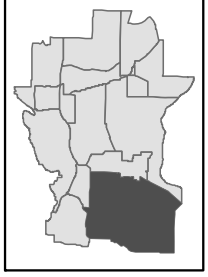
N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-13. Transportation Facilities Plan Projects in MMA #10 (Eastgate)




Location of MMA



## Mobility Management Area #11

**Newcastle**

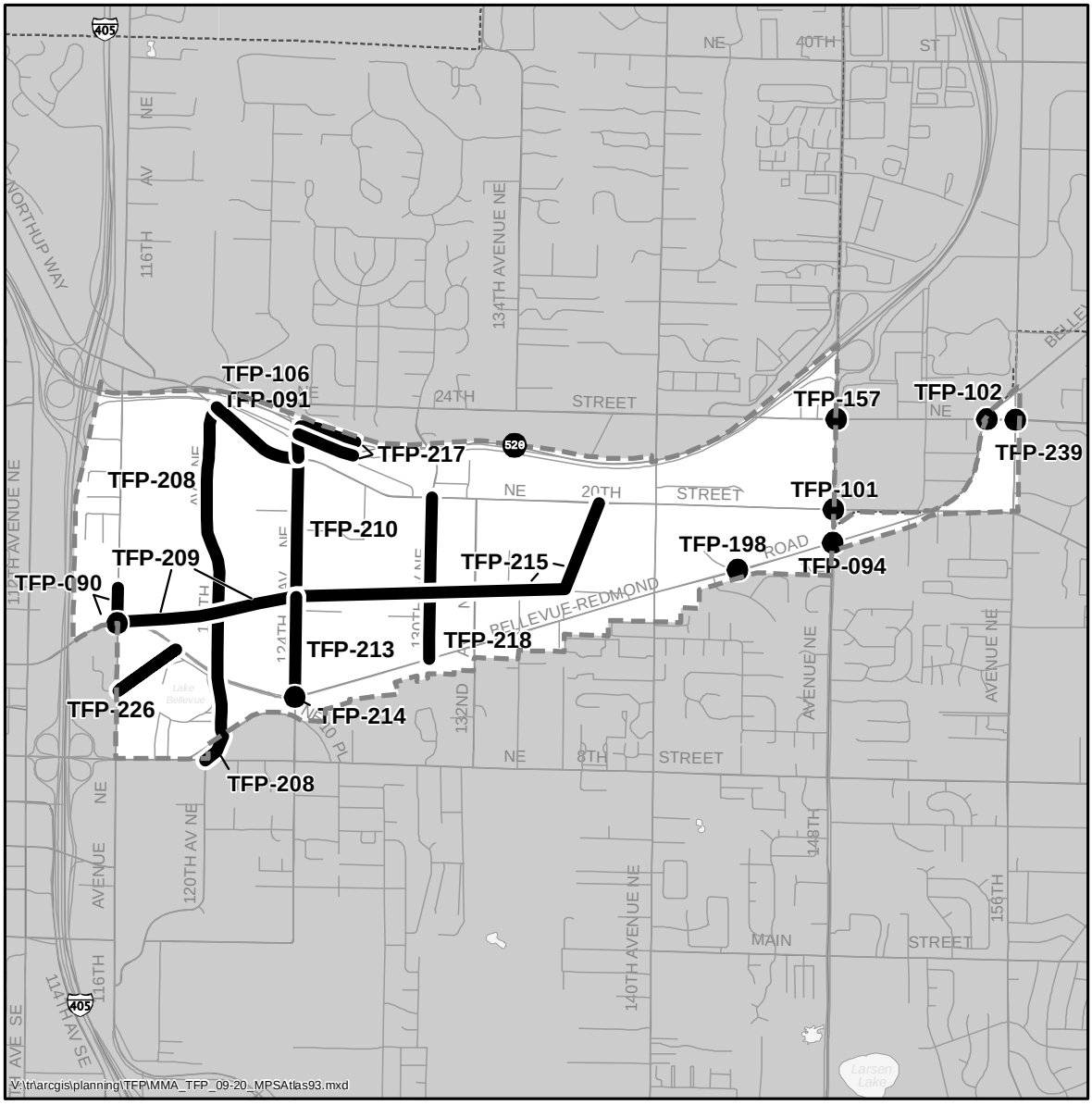
**Legend**

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

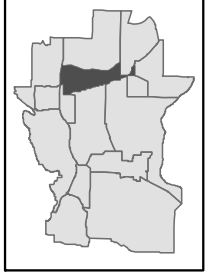
N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-14. Transportation Facilities Plan Projects in MMA #11 (Newcastle)




Location of MMA



## Mobility Management Area #12

**Bel-Red/Northup**

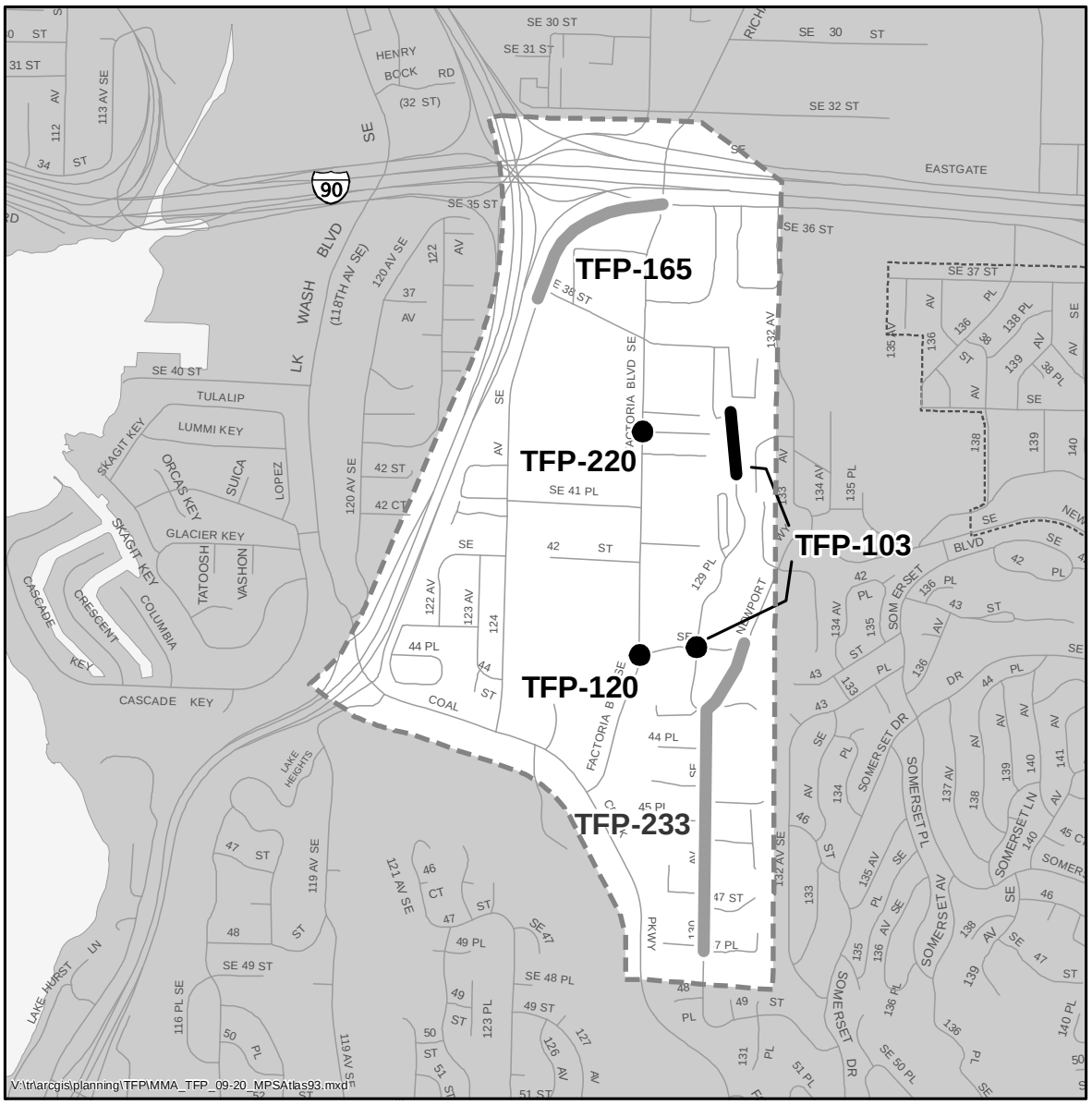
### Legend

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

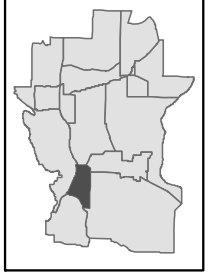
N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-15. Transportation Facilities Plan Projects in MMA #12 (Bel-Red/Northup)




Location of MMA



## Mobility Management Area #13

**Factoria**

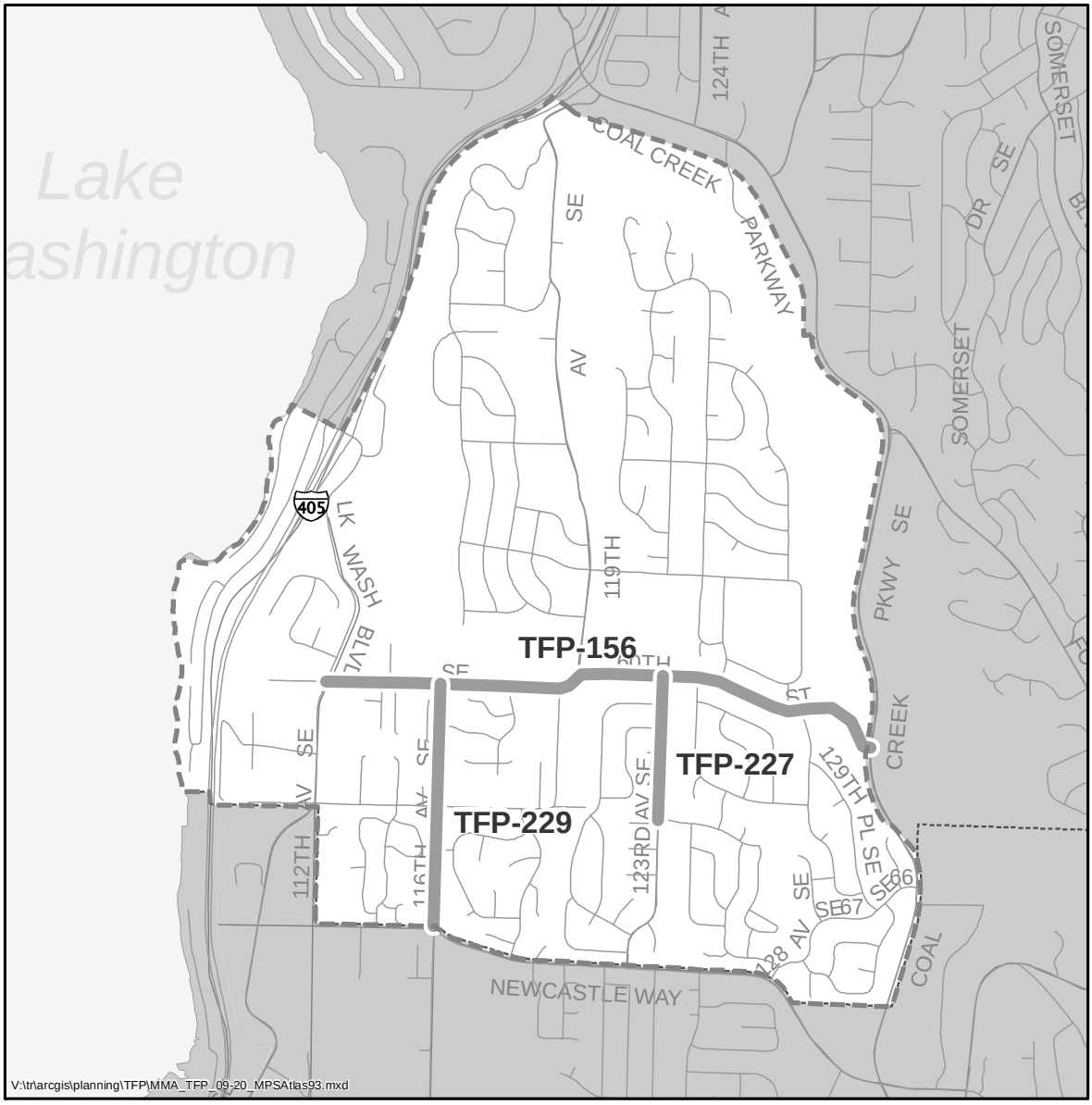
**Legend**

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

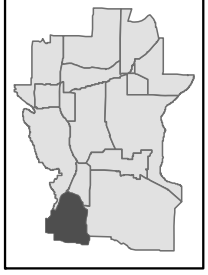
N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-16. Transportation Facilities Plan Projects in MMA #13 (Factoria)




Location of MMA



## Mobility Management Area #14

**Newport Hills**

**Legend**

- Capacity project open for use by 2020
- Capacity project not in use by 2020 or non-capacity project
- MMA Boundary

N

**City of Bellevue**
**2009 - 2020 TFP**

Figure 2-17. Transportation Facilities Plan Projects in MMA #14 (Newport Hills)

## 2.5. Benefits and Disadvantages of Delaying the Proposed Action Alternative

SEPA Rules require that an EIS evaluate the benefits and disadvantages of delaying implementation of the Proposed Action 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 Proposed Action alternative. 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, particularly short-term air quality during construction; effects of street widening projects on adjoining land uses; and increases in impervious surfaces and other effects on the natural environment resulting from the various transportation projects contained in this plan. These potential environmental issues are assessed in Chapters 3 through 7 of this Final EIS.

# Chapter 3. Transportation

This chapter reviews the existing conditions (2006) of the city's transportation system by subarea and identifies the potential impacts projected through 2020 of the No Action and 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; and
- pedestrian and bicycle systems.

### 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 described as follows.

- Major arterial. Major arterial streets provide efficient direct routes for long-distance auto 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 (City of Bellevue 2008a).

Level of Service (LOS) is a qualitative measure of congestion that describes the quality of traffic conditions and takes into consideration the traffic volume on a facility compared to its carrying capacity (volume to capacity ratio [V/C]). LOS is represented by letter grades, A through F. LOS A and B reflect traffic flows with minimal delay; LOS C and D reflect moderate and stable traffic conditions; LOS E reflects conditions that approach capacity; and LOS F reflects congested conditions with potential for substantial delays.

The GMA requires that development cannot occur unless existing infrastructure either exists or is built concurrent with development (Revised Code of Washington [RCW] 36.70A). This is known as concurrency. LOS standards are used to evaluate the transportation impacts of long-term growth and concurrency. 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. These standards are applied to weekday PM peak hour volumes, which typically reflect most congested conditions.

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 E of this document. Table E-7 in Appendix E summarizes existing and future projected operations of the 92 system intersections, located throughout the city, by which it measures concurrency.

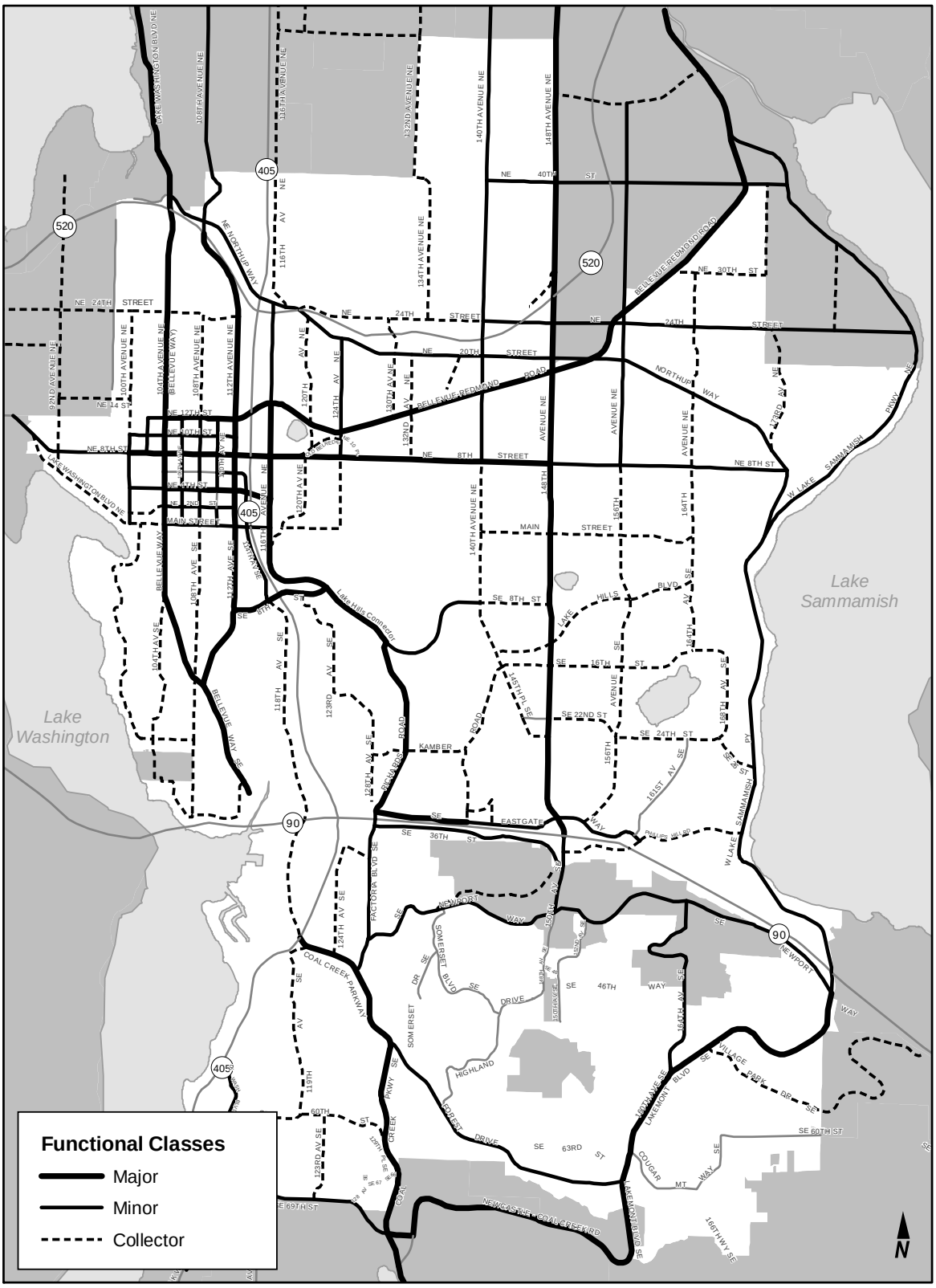



Figure 3-1. Roadway Classifications

### Table 3-1. City of Bellevue Level of Service Standards

| | MMA | LOS Standard | Maximum V/C |
|---|---|---|---|
| 1 | North Bellevue | D+ | 0.85 |
| 2 | Bridle Trails | C | 0.80 |
| 3 | Downtown | E+ | 0.95 |
| 4 | Wilburton | D | 0.90 |
| 5 | Crossroads | D- | 0.90 |
| 6 | Northeast Bellevue | C | 0.80 |
| 7 | South Bellevue | D+ | 0.85 |
| 8 | Richards Valley | D+ | 0.85 |
| 9 | East Bellevue | D+ | 0.85 |
| 10 | Eastgate | D | 0.90 |
| 11 | Newcastle | C | 0.80 |
| 12 | Bel-Red | E+ | 0.95 |
| 13 | Factoria | E+ | 0.95 |
| 14 | Newport Hills | --[1] | --[1] |

1. No system analysis intersections are located within this MMA, so no LOS standards have been defined.

Source: City of Bellevue 2008 (Excerpted from BCC 14.10.030 and modified to reflect anticipated revisions associated with the Bel-Red plan adoption)

Existing roadway operating conditions, as reflected by the existing LOS presented in Appendix E, is discussed in the following sections. In general, analysis indicates that most system intersections are currently operating at an acceptable LOS, with all except five locations operating within their respective standards. The few that are operating below LOS standards are often located within close proximity of interchanges with either State Route (SR) 520 or Interstate (I)-405. This indicates that high traffic volumes generated by the freeways are most likely to affect operations on the local roadways located near the interchanges.

## North Bellevue/Bridle Trails

This area encompasses the North Bellevue (MMA 1) and Bridle Trails (MMA 2) subareas. Both MMAs have area-wide average LOS that is well below adopted standards. Of the 12 system intersections located in this area, 10 are operating within their respective LOS standards, and the following two intersections are operating at LOS levels that exceed their standards:

- (116) 115th Place NE / Northup Way – V/C of 0.82 (LOS D+) exceeds its V/C threshold of 0.80
- (188) 148th Avenue NE / NE 29th Place – V/C of 0.91 (LOS E+) exceeds its V/C threshold of 0.80

The latter intersection is located within close proximity to SR 520 ramps.

## Downtown

This area encompasses the Downtown (MMA 3) subarea. Its area-wide average of LOS B is well within standards adopted for this MMA. Of the 13 system intersections located in this area, 12 are operating within their respective standards, and the following one intersection is operating at an LOS level that exceeds its standard:

- (26) 112th Avenue NE / NE 8th Street – V/C of 1.07 (LOS F) exceeds its V/C threshold of 0.95

This intersection is located in very close proximity to the interchange of NE 8th Street with I-405.

## Bel-Red/Wilburton

This area encompasses all but the easternmost portion of the Bel-Red (MMA 12) subarea and Wilburton (MMA 4) subarea. Both MMAs have area-wide average LOS that is well below the LOS standard presented in Table 3-1. Of the 17 system intersections located in this area, all are operating within their respective LOS standards.

## Overlake

This area encompasses the easternmost portion of the Bel-Red (MMA 12) subarea and the northernmost portion of the Crossroads (MMA 5) subarea. Both MMAs have area-wide average LOS that is well below adopted standards. Of the three system intersections located in this area, all are operating within their respective LOS standards.

## Northeast Bellevue/Crossroads

This area encompasses the Crossroads (MMA 5) and Northeast Bellevue (MMA 6) subareas. Both MMAs have area-wide average LOS that is well below adopted standards. Of the 6 system intersections located in this area, all are operating within their respective LOS standards.

## Central Bellevue

This area encompasses the South Bellevue (MMA 7), Richards Valley (MMA 8) and East Bellevue (MMA 9) subareas. All three MMAs have area-wide average LOS that is well below adopted standards. Of the 23 system intersections located in this area, 22 are operating within their respective standards, and the following one intersection is operating at an LOS level that exceeds its standard:

- (71) Lake Hills Connector/SE 8th Street/7th Street – V/C of 0.91 (LOS E) exceeds its V/C threshold of 0.85

## Eastgate

This area encompasses the Eastgate (MMA 10) subarea. This MMA has an area-wide average LOS that is well below adopted standards. Of the eight system intersections located in this area, all are operating within their respective LOS standards.

## Factoria

This area encompasses the Factoria (MMA 13) subarea. This MMA has an area-wide average LOS that is well below adopted standards. Of the eight system intersections located in this area, seven are operating within their respective standards, and the following one intersection is operating at an LOS level that exceeds its standard:

- (284) 124th Avenue SE/Coal Creek Parkway – V/C of 0.99 (LOS E-) exceeds its V/C threshold of 0.95

## South Bellevue

This area encompasses the Newcastle (MMA 11) and Newport Hills (MMA 14) subareas. This area has an area-wide average LOS that is well below adopted standards. Of the three system intersections located in this area, all are operating within their respective LOS standards. (Note, no system intersections are located in MMA 14. All three are located in MMA 11).

## 3.1.2. Neighborhood Conditions

Although the City works at the regional and local levels to keep daily commuter traffic off its residential streets, residents continue to express concern about increased cut-through traffic and speeding. The City addresses transportation system impacts on its many neighborhoods through a number of programs, including: the Neighborhood Traffic Calming Program, Neighborhood Enhancement Program, and Residential Permit Parking Zone (RPZ) Program.

The Neighborhood Traffic Calming Program uses a two-phase process to address excessive vehicle speeds, non-local traffic, accidents, and spill-over parking that often result from traffic congestion on arterial streets. During the first year, Phase I, the City focuses on changing driver behavior through education and enforcement measures. Most often, these first-year measures are effective in addressing traffic concerns. However, if they are not, Phase II begins, and physical treatments such as speed humps and traffic circles are considered. These projects can include neighborhood entry treatments, medians, raised crosswalks and stationary radar signs to monitor and display speeds on local streets.

The Neighborhood Enhancement Program constructs improvements such as sidewalks and trails requested by residents in select neighborhoods (three to four per year). The program rotates through neighborhoods on a three-year cycle.

The RPZ Program effectively addresses neighborhood spillover parking. A Residential Permit Parking Zone 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, is within a three-block radius of 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 16 designated permit parking zones.

### 3.1.3. Traffic Safety

The City serves as a model for the development and implementation of an active and consistently applied Accident Reduction Program, which annually identifies the intersections and mid-block corridors with the highest accident rates. A review of the highest accident intersections reveals that in 2007, no single intersection had an accident rate higher than two accidents per million entering vehicles and only six intersections had an accident rate greater than one accident per million entering vehicles.

The Annual Accident Study assesses the significance of police-investigated accidents in the city; recent findings include:

- Although the city has significantly grown in size and population from 1993–2007, the total number of reported accidents has not increased proportionately.
- The trend line for the number of total injuries resulting from traffic accidents reveals a general decrease.
- The number of traffic-related fatalities remains low, with an average of 2.4 fatalities per year in the period from 2003 through 2007. This is well below national average rates, which would put the total at approximately 17 annual fatalities for a city of Bellevue's size.

### 3.1.4. Travel Alternatives

Reliable and responsive alternatives to the single-occupant vehicle (SOV) are a vital component of the transportation system. The City has an aggressive Transportation Demand Management (TDM) program and a growing transit network. Following are some relevant data and facts:

- Recent mode split surveys indicate two (Bel-Red/Northup and Factoria) of the five commercial MMAs (Downtown, Bel-Red/Northup, Crossroads, Eastgate and Factoria) have exceeded their Comprehensive Plan mode-split target goals for 2005, meaning that more people than anticipated in these areas are choosing alternative modes of transportation for their daily commutes.
- During 2007, the City worked with 61 employers affected by the State Commute Trip Reduction (CTR) Act (sites with 100 or more employees) to implement commute trip reduction efforts; approximately 28,000 employees work at these affected worksites. Data show that worksites which have participated in the program since the start in 1993 have reduced their average SOV commute rate by 10%, from a baseline of 79% in 1993 to 69% in 2005. The City adopted an updated Commute Trip Reduction Plan in March 2008, to conform to requirements of the State of Washington CTR Act.
- In March 2008, the City adopted a TDM plan for Downtown that has the objective of shifting 5,000 daily commute trips away from single-occupancy vehicle mode by the end of 2011. The plan, *Connect Downtown*, was developed pursuant to the Growth and Transportation Efficiency Center program of the Washington State Department of Transportation (WSDOT); implementation of the plan is funded by a State grant and local funds.

- Sound Transit and King County Metro play a key role in increasing non-SOV travel. In addition to providing transit service, they provide five permanent park and ride lots in Bellevue. These generally operate at or near capacity, although in late 2004, King County Metro opened a new parking garage at the Eastgate Park & Ride, which expanded capacity by 66% to 1,170 stalls. Sound Transit constructed dedicated HOV on- and off- ramps to I-90 at 142nd Avenue SE to serve the lot.
- The City collaborated with WSDOT and transit agencies to improve speed and reliability of transit through the Access Downtown project, including the I-405 high-occupancy vehicle (HOV) direct access ramps at NE 6th Street, which opened in late 2004, providing an efficient linkage to the Downtown Transit Center.

The Bellevue Transit Plan (2003) outlines a six-year strategy for transit operations within and around the city. Although implementation is not yet complete, certain service improvements occurred in 2007 and 2008, in conjunction with King County Metro's Transit Now initiative.

### 3.1.5. Pedestrian and Bicycle Systems

The City of Bellevue Pedestrian and Bicycle Transportation Plan Update (1999) 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 throughout the city, as identified in the plan, although Pedestrian and especially Bicycle System completion in most MMAs falls short of targets in the Comprehensive Plan. As of the end of 2006, the adopted Pedestrian System route network is 60% complete and the Bicycle System route network is 31% complete. Identified inadequacies in non-motorized transportation facilities generally consist of:

- streets with no sidewalks or other pedestrian facilities;
- streets that have discontinuous sidewalks or pedestrian facilities, especially along arterial roadways and in areas that serve as primary walking routes for school children;
- streets with inadequate sidewalk widths, especially in commercial areas with high volumes of pedestrians;
- missing segments of planned trail links that will serve pedestrians and, in some cases, bicyclists; and
- bicycle system streets that carry heavy vehicle volumes and lack a wide curb lane, paved shoulder or bike lane.

The City started work on an updated Pedestrian and Bicycle Plan in 2006. The updated plan will be presented for adoption by the City Council in early 2009. The non-motorized projects in the 2009–2020 TFP address locations identified as deficient in the 1999 Pedestrian and Bicycle Transportation Plan and their selection was informed by the current planning process for the new Pedestrian and Bicycle Plan.

## 3.2. Impacts

This section assesses the potential impacts of the No Action and Proposed Action alternatives on the transportation system. As discussed in Chapter 2, the No Action alternative includes only the projects that are in the current CIP. The Proposed Action alternative includes adoption of the full list of 2009–2020 TFP projects summarized in Table 2-5.

Assessment of potential impacts of the No Action and Proposed Action alternatives was conducted in the following areas:

- overall system performance;
- intersection and arterial traffic operations;
- neighborhood impacts;
- safety; and
- pedestrian/bicycle impacts.

### 3.2.1. Overall System Performance

The locations of traffic volume analysis locations are shown in Figure 3-2. Table 3-2 summarizes the one-hour average of the two-hour PM peak arterial volumes for current (2006) and projected 2020 volumes under the No Action and Proposed Action alternatives at each of the analysis locations.

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 Mobility Management Areas are predicted to operate at worsened LOS between now and 2020.

Areas with the greatest increase (i.e., worsening) in traffic volumes are the Downtown, Bel-Red and Bridle Trails MMAs. In Downtown, increases of 30% to 40% are projected on some roadways between now and 2020. In the Bel-Red area, increases at some locations are projected to exceed 100%. In the Bridle Trails area, traffic volume increases at many locations are projected to range between 20% and 44% (the latter percentage is for 148th Avenue NE).

In general, the change of 2020 roadway volumes over existing are projected to be within 5% of each other, under the No Action and the Proposed Action alternatives; with No Action volumes a little higher at some locations, and Proposed Action volumes a little higher at others. The following locations have larger discrepancies between the No Action and Proposed Action alternatives:

- Projected volumes on 130th Avenue NE, south of NE 24th Street (ID# 22), are lower under the Proposed Action alternative than No Action alternative; while volumes on 124th Avenue NE, south of Northup Way (ID# 23), are substantially higher. This is likely due to substantial improvement proposed on 124th Avenue NE, including a connection to SR 520, under the Proposed Action alternative.

- Projected volumes on 116th Avenue NE, north of NE 12th Street (ID# 33), are lower under the Proposed Action alternative than the No Action alternative. This is likely due to substantial improvement proposed on parallel routes under the Proposed Action alternative.
- Projected volumes on NE 4th Street west of 112th Avenue NE (ID# 42), are lower under the Proposed Action alternative than the No Action alternative. This is likely due to substantial improvement proposed on parallel downtown routes under the Proposed Action alternative.
- Projected volumes on NE 8th Street east of 140th Avenue NE (ID# 47), are higher under the Proposed Action alternative than the No Action alternative. This is likely due to improvement to the intersection of NE 8th Street and 148th Avenue NE, which would make NE 8th Street a more attractive route.
- Projected volumes on 116th Avenue SE, south of Main Street (ID# 60) and SE 8th Street, west of Lake Hills Connector (ID# 61) are lower under the Proposed Action alternative than the No Action alternative. This is likely due to new roadway connectors to the north under the Proposed Action alternative that would draw traffic away from these roadways.

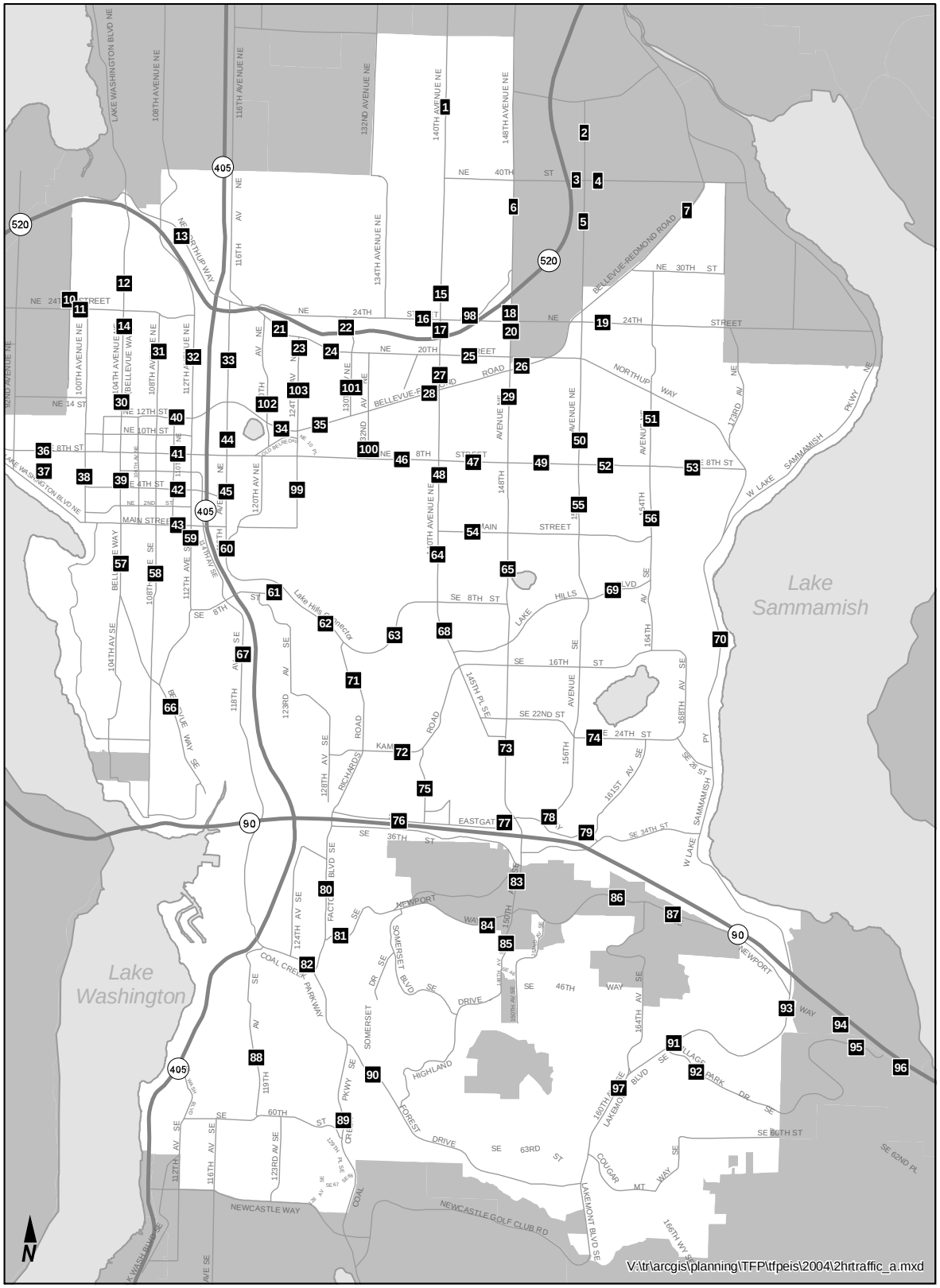



Figure 3-2. Traffic Volume Locations

## Table 3-2. Existing and Projected Future Traffic Volumes

| Roadway Location Index | Roadway Location | Mobility Management Area | Average Traffic Volume (vehicles per hour averaged over 2 hours in PM Peak) | | | % Change in No Action over Existing | % Change in Proposed Action over Existing |
|---|---|---|---|---|---|---|---|
| | | | Existing (2006 Observed) | Future (2020) No Action Network | Future (2020) Proposed Action Network | | |
| 1 | 140th Avenue NE, north of NE 40th Street | 2 | 990 | 1,378 | 1,382 | 39% | 40% |
| 2 | 156th Avenue NE, north of NE 40th Street | 0 | 1,267 | 1,589 | 1,596 | 25% | 26% |
| 3 | NE 40th Street, west of 156th Avenue NE | 0 | 2,545 | 3,158 | 3,131 | 24% | 23% |
| 4 | NE 40th Street, east of 156th Avenue NE | 0 | 1,632 | 2,383 | 2,386 | 46% | 46% |
| 5 | 156th Avenue NE, south of NE 40th Street | 0 | 2,130 | 2,340 | 2,315 | 10% | 9% |
| 6 | 148th Avenue NE, south of NE 40th Street | 2 | 1,770 | 2,556 | 2,541 | 44% | 44% |
| 7 | Bel-Red Road, south of NE 40th Street | 6 | 1,063 | 1,261 | 1,252 | 19% | 18% |
| 8 | 84th Avenue NE, north of NE 24th Street | 0 | 1,181 | 1,395 | 1,395 | 18% | 18% |
| 9 | NE 24th Street, east of 84th Avenue NE | 0 | 404 | 518 | 517 | 28% | 28% |
| 10 | 98th Avenue NE, north of NE 24th Street | 1 | 182 | 185 | 186 | 2% | 2% |
| 11 | NE 24th Street, east of 98th Avenue NE | 1 | 689 | 732 | 733 | 6% | 6% |
| 12 | Bellevue Way NE, north of NE 24th Street | 1 | 1,998 | 2,656 | 2,619 | 33% | 31% |
| 13 | Northup Way, east of 108th Avenue NE | 1 | 1,299 | 1,706 | 1,661 | 31% | 28% |
| 14 | Bellevue Way NE, south of NE 24th Street | 1 | 1,914 | 2,345 | 2,336 | 23% | 22% |
| 15 | 140th Avenue NE, north of NE 24th Street | 2 | 1,217 | 1,132 | 1,165 | -7% | -4% |

| Roadway Location Index | Roadway Location | Mobility Management Area | Average Traffic Volume (vehicles per hour averaged over 2 hours in PM Peak) | | | % Change in No Action over Existing | % Change in Proposed Action over Existing |
|---|---|---|---|---|---|---|---|
| | | | Existing (2006 Observed) | Future (2020) No Action Network | Future (2020) Proposed Action Network | | |
| 16 | NE 24th Street, west of 140th Avenue NE | 2 | 1,026 | 1,446 | 1,435 | 41% | 40% |
| 17 | 140th Avenue NE, south of NE 24th Street | 2 | 1,897 | 2,149 | 2,135 | 13% | 13% |
| 18 | 148th Avenue NE, north of NE 24th Street | 12 | 3,793 | 3,795 | 3,723 | 0% | -2% |
| 19 | NE 24th Street, east of 156th Avenue NE | 12 | 1,113 | 1,274 | 1,280 | 14% | 15% |
| 20 | 148th Avenue NE, south of NE 24th Street | 12 | 2,694 | 2,954 | 2,943 | 10% | 9% |
| 21 | Northup Way, west of 124th Avenue NE | 12 | 1,547 | 1,633 | 1,700 | 6% | 10% |
| 22 | 130th Avenue NE, south of NE 24th Street | 2 | 573 | 606 | 518 | 6% | -10% |
| 23 | 124th Avenue NE, south of Northup Way | 12 | 653 | 1,371 | 1,656 | 110% | 154% |
| 24 | Northup Way, east of 124th Avenue NE | 12 | 2,317 | 2,951 | 2,980 | 27% | 29% |
| 25 | NE 20th Street, east of 140th Avenue NE | 12 | 2,140 | 2,630 | 2,685 | 23% | 25% |
| 26 | Bel-Red Road, east of 148th Avenue NE | 12 | 1,605 | 2,042 | 2,051 | 27% | 28% |
| 27 | 140th Avenue NE, north of Bel-Red Road | 12 | 1,673 | 1,800 | 1,749 | 8% | 5% |
| 28 | 140th Avenue NE, south of Bel-Red Road | 12 | 1,536 | 1,696 | 1,632 | 10% | 6% |
| 29 | 148th Avenue NE, south of Bel-Red Road | 12 | 2,771 | 3,195 | 3,187 | 15% | 15% |
| 30 | Bellevue Way NE, north of NE 12th Street | 1 | 2,033 | 2,414 | 2,403 | 19% | 18% |
| 31 | 108th Avenue NE, north of NE 12th Street | 1 | 191 | 313 | 305 | 64% | 60% |

| Roadway Location Index | Roadway Location | Mobility Management Area | Average Traffic Volume (vehicles per hour averaged over 2 hours in PM Peak) | | | % Change in No Action over Existing | % Change in Proposed Action over Existing |
|---|---|---|---|---|---|---|---|
| | | | Existing (2006 Observed) | Future (2020) No Action Network | Future (2020) Proposed Action Network | | |
| 32 | 112th Avenue NE, north of NE 12th Street | 1 | 1,187 | 1,272 | 1,261 | 7% | 6% |
| 33 | 116th Avenue NE, north of NE 12th Street | 12 | 1,077 | 1,266 | 1,001 | 18% | -7% |
| 34 | NE 12th Street, west of 124th Avenue NE | 12 | 2,057 | 2,025 | 1,970 | -2% | -4% |
| 35 | Bel-Red Road, west of 130th Avenue NE | 12 | 2,513 | 3,164 | 3,040 | 26% | 21% |
| 36 | NE 8th Street, east of 92nd Avenue NE | 1 | 569 | 730 | 731 | 28% | 28% |
| 37 | Lake Washington Boulevard NE, east of 92nd Avenue NE | 1 | 453 | 549 | 541 | 21% | 19% |
| 38 | 100th Avenue NE, south of NE 8th Street | 3 | 896 | 1,214 | 1,198 | 35% | 34% |
| 39 | Bellevue Way NE, south of NE 6th Street | 3 | 2,053 | 2,715 | 2,705 | 32% | 32% |
| 40 | NE 12th Street, west of 112th Avenue NE | 3 | 1,955 | 2,622 | 2,608 | 34% | 33% |
| 41 | NE 8th Street, west of 112th Avenue NE | 3 | 2,867 | 3,358 | 3,374 | 17% | 18% |
| 42 | NE 4th Street, west of 112th Avenue NE | 3 | 1,843 | 2,628 | 2,510 | 43% | 36% |
| 43 | Main Street, west of 112th Avenue | 3 | 1,546 | 1,877 | 1,959 | 21% | 27% |
| 44 | 116th Avenue NE, north of NE 8th Street | 4 | 1,905 | 2,855 | 2,948 | 50% | 55% |
| 45 | 116th Avenue NE, south of NE 8th Street | 4 | 2,083 | 2,454 | 2,420 | 18% | 16% |
| 46 | NE 8th Street, west of 140th Avenue NE | 9 | 1,990 | 2,582 | 2,710 | 30% | 36% |
| 47 | NE 8th Street, east of 140th Avenue NE | 9 | 1,636 | 1,970 | 2,089 | 20% | 28% |

| Roadway Location Index | Roadway Location | Mobility Management Area | Average Traffic Volume (vehicles per hour averaged over 2 hours in PM Peak) | | | % Change in No Action over Existing | % Change in Proposed Action over Existing |
|---|---|---|---|---|---|---|---|
| | | | Existing (2006 Observed) | Future (2020) No Action Network | Future (2020) Proposed Action Network | | |
| 48 | 140th Avenue NE, south of NE 8th Street | 9 | 1,445 | 1,723 | 1,747 | 19% | 21% |
| 49 | NE 8th Street, east of 148th Avenue NE | 9 | 1,541 | 1,775 | 1,820 | 15% | 18% |
| 50 | 156th Avenue NE, north of NE 8th Street | 5 | 1,948 | 2,256 | 2,252 | 16% | 16% |
| 51 | 164th Avenue NE, south of Northup Way | 6 | 881 | 1,170 | 1,162 | 33% | 32% |
| 52 | NE 8th Street, west of 164th Avenue NE | 6 | 1,040 | 1,120 | 1,123 | 8% | 8% |
| 53 | NE 8th Street, east of 164th Avenue NE | 6 | 621 | 662 | 660 | 7% | 6% |
| 54 | Main Street, east of 140th Avenue | 9 | 493 | 597 | 609 | 21% | 24% |
| 55 | 156th Avenue NE, north of Main Street | 9 | 1,337 | 1,615 | 1,608 | 21% | 20% |
| 56 | 164th Avenue NE, north of Main Street | 9 | 829 | 1,088 | 1,077 | 31% | 30% |
| 57 | Bellevue Way SE, south of SE 3rd Street | 3 | 2,307 | 2,558 | 2,564 | 11% | 11% |
| 58 | 108th Avenue SE, south of SE 4th Street | 3 | 379 | 557 | 573 | 47% | 51% |
| 59 | 112th Avenue SE, south of Main Street | 3 | 1,976 | 2,523 | 2,616 | 28% | 32% |
| 60 | 116th Avenue SE, south of Main Street | 4 | 2,142 | 2,819 | 2,527 | 32% | 18% |
| 61 | SE 8th Street, west of Lake Hills Connector | 8 | 1,540 | 1,833 | 1,524 | 19% | -1% |
| 62 | Lake Hills Connector, south of SE 8th Street | 8 | 2,744 | 3,150 | 3,214 | 15% | 17% |
| 63 | Lake Hills Connector, east of Richards Road | 8 | 1,004 | 1,441 | 1,409 | 44% | 40% |

| Roadway Location Index | Roadway Location | Mobility Management Area | Average Traffic Volume (vehicles per hour averaged over 2 hours in PM Peak) | | | % Change in No Action over Existing | % Change in Proposed Action over Existing |
|---|---|---|---|---|---|---|---|
| | | | Existing (2006 Observed) | Future (2020) No Action Network | Future (2020) Proposed Action Network | | |
| 64 | 140th Avenue SE, north of SE 8th Street | 8 | 1,450 | 1,660 | 1,610 | 14% | 11% |
| 65 | 148th Avenue SE, south of Main Street | 9 | 3,011 | 3,360 | 3,361 | 12% | 12% |
| 66 | Bellevue Way SE, east of 112th Avenue SE | 7 | 3,536 | 3,647 | 3,645 | 3% | 3% |
| 67 | 118th Avenue SE, south of SE 8th Street | 7 | 901 | 1,055 | 1,061 | 17% | 18% |
| 68 | 145th Place SE, south of SE 8th Street | 8 | 1,383 | 1,542 | 1,537 | 11% | 11% |
| 69 | Lake Hills Boulevard, east of 156th Avenue SE | 9 | 384 | 440 | 441 | 15% | 15% |
| 70 | W Lake Sammamish Parkway, south of Northup Way | 9 | 1,202 | 1,431 | 1,423 | 19% | 18% |
| 71 | Richards Road, north of Kamber Road | 8 | 1,962 | 2,253 | 2,278 | 15% | 16% |
| 72 | Kamber Road east of Richards Road | 8 | 775 | 856 | 855 | 10% | 10% |
| 73 | 148th Avenue SE, south of SE 24th Street | 9 | 3,959 | 4,296 | 4,356 | 9% | 10% |
| 74 | SE 24th Street, east of 156th Avenue SE | 9 | 238 | 253 | 247 | 6% | 4% |
| 75 | 139th Avenue SE, south of Kamber Road | 8 | 540 | 768 | 771 | 42% | 43% |
| 76 | SE Eastgate Way, east of Richards Road | 13 | 1,011 | 1,134 | 1,126 | 12% | 11% |
| 77 | SE Eastgate Way, west of 150th Avenue SE | 10 | 1,361 | 1,451 | 1,445 | 7% | 6% |
| 78 | 156th Avenue SE, north of SE Eastgate Way | 10 | 1,352 | 1,531 | 1,524 | 13% | 13% |
| 79 | SE Eastgate Way, west of 161st Avenue SE | 10 | 841 | 1,728 | 1,715 | 105% | 104% |

| Roadway Location Index | Roadway Location | Mobility Management Area | Average Traffic Volume (vehicles per hour averaged over 2 hours in PM Peak) | | | % Change in No Action over Existing | % Change in Proposed Action over Existing |
|---|---|---|---|---|---|---|---|
| | | | Existing (2006 Observed) | Future (2020) No Action Network | Future (2020) Proposed Action Network | | |
| 80 | Factoria Boulevard, north of SE 41st Street | 13 | 2,130 | 2,149 | 2,149 | 1% | 1% |
| 81 | SE Newport Way, east of 128th Avenue SE | 13 | 1,214 | 1,257 | 1,275 | 4% | 5% |
| 82 | Coal Creek Parkway, west of SE Newport Way | 13 | 2,268 | 2,322 | 2,331 | 2% | 3% |
| 83 | 150th Avenue SE, north of SE Newport Way | 11 | 1,609 | 2,335 | 2,353 | 45% | 46% |
| 84 | SE Newport Way, west of 150th Avenue SE | 11 | 664 | 841 | 856 | 27% | 29% |
| 85 | 150th Avenue SE, south of SE Newport Way | 11 | 789 | 929 | 928 | 18% | 18% |
| 86 | SE Newport Way, west of 164th Avenue SE | 11 | 531 | 742 | 736 | 40% | 39% |
| 87 | SE Newport Way, east of 164th Avenue SE | 11 | 343 | 440 | 426 | 28% | 24% |
| 88 | 119th Avenue SE, north of SE 52nd Street | 14 | 713 | 1,081 | 1,114 | 52% | 56% |
| 89 | Coal Creek Parkway, south of Forest Drive SE | 11 | 2,521 | 3,346 | 3,405 | 33% | 35% |
| 90 | Forest Drive SE, east of Coal Creek Parkway | 11 | 873 | 1,059 | 1,078 | 21% | 23% |
| 91 | Lakemont Boulevard SE, east of Village Park Drive SE | 11 | 1,188 | 1,211 | 1,235 | 2% | 4% |
| 92 | Village Park Drive SE, south of Lakemont Boulevard SE | 11 | 452 | 535 | 538 | 18% | 19% |
| 93 | Lakemont Boulevard SE, south of SE Newport Way | 11 | 1,411 | 1,459 | 1,474 | 3% | 4% |
| 94 | SE Newport Way, north of Village Park Drive SE | 0 | 878 | 872 | 962 | -1% | 10% |

| Roadway Location Index | Roadway Location | Mobility Management Area | Average Traffic Volume (vehicles per hour averaged over 2 hours in PM Peak) | | | % Change in No Action over Existing | % Change in Proposed Action over Existing |
|---|---|---|---|---|---|---|---|
| | | | Existing (2006 Observed) | Future (2020) No Action Network | Future (2020) Proposed Action Network | | |
| 95 | Village Park Drive SE, west of SE Newport Way | 0 | 344 | 382 | 773 | 11% | 125% |
| 96 | SE Newport Way, south of Village Park Drive SE | 0 | 772 | 964 | 1,016 | 25% | 32% |
| 97 | Lakemont Boulevard SE, west of 164th Avenue SE | 11 | 1,654 | 1,941 | 1,957 | 17% | 18% |
| 98 | NE 29th Place, north of NE 24th Street | 2 | 1,372 | 1,659 | 1,674 | 21% | 22% |
| 99 | 124th Avenue NE, south of NE 5th Street | 8 | 495 | 734 | 803 | 48% | 62% |
| 100 | 132nd Avenue NE, north of NE 8th Street | 8 | 319 | 654 | 656 | 105% | 106% |
| 101 | 130th Avenue NE, north of NE 15th/16th Street | 12 | 746 | 1,052 | 706 | 41% | -5% |
| 102 | 120th Avenue NE, south of NE 15th/16th Street | 12 | 493 | 1,977 | 2,106 | 301% | 327% |
| 103 | 124th Avenue NE, south of NE 15th/16th Street | 12 | 597 | 1,305 | 832 | 119% | 39% |

## 3.2.2. Intersection and Arterial Traffic Operations

Future roadway operating conditions under the No Action and Proposed Action alternatives, as reflected by the existing LOS presented in Table E-7 (see Appendix E), is discussed in the following sections.

## North Bellevue/Bridle Trails

This area encompasses the North Bellevue (MMA 1) and Bridle Trails (MMA 2) subareas. Table 3-3 shows that one capacity project is proposed in this area. It is included in both the No Action and Proposed Action alternatives.

### Table 3-3. TFP Projects for No Action and Proposed Action–North Bellevue/Bridle Trails

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 079 | 2 | Northup Way / Bellevue Way NE—NE 24th Street[1] | X | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-4 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to No Action. The Proposed Action alternative is expected to improve one location, 116th Avenue NE / Northup Way NE, to levels within the LOS standard of 0.80 for Bridle Trails. The area-wide 2020 LOS for Bridle Trails is projected to exceed the 0.80 standard under both alternatives. However, the area-wide V/C for this area is expected to improve under the Proposed Action alternative.

### Table 3-4. 2020 Level of Service under No Action and Proposed Action–North Bellevue/Bridle Trails

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 69 | Bellevue Way NE / NE 24th Street | 0.944 | E+ | 0.939 | E+ | -0.005 |
| 64 | 140th Avenue NE / NE 24th Street | 0.917 | E+ | 0.923 | E+ | +0.006 |
| 79 | 148th Avenue NE / NE 40th Street | 0.867 | D- | 0.870 | D- | +0.003 |
| 114 | 116th Avenue NE / Northup Way | 0.852 | D- | 0.712 | C | -0.140 |
| 116 | 115th Place NE / Northup Way | 1.068 | F | 0.916 | E+ | -0.152 |
| 188 | 148th Avenue NE / NE 29th Place | 0.989 | E- | 0.929 | E+ | -0.060 |

## Downtown

This area encompasses the Downtown (MMA 3) subarea. Table 3-5 shows that 11 capacity projects are proposed in this area under the Proposed Action alternative. Of these, three projects are also included under the No Action alternative.

### Table 3-5. TFP Projects for No Action and Proposed Action–Downtown

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 110 | 3 | 110th Avenue NE / NE 4th Street—NE 8th Street[1] | X | X |
| 172 | 3 | 106th/108th One Way Couplet | | X |
| 184 | 3 | NE 8th Street / 106th Avenue NE—108th Avenue NE[1] | X | X |
| 190 | 3 | NE 2nd Street/Bellevue Way—112th Avenue NE[1] | X | X |
| 193 | 3 | NE 10th Street / I-405 | | X |
| 197 | 3 | NE 2nd Street Extension and I-405 interchange | | X |
| 216 | 3 | 112th Avenue NE / NE 2nd Street[1] | | X |
| 219 | 3 | NE 8th Street / 106th Avenue NE[1] | | X |
| 222 | 3 | Bellevue Way NE / NE 4th Street[1] | | X |
| 223 | 3 | Bellevue Way NE / NE 8th Street[1] | | X |
| 225 | 3 | Bellevue Way NE / NE 2nd Street[1] | | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-6 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. The table shows that one intersection, 112th Avenue NE / NE 8th Street, is projected to exceed the LOS standard of 0.95 for Downtown, under both No Action and Proposed Action. Overall, operations under the Proposed Action alternative are generally projected to be better in this area than they are under the No Action alternative. Overall, the Downtown area-wide V/C is expected to improve under the Proposed Action alternative.

### Table 3-6. 2020 Level of Service under No Action and Proposed Action–Downtown

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 7 | Bellevue Way NE / NE 8th Street | 0.823 | D+ | 0.822 | D+ | -0.001 |
| 9 | Bellevue Way / Main Street | 0.874 | D- | 0.817 | D+ | -0.057 |
| 21 | 108th Avenue NE / NE 8th Street | 0.941 | E+ | 0.927 | E+ | -0.014 |
| 25 | 112th Avenue NE / NE 12th Street | 0.920 | E+ | 0.871 | D- | -0.049 |
| 26 | 112th Avenue NE / NE 8th Street | 1.238 | F | 1.211 | F | -0.027 |
| 36 | 112th Avenue / Main Street | 0.935 | E+ | 0.928 | E+ | -0.007 |

## Bel-Red/Wilburton

This area encompasses all but the easternmost portion of the Bel-Red (MMA 12) subarea and Wilburton (MMA 4) subarea. Table 3-7 shows that 14 capacity projects are proposed in this area under the Proposed Action alternative. Of these, one project is also included under the No Action alternative.

### Table 3-7. TFP Projects for No Action and Proposed Action–Bel-Red/Wilburton

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 207 | 4 | NE 4th Street Extension / 116th Avenue NE—120th Avenue NE; and widening of 120th Avenue / NE 4th Street—NE 8th Street[1] | | X |
| 211 | 4 | NE 6th Street Extension[1] | | X |
| 090 | 12 | 116th Avenue NE / NE 12th Street—1600 block[1] | | X |
| 091 / 106 | 12 | Northup Way / 120th Avenue NE—124th Avenue NE[1] | X | X |
| 208 | 12 | 120th Avenue NE / NE 8th Street—Northup Way[1] | | X |
| 209 | 12 | NE 15th/16th Street (Phase I) / 116th Avenue at NE 12th Street to 124th Avenue NE[1] | | X |
| 210 | 12 | 124th Avenue NE / NE 15th/16th Street —Northup Way[1] | | X |
| 213 | 12 | 124th Avenue NE / Bel-Red Road—NE 15th/16th Street[1] | | X |
| 214 | 12 | 124th Avenue NE / Bel-Red Road / Old Bel-Red Road[1] | | X |
| 215 | 12 | NE 15th Street/NE16th Street (Phase II) / 124th Avenue NE—136th Place NE; and 136th Place NE / NE 16th Street—NE 20th Street | | X |
| 217 | 12 | 124th Avenue NE / SR-520 | | X |
| 218 | 12 | 130th Avenue NE / NE 20th Street—NE Bel-Red Road | | X |
| 226 | 12 | NE 11th/12th Street—116th Avenue NE Connection (across from Overlake Hospital) | | X |
| 239 | 12 | 156th Avenue NE/NE 24th Street[1] | | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-8 summarizes intersection LOS at key locations in this area, under the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to No Action alternative. The Proposed Action alternative is expected to improve three locations to levels within LOS standards: 116th Avenue NE / Main Street is forecasted to be under the Wilburton V/C standard of 0.90; 120th Avenue NE / NE 12th Street and 148th Avenue NE / NE

24th Street are forecasted to be under the Bel-Red area V/C standard of 0.95. The Proposed Action alternative includes a project to extend NE 4th Street east of 116th Avenue; adding the new roadway link improves overall mobility, but degrades performance at the 116th Avenue NE / NE 4th Street intersection because of the added movements involved with the new east leg of the intersection. Overall, the Bel-Red/Wilburton area-wide V/C is expected to improve under the Proposed Action alternative.

### Table 3-8. 2020 Level of Service under No Action and Proposed Action–Bel-Red/Wilburton

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 30 | 116th Avenue NE / NE 8th Street | 1.069 | F | 0.913 | E+ | -0.156 |
| 73 | 116th Avenue / Main Street | 0.972 | E- | 0.793 | C | -0.179 |
| 131 | 116th Avenue SE / SE 1st Street | 0.792 | C | 0.633 | B | -0.159 |
| 139 | 116th Avenue NE / NE 4th Street | 0.755 | C | 0.869 | D- | +0.114 |
| 233 | 120th Avenue NE / NE 8th Street | 0.901 | D- | 0.907 | E+ | +0.006 |
| 29 | 116th Avenue NE / NE 12th Street | 0.911 | E+ | 0.866 | D- | -0.045 |
| 32 | 120th Avenue NE / NE 12th Street | 1.374 | F | 0.865 | D- | -0.509 |
| 37 | 130th Avenue NE / Bel-Red Road | 0.782 | C | 0.669 | B | -0.113 |
| 39 | 140th Avenue NE / NE 20th Street | 0.841 | D+ | 0.862 | D- | +0.021 |
| 40 | 140th Avenue NE / Bel-Red Road | 0.822 | D+ | 0.792 | C | -0.030 |
| 81 | 148th Avenue NE / NE 24th Street | 0.976 | E- | 0.898 | D- | -0.078 |
| 88 | 124th Avenue NE / Northup Way NE | 0.878 | D- | 0.845 | D+ | -0.033 |
| 117 | 120th Avenue NE / NE 20th Street | 0.915 | E+ | 0.741 | C | -0.174 |

## Overlake

This area encompasses the easternmost portion of the Bel-Red (MMA 12) subarea and the northernmost portion of the Crossroads (MMA 5) subarea. Table 3-9 shows that six capacity projects are proposed in this area under the Proposed Action alternative. Of these, two projects are also included under the No Action alternative.

### Table 3-9. TFP Projects for No Action and Proposed Action–Overlake

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 224 | 5 | Bel-Red Road / NE 20th Street[1] | | X |
| 094 | 12 | 148th Avenue NE / Bel-Red Road[1] | X | X |

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 101 | 12 | 148th Avenue NE / NE 20th Street[1] | X | X |
| 102 | 12 | Bel-Red Road / NE 24th Street[1] | | X |
| 157 | 12 | 148th Avenue NE / NE 24th Street[1] | | X |
| 198 | 12 | Bel-Red Road / NE 20th Place[1] | | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-10 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to the No Action alternative. Three locations (148th Avenue NE / Bellevue-Redmond Road, Bellevue-Redmond Road / NE 24th Street, and 156th Avenue NE / NE 24th Street) are projected to exceed the Bel-Red standard of 0.95 under both the No Action and Propose Action alternatives. At 156th Avenue NE / NE 24th Street, the Proposed Action is projected to improve operations compared to the No Action Alternative. At the other two locations, the Proposed Action is projected to slightly worsen operations compared to the No Action alternative. The Proposed Action alternative includes a project to add a northbound to westbound left turn lane at Bel-Red Road / NE 24th Street and allow peak hour turns (currently, they are forbidden); adding the turn lane and allowing this movement improves overall mobility, but degrades performance at the intersection because this is a critical movement.

### Table 3-10. 2020 Level of Service under No Action and Proposed Action–Overlake

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 47 | 148th Avenue NE / NE 20th Street | 0.944 | E+ | 0.872 | D- | -0.072 |
| 48 | 148th Avenue NE / Bel-Red Road | 0.953 | E- | 0.970 | E- | +0.017 |
| 59 | Bel-Red Road / NE 24th Street | 0.994 | E- | 1.165 | F | +0.171 |
| 60 | 156th Avenue NE / Bel-Red Road | 0.919 | E+ | 0.806 | D+ | -0.113 |
| 61 | 156th Avenue NE / NE 24th Street | 1.080 | F | 0.980 | E- | -0.100 |

## Northeast Bellevue/Crossroads

This area encompasses the Crossroads (MMA 5) and Northeast Bellevue (MMA 6) subareas. The only capacity project in these MMAs is TFP-224, which is located in the Overlake area and described above.

Table 3-11 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to the No Action alternative. Two locations are projected to exceed their respective standards under

both the No Action and Propose Action alternatives: 156th Avenue NE / Northup Way is projected to exceed the Crossroads standard of 0.90, and 164th Avenue NE / NE 8th Street is projected to exceed the Northeast Bellevue standard of 0.80. At each of these three locations, the Proposed Action is projected to slightly worsen operations compared to the No Action alternative. The area-wide 2020 LOS forecast for Northeast Bellevue is projected at 0.810 for both the No Action and Proposed Action alternatives, which exceeds the standard of 0.80. This indicates that the Proposed Action is projected to have no discernable effect on the area-wide average V/C in the Northeast Bellevue MMA.

### Table 3-11. 2020 Level of Service under No Action and Proposed Action–Northeast Bellevue/Crossroads

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 58 | Bel-Red Road / NE 20th Street | 0.665 | B | 0.658 | B | -0.007 |
| 62 | 156th Avenue NE / Northup Way | 0.913 | E+ | 0.938 | E+ | 0.025 |
| 63 | 156th Avenue NE / NE 8th Street | 0.763 | C | 0.773 | C | 0.010 |
| 75 | 164th Avenue NE / NE 24th Street | 0.757 | C | 0.755 | C | -0.002 |
| 76 | 164th Avenue NE / Northup Way | 0.767 | C | 0.766 | C | -0.001 |
| 87 | 164th Avenue NE / NE 8th Street | 0.907 | E+ | 0.908 | E+ | 0.001 |

## Central Bellevue

This area encompasses the South Bellevue (MMA 7), Richards Valley (MMA 8) and East Bellevue (MMA 9) subareas. Table 3-12 shows that two capacity projects are proposed in this area under the Proposed Action alternative. Of these, one project is also included under the No Action alternative.

### Table 3-12. TFP Projects for No Action and Proposed Action–Central Bellevue

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 160 | 9 | 145th Place SE / SE 16th Street to SE 24th Street; and SE 22nd St / 145th Place SE—156th Avenue SE[1] | X | X |
| 168 | 9 | 148th Avenue NE / NE 8th Street[1] | | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-13 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. All intersections listed in the table are projected to exceed the

LOS standard of 0.85 (the standard is the same for all three MMAs) under both the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to the No Action alternative. LOS at the 124th Avenue NE / NE 8th Street intersection is expected to degrade under the Proposed Action alternative due to the additional traffic attracted by improvements to 124th Avenue farther north, in the Bel-Red area. The area-wide 2020 LOS for the East Bellevue MMA is projected to exceed the 0.85 standard under both alternatives. However, the area-wide V/C for this area is expected to improve under the Proposed Action alternative.

### Table 3-13. 2020 Level of Service under No Action and Proposed Action–Central Bellevue

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 102 | 118th Avenue SE / SE 8th Street | 0.865 | D- | 0.853 | D- | -0.012 |
| 35 | 124th Avenue NE / NE 8th Street | 0.853 | D- | 1.005 | F | 0.152 |
| 71 | Lake Hills Connector / SE 8th Street / 7th Street | 1.114 | F | 1.101 | F | -0.013 |
| 41 | 140th Avenue NE / NE 8th Street | 0.966 | E- | 1.012 | F | 0.046 |
| 49 | 148th Avenue NE / NE 8th Street | 1.058 | F | 0.918 | E+ | -0.140 |
| 50 | 148th Avenue NE / Main Street | 0.911 | E+ | 0.914 | E+ | 0.003 |
| 51 | 148th Avenue SE / Lake Hills Boulevard | 0.958 | E- | 0.960 | E- | 0.002 |
| 52 | 148th Avenue SE / SE 16th Street | 0.954 | E- | 0.961 | E- | 0.007 |

## Eastgate

This area encompasses the Eastgate (MMA 10) subarea. Table 3-14 shows that three capacity projects are proposed in this area under the Proposed Action alternative. Of these, no projects are included under the No Action alternative.

### Table 3-14. TFP Projects for No Action and Proposed Action–Eastgate

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 154 | 10 | 148th/150th Avenue SE / I-90 westbound on-ramp—I-90 westbound off-ramp[1] | | X |
| 162 | 10 | 156th Avenue SE / SE Eastgate Way (I-90 westbound off-ramp) [1] | | X |
| 195 | 10 | 150th Avenue SE / SE 37th Street / I-90 off-ramp widening[1] | | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-15 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to the No Action alternative. The Proposed Action alternative is expected to improve one location, 150th Avenue SE/SE Eastgate Way, within the Eastgate LOS standard of 0.90. Overall, the area-wide V/C for this area is expected to improve under the Proposed Action alternative.

### Table 3-15. 2020 Level of Service under No Action and Proposed Action–Eastgate

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 86 | 156th Avenue SE / SE Eastgate Way | 0.868 | D- | 0.799 | C | -0.069 |
| 92 | 161st Avenue SE / SE Eastgate Way | 0.681 | B | 0.683 | B | 0.002 |
| 101 | 150th Avenue SE / SE Eastgate Way | 0.993 | E- | 0.891 | D- | -0.102 |
| 174 | 150th Avenue SE / SE 38th Street | 0.845 | D+ | 0.867 | D- | 0.022 |
| 227 | 150th Avenue SE / I/90 eastbound off-ramp | 0.883 | D- | 0.908 | E+ | 0.025 |
| 272 | 139th Avenue SE / SE Eastgate Way | 0.424 | A | 0.411 | A | -0.013 |

## Factoria

This area encompasses the Factoria (MMA 13) subarea. Table 3-16 shows that three capacity projects are proposed in this area under the Proposed Action alternative. Of these, no projects are included under the No Action alternative.

### Table 3-16. TFP Projects for No Action and Proposed Action–Factoria

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 103 | 13 | 129th Place SE / SE 38th Street—Newport Way | | X |
| 120 | 13 | Factoria Boulevard / SE Newport Way[1] | | X |
| 220 | 13 | SE 40th Lane / Factoria Boulevard[1] | | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-17 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to No Action alternative. One location, 124th Avenue SE / Coal Creek Parkway is projected to the Factoria LOS standard of 0.95 under both the No Action and Propose Action alternatives. At this location, the Proposed Action is projected to slightly improve operations compared to the No

Action alternative. Overall, the area-wide V/C for this area is expected to improve under the Proposed Action alternative.

### Table 3-17. 2020 Level of Service under No Action and Proposed Action–Factoria

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 202 | Factoria Boulevard / SE Newport Way | 0.668 | B | 0.632 | B | -0.036 |
| 203 | SE Newport Way / Coal Creek Parkway | 0.721 | C | 0.729 | C | 0.008 |
| 204 | Factoria Boulevard / SE 36th Street | 0.861 | D- | 0.849 | D+ | -0.012 |
| 220 | I-405 northbound ramps / Coal Creek Parkway | 0.797 | C | 0.796 | C | -0.001 |
| 221 | I-405 southbound ramps / Coal Creek Parkway | 0.929 | E+ | 0.931 | E+ | 0.002 |
| 284 | 124th Avenue SE / Coal Creek Parkway | 1.003 | F | 0.999 | E- | -0.004 |

## South Bellevue

This area encompasses the Newcastle (MMA 11) and Newport Hills (MMA 14) subareas. Table 3-18 shows that two capacity projects are proposed in this area under the Proposed Action alternative. Of these, no projects are included under the No Action alternative.

### Table 3-18. TFP Projects for No Action and Proposed Action–South Bellevue

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 192 | 11 | Lakemont Boulevard (Phase 1) / Cougar Mountain Way—Lewis Creek Park and 164th Avenue SE—171st Avenue SE[1] | | X |
| 205 | 11 | Lakemont Blvd (Phase 2) / Lewis Creek Park—164th Ave SE[1] | | X |

1. Capacity (impact fee) project expected to be open for use by 2020 and included in the traffic model.

Table 3-19 summarizes intersection LOS at key locations within this area, under the No Action and Proposed Action alternatives. All intersections listed in the table are projected to exceed the Newcastle (MMA 11) LOS standard of 0.80 under both the No Action and Proposed Action alternatives. The table shows that operations under the Proposed Action alternative will be slightly better at some locations and slightly worse at others, compared to the No Action alternative. Although the area-wide V/C for 2020 is projected to exceed the standard of 0.80, the level is closer to standard under the Proposed Action alternative (0.813) than under the No Action alternative (0.989).

Table 3-19. 2020 Level of Service under No Action and Proposed Action–South Bellevue

| | | No Action Alternative | | Proposed Action Alternative | | |
|---|---|---|---|---|---|---|
| ID# | Intersection | V/C | LOS | V/C | LOS | V/C Difference |
| 98 | Coal Creek Parkway / Forest Drive | 1.160 | F | 1.197 | F | 0.037 |
| 133 | 150th Avenue SE / SE Newport Way | 0.965 | E- | 0.719 | C | -0.246 |
| 228 | Lakemont Boulevard SE / SE Newport Way | 0.842 | D+ | 0.933 | E+ | 0.091 |

## 3.2.3. Neighborhood Impacts

A major concern of city residents in neighborhoods served by the major arterials is cut-through traffic, i.e., 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 Neighborhood Traffic Calming Program will continue to address those needs by slowing traffic entering neighborhoods and discouraging cut-through routes using a combination of education, enforcement, and physical facilities.

The proposed capacity projects under the No Action alternative and Proposed Action alternative do not directly respond to residents' concerns about speeding on their neighborhood streets. However, capacity projects can reduce spillover traffic onto local streets, by improving the efficiency and traffic flow on the city's main arterials. Most of the capacity projects in the No Action and Proposed Action alternatives either directly or indirectly address this concern. However, since there are more capacity projects proposed under the Proposed Action alternative, it is expected to address the issue of cut-through traffic to a greater extent than the No Action alternative.

For example, the installation of new roadways and ramp connections in the Downtown and Bel-Red areas would facilitate the through movement of traffic to the I-405 and SR 520 corridors. Similar enhancements are expected by projects proposed in the Eastgate area.

## 3.2.4. Safety

The turn lane projects referenced throughout this chapter improve capacity, but also enhance safety by providing a dedicated "environment" for turning movements from major arterials onto side streets.

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 accidents. In some cases, capacity projects help resolve hazards resulting from traffic congestion; or 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.

In addition, some projects are specifically designed to correct problems in high accident areas. Projects included in the Proposed Action alternative that address vehicular safety and operational issues are NE 20th Street / Bel-Red Road to 156th Avenue NE (TFP-196), Bel-Red Road / NE 20th Street signal (TFP 198) and the 148th Avenue Intersection Safety and Reliability project (TFP-221).

### 3.2.5. Pedestrian/Bicycle Impacts

Table 3-20 summarizes the bicycle and pedestrian improvement projects included in the No Action and Proposed Action alternatives. These projects primarily provide increased mobility for non-motorized travel and complete missing links in the citywide pedestrian and bicycle networks. The table shows that 26 projects are included in the Proposed Action alternative, and nine projects are included in No Action alternative. The greater number of projects included under the Proposed Action alternative is expected to result in greater improvement to non-motorized mobility than what would be expected under the No Action alternative.

#### Table 3-20. Bicycle and Pedestrian Projects–No Action and Proposed Action

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 173 | 1 | 108th/112th Avenue NE / south of SR 520—NE 12th Street | | X |
| 191 | | NE 8th Street / Lake Washington Boulevard—96th Avenue NE | X | X |
| 235 | | 108th Avenue NE / NE 24th Street—NE 12th Street | | X |
| 236 | | NE 24th Street / 108th Avenue NE—112th Avenue NE | | X |
| 171 | 2 | NE 40th Street / 140th Avenue NE—14500 block | | X |
| 230 | 3 | 108th Avenue NE / NE 12th Street—Main Street | | X |
| 234 | | Main Street / 100th Avenue—116th Avenue | | X |
| 164 | 6 | 173rd Avenue NE / Northup Way—north city limit | | X |
| 159 | 7 | 108th Avenue SE / Bellevue Way SE—I-90 | X | X |
| 170 | 8 | 128th Avenue SE / SE 25th Street—SE 32nd Street | X | X |
| 231 | | SE 7th Place / Lake Hills Connector—culs-de-sac | | X |
| 237 | | 123rd Avenue SE / SE 20th Street—SE 26th Street | | X |
| 078 | 9 | West Lake Sammamish Parkway / north city limit—I-90 | X | X |
| 158 | | SE 16th Street / 148th Avenue SE—156th | | X |

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| | | Avenue SE | | |
| 175 | | SE 34th Street / 162nd Place SE—West Lake Sammamish Parkway | X | X |
| 178 | | SE 26th Street / SE 24th Street—West Lake Sammamish Parkway | X | X |
| 232 | | 164th Avenue NE/SE / NE 18th Street—SE 14th Street | | X |
| 163 | 11 | 152nd Avenue SE / SE 45th Street/SE 46th Street—Newport Way | X | X |
| 194 | | 164th Ave SE / SE Cougar Mountain Way—SE 63rd Street | | X |
| 228 | | 148th Avenue SE / SE 44th Street—SE 46th Street | | X |
| 238 | | Somerset Ave SE / SE Somerset Boulevard—136th Place SE | X | X |
| 165 | 13 | 124th Avenue Bicycle Trail / SE 38th Street—I-90 Bicycle Trail | | X |
| 233 | | 130th Place SE/130th Avenue SE / SE Newport Way—SE 47th Place | | X |
| 156 | 14 | SE 60th Street / Lake Washington Boulevard—Coal Creek Parkway | X | X |
| 227 | | 123rd Avenue SE / SE 60th Street—SE 64th Place | | X |
| 229 | | 116th Avenue SE / SE 60th Street— Newcastle Way | | X |

Table 3-21 summarizes capacity projects that also include pedestrian and/or bicycle elements under the No Action and Proposed Action alternatives. The table shows that 16 capacity projects under the Proposed Action alternative also include non-motorized improvements; while three projects under the No Action alternative include them. The greater number of projects included under the Proposed Action alternative capacity projects are expected to result in greater improvement to non-motorized mobility than what would be expected under the No Action alternative.

Table 3-21. Capacity Projects that Include Bicycle and/or Pedestrian Projects–No Action and Proposed Action

| 2009–2020 TFP# | MMA | Project Location | No Action Alternative | Proposed Action Alternative |
|---|---|---|---|---|
| 079 | 2 | Northup Way / Bellevue Way NE—NE 24th Street | X | X |
| 184 | 3 | NE 8th Street / 106th Avenue NE—108th Avenue NE | | X |
| 207 | 4 | NE 4th Street Extension / 116th Avenue NE—120th Avenue NE; and widening of 120th Avenue / NE 4th Street—NE 8th Street | | X |
| 211 | | NE 6th Street Extension | | X |
| 160 | 9 | 145th Place SE / SE 16th Street to SE 24th Street; and SE 22nd St / 145th Place SE—156th Avenue SE | X | X |
| 192 | 11 | Lakemont Boulevard (Phase 1) / Cougar Mountain Way—Lewis Creek Park and 164th Avenue SE—171st Avenue SE | | X |
| 205 | | Lakemont Boulevard (Phase 2) / Lewis Creek Park—164th Avenue SE | | X |
| 091/106 | 12 | Northup Way / 120th Avenue NE—124th Avenue NE | X | X |
| 157 | | 148th Avenue NE / NE 24th Street | | X |
| 198 | | Bel-Red Road / NE 20th Place | | X |
| 208 | | 120th Avenue NE / NE 8th Street—Northup Way | | X |
| 209 | | NE 15th Street/NE 16th Street (Phase I) / 116th Avenue NE—124th Avenue NE | | X |
| 210 | | 124th Avenue NE / NE 15th/16th Street Extension—Northup Way | | X |
| 213 | | 124th Avenue NE / Bel-Red Road—NE 15th/16th Street Extension | | X |
| 214 | | 124th Avenue NE / Bel-Red Road / Old Bel-Red Road | | X |
| 218 | | 130th Avenue NE / NE 20th Street—Bel-Red Road | | X |

## 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 Proposed Action alternative includes more projects than the No Action alternative, and thus is expected to improve overall safety and mobility conditions to a greater extent. Since the projects included in both alternatives would be expected to improve transportation conditions, no mitigation is recommended.

## 3.4. Significant Unavoidable Adverse Impacts

Analysis of 2020 conditions indicates that V/C is projected to exceed area-wide LOS standards in four MMAs, under both the No Action and Proposed Action alternatives. Bridle Trails (MMA 2) is projected to exceed its standard of 0.80; Northeast Bellevue (MMA 6) is projected to exceed its standard of 0.80; East Bellevue (MMA 9) is projected to exceed its standard of 0.85; and South Bellevue (MMA 11) is projected to exceed its standard of 0.80. However, as compared to the No Action alternative, the Proposed Action is projected to improve the area-wide V/C in Bridle Trails, East Bellevue, and Newcastle; and is expected to have no effect on the area-wide V/C in Northeast Bellevue. Although the Proposed Action has no adverse effect on area-wide LOS of these MMAs, and improves conditions in three of four of them, the exceedance of the area-wide standard in itself can be considered an significant unavoidable adverse effect.

No other significant unavoidable adverse impacts on the transportation system were identified as a result of either alternative.

# 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 No Action alternative and the Proposed Action 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 1991. These laws set standards for the concentration of pollutants that can be in the air. At the federal level, the Environmental Protection Agency (EPA) administers the CAA. The Washington Clean Air Act 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 TFP area and surrounding areas are located in the Puget Sound region, in which the Puget Sound Clean Air Agency (PSCAA) has local jurisdiction over the project area of the proposed TFP.

#### 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.

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 (PM10), particulate matter less than 2.5 micrometers in size (PM2.5), lead (Pb), sulfur dioxide (SO2), and nitrogen dioxide (NO2). 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 SO2, which are more stringent than the federal requirements.

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

| Pollutant | Federal | | State |
|---|---|---|---|
| | Primary | Secondary | |
| Carbon Monoxide | | | |
| 8-hour average[a] | 9 ppm | No standard | 9 ppm |
| 1-hour average[a] | 35 ppm | No standard | 35 ppm |
| Ozone[2] | | | |
| 8-hour average[b,c] | 0.075 ppm | 0.075 ppm | 0.075 ppm |
| Total Suspended Particles | | | |
| Annual average | No standard | No standard | 60 µg/m$^3$ |
| 24-hour average[a] | No standard | No standard | 150 µg/m$^3$ |
| Particulate Matter - PM10 | | | |
| 24-hour average[a] | 150 µg/m$^3$ | 150 µg/m$^3$ | 150 µg/m$^3$ |
| Particulate Matter - PM2.5 | | | |
| Annual average | 15 µg/m$^3$ | 15 µg/m$^3$ | 15 µg/m$^3$ |
| 24-hour average[a] | 35 µg/m$^3$ | 35 µg/m$^3$ | 35 µg/m$^3$ |
| Lead | | | |
| Quarterly average | 1.5 µg/m$^3$ | 1.5 µg/m$^3$ | 1.5 µg/m$^3$ |
| Sulfur Dioxide | | | |
| Annual average | 0.03 ppm | No standard | 0.02 ppm |
| 24-hour average[a] | 0.14 ppm | No standard | 0.10 ppm |
| 3-hour average[a] | No standard | 0.50 ppm | No standard |
| 1-hour average[d] | No standard | No standard | 0.40 ppm |
| Nitrogen Dioxide | | | |
| Annual average | 0.05 ppm | 0.05 ppm | 0.05 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; PM10 = particles 10 microns or less in size; PM2.5= particles 2.5 microns or less in size; µg/m3 = micrograms per cubic meter

[a] Not to be exceeded on more than 1 day per calendar year as determined under the conditions indicated in Chapter 173 475 WAC.

[b] In March 2008, EPA lowered the federal standard for 8-hour ozone from 0.08 parts per million (ppm) to 0.075 ppm to better protect public health.

[c] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm.

[d] 0.25 ppm are not to be exceeded more than two times in seven consecutive days.

Source: Chapter 173, Sections 470 to 475 Washington Administrative Code (WAC).

## 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 background 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 they are consistently below the federal standards, Ecology and EPA can reclassify the nonattainment area to 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.

The Puget Sound region (including the TFP area) is currently designated as a maintenance area for CO and an attainment area for all other air pollutants. However, in March 2008, the EPA lowered its 8-hour ozone standard from 0.08 parts per million (ppm) to 0.075 ppm to better protect public health. Under the new standard, the 3-year average (2006–2008) concentration measured at the Enumclaw station in King County exceeded the 8-hour ozone standard. The PSCAA will work with Ecology to make recommendations to EPA about ozone designations. Therefore, the region will be designated as a nonattainment area for ozone starting in 2010. Until then, the region is still designated an attainment area for ozone.

## Transportation Conformity Regulations

Regionally significant transportation projects (regardless of the source of funding) proposed for construction within nonattainment areas or maintenance areas are subject to the Transportation Conformity regulations specified under federal regulations (EPA 40 CFR Parts 51 and 93) and state regulations (Chapter 173-420 of WAC). Regionally significant projects include construction or widening of new roadways, and widening of signalized intersections. The intent of these regulations are to ensure that transportation projects, plans, and programs affecting regional and local air quality will conform to existing plans and time tables for attaining and maintaining federal health based air quality standards. The City must demonstrate transportation conformity by the following steps:

- The City must conduct a regional air quality analysis (and confirm the findings with the Puget Sound Regional Council [PSRC]) to include in its long-range transportation plan and in PSRC's regional air quality modeling for their required periodic Air Quality Conformity Analysis; and confirm that the regional emissions (including the proposed TFP) are within the allowable emission budget specified by Ecology.
- The City must conduct a project-level CO hot-spot analysis to model the worst-case concentrations at the most heavily congested intersections, and confirm that the modeled CO concentrations are below the NAAQS.

The preceding air quality demonstrations must be included in SEPA and/or NEPA documentation for the proposed future roadway improvement projects.

## Mobile Source Air Toxics Regulations

The 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 six priority MSATs: benzene, formaldehyde, acetaldehyde, diesel particulate matter/diesel exhaust organic gases, acrolein, and 1,3-butadiene.

The EPA has issued a number of regulations that will dramatically decrease MSATs by mandating the use of cleaner fuels and cleaner engines. The MSAT regulations were issued under the authority in Section 202 of the Clean Air Act. In its regulations, 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. According to a Federal Highway Administration (FHWA) analysis, even if nationwide VMTs increase by 64%, reductions of 57% to 87% in MSATs are projected from 2000 to 2020 (Federal Highway Administration 2006).

## 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 caused by humans have already caused measurable increases in global temperature and are expected to result in significantly greater increases in temperature in the future. However, there is still considerable uncertainty about the exact magnitude of future global impacts and the best approach to mitigate the impacts.

## Global Climate Change Initiatives

The United Nations' Intergovernmental Panel on Climate Change (IPCC) published its most recent sets of 5-year progress reports summarizing worldwide research on global climate change between 2001 and 2007 (Intergovernmental Panel on Climate Change 2007). These reports indicated that some level of global climate change is likely to occur and that there is a significant possibility of adverse environmental effects. Several alternative mitigation measures were evaluated by the worldwide scientific community to reduce global emissions, including the first round of worldwide reductions in greenhouse gases (GHGs), as prescribed by the Kyoto Protocol.

Global climate change is a cumulative issue related to worldwide GHG emissions rather than emissions from any individual facility. 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.

## State of Washington GHG Initiatives

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

- reduce emissions to 1990 levels by 2020 and 50% below 1990 levels by 2050;
- increase Green Economy jobs to 25,000; and
- reduce expenditures on fuel imported into the State by 20% by 2020 (Washington State Department of Ecology 2008a).

In 2008, ESHB 2885, an act to create a frame work to reduce GHG emissions in Washington State, codified the GHG reduction goals of Executive Order 07-02, and also added a fourth requirement to help achieve the GHG reduction targets: 4) decrease the annual per capita vehicle miles traveled (VMT) 18% by 2020, 30% by 2035, and 50% by 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. In 2008, the CAT has refined these recommendations in its report (Washington State Department of Ecology 2008a) to provide the "most promising" strategies and opportunities to move forward for consideration by the Legislature and Governor in 2009 and beyond to meet the goals. If enacted, these recommendations can enable significant reduction of GHG emissions and per capita VMT, result in transformational shifts, and strengthen Washington's economy.

These final recommendations focus on four areas:  the built environment, transportation, reducing the waste stream, and the role of SEPA in climate change. The recommended actions build a future in which 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; and government, business, labor, and environmental advocates work together to support entrepreneurial creativity and economic opportunities for all. (Washington State Department of Ecology 2008a) 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.

## King County GHG Initiatives

King County has developed its Climate Plan (King County 2007), mandating significant reductions in countywide GHG emissions. While the City is not currently subject to the emission-reduction goals described in King County's Climate Plan or Ecology's GHG regulations, the recent state and county goals illustrate the importance of local action to reduce GHG emissions.

## City GHG Initiatives

In 2007, the City adopted a community-wide target to reduce GHG emissions to 7% 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.

- In February 20, 2007, the Bellevue City Council passed Resolution 7517, which adopted the goal of reducing GHG emissions to 7% below 1990 levels by 2012
- In August 2007, the City became a signatory to the U.S. Mayor's 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 U.S. local governments 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; and
    - Milestone 5 – Monitor and verify results.

The City completed its initial emissions inventory in 2007, and updated the inventory in 2008. (City of Bellevue 2008b) The City's proposed Climate Action Plan was completed in September 2008. (City of Bellevue 2008c)

Table 4-2 presents a summary of the city's historical municipal and community emissions output, and projected future emissions with and without the targeted reductions. In order to meet the 7% reduction target:

- Municipal emissions must be reduced by 42% from the 'business as usual' trend by 2012, and reduced by 49% by 2020; and
- Community emissions must be reduced by 33% from the 'business as usual' trend by 2012, and reduced by 39% by 2020.

Table 4-2. Overview of Municipal and Community Emissions and Reduction Targets

| | Municipal Analysis $CO_2e$ (Metric Tons) | Community Analysis $CO_2e$ (Metric Tons) |
|---|---|---|
| Emissions Target: 7% below 1990 Emissions Level | 11,485 | 1,300,309 |
| 1990 – Back-cast Year Emissions | 12,349 | 1,398,182 |
| 2001 – Base Year Emissions | 14,716 | 1,692,197 |
| 2006 – Interim Year Emissions | 18,423 | 1,775,479 |
| 2012 – Emissions Projection from 2006 Trends | 19,865 | 1,930,230 |
| 2020 – Emissions Projection from 2006 Trends | 22,455 | 2,122,211 |
| Volume of Emissions Reduction Needed to Meet Target in 2012 | 8,380 | 629,921 |
| Volume of Emissions Reduction Needed to Meet Target in 2020 | 10,970 | 821,902 |

Source: City of Bellevue 2008c.

## City Air Quality Policies

The City's air quality policies are found in the Comprehensive Plan and focus on coordinating with other agencies in developing long-term strategies to address many contributors to air pollution (Policies EN-78, 82). Other policies to reduce air quality emissions include reduction of vehicle trip growth (Policy EN-79), growth management strategies to reduce auto dependency (Policy EN-85), and development of Transportation Improvement Program (TIP) measures that not only reduce congestion but also provide air quality benefits at problem locations (Policies EN-80, 81). (City of Bellevue 2008a)

## 4.1.2. Existing Air Quality

Typical air pollution sources in the city include vehicular traffic, commercial and retail businesses, light industrial, and residential wood-burning devices. While many types of pollutant sources are present, the single largest contributor to most criteria pollutant emissions is on-road mobile sources. 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 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 (VOC) and nitrogen oxides (NOx), which will be important in the future as a result of the upcoming re-designation to nonattainment status for ozone. Particulate matter (PM10 and PM2.5) also is emitted in vehicle exhaust and generated by tire action on pavement (or unpaved areas). However, the amounts of PM10 and PM2.5 generated by individual vehicles are small compared with other sources (e.g., wood-burning stoves). Sulfur oxides (SOx) and NO2 also are emitted by motor vehicles, but concentrations of these pollutants are usually not high, except near large industrial facilities.

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

## Carbon Monoxide

CO is a product of incomplete combustion 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. CO is a pollutant whose impact 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 wintertime periods of air stagnation.

The TFP area is located in the Puget Sound region, where CO nonattainment area was designated by EPA 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 attainment for CO. The region remains an air quality maintenance area for CO, but there have been no measured violations of the standards in many years. Measured CO levels at the 148th Avenue NE station have also been below ambient air quality standards since its monitoring began in 2002.

## Ozone

Ozone is a highly reactive form of oxygen created by atmospheric chemical reaction of NOx and VOC, 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 during the delay between emission and ozone formation, ozone precursors can be transported far from their sources. Transportation sources like 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 nonattainment for ozone until early 1990s. After which date, more stringent emission limits on mobile sources and industrial facilities greatly reduced emission rates for the NOx and VOC precursors. In 1996, having met the federal standards for several years, the region was re-designated by the 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 re-classified the region as an attainment area for ozone.

As discussed previously in the Attainment Status Designation section, the region will be designated as a nonattainment area starting in 2010. Until then, the region is still designated an attainment area for ozone.

### Particulate Matter (PM10 and PM2.5)

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 PM10 and PM2.5, because they contribute the most to human health effects, regional haze, and acid deposition. The highest ambient concentrations generally occur near the emission sources. PM2.5 has a greater impact than PM10 at locations far from the emitting source because it remains suspended in the atmosphere longer, and travel farther.

The Puget Sound region has been below the daily and annual federal standards for PM 10 and PM2.5 since the early 1990s. In 2001, EPA designated the region in attainment for PM10 and PM2.5. In 2006, EPA revoked the annual PM10 standard due to a lack of evidence linking health problems to long-term exposure to PM10 pollution. Since then the PSCAA ceased all PM10 monitoring and has focused its efforts on PM2.5 monitoring.

In 2006, the EPA also lowered its daily PM2.5 standard from 65 micrograms per cubic meter (µg/m3) to 35 µg/m3 to better protect public health. Under the new standard, the Bellevue Way station measured an exceedance or near exceedance of the new PM2.5 daily standard but measured concentrations decreased in the following years to below-standard levels.

## 4.2. Impacts

This section presents potential impacts which may result if either alternative is implemented. Since both alternatives contain potential projects, impacts will be similar. However, because the Proposed Action alternative contains more potential projects, it is anticipated that impacts would be greater than the No Action alternative.

Since all components of the No Action alternative are included as part of the Proposed Action alternative, this impacts section discusses impacts that are common to both alternatives.

### 4.2.1. Mobile Source Air Toxics

According to traffic data provided by the City, the future VMT would be higher than existing levels. However, the magnitude of the EPA-projected MSAT emissions reductions 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 proposed roadway and intersection widening improvements contemplated as part of the Proposed Action alternative would have the effect of moving some traffic closer to nearby homes and businesses; therefore, there may be localized areas where ambient concentrations of MSAT emissions could be higher with the Proposed Action alternative than under the No Action alternative. However, the magnitude and the duration of these potential increases compared to the No Action alternative 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 Proposed Action alternative could be higher relative to the No Action alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). However, on a regional basis, EPA's vehicle and fuel regulations, coupled with ongoing future fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

### 4.2.2. Greenhouse Gas Emissions

GHG emissions were estimated and evaluated as part of this SEPA analysis. This section presents these findings.

#### Estimated GHG Emissions

To estimate GHG emissions produced from motor vehicles on city streets, the City provided traffic data for all roadway segments in the TFP area. The traffic data included average travel speed, segment length, and PM peak hour traffic volume for both the Proposed Action and the No Action alternatives (for design year 2020).

GHG emissions include a variety of compounds, predominantly Carbon Dioxide (CO2), methane, and nitrous oxide, each of which exhibits its own GHG potency. However, for on-road tailpipe emissions, CO2 is by far the dominate contributor to GHG emissions. For purposes of comparing GHG emissions from various scenarios with other published GHG inventories, the overall GHG emissions associated with the No Action alternative and the Proposed Action alternative were assumed to consist entirely of CO2. The CO2 emissions were calculated from the fuel usage of vehicles traveling on city streets based on fuel economy data (i.e., miles per gallon of fuel). The CO2 emissions factors are then applied to the calculated total fuel usage to get the CO2 emissions emitted from motor vehicles traveling on the city streets. The detailed analytical approach and analysis are presented in the Appendix F.

The average fuel economy corresponding to the average travel speed along each segment was estimated using published fuel economy versus speed profiles derived using the California

Emissions FACtors (EMFAC) tailpipe emission model (Urban Land Institute 2008). The use of California fuel economy data is valid for this analysis because Washington State plans to adopt the California fuel economy standards. The assumed fleet-average fuel economy for existing conditions was 25 miles per gallon based on historical fleet-average fuel economy data over the past 10 years (National Highway Traffic Safety Administration 2008). The assumed future fleet-average fuel economy for year 2020 was set at 35 miles per gallon, corresponding to the recently-proposed update for the Corporate Average Fuel Economy (CAFE) fuel economy standard. Based on a previous GHG study in the region (ICF Jones & Stokes 2008), it was assumed fuel used by the vehicle fleet along the city streets is 50% gasoline and 50% diesel. The CO2 emission factors were assumed 19.6 pounds per gallon for gasoline and 22.4 pounds CO2 per gallon for diesel (Energy Information Administration 2008).

Based on the preceding assumptions, the estimated GHG emissions produced from city streets for both the No Action and Proposed Action alternatives are listed in Table 4-3. The table shows that GHG emissions produced from all roadway segments in the city are nearly the same under both alternatives in the year 2020 conditions.

### Table 4-3. Estimated Greenhouse Gas Emissions for Transportation Facilities Plan

| Scenario | Greenhouse Gas Emission Rate (Metric Tons of CO2) |
|---|---|
| 2020 No Action emissions | 607,129 metric tons/year |
| 2020 Proposed Action emissions | 606,764 metric tons/year |
| King County GHG Emissions in 2007[a] | 23 million metric tons/year |

Source: King County 2007.

## SEPA Impact Evaluation for GHG Emissions

To date, no national or state regulations have been established regarding GHG emissions, and neither EPA nor Ecology have established environmental impact thresholds for GHG emissions. As discussed in the Regulatory Overview section, the CAT provided the final recommendations in November 2008 for consideration by the Legislature and Governor in 2009 and beyond to meet the GHG emission targets. If enacted, these recommendations can enable significant reduction of GHG emissions. Until then, no regulations are established for evaluating GHG impacts.

The GHG emissions produced from city streets under both the No Action and Proposed Action alternatives would be a small fraction of county-wide GHG emissions contributing to global climate change. Table 4-3 compares the forecast emissions generated by the roadway segments within the City to the county-wide emissions. For example, the estimated 2020 GHG emissions with the proposed TFP are 0.6 million metric tons per year, which would be only 3% of the current county-wide emissions rate of 23 million metric tons per year (King County 2007). However, because global climate change is recognized to be a significant evolving cumulative impact, this small relative amount of GHG emitted from city streets is acknowledged to be a contributor to cumulative global emissions. At this time neither EPA nor Ecology has developed any regulations or guidelines to define SEPA thresholds of significance for GHG emitted by roadway projects. Therefore, there is no mechanism to determine if the GHG emissions forecast

for the No Action and Proposed Action alternatives would constitute a significant contributor to the global cumulative impact. However, the slightly lower emissions projection under the Proposed Action alternative would contribute to meeting the City's target of 7% reduction below 1990 levels by 2012.

### 4.2.3. Construction Emissions

Air quality impacts could occur during construction of roadway improvement projects. Dust from construction activities would contribute to ambient concentrations of suspended particulate matter. Construction contractor(s) would have to comply with the PSCAA regulations requiring 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 would emit air pollutants that could slightly degrade local air quality in the immediate vicinity of the activity. However, these emissions would be temporary and localized, 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 using 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 can 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 affect on other traffic and would minimize indirect increases in traffic related emissions.

### 4.2.4. Transportation 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: regional photochemical smog caused by combined emissions throughout the Puget Sound region; and CO hot-spots caused by localized emissions at heavily-congested intersections.

#### Regional Air Quality Conformity

Regional air quality conformity analysis is performed for the Puget Sound region by the PSRC in its periodic air quality conformity analyses, which forecast regional transportation emissions produced by the region's long-range transportation plan and the regional Transportation

Improvement Program. Projects in the TFP are included in Transportation Improvement Program documents the City periodically submits to the PSRC for its regional air quality analysis. The vehicle emissions caused by proposed TFP are included in the regional emissions and would not cause or contribute to regional exceedances of the federal standards.

## Proposed Action Alternative: Project-Level CO Hot-Spot Concentration

Project-level CO hot-spot analysis is required for future project-level SEPA/NEPA documentation because the city is located in a CO maintenance area. The analysis was performed based on the guidance document entitled Guidebook for Conformity (KJS Associates 1995) prepared for WSDOT in accordance with EPA guidance (Environmental Protection Agency 1992). Based on these guidelines, signalized intersections within the TFP area were screened to identify the most heavily congested signalized intersections for the CO hot-spot analysis. According to EPA, the congested signalized intersections are those intersections operating at LOS D or worse.

To establish which intersections to consider, the City provided the traffic data for system intersections within the TFP area, which is divided into 14 MMAs. The intersection traffic data include PM peak hour traffic volume, LOS, and V/C) ratio for 2006 existing year and 2020 design year (No Action alternative and Proposed Action alternative). The intersections were ranked twice based on forecast traffic data for the proposed TFP: 1) ranking traffic volumes for intersections with LOS E or worse; 2) ranking intersection LOS. The three signalized intersections with the worst LOS and the three intersections with the highest traffic volumes were selected. The detailed analytical approach and analysis are presented in the Appendix F. The following six signalized intersections were selected for CO hot-spot analysis to represent the most congested intersections during the PM peak hour (see Figure 4-1).

1. 112th Avenue NE / NE 8th Street (Downtown)
2. 116th Avenue NE / NE 8th Street (Wilburton)
3. Lake Hills Connector / SE 8th Street/7th Place (Richards Valley)
4. 148th Avenue NE / NE 8th Street (East Bellevue)
5. Coal Creek Parkway / Forest Drive (Newcastle)
6. 148th Avenue NE / Bel-Red Road (Bel-Red)

Project-level CO hot-spot analyses for the selected intersections were conducted using the Washington State Intersection Screening Tool (WASIST) (Washington State Department of Transportation 2005). WASIST is a computerized screening model used to estimate worst-case CO concentrations near signalized intersections. The results from WASIST are based on inputs from EPA-approved vehicle emission and dispersion models, Mobile 6 version 2.03 and CAL3QHC.

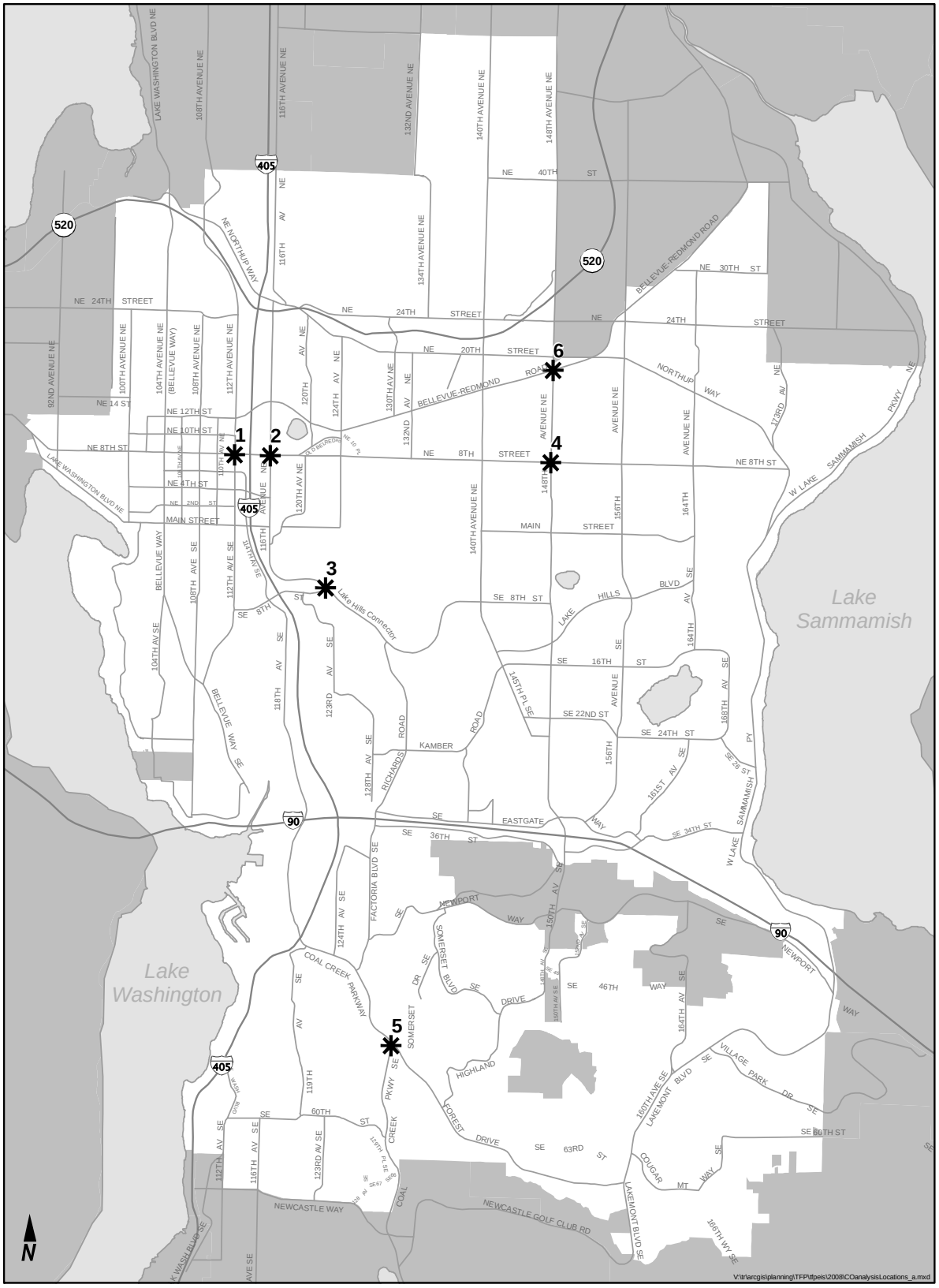



Figure 4-1. CO Hot Spot Analysis Locations

General inputs required for WASIST to describe the analysis intersections include analysis year, background concentration, county name, name of CO maintenance area, and land use type surrounding the intersection. Traffic input parameters required to describe the analysis intersections include lane configurations, traffic volumes, approach speeds, and signal timing of each intersection. Receptor inputs required to describe the receptor positions include number of receptors and distance from the edge of roadways. A receptor is the position where the CO concentration is estimated. The WASIST was run with the following input values:

- The Project is located in the King County, Puget Sound CO maintenance area.
- Worst-case modeling receptors were placed on the sidewalks adjacent to each intersection. The CO concentrations at other locations (e.g., at outdoor use areas at businesses near the intersections) were expected to be lower than the concentrations forecast at the sidewalks.
- The CO hot-spot modeling was performed for the 2006 existing year and the 2020 design year.
- Background CO concentrations of 3 ppm were used for one-hour and 8-hour averaging periods as specified in the WASIST User's Manual (Washington State Department of Transportation 2005). The modeled one-hour CO concentration was converted to an estimated 8-hour concentration by applying a 0.7 scale factor.
- Land use types surrounding the analysis intersections were based on existing land uses at each intersection.
- The approach speed at intersections was 5 miles per hour (mph) as suggested in the WASIST User's Manual.
- PM peak hour traffic volume of each analysis intersection was provided by the City for 2006 existing conditions and 2020 design year conditions.
- Existing lane configurations at analysis intersections were applied to existing conditions and the 2020 No Action alternative conditions. With the proposed TFP, the proposed future lane configurations were applied to intersections where TFP improvements are proposed.

Table 4-4 shows the CO hot-spot analysis results for existing conditions, the No Action alternative and the Proposed Action alternative. The table shows that modeled 8-hour average CO concentrations exceed NAAQS limits for the existing year at all of the sidewalks at analysis intersections. Apart from this modeled exceedance for existing conditions, the table shows that the modeled future 1-hour average and 8-hour average CO concentrations with the proposed TFP in the 2020 design year are lower than the allowable NAAQS limit. The model indicates that CO concentrations would decrease from 2006 to 2020, even though the traffic volumes were projected to increase during that same period. The net improvement in ambient concentrations is due to the expected continuous improvement in emissions from individual vehicles, which more than offsets the increase in traffic volume. Thus, the exceedance of the NAAQS standard in the existing year would not affect the significant conclusions regarding air quality impacts.

The modeled concentrations in Table 4-4 apply to the PM peak-hour period. CO impacts for the AM peak were not modeled, because traffic volumes for the AM peak period are expected to be lower compared to the PM peak period. Therefore, the maximum CO impacts during the AM peak period would also be lower than the NAAQS limits.

In general, the modeled ambient CO concentrations for the Proposed Action alternative are less than those for the No Action alternative. The modeled ambient CO concentrations at all intersections are below the allowable federal limits under 2020 conditions for the Proposed Action alternative. Therefore, the Proposed Action alternative would have no significant impacts on localized air quality.

### Table 4-4. Carbon Monoxide Hot-Spot Modeling Results

| MMA | Intersection | Alternative | Concentrations (ppm) | |
|---|---|---|---|---|
| | | | 1-Hour Interval | 8-Hour Interval |
| **Federal CO Limits (NAAQS)** | | | **35** | **9** |
| 3 Downtown | 112th Avenue NE / NE 8th Street | 2006 Existing | 15.1 | 11.5 |
| | | 2020 No Action | 9.9 | 7.8 |
| | | 2020 Action | 9.8 | 7.8 |
| 4 Wilburton | 116th Avenue NE / NE 8th Street | 2006 Existing | 15.2 | 11.5 |
| | | 2020 No Action | 11.3 | 8.8 |
| | | 2020 Action | 10.1 | 8.0 |
| 8 Richards Valley | Lake Hills Connector / SE 8th Street/7th Place | 2006 Existing | 15.2 | 11.5 |
| | | 2020 No Action | 9.9 | 7.8 |
| | | 2020 Action | 9.6 | 7.6 |
| 9 East Bellevue | 148th Avenue NE / NE 8th Street | 2006 Existing | 14.1 | 10.8 |
| | | 2020 No Action | 9.5 | 7.5 |
| | | 2020 Action | 9.6 | 7.6 |
| 11 Newcastle | Coal Creek Parkway / Forest Drive | 2006 Existing | 15.3 | 11.6 |
| | | 2020 No Action | 10.1 | 8.0 |
| | | 2020 Action | 10.1 | 8.0 |
| 12 Bel-Red | 148th Avenue NE / Bel-Red Road | 2006 Existing | 13.7 | 10.5 |
| | | 2020 No Action | 9.7 | 7.7 |
| | | 2020 Action | 9.4 | 7.5 |

Note: All listed values include background concentrations.

## No Action Alternative: Project-Level CO Hot-Spot Concentration

Methodology and approach for the project-level CO hot-spot analysis are described in the previous section for the Proposed TFP Alternative. The CO hot-spot analysis results at the

analysis intersections for the No Action alternative are shown in Table 4-4. The table shows that modeled 1-hour average and 8-hour average CO concentrations at all intersections are below the NAAQS under 2020 conditions for the No Action alternative. Therefore, the No Action alternative would have no significant impacts on localized air quality.

## 4.3. Mitigation Measures

The following discussion presents mitigation measures that should be implemented for proposed projects – whether they are part of the No Action alternative or the Proposed Action alternative.

### 4.3.1. Incorporated Plan Features

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 Washington 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.

Mobile construction equipment and portable stationary engines would 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 slash burning is anticipated for any construction projects in the project area.

### 4.3.2. Applicable Regulations and Commitments

As part of future project-specific SEPA and NEPA documentation for individual new roadway improvement projects, the City would 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.

### 4.3.3. Other Potential Reduction Measures

Table 4-5 lists a variety of additional mitigation measures that could reduce GHG emissions caused by transportation facilities (Washington State Department of Ecology 2008b). The table lists potential GHG reduction measures, and indicates where the emission reductions might occur. The City could identify the reduction measures in their projects, and explain why other measures are not included or are not applicable.

Table 4-5. Potential Greenhouse Gas Reduction Measures

| Reduction Measures | Comments |
|---|---|
| Size parking capacity to not exceed local parking requirements and, where possible, seek reductions in parking supply through special permits or waivers. | Reduced parking discourages auto dependent travel, encouraging alternative modes such as transit, walking, biking etc. Reduces direct and indirect VMT |
| Develop and implement a marketing/information program that includes posting and distribution of ridesharing/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/systems for fuel efficiency. |
| Develop shuttle systems around business district parking garages to reduce congestion and create shorter commutes. | Reduces idling fuel emissions and direct and indirect VMT |

Source: Washington State Department of 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.

# Chapter 5. Noise

This section addresses noise impacts associated with construction and added vehicle traffic associated with the 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 No Action and Proposed Action alternatives.

## 5.1. Affected Environment

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

### 5.1.1. Noise Terminology

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, is capable of being 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.
- 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).** $L_{eq}$ represents the average of sound energy occurring over a specified interval of time. In effect, $L_{eq}$ 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 one-hour A-weighted equivalent sound level ($L_{eq}$ [1h]), is the energy average of the varying A-weighted sound levels occurring during a one-hour period.

### 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)<br>Auto horn (3 feet) | 120 | Threshold of feeling and pain |
| Riveting machine<br>Jet takeoff (2,000 feet) | 110 | Very annoying |
| Shout (0.5 foot)<br>New York subway station | 100 | |
| Heavy truck (50 feet)<br>Pneumatic drill (50 feet) | 90 | Hearing damage (8-hour exposure) |
| Passenger train (100 feet)<br>Helicopter (in flight, 500 feet)<br>Freight train (50 feet) | 80 | Annoying |
| Freeway traffic (50 feet) | 70 | Intrusive |
| Air conditioning unit (20 feet)<br>Light auto traffic (50 feet) | 60 | |
| Normal speech (15 feet)<br>Quiet Urban daytime | 50 | Quiet |
| Living room<br>Bedroom<br>Library | 40 | |
| Soft whisper (15 feet) | 30 | Very quiet |
| Broadcasting studio | 20 | |
| | 10 | Just audible |
| | 0 | Threshold of hearing |

Source: Federal Transit Administration 2006.

A doubling of acoustical energy from a noise source results in a 3-dB increase in sound. However, given a sound level change measured with precise instrumentation, 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 those cases where the new intruding noise is similar in nature to the existing background (e.g., an

increase in traffic noise compared to existing traffic noise). However, for cases where the intruding noise has a character different from the background (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.

### 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 lodging, libraries, parks, and places of worship and certain types of recreational uses. Single-family and multi-family residences including areas of frequent outdoor use, such as residential back yards and neighborhood parks would 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. Other sources contributing to ambient, or background outdoor noise levels include equipment noise and general aviation aircraft over-flights. 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, short-term measurements of 15 minutes in duration were conducted at various locations in the project area. The City utilized noise measurements that were previously taken for the 2006-2017 TPF EIS (City of Bellevue 2006), and supplemented that data with measurements taken at five additional sites.

Existing daytime sound levels were measured at a total of 28 locations representing potentially sensitive areas where the noise environment could be affected by the proposed projects. These included short-term measurements (i.e., 15 minutes) during various daytime hours on May 31, June 8, June 14, June 15, and June 19, 2006.

For the 2006 measurements, 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 (i.e., a home, park, school, etc). Those locations where future projects would not adversely impact sensitive receivers were not considered for sound level measurements. The remaining locations were plotted on a map to determine the degree to which they would reflect representative noise-sensitive areas. Additional sound level measurement locations were then added to create a data set that represented the entire city. (City of Bellevue 2006)

For the 2009–2020 TFP update, the City selected five additional noise monitoring sites. Sites were selected to document existing ambient noise levels at representative locations where noise-sensitive land uses are currently located, and at locations where future development is anticipated.

Short-term monitoring was conducted on Monday November 10, 2008, using a Larson-Davis Model 812 Precision Type 1 sound level meter (serial number 0239). The meter was positioned on a tripod at a microphone height of 1.5 meters (5 feet) above the ground. Sound levels and audible noise sources were recorded on field data sheets in order to characterize the noise environment at each position.

Traffic was the dominant noise source observed during all five short-term noise measurement periods. Aircraft over-flights and neighborhood landscaping noise was audible during the measurements, but these sources were overshadowed by traffic noise during vehicle pass-bys. Measured $L_{eq}$ noise levels for the measurement periods at each site ranged from 60.1 dBA at the intersection of 130th Avenue NE and NE 24th Street, to 69.3 dBA on the segment of 156th Avenue NE south of NE 24th Street. Temperature and wind speed were recorded manually during monitoring from data obtained by a Kestrel 3000 portable weather station. Skies varied from mostly cloudy to partly cloudy during the short-term monitoring, with wind speeds typically in the range of 2 to 8 mph. Temperatures were in the range of 51 to 58 °F, with relative humidity on the range of 80% to 90%.

Figure 5-1 shows the locations of 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 this data are labeled 29 through 33.

The information gathered during the short-term monitoring conducted in 2006 is summarized in Table 5-2. The information gathered during the additional short-term monitoring conducted in 2009 is summarized in Table 5-3.

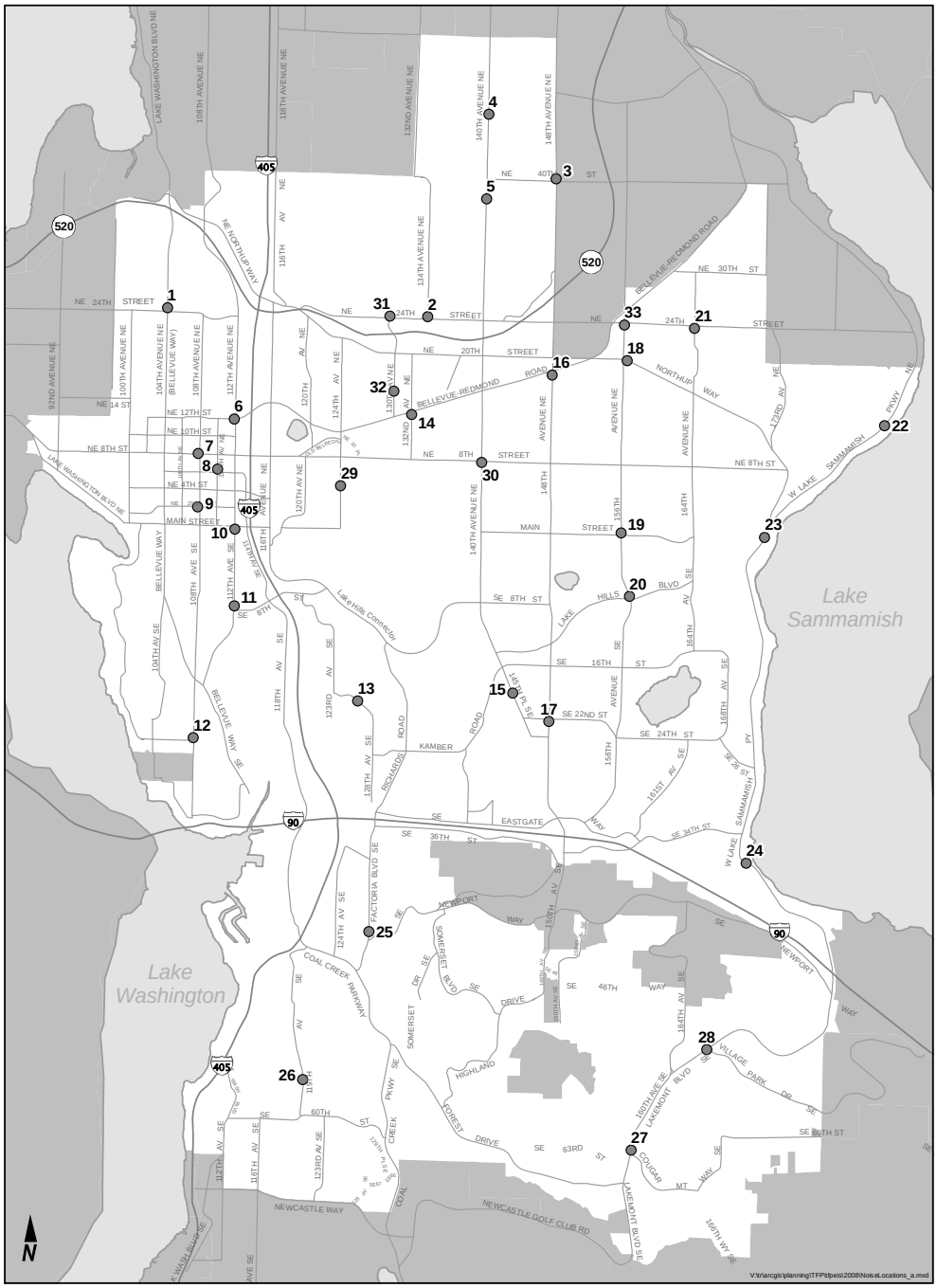



Figure 5-1. Short-Term Noise Measurement Positions

## Table 5-2. Summary of Short-Term Sound Level Measurements in the City of Bellevue–May 31 to June 19, 2006

| Monitor Site | Monitor Location | Date, Measurement Start Time | Duration of Measurement (minutes) | Measured Sound Level, dBA $L_{eq}$, all noise sources |
|---|---|---|---|---|
| 1 | Bellevue Way, north of NE 24th Street | 5/31/06, 11:56 | 15 | 66.7 |
| 2 | 134th Avenue NE, north of NE 24th Street | 5/31/06, 15:52 | 15 | 60.5 |
| 3 | 148th Avenue NE, north of NE 40th Street | 6/14/06, 11:44 | 15 | 66.3 |
| 4 | 140th Avenue NE, at NE 48th Place | 6/19/06, 13:54 | 15 | 63.6 |
| 5 | 140 Avenue NE, north of NE 36th Place | 6/19/06, 14:45 | 15 | 66.3 |
| 6 | NE 12th Street, west of 112th Avenue NE | 6/15/06, 13:14 | 15 | 65.2 |
| 7 | NE 8th Street, west of 108th Avenue NE | 6/15/06, 13:47 | 15 | 65.0 |
| 8 | 110th Avenue NE, north of NE 6th Street | 6/19/06, 16:04 | 15 | 65.1 |
| 9 | NE 2nd Street, west of 108th Avenue NE | 6/19/06, 15:33 | 15 | 61.3 |
| 10 | 112th Avenue SE, south of Main Street | 5/31/06, 12:50 | 15 | 69.1 |
| 11 | 112th Avenue SE, north of SE 8th Street | 5/31/06, 12:50 | 15 | 68.2 |
| 12 | 108th Avenue SE, north of SE 25th Street | 6/14/06, 12:50 | 15 | 59.9 |
| 13 | SE 20th Place, east of 127th Avenue SE | 6/15/06, 10:59 | 15 | 56.2 |
| 14 | 132nd Avenue NE, south of Bel-Red Road | 5/31/06, 15:16 | 15 | 53.1 |
| 15 | 145th Place SE, west of 144th Avenue SE | 6/14/06, 14:26 | 15 | 61.1 |
| 16 | 148th Avenue NE, south of Bel-Red Road | 5/31/06, 15:16 | 15 | 69.3 |
| 17 | 148th Avenue SE, south of SE 22nd Street | 6/15/06, 12:11 | 15 | 67.6 |
| 18 | Northup Way, east of 156th Avenue NE | 6/8/06, 13:41 | 15 | 62.8 |
| 19 | 156th Avenue SE, north of Main Street | 6/8/06, 14:45 | 15 | 64.0 |
| 20 | 156th Avenue SE, north of Lake Hills Boulevard | 6/8/06, 15:16 | 15 | 63.1 |

| Monitor Site | Monitor Location | Date, Measurement Start Time | Duration of Measurement (minutes) | Measured Sound Level, dBA $L_{eq}$, all noise sources |
|---|---|---|---|---|
| 21 | 164th Avenue NE, south of NE 24th Street | 6/8/06, 13:13 | 15 | 59.7 |
| 22 | W Lake Sammamish Parkway, south of NE 15th Place | 6/14/06, 12:40 | 15 | 62.4 |
| 23 | W Lake Sammamish Parkway, south of Northup Way | 6/8/06, 16:40 | 15 | 69.3 |
| 24 | W Lake Sammamish Pkwy, south of SE 38th Street at Vasa Park | 6/8/06, 16:10 | 15 | 63.8 |
| 25 | Factoria Boulevard SE, north of Newport Way | 6/14/06, 11:55 | 15 | 66.5 |
| 26 | 119th Avenue SE, south of SE 54th Street | 6/14/06, 13:33 | 15 | 60.7 |
| 27 | Lakemont Boulevard, north of SE 63rd Street | 6/14/06, 13:16 | 15 | 63.9 |
| 28 | Lakemont Boulevard, west of Village Park Drive | 6/14/06, 13:41 | 15 | 65.5 |

## Table 5-3. Summary of Short-Term Sound Level Measurements in the City of Bellevue–November 10, 2008

| Monitor Site | Monitor Location | Measurement Start Time | Duration of Measurement (minutes) | Measured Sound Level, dBA $L_{eq}$, all noise sources | Noise Sources Observed |
|---|---|---|---|---|---|
| 29 | 124th Avenue NE / NE 4th Place | 4:00 p.m. | 15 | 60.8 | Local traffic, helicopter, sirens, aircraft, lawnmower |
| 30 | 140th Avenue NE across from NE 6th Place | 12:08 p.m. | 15 | 69.2 | Local traffic, high altitude aircraft |
| 31 | 130th Avenue NE / NE 24th Street | 12:45 p.m. | 15 | 60.1 | Traffic on NE 24th Street, turboprop aircraft |
| 32 | 130th Avenue NE / NE 15th Place | 1:10 p.m. | 15 | 62.8 | Local traffic, heavy trucks |
| 33 | 156th Avenue NE, south of NE 24th Street | 3:12 p.m. | 15 | 69.3 | Local traffic |

## 5.1.5. Regulatory Setting

A summary of applicable city noise regulations is described in this section. Capacity-increasing TFP projects built with state funding may also be subject to WSDOT traffic noise regulations and noise abatement evaluation protocols under 23 CFR 772.

### City of Bellevue Noise Regulations

#### Noise Limits for Stationary Industrial and Commercial Sources

Chapter 9.18 of the Bellevue City Code (BCC) 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. 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 5-4.

Table 5-4. Maximum Permissible Noise Levels at Receiving Property Line

| EDNA of Sound Source | Permissible Noise Level in dBA EDNA of Receiving Source | | | |
|---|---|---|---|---|
| | **Class A** | | **Class B** | **Class C** |
| | Daytime | Nighttime | 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 |

Bellevue City Code: Section 9.18.030.

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

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

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

Bellevue City Code: 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, including but not limited to:

- 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 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 Washington Administrative Code (WAC 173-62). However, the City may require an acoustical analysis if traffic noise exceeds City standards for arterial improvement projects (see below).

## Standards for Arterial Improvement Projects (TFP projects)

For the purposes of studying environmental traffic noise, arterial improvement projects considered here do not include minor widening (widening projects that do not increase capacity), addition of bicycle lanes, or walkways. The City will require 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 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 (i.e., predicted increase under the Proposed Action alternative compared to the No Action alternative).

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

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

An acoustical analysis for a given arterial improvement project should include feasible alternatives for noise mitigation and expected noise reduction for each mitigation alternative, where noise impacts are predicted.

## The Traffic Noise Model

The Traffic Noise Model Lookup program, a spreadsheet adaptation of the FHWA Traffic Noise Model (TNM) Version 2.5, was the noise model used for this project. The noise propagation factors described above are included in the algorithms integral to TNM noise level calculations.

Inputs to TNM include the locations of roadways, traffic volumes and speeds, noise barriers, ground type, and receiver distance to the roadway. TNM is a computer model based on two FHWA reports: FHWA-PD-96-009 and FHWA-PD-96-010 (Federal Highway Administration 1996; Federal Highway Administration 1998).

## 5.2. Impacts

This section presents potential impacts which may result if either alternative is implemented. Since all components of the No Action alternative are included as part of the Proposed Action, this section discusses impacts that are common to both alternatives.

### 5.2.1. Exposure of Noise-Sensitive Land Uses to Noise during Construction Activities

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

Table 5-6 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.

As described previously, construction activity is prohibited in the city at night or 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 5-6. 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 demand for public roadways will result in increased noise levels along roadway locations throughout the city.

Modeled existing and future traffic noise levels and potential noise impacts are based on traffic volumes provided by the City. Table 5-7 summarizes potential traffic noise impacts on roadways where traffic noise levels are predicted to exceed 67 dBA Leq under one or more TFP alternatives. Potentially impacted roadways are listed by their corresponding MMA (see Figure 1-1). Table G-1 (see Appendix G) provides results for all roadways studied in the TFP, including the 33 locations where noise monitoring was conducted. Table 5-7 presents a subset of the full information provided in Appendix G, as only roadways potentially impacted by the Proposed Action alternative are shown in this table.

The comparison between future Proposed Action alternative conditions and existing conditions gives an indication of the cumulative increase in noise associated with the project and background growth. The comparison between future Proposed Action alternative conditions and No Action alternative conditions indicates the increase in noise caused directly by projects under the Proposed Action alternative.

The increase in noise levels will be nearly the same (2 dB or less) for most roadways shown in Table 5-7 under both alternatives. Potential impacts in year 2020 are predicted to be the same for both alternatives. Therefore, background growth between the years 2006 and 2020 is a more significant driver of traffic noise levels in the future than demand for specific projects.

For all roadway segments, none of the traffic noise levels are predicted to increase by 5 dB or more due to implementation of the Proposed Action alternative.

Traffic noise levels at residential locations are predicted to exceed the City threshold of 67 dBA $L_{eq}$ along certain arterial roadways under existing conditions as well as under the No Action or Proposed Action alternatives.

Since noise levels are predicted to exceed City thresholds for arterial improvement projects along certain roadways, this impact is considered potentially significant, and a detailed acoustical analysis of the proposed projects affecting these roadways may be required. The applicable criteria for potential noise impacts due to arterial improvement projects are described in Section 5.1.5.

## Table 5-7. Roadway Segments Predicted to Exceed 67 dBA $L_{eq}$ under Both Alternatives

| MMA | Segment Locations within MMA Predicted to exceed 67 dBA Leq in 2020[1] | Existing (2006) dBA Leq | No Action Alternative (2020) dBA Leq | Proposed Action Alternative (2020) dBA Leq | TFP Increase over Existing dB | TFP Increase over No Action dB[2] |
|---|---|---|---|---|---|---|
| 1 | Bellevue Way NE, north of NE 24th Street | 67 | 68 | 68 | + 1 | 0 |
| | Bellevue Way NE, south of NE 24th Street | 67 | 68 | 68 | + 1 | 0 |
| | Bellevue Way, north of NE 24th Street | 67 | 68 | 68 | + 1 | 0 |
| 2 | 148th Avenue NE, south of NE 40th Street | 66 | 68 | 68 | + 2 | 0 |
| | 140th Avenue NE, south of NE 24th Street | 67 | 67 | 67 | 0 | 0 |
| | 148th Avenue NE, north of NE 40th Street | 67 | 68 | 68 | + 1 | 0 |
| 3 | Bellevue Way NE, north of NE 12th Street | 67 | 68 | 68 | + 1 | 0 |
| | Bellevue Way NE, south of NE 6th Street | 67 | 68 | 68 | + 1 | 0 |
| | NE 12th Street, west of 112th Avenue NE | 67 | 68 | 68 | + 1 | 0 |
| | NE 8th Street, west of 112th Avenue NE | 69 | 69 | 69 | 0 | 0 |
| | NE 8th Street, west of 108th Avenue NE | 67 | 68 | 68 | + 1 | 0 |
| | NE 4th Street, west of 112th Avenue NE | 67 | 68 | 68 | + 1 | 0 |
| | NE 2nd Street, west of 108th Avenue NE | 63 | 67 | 67 | + 4 | 0 |
| | Main Street, west of 112th Avenue | 66 | 67 | 67 | + 1 | 0 |
| | Bellevue Way SE, south of SE 3rd Street | 68 | 68 | 68 | 0 | 0 |
| | 112th Avenue SE, south of Main Street | 67 | 68 | 68 | + 1 | 0 |
| | NE 12th Street, west of 112th Avenue NE | 67 | 68 | 68 | + 1 | 0 |
| 4 | 116th Avenue NE , north of NE 8th Street | 67 | 69 | 69 | + 2 | 0 |
| | 116th Avenue NE, south of NE 8th Street | 67 | 68 | 68 | + 1 | 0 |

| MMA | Segment Locations within MMA Predicted to exceed 67 dBA Leq in 2020[1] | Existing (2006) dBA Leq | No Action Alternative (2020) dBA Leq | Proposed Action Alternative (2020) dBA Leq | TFP Increase over Existing dB | TFP Increase over No Action dB[2] |
|---|---|---|---|---|---|---|
| | 116th Avenue SE, south of Main Street | 67 | 69 | 68 | + 1 | - 1 |
| 5 | 156th Avenue NE, north of NE 8th Street | 67 | 68 | 68 | + 1 | 0 |
| 6 | None | N/A | N/A | N/A | N/A | N/A |
| 7 | Bellevue Way SE, east of 112th Avenue SE | 70 | 70 | 70 | 0 | 0 |
| | 112th Avenue SE, north of SE 8th Street | 66 | 67 | 67 | + 1 | 0 |
| 8 | Lake Hills Connector, south of SE 8th Street | 68 | 69 | 69 | + 1 | 0 |
| | Richards Road, north of Kamber Road | 67 | 68 | 68 | + 1 | 0 |
| 9 | NE 8th Street, west of 140th Avenue NE | 67 | 68 | 68 | + 1 | 0 |
| | NE 8th Street, east of 140th Avenue NE | 66 | 67 | 67 | + 1 | 0 |
| | NE 8th Street, east of 148th Avenue NE | 66 | 67 | 67 | + 1 | 0 |
| | 148th Avenue SE, south of Main Street | 69 | 69 | 69 | 0 | 0 |
| | 148th Avenue SE, south of SE 24th Street | 70 | 70 | 70 | 0 | 0 |
| | 148th Avenue SE, south of SE 22nd Street | 69 | 69 | 69 | 0 | 0 |
| 10 | None | N/A | N/A | N/A | N/A | N/A |
| 11 | 150th Avenue SE, north of SE Newport Way | 66 | 68 | 68 | + 2 | 0 |
| | Coal Creek Parkway, south of Forest Drive SE | 68 | 69 | 69 | + 1 | 0 |
| | Lakemont Boulevard SE, west of 164th Avenue SE | 66 | 67 | 67 | + 1 | 0 |
| 12 | 148th Avenue NE, north of NE 24th Street | 70 | 70 | 70 | 0 | 0 |
| | 148th Avenue NE, south of NE 24th Street | 68 | 69 | 69 | + 1 | 0 |
| | Northup Way, east of 124th Avenue NE | 68 | 69 | 69 | + 1 | 0 |

| MMA | Segment Locations within MMA Predicted to exceed 67 dBA Leq in 2020[1] | Existing (2006) dBA Leq | No Action Alternative (2020) dBA Leq | Proposed Action Alternative (2020) dBA Leq | TFP Increase over Existing dB | TFP Increase over No Action dB[2] |
|---|---|---|---|---|---|---|
| | NE 20th Street, east of 140th Avenue NE | 67 | 68 | 68 | + 1 | 0 |
| | Bel-Red Road, east of 148th Avenue NE | 66 | 67 | 67 | + 1 | 0 |
| | 148th Avenue NE, south of Bel-Red Road | 68 | 69 | 69 | + 1 | 0 |
| | NE 12th Street, west of 124th Avenue NE | 67 | 67 | 67 | 0 | 0 |
| | Bel-Red Road, west of 130th Avenue NE | 68 | 69 | 69 | + 1 | 0 |
| | 120th Avenue NE, south of NE 15th/16th Street | 61 | 67 | 67 | + 6 | 0 |
| | 156th Avenue NE, south of NE 24th Street. | 67 | 68 | 68 | + 1 | 0 |
| 13 | Coal Creek Parkway, west of SE Newport Way | 68 | 68 | 68 | 0 | 0 |
| | Factoria Boulevard SE, north of Newport Way | 67 | 67 | 67 | 0 | 0 |
| | Factoria Boulevard SE, north of SE 41st Street | 67 | 67 | 67 | 0 | 0 |
| -- | NE 40th Street, west of 156th Avenue NE | 68 | 69 | 69 | + 1 | 0 |
| -- | NE 40th Street, east of 156th Avenue NE | 66 | 68 | 68 | + 2 | 0 |
| -- | 156th Avenue N , south of NE 40th Street | 67 | 68 | 68 | + 1 | 0 |

Notes:

1. Only roadways potentially impacted by the Proposed Action alternative are shown in this table. Appendix G contains a complete table of all modeled noise levels for all roadways studied in the TFP.
2. None of the TFP projects are predicted to result in a traffic noise level increase of 5 dB over the No Action alternative.

## 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-impacted roadway segments identified above in Table 5-6 reaches the design stage.

### 5.3.1. Construction Noise

Roadway construction occurring outside of exempt hours should follow noise-reducing construction practices ensuring 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; and
- in exceptionally loud cases where nighttime noise limits can't be achieved, offer temporary hotel rooms.

### 5.3.2. 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;
- Acquiring property to serve as a buffer zone;
- Using traffic management measures to regulate types of vehicles and speeds; and
- Acoustically insulating public-use or nonprofit institutional structures.

Sound walls are generally the most common and effective measure to reduce noise levels. However, in the project area, sound walls may not be desirable because of their effects on community cohesion, safety, 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 this project because

since travel speeds on surface streets are lower than on highways, 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 determine 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 $L_{eq}$ will increase from 2006 to 2020. Future traffic noise levels are basically equivalent between the two alternatives.

Most residential areas within the city require access to the roadways where traffic noise impacts are predicted to occur under the either alternative. This access requirement would conflict with placement of a noise barrier as a potential mitigation measure for impacted 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 presents information related to land use and aesthetics and the potential impacts that may result due to implementation of the No Action alternative or the Proposed Action 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 the visual quality of the current natural and built environment. Impacts analysis identifies how existing conditions could change with implementation of either alternative.

Also presented in this chapter is a discussion of potential mitigation measures. 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.

## 6.1. Affected Environment

This section presents an overview of current land uses in the city. In addition, aesthetics and visual quality along transportation corridors and neighborhoods is also discussed. The affected environment provides the foundation by which impacts are assessed.

### 6.1.1. Land Use Patterns

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

- Downtown (MMA 3);
- Bel-Red (MMA 12);
- Wilburton (MMA 4 and northeast MMA 7);

- Eastgate/Factoria (MMA 10 and north MMA 13); and
- Crossroads (MMA 5).

(City of Bellevue 2008a)

Land use capacity analyses performed by the City show that with little vacant land, the vast majority of future development and growth in the city will occur through redevelopment and infill. Much of this redevelopment and infill will occur in the areas listed above.

Downtown (MMA 3) is the city's central urban area. Most new buildings in Downtown are multi-story with a mix of uses, including office, retail, and in some cases, residential. Streetscapes are generally urban in nature with wide sidewalks connecting to building entrances. Landscaping consists of street trees in gratings or in some cases planter strips between the curb and the sidewalk. Portions of the Downtown that have not experienced recent redevelopment have a more suburban character that includes narrower sidewalks and surface parking that generally separates a building from the streetscape. Older buildings are more likely to be single-story.

The remaining four commercial and mixed-use centers are also transforming to a more urban land. However, in these areas, building heights tend to be lower with more surface parking (than in Downtown). However, these areas are witnessing more of a shift to structured parking, given the increased cost of land in these areas. The five commercial/mixed-use hubs are predominately surrounded by single-family detached residential buildings which are set back from the street with yards and landscaping. Mixed in among these neighborhoods are small-scale neighborhood commercial centers. Pockets of multi-family buildings are located along arterials. These areas are characterized by parking and landscaping separating the buildings from the street.

The City, in its Bel-Red Corridor Project Final EIS, reviewed potential growth and redevelopment scenarios for the Bel-Red/SR 520 subarea. These scenarios included review of current and proposed plans and policies, including future transportation projects and infrastructure requirements. The proposed projects identified in the 2009–2020 TFP are consistent with the findings and recommendations in the Bel-Red Corridor Final EIS. (City of Bellevue 2007)

### 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 Final EIS, 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 of a "City in a Park." As part of this vision, a primary goal is for the city to be "the Eastside's transportation hub, offering an array of mobility choices." Other goal statements envision the City as:

- a dedicated steward of environmental quality, where key natural features are preserved and restored;
- a model of superior design and "people places";
- a regional economic center with a strong and diverse economy; and
- a city served by outstanding facilities and services.

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

## Land Use Element

The Comprehensive Plan land use element directs that the City:

- maintain and strengthen the vitality of its residential neighborhoods;
- support the Downtown Urban Center and the other commercial and mixed-use areas serving the City and the larger region, and
- support and be supported by a variety of mobility options.

These themes permeate the City's Land Use element and provide guidance for future transportation projects. Key policies related to transportation projects include:

- Policy LU-3. Accommodate growth targets of 10,117 additional households and 40,000 additional jobs for the 2001–2022 period. These targets represent the City's commitment to developing the zoning and infrastructure to accommodate this level of growth.
- Policy LU-10. Access high-traffic-generating land uses from arterials whenever possible. If this is not possible, provide mitigation to address access impacts.
- Policy LU-18. Adopt and maintain policies, codes, and land use patterns that promote walking in order to increase public health.
- Policy LU-28. Support Downtown Bellevue's development as an Urban Center, maintaining it as a financial, retail, and business hub of the Eastside.
- Policy LU-31. Encourage and foster economic development in areas designated for commercial uses.

## Transportation Element

The goal of the Comprehensive Plan transportation element is to maintain and enhance mobility for residents and businesses through the creation and maintenance of a balanced system of transportation alternatives that:

- provides a wide range of travel choices;
- supports the land use vision of the City;
- protects our neighborhoods from adverse transportation impacts;

- reflects the regional role of the City in transportation issues; and
- reduces the overall dependency on automobiles throughout the city.

A further goal of the transportation element is to:

- implement a fully multi-modal transportation system that supports the land use vision of the Comprehensive Plan and the role of Downtown Bellevue as the Eastside urban center; and
- reduce the use of SOVs, by creating a land use pattern that allows for shorter vehicle trips and the use of alternative travel options.

The transportation element strengthens the integration of land use and transportation planning in the City. It supports the City's land use vision as expressed in the land use element and Future Land Use Map.

Most of the transportation policies contained in the transportation element are relevant to the 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 the major urban center of the east side by creating an area with pedestrian emphasis and providing alternatives to the SOV.

The transportation element directs the reader to the City's CIP; the TFP; Pedestrian and Bicycle Transportation Plan; Transit Plan; and six subarea transportation plans for further information detail and guidance on the City's transportation plans and investment.

### 6.1.3. Aesthetics

The city's aesthetic character is derived from visual quality of the environment. It has areas characterized by urban high-rise development (e.g. MMA 3 – Downtown) and areas that are characterized by low-density suburban residential development surrounding natural areas (e.g. MMA 2 – Bridle Trails). As a transportation facility is developed, it can either make a transportation corridor feel more like the predominant character of an area, or it might transform an area from one type of area to another (i.e., create more of an urban feel in an otherwise low-intensity suburban environment).

Much of a city's aesthetic quality is influenced by community character and design. The urban design element of the Comprehensive Plan includes guidance for the design quality of future city development—both private and public. Of particular importance for the TFP are the City's "Public Places and Connections" design policies because they relate to design of streets, parks, and other public facilities.

The City's policies related to street corridors include policies that:

- promote development of visually appealing connections in the community;
- advocate for development of boulevards as an attractive and distinct form of connection in the city;

- develop special streetscapes at gateways; and
- incorporate dramatic and imaginative landscape and art features when reconstructing streets or sidewalks.

As the city continues to grow, implementation of these policies will become more critical to ensure the City meets its vision of becoming a "City in a Park."

## 6.2. Impacts

This section presents potential impacts which may occur as a result of if either alternative is implemented. Since all components of the No Action alternative are included as part of the Propose Action, this impacts section discusses impacts that are common to both alternatives and then presents impacts associated with the Proposed Action alternative.

### 6.2.1. Impacts Common to Both Alternatives

This section presents potential impacts which may result from implementation of either the No Action alternative or the Proposed Action alternative.

#### Land Use Patterns

The implementation of projects in either alternative being evaluated in this Final EIS could potentially impact existing land uses located within close proximity to the specific project. Some impacts could be permanent in nature, while others are only short term or temporary.

##### Short-Term Impacts

During construction of any project, short-term impacts are typical. Impacts 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.

Although short-term inconvenience may result during construction, project amenities such as lighting, landscaping, crosswalks, sidewalks, and bicycle lanes will enhance the pedestrian environment, which could increase pedestrian usage and generally enhance adjacent land uses.

##### Permanent Impacts

Table 6-1 identifies the projects that are included in the No Action and Proposed Action alternatives. This table also indicates which projects are more likely to affect land use patterns.

For purposes of analysis, impacts are identified by whether a proposed transportation project has the potential to require total acquisition of parcels of land and/or to displace one or more building as part of the project ("Potential acquisition affecting buildings/land uses"), or whether the project has the potential to affect some amount of on-site parking, on-site landscaping, or formal

streetscape improvements through implementation of the project ("Potential acquisition affecting on-site parking and/or landscaping"). Projects that do not contain an "X" in either of these columns may also require removal of landscaping or other features, but are considered less likely to do so, based on a windshield survey of the project areas and follow up review of King County IMap.

Following completion of any project, there is a potential that existing land uses and associated structures could be permanently impacted. Depending on the type of project being implemented, impacts could include:

- If traffic noise and pollution levels become intrusive for nearby structures, they could make affected buildings less desirable for tenants and/or could lead to the need for investment in abatement measures.
- In some cases, displacement of driveways, 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. In many cases, widening a street by one lane reduces 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.) This parking configuration is typical for commercial and multi-family development throughout the city. The severity of the impact of 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.
- Acquisition of entire parcels or large parts of existing parcels for rights-of-way, especially for construction of new roadways. Where roadways are proposed, potential alignments will typically fall on property lines, which generally divide the burden of acquisition between parcels, resulting in less severe impact on any one parcel. However, most of the proposed improvements consist of widening streets or intersections by one or two lanes and/or adding sidewalks, most of which can be done within the existing rights-of-way, and do not require extensive acquisition from any single parcel.
- Two projects under the No Action alternative, TFP-094 and TFP-184, have the potential for right-of-way acquisition to affect buildings and land uses.

## Table 6-1. Summary of TFP Projects with Potential Land Use Impacts

| 2009–2020 TFP Project # | Included in No Action Alternative | Potential Acquisition Affecting On-Site Parking and/or Landscaping | Potential Acquisition Affecting Buildings and Land Uses |
|---|---|---|---|
| 078 | X | | |
| 079 | X | X | |
| 090 | | X | |
| 091/106 | X | X | |
| 094 | X | X | X |
| 101 | X | X | |
| 102 | | X | |
| 103 | | X | |
| 110 | X | | |
| 120 | | X | |
| 154 | | | |
| 156 | X | X | |
| 157 | | X | |
| 158 | | | |
| 159 | X | | |
| 160 | X | X | |
| 162 | | | |
| 163 | X | | |
| 164 | | | |
| 165 | | | |
| 168 | | X | |
| 170 | X | | |
| 171 | | | |
| 172 | | | |
| 173 | | | |
| 175 | X | | |
| 178 | X | | |
| 184 | X | X | X |
| 190 | X | X | |
| 191 | X | | |
| 192 | | X | |
| 193 | | X | X |

| 2009–2020 TFP Project # | Included in No Action Alternative | Potential Acquisition Affecting On-Site Parking and/or Landscaping | Potential Acquisition Affecting Buildings and Land Uses |
|---|---|---|---|
| 194 | | | |
| 195 | | X | |
| 196 | | | |
| 197 | | X | X |
| 198 | | X | |
| 205 | | X | |
| 207 | | X | X |
| 208 | | X | X |
| 209 | | X | X |
| 210 | | X | |
| 211 | | X | X |
| 213 | | X | |
| 214 | | X | |
| 215 | | X | X |
| 216 | | X | X |
| 217 | | | |
| 218 | | X | |
| 219 | | | |
| 220 | | | |
| 221 | | | |
| 222 | | X | |
| 223 | | X | |
| 224 | | X | |
| 225 | | X | |
| 226 | | X | X |
| 227 | | | |
| 228 | | | |
| 229 | | | |
| 230 | | | |
| 231 | | | |
| 232 | | X | |
| 233 | | | |
| 234 | | | |

| 2009–2020 TFP Project # | Included in No Action Alternative | Potential Acquisition Affecting On-Site Parking and/or Landscaping | Potential Acquisition Affecting Buildings and Land Uses |
|---|---|---|---|
| 235 | | | |
| 236 | | | |
| 237 | | | |
| 238 | X | | |
| 239 | | X | |

## Aesthetics

Construction of the new transportation facilities proposed in either the No Action alternative or the Proposed Action 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 an observer not on the roadway, or a change of the environment by the observer from the roadway (driver, bicyclist, pedestrian). 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, reduce landscaping and change road configurations, or affect view corridors.

Other minor impacts on the overall aesthetics of a neighborhood or area could result from a reduction in landscaping, and the appearance of new facilities (especially utilities, wider streets, and lighting posts).

## 6.2.2. Proposed Action Alternative

The previous section presented potential impacts which could occur regardless of alternative. This section focuses only on potential impacts which could result if the Proposed Action alternative is implemented.

## Land Use Patterns

All projects included in the Proposed Action alternative involve some form of construction activity that would have the potential to temporarily disrupt traffic and/or create pedestrian or motorist detours during construction. There are 52 projects included in the Proposed Action alternative that are not included as part of the No Action alternative. Most of the new projects are located in the commercial/mixed-use Downtown (MMA 3), Bel-Red (MMA 12) and northern Wilburton (MMA 4) areas. The No Action alternative includes 17 projects.

In addition to the two projects identified under the No Action alternative, nine projects under the Proposed Action alternative have the potential to displace land uses by creating new roads and/or re-aligning existing. Four of these projects (TFP-197, TFP-207, TFP-211, and TFP-216) continue

the Downtown street grid and/or provide access to/from I-405 to the northern portion of the Wilburton area. Five of these projects (TFP-193, TFP -208, TFP -209, TFP -215 and TFP -226) create a street grid or realign streets in the Bel-Red area, or make I-405 access improvements in support of anticipated growth and redevelopment of this area, which is currently characterized by low-rise office, warehouse, and auto-related uses. All nine projects hold the greatest possibility for acquiring property for right-of-way which may result in displacing pre-existing buildings, on-site parking, and/or landscaping. One additional project will require vacant land to connect to two existing street ends in the Factoria area (TFP-103). However, this project is not anticipated to displace pre-existing land uses.

Other projects in the Proposed Action alternative may require acquisition of smaller amounts of land to widen existing roadways or to bring roadways up to urban standards. These projects may not displace existing land uses, but may remove required on-site parking, require re-alignment of required parking, or may require removal and replacement of existing landscaping. Eleven of the new projects under the Proposed Action alternative have the potential to remove or re-align on-site parking, and/or to require replacement of on-site landscaping. These projects are generally required to bring city roadways up to urban standards, and to improve traffic conditions to accommodate expected future growth.

## Plans and Policies

The transportation projects that are part of the Proposed Action alternative but were not considered under the No Action alternative are consistent with the City's vision statement and the goals and policies of the City's land use and transportation elements of the Comprehensive Plan.

The projects included in the proposed 2009–2020 TFP 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 the city's fastest growing subareas. The projects included in the Proposed Action alternative are consistent with the City's land use, transportation, and transportation-related subarea goals and policies. Similarly, the projects contained in the 2009–2020 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 majority of projects in the proposed 2009–2020 TFP are located within Downtown (MMA 3), Bel-Red (MMA 12), and Wilburton (MMA 4).

The Downtown projects include many of the new roadway and freeway access projects in the Proposed Action alternative. These projects comply with the City's Downtown subarea goals of providing regional access to Downtown and mobility between the Downtown and other parts of the city. These projects will help accommodate the additional 28,000 jobs and 10,000 residents that are expected in the Downtown subarea by 2020.

The proposed new roadways in the Wilburton area are consistent with Wilburton/NE 8th Street Subarea Policy S-WI-25:

> ***Policy S-WI-25.*** *Improve local access, street system connectivity and traffic flow by providing additional east-west transportation connections, including an arterial street connection at NE 4th Street between NE 116th and 120th Avenues and HOV and non-motorized access at NE 6th Street between Downtown and 120th Avenue NE.*

New roadways proposed in the Bel-Red area are consistent with Bel-Red/Northup Subarea policy S-BR-19 which encourages the City to develop a safe circulation system that accommodates both motorized and non-motorized users.

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 most cases, improvements contained in the Proposed Action alternative extend or fill in gaps in existing streetscapes that comply with these policies and guidelines.

### Aesthetics

Implementation of the projects included in the Proposed Action alternative could affect the character of a neighborhood or corridor; however, the majority of them provide consistency of character by filling in missing segments of streetscape, sidewalks, and/or bicycle lanes where they are missing. Other improvements such as those found in the Downtown (MMA 3) or Bel-Red (MMA 4) areas transform the character of a particular segment of a street or transportation corridor from a lower-intensity suburban standard that formerly dominated the neighborhood to a more urbanized standard that is envisioned in the Comprehensive Plan.

Projects included within the Proposed Action alternative that propose creation of new roadway corridors or realignment of existing roadways have the potential to impact aesthetics by creating new publicly-accessible corridors that may create new view corridors. These projects will be required to adhere to the City's streetscape design standards to help ensure continuity of surrounding streetscapes.

Overall, because the City has strict streetscape standards that require appropriate landscape elements and pedestrian amenities, it is not anticipated that any of the projects that are included in the Proposed Action alternative will have a negative impact on aesthetics.

## 6.3. Mitigation Measures

If an adverse impact is anticipated due to one of the TFP projects found in the Proposed Action alternative, one or more of the following mitigation measures could be implemented:

## Land Use Patterns

- Prepare a relocation plan for displaced residential or commercial uses.
- Remove or relocate underground storage tanks and other hazardous materials if displacement of gas station occurs.
- 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 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; preserving significant stands of vegetation adjacent to roadways by installing sidewalks on one side of the street, where pedestrian volumes and hazard potentials are low; and reducing the extent of cleared areas by using retention structures, where practical in place of long, fill slopes.

## Plans and Policies

- Any transportation facility projects not identified within the Comprehensive Plan or associated subarea plans should be included in a Comprehensive Plan amendment to maintain consistency between the 2009–2020 TFP and the Comprehensive Plan.

## Aesthetics

- Preserve natural vegetation to the greatest extent possible.
- Replace landscaping, including street trees when roadway widening or realignment 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 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.

## 6.4. Significant Unavoidable Adverse Impacts

The areas most likely to be impacted by the 2009–2020 TFP are Downtown (MMA 3), Bel-Red (MMA 12) and Wilburton (MMA 4). These areas correspond to the major activity centers in the city. It is consistent with Comprehensive Plan policies that infrastructure improvements are focused in these areas. However, it is likely that any adverse impact generated by the projects in the Proposed Action alternative could be mitigated to be consistent with City policies.

Permanent effects to buildings related to transportation projects are considered a potential significant adverse impact. Two projects under the No Action and Proposed Action alternatives, TFP-094 and TFP-184, have the potential for right-of-way acquisition to affect buildings and land uses. Under the Proposed Action alternative, nine additional projects have the potential to displace buildings by creating new roads and/or re-aligning existing. Four of these projects (TFP-197, TFP-207, TFP-211, and TFP-216) continue the Downtown street grid and/or provide access to/from I-405 to the northern portion of the Wilburton area. Five of these projects (TFP-193, TFP-208, TFP-209, TFP-215 and TFP-226) create a street grid or realign streets in the Bel-Red area, or make I-405 access improvements in support of anticipated growth and redevelopment of this area, which is currently characterized by low-rise office, warehouse, and auto-related uses. All nine projects hold the greatest possibility for acquiring property for right-of-way which may result in displacing pre-existing buildings, on-site parking, and/or landscaping.

No other significant unavoidable adverse impacts on land use and aesthetics were identified as a result of either alternative.

# Chapter 7. Natural Environment

This chapter describes the natural environment in the City, natural resources that are known to occur, and the potential effects to these resources from the projects included in either alternative.

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

- City of Bellevue Information Technology Department, Geographic Information Services (GIS) Critical Areas Maps (City of Bellevue 2008d);
- Washington Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database (Washington Department of Fish and Wildlife 2008);
- Final EIS for the City of Bellevue 2006–2017 Transportation Facilities Plan (City of Bellevue 2006); and
- a partial driving reconnaissance survey focusing on the projects located near critical areas identified on the City of Bellevue Critical Areas Maps (City of Bellevue 2008d), conducted by an ICF Jones & Stokes biologist on November 22, 2008 (ICF Jones & Stokes 2008).

The exact level of direct and indirect impact of each individual project on the natural environment, as well as contribution to cumulative impacts, can only be reliably established after preliminary project design has been completed and a project footprint established. Initiation of project design typically occurs following a project's inclusion in an adopted Capital Investment Program Plan, for which the TFP, which is the subject of this Final EIS, serves as an initial screen. Because TFP projects are still at the conceptual stage, their potential impacts on the natural environment are addressed more generally in this document. Future phased review will result in a more specific treatment of direct and indirect impacts on the natural environment; and will identify project-specific design elements and mitigation measures to avoid or minimize impacts. Notwithstanding the subsequent project-level review for most projects contained in the TFP, some cumulative impacts—notably increased impervious surface and concomitant

hydrologic and habitat impacts—may nonetheless occur due to the addition of impervious surface associated with the projects identified in the TFP.

## 7.1. Affected Environment

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

### 7.1.1. Critical Areas

Bellevue City Code (BCC), Part 20.25, regulates development in Critical Areas Overlay Districts. Critical Area 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 which 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 the functions and values of these areas and to protect public health, safety, and welfare, while allowing reasonable use of private property.

The City regulates the following as critical areas:

- streams,
- wetlands,
- shorelines,
- geologic hazard areas,
- habitat associated with species of local importance, and
- areas of special flood hazard.

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

### 7.1.2. Geology and Soils

The city'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 is comprised 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 the city 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 the city than currently mapped. Outwash soils have relatively high permeability therefore may facilitate low impact development. Soil types will be evaluated at the project-level analysis for consideration in construction design.

### 7.1.3. Wetlands

The City classifies wetlands into four categories, depending upon a variety of factors, and regulates buffers adjacent to wetlands. Where there are existing easements on a site, specifically Native Growth Protection Area (NGPA) or Native Growth Protection Easement (NGPE), the regulatory buffer is assumed to be included within these areas and the site is considered to be developed for regulatory purposes and no additional buffer is required (BCC 20.25H). The range of buffer widths for each wetland category on undeveloped sites is shown in Table 7-1.

Table 7-1. Wetland Buffer Width Ranges by Wetland Type

| Wetland Type | Buffer (feet) |
|---|---|
| Category I | 75-225 |
| Category II | 75-225 |
| Category III | 60-110 |
| Category IV over 2,500 square feet | 40 |

Source: City of Bellevue Land Use Code Part 20.25.

Wetland buffer modification, including averaging, is allowed. 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.

Several projects included in the transportation facilities plan project list would be located within a wetland or a wetland buffer. These projects are listed by MMA in Table 7-2.

Table 7-2. Mapped Wetlands or Wetland Buffers Located in Potential Project Areas

| MMA | TFP Project Number(s) |
|---|---|
| 1 North Bellevue | 173, 236 |
| 2 Bridle Trails | 171 |
| 4 Wilburton | 197, 234 |
| 8 Richards Valley | 281 |
| 9 East Bellevue | 158, 168, 221 |
| 12 Bel-Red | 208, 210 |

Note: Only those MMAs with the potential to impact mapped wetlands or wetland buffers are included.

The category of each of these wetlands, and buffer associated with each, will be determined during project specific analysis for each of the projects.

Based upon a reconnaissance level review, the wetland adjacent to TFP-197 is a forested wetland with open water habitat. Overstory tree species include Douglas-fir (*Pseudotsuga menziesii*), western redcedar (*Thuja plicata*), bigleaf maple (*Acer macrophyllum*), and red alder (*Alnus rubra*), with an understory of Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*) and reed canarygrass (*Phalaris arundinacea*).

There are wetlands located on both sides of 148th Avenue NE on the north side of NE 8th Street, in the vicinity of TFP-168. These also have a forested overstory or edge, with Douglas-fir and red alder present. Shrub and ground cover species observed include Himalayan blackberry, Japanese knotweed (*Polygonum cuspidatum*), osoberry (*Oemleria cerasiformis*), common snowberry (*Symphoricarpos albus*), sword fern (*Polystichum munitum*), and reed canarygrass. Ornamental shrubs and trees are also present along the edges of the wetland.

Only a portion of TFP-221 is adjacent to a wetland, the intersection of 148th Avenue SE and SE 8th Street. The wetland in this vicinity is dominated by red alder in the overstory, with black cottonwood (*Populus balsamifera* spp. *trichocarpa*) also occurring, and the understory in primarily Himalayan blackberry.

The wetland in the vicinity of TFP-208 has an overstory of red alder, with willow (*Salix* sp) and western red cedar underneath. The shrub layer is predominantly Himalayan blackberry. The wetland in the vicinity of TFP-210 also contains red alder, with black cottonwood also occurring and Douglas-fir near the edges and Himalayan blackberry in the understory.

There are likely additional wetlands present in the project areas, and these would be identified during project specific review.

Wetlands perform a variety of important functions on the landscape, including water storage, water filtration, and providing habitat for fish and wildlife. 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 river and streams. This method 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 the city 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 individual functions and values of wetlands potentially impacted by the proposed projects will be evaluated at the project level using the Washington State Department of Ecology (Ecology) wetland rating system for Western Washington (Hruby 2004).

## 7.1.4. Aquatic Resources

The City classifies streams into four types, depending upon a variety of factors, and regulates buffers adjacent to streams. Buffer widths vary by stream type and depending upon whether the stream is located on an undeveloped or a developed site. Open segments of the West Tributary of Kelsey Creek have separate buffer requirements (BCC 20.25H). Buffer widths of each of the open steam types are shown in Table 7-3. Closed stream segments, defined as segments of streams located in underground culverts, are regulated separately.

### Table 7-3. Standard Stream Buffer Widths for Open Streams per Bellevue Land Use Code Part 20.25

| Stream Type[1] | Buffer, Undeveloped Site (feet) | Buffer, Developed Site[2](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 |

1. Type S Streams are those designated shorelines of the State; Type F waters are those that are not Type S waters that contain fish or fish habitat; Type N waters are those that are not type S or F waters and are physically connected to a type S or F water by an above ground channel system, stream, or wetland; Type O waters are those that are not type S, F, or N waters and that are not physically connected to type S, F, or N waters by an aboveground channel system, stream, or wetland (BCC 20.25H.075.B).
2. The actual buffer is the greater of the buffer width shown in this table or the buffer established with the existing NGPE/NGPA.

Stream buffer modification, with specific constraints, is allowed. In addition, if an established right-of-way, such as a road, is located within a stream buffer the buffer is reduced to the area between the right-of-way and the stream only 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.

The proposed projects are located in Water Resource Inventory Area (WRIA) 8, Cedar/Sammamish (Ecology 2008). Each stream within a WRIA is given a unique identifying number. Several projects included in the transportation facilities plan project list would either cross mapped streams or would potentially be located within stream buffers. These projects, the mapped stream type, stream name and WRIA number are listed by MMA in Table 7-4.

### Table 7-4. Mapped Streams or Streams Buffers Located in Potential Project Areas

| MMA[1] | TFP Project Number(s) | Stream Type | Stream Name | WRIA |
|---|---|---|---|---|
| 1 North Bellevue | 079, 173 | F | Yarrow Creek | 08-0252 |
| 2 Bridle Trails | 171 | F | Valley Creek | 08-0266 |
| 4 Wilburton | 211, 234 | F | Sturtevant Creek | 08-0260 |
| 8 Richards Valley | 231 | F | Kelsey Creek | 08-0259 |
| 9 East Bellevue | 078, 175 | F | Vasa Creek, | 08-0156 |

| MMA[1] | TFP Project Number(s) | Stream Type | Stream Name | WRIA |
|---|---|---|---|---|
| | | | Phantom Creek | 08-0154 |
| | | | South Sammamish Northern Stream | 08-0160 |
| | | | South Sammamish Middle Stream | None assigned |
| | | | South Sammamish Southern Stream | 08-0161 |
| | 078 | N | Wilkins Creek | 08-0151 |
| | | | Unnamed tributaries to Lake Sammamish | None assigned |
| 11 Newcastle | 192, 205 | F | Lewis Creek | 08-0162 |
| | 163, 192, 194, 228 | N | Vasa Creek headwaters, | 08-0156 |
| | | | Lewis Creek headwaters, | 08-0162 |
| 12 Bel-Red | 215 | F | Goff Creek | None assigned |
| | | | Kelsey Creek | 08-0259 |
| | 091, 106, 208, 210, 215, 218 | N | West Tributary,Kelsey Creek | 08-0264 |
| 14 Newport Hills | 156, 229 | N | Lakehurst, Northern Stream | 08-0281 |

1. Only those MMAs with the potential to impact mapped streams or stream buffers are included.

Type F waters are those that are not designated as shorelines of the state (type S waters) and which contain fish or fish habitat. Type N waters are those that are not type S or F waters but are physically connected to a type S or F waters by an above ground channel system, stream or wetland (BCC 20.25H 075 B).

Fish species documented in streams in the city 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 2008). Figure 7-1 illustrates the location of these streams. Fish presence and use by stream within the city is shown in Table 7-5.

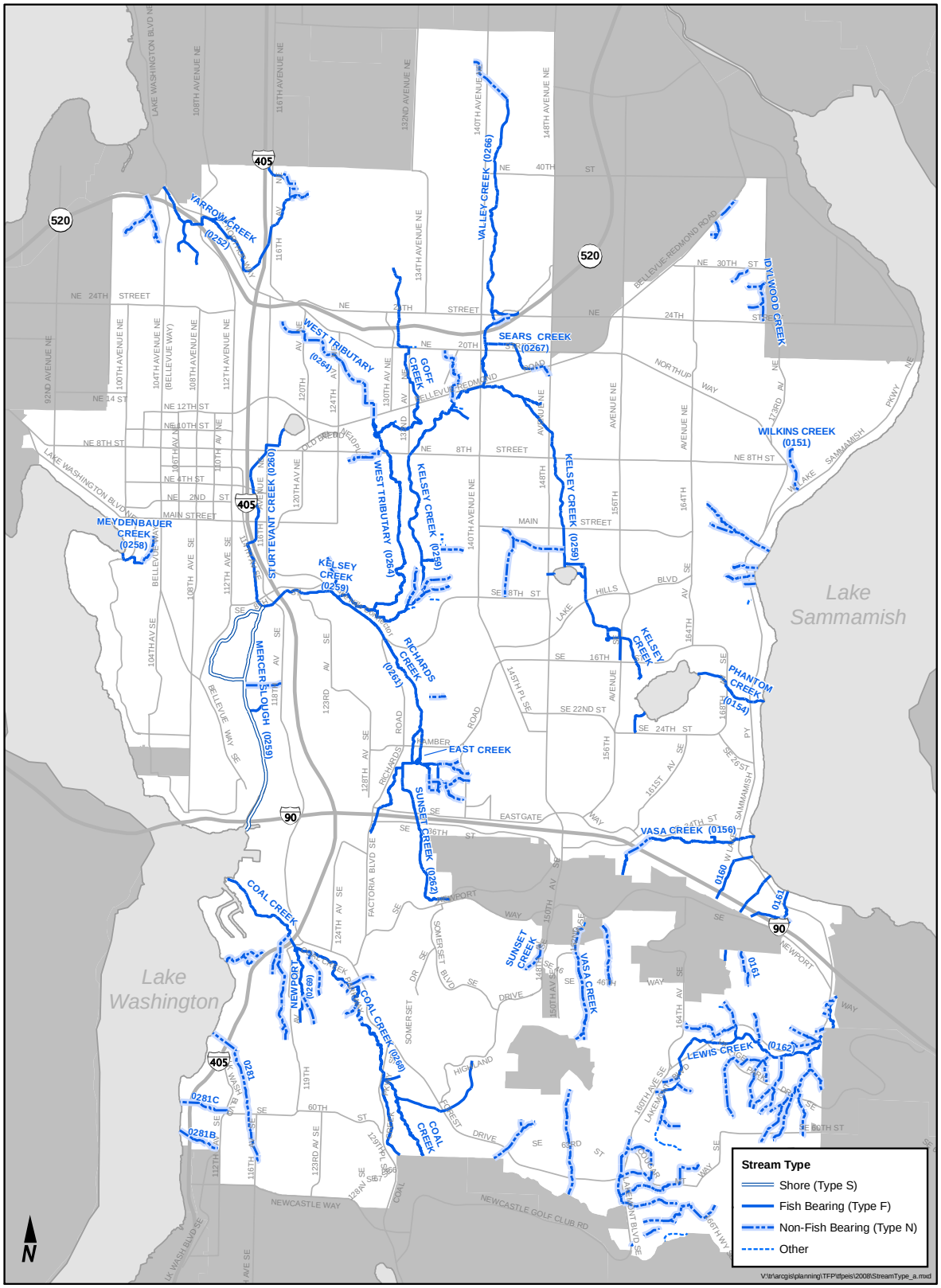



Figure 7-1. Bellevue Streams

## Table 7-5. Fish Species and Use by Stream

| Stream Name (WRIA Number) | Fish Species | Fish Use |
|---|---|---|
| Richards Creek (08-0261) | Chinook salmon<br>Coho salmon<br>Sockeye salmon<br>Coast resident cutthroat | Rearing and migration<br>Spawning and rearing<br>Migration<br>Migration |
| Vasa Creek (08-0156) | Coho salmon<br>Kokanee<br>Sockeye salmon<br>Coast resident cutthroat | Rearing and migration<br>Migration<br>Migration<br>Migration |
| Sturtevant Creek (08-0260) | Coho salmon<br>Coho salmon<br>Sockeye salmon<br>Coast resident cutthroat | Migration |
| Lewis Creek (08-0162) | Coast resident cutthroat | Migration |
| Coal Creek (08-0268) | Chinook salmon<br>Coho salmon<br>Sockeye salmon<br>Steelhead trout<br>Coast resident cutthroat | Migration<br>Spawning and migration<br>Spawning and migration<br>Migration<br>Migration |
| Kelsey Creek (08-0259) | Chinook salmon<br>Coho salmon<br>Sockeye salmon<br>Coast resident cutthroat | Migration<br>Spawning<br>Spawning<br>Migration |
| Goff Creek (No WRIA # assigned) | Chinook salmon<br>Coho salmon<br>Sockeye salmon<br>Coast resident cutthroat | Migration<br>Migration<br>Spawning<br>Migration |
| Sunset Creek (08-0262) | Coho salmon | Rearing and migration |
| Mercer Slough (08-0259) | Chinook salmon<br>Coho salmon<br>Sockeye salmon<br>Coast resident cutthroat<br>Rainbow trout | Rearing and migration<br>Rearing and migration<br>Migration<br>Migration<br>Migration |
| Newport Creek (08-0269) | Coho salmon<br>Coast resident cutthroat | Rearing and migration<br>Migration |
| Yarrow Creek (08-0252) | Coho<br>Coast resident cutthroat | Rearing<br>Migration |
| Coal Creek Tributary (08-0268) | Coast resident cutthroat | Migration |
| Sunset Creek Tributary (08-262) | Coast resident cutthroat | Migration |

| Stream Name (WRIA Number) | Fish Species | Fish Use |
|---|---|---|
| East Creek (No WRIA # Assigned) | Coast resident cutthroat | Migration |
| Sears Creek (08-0267) | Coast resident cutthroat | Migration |

Watersheds with significant impervious surface areas typically show some impairment to fish habitat due to alterations in hydrology, sediment quality and dynamics, or pollutant loads, compared to undeveloped watersheds. An analysis incorporating the results of 225 studies, including several in the Pacific Northwest, on the effects of impervious surface on water quality found that, in general, watersheds with 1 to 10 percent impervious surface had high water quality; watersheds with 11 to 25 percent impervious surface had reduced water quality, and watersheds with greater than 25 percent impervious surface had poor water quality (Center for Watershed Protection 2003). The City has calculated that 38.6% of citywide surface area is impervious under existing conditions. Table 7-6 summarizes the percent of the total impervious surface area in each MMA. Although MMAs do not reflect hydrologic boundaries, the existing amount of impervious surface in each MMA and in the City as a whole indicates that fish habitat is currently impaired.

### Table 7-6. Percent Impervious Surface in MMAs

| MMA | Existing Impervious Surface (percent) |
|---|---|
| 1. North Bellevue | 46.5 |
| 2. Bridle Trails | 30.0 |
| 3. Downtown | 86.2 |
| 4. Wilburton | 59.0 |
| 5. Crossroads | 64.2 |
| 6. Northeast Bellevue | 40.9 |
| 7. South Bellevue | 36.5 |
| 8. Richards Valley | 30.9 |
| 9. East Bellevue | 37.5 |
| 10. Eastgate | 53.0 |
| 11. Newcastle | 31.6 |
| 12. Bel-Red Northup | 75.0 |
| 13. Factoria | 55.8 |
| 14. Newport Hills | 33.9 |

The City has conducted an inventory of culverts within the city limits and has evaluated each for its potential to act as a barrier to fish passage. This inventory is in the process of being updated.

BCC 20.25H.055C.3.e requires that any new culverts be designed according to guidelines contained in the Design of Culverts for Fish Passage Manual (WDFW 2003). Critical areas ordinance requirements for new or improved culverts are described in detail in Section 7.2.3.

### 7.1.5. Wildlife and Vegetation

Wildlife species expected to be present in the city include those typically associate 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*). As a result of large patches of undeveloped wildlife habitat in the city, primarily in the vicinity of Mercer Slough and the large wetland complex that extends from NE 8th Street to Larsen and Phantom Lakes, and the presence of large conifer and hardwood trees throughout many of the residential neighborhoods, species that are less common in urban environments may also occur. 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 the city include bald eagle (*Haliaeetus leucocephalus*) and peregrine falcon (*Falco peregrinus*) (WDFW 2008).

The City has identified 23 species as Species of Local Importance, and habitat for these species is regulated under BCC 20.25H. Species of local importance are listed in Table 7-7.

#### Table 7-7. 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.

Of the species in Table 7-6, only the bald eagle and peregrine falcon have been documented as occurring by the WDFW (WDFW 2008), although there is a high probability that most of the species do occur in areas of suitable habitat for them within the city. Potential habitat for species

of local importance will be identified during project-level analysis for each of the projects included in the TFP.

There are two bald eagle nesting territories in the city. One is located near TFP-159. And the other is not located near any of the proposed projects. A peregrine falcon aerie has been documented on a building in downtown Bellevue, in the vicinity of projects TFP-172, TFP-184, and TFP-110.

Many residential neighborhoods in the city, 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 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 in the city. Pileated woodpeckers occur in urban habitats, including Bellevue, utilizing remnant habitat patches and individual trees. Pileated woodpeckers nest and forage in large conifers, and remnant conifers within the city provide habitat for them. They also forage in smaller coniferous and deciduous trees, down logs, and stumps (Lewis and Azerrad 2003). Larger patches of suitable habitat for pileated woodpecker occur in city parks and green belts containing forested habitat and forested wetlands, however remaining trees in residential and commercial areas of Bellevue also provide habitat for this species.

The City also designated naturally occurring ponds that are less than 20 acres in size as a critical area, with a 35-foot buffer also designated (BCC 20.25H). No naturally occurring ponds that are less than 20 acres in size have been identified near the proposed projects; however project-level review may result in such ponds being identified in the future.

### 7.1.6. Shorelines

The Shoreline Overlay District includes lakes that are 20 acres in size or greater and streams with a mean annual water flow exceeding 20 cubic feet per second; 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; and marshes, bogs, swamps and river deltas associated with such streams and lakes. Where steep slopes are located adjacent to streams, the stream bank may be wider than a standard buffer width and based on the location of the top of the bank instead. BCC 20.50 defines this as:

- The point closest to the boundary of the active floodplain of a stream where a break in the slope of the land occur such that he grade beyond the break is  flatter than 3:1 at any point for a minimum distance o 50 feet measured perpendicularly from the break; and
- For a floodplain area not contained within a ravine, the edge of the active floodplain of a stream where the slope of the land beyond the edge is flatter than 3:1 at any point for a minimum distance of 50 feet measured perpendicularly from the edge.

Within the city, the following are specifically included in the district:

- Lake Washington (including Mercer Slough upstream to I-405). The 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. The 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. The 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; and
- Phantom Lake. The 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.

Portions of two proposed projects are located in shoreline areas, with portions of TFP-221 located in the shoreline buffer for Phantom Lake and portions of TFP-078 located within shoreline buffer for Lake Sammamish.

## 7.2. Impacts

This section presents potential impacts which may result if either alternative is implemented. New or expanded public rights-of-way are an allowable use within critical areas under BCC 20.25H.055.B; however they must also meet the specific performance standards described in BCC 20.25.H.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. A determination of technical feasibility must consider:

- The location of existing infrastructure;
- The function or objective of the proposed new or expanded facility or system;
- Demonstration that no alternative 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 the critical area;
- Whether the cost of avoiding disturbance is substantially disproportionate as compared to the environmental impact or proposed disturbance; and
- The ability of both permanent and temporary disturbance to be mitigated.

Specific mitigation for potential impacts to each critical area is discussed in Section 7.3.

## 7.2.1. Geology and Soils

Potential impacts on geology and soils that may result from implementation of proposed projects included in the No Action and Proposed Action alternatives are discussed in this section.

### No Action Alternative

Potential impacts resulting from implementation of proposed projects included under the No Action alternative will be the same as impacts associated with the Proposed Action alternative (see following section). As discussed under the Proposed Action alternative, construction activity in potentially unstable ground could destabilize hillsides, if mitigating measures, such as groundwater interception, engineered retaining systems, or bridges, are not employed. Specific projects located in the vicinity of slopes greater than 40% include portions of TFP-078 and TFP-163. Additional areas may be identified during project-level review.

### Proposed Action Alternative

While some individual projects could extensively disturb surface soils, most improvements would occur where soils are already highly disturbed by previous urbanization and paving. If not properly mitigated, clearing, excavation, grading and filling activities required for roadway construction could result in erosion and sedimentation 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 could damage both physical and biological functions of the water body.

Construction activity in potentially unstable ground could destabilize hillsides, 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 roadway widening projects and intersection improvements proposed. In most cases, the earthwork volumes are not anticipated to be significant.

Specific projects located in the vicinity of slopes greater than 40% include portions of TFP-078, TFP-163, and TFP-228. Additional areas may be identified during project-level review.

Landslide hazard areas and slopes of 40% or more are designated as critical areas under BCC 20.25H. On undeveloped sites, 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 the slope, where mass slope movement has occurred or could occur. As described in Section 7.2 above, 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. If no technically feasible alternative with less impact on a critical area or critical area buffer exists, then compliance with applicable measures contained in BCC 20.25.055.C.2.b. are required. For landslide hazard areas and steep slopes, applicable requirements include:

- Location and design shall result in the least impacts on the critical area or critical area buffer;

- Disturbance of the critical area and critical areas buffer, including disturbance of vegetation and soils, shall be minimized;
- All work shall be consistent with applicable City codes and standards;
- 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;
- Areas on 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 BCC 20.25H.210.

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. 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.

### 7.2.2. Wetlands

Potential impacts on wetlands that may result from implementation of proposed projects included in the No Action and Proposed Action alternatives are discussed in this section.

#### No Action Alternative

None of the proposed projects included in the No Action alternative would impact wetlands.

#### Proposed Action Alternative

Under the Proposed Action alternative, eleven proposed projects could potentially impact wetlands. These projects are TFP-158, TFP-168, TFP-171, TFP-173, TFP-197, TFP-208, TFP-210, TFP-221, TFP-231, TFP-234, and TFP-236. The actual extent of on-site wetlands, as well as wetland functions and values, would be assessed at the time of project-level environmental review for each of the proposed projects. Development in a wetland or buffer would result in the direct filling and subsequent loss of the resource. Development outside of the wetlands and buffers would likely result in some indirect impacts on the wetlands. Indirect impacts on wetlands could include sedimentation from stormwater runoff, increased nutrient loading from road and lawn runoff, changes in the amount or time 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.

As described in Section 7.2 above, 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. If no technically feasible alternative with less impact on a

critical area or critical area buffer exists, then compliance with applicable measures contained in BCC 20.25.055.C.2.b. are required. For wetlands, applicable requirements include:

- Location and design shall result in the least impacts on the critical area or critical area buffer;
- Disturbance of the critical area and critical areas buffer, including disturbance of vegetation and soils, shall be minimized;
- 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;
- Any crossing over of a wetland or a stream shall be designed to minimize critical area and critical area buffer coverage and critical areas and critical area buffer disturbance, for example by using a 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 buffer than multiple intrusions into the critical area or critical area buffer;
- All work shall be consistent with applicable City codes and standards;
- The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume of flood storage capacity, or hydroperiod;
- 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;
- Areas on 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 BCC 20.25H.210.

### 7.2.3. Aquatic Resources

Potential impacts on aquatic resources that may result from implementation of proposed projects included in the No Action and Proposed Action alternatives are discussed in this section.

#### No Action Alternative

Potential impacts resulting from implementation of proposed projects included under the No Action alternative will be the same as impacts associated with the Proposed Action alternative (see following section). Potential exceptions are TFP-078 and TFP-079, which are funded for a lesser scope of implementation under the No Action alternative than under the Proposed Action alternative. Specific projects which may impact aquatic resources are TFP-078, TFP-079, TFP-091, TFP-106, TFP-156, TFP-163, and TFP-175. Additional areas may be identified during project-level review. Most of the proposed projects would result in an increase in impervious surface, specifically those that would provide additional lanes for traffic on existing roads, new

road segments, and the construction of bicycle lanes and sidewalks. The potential for increased pollution from stormwater runoff is greater for those projects that would provide for additional motorized capacity (i.e. an increase in pollution generating surfaces). As there are fewer projects included in the No Action alternative, a lower level of impact related to increased impervious surface would result, as compared to the Proposed Action alternative.

## Proposed Action Alternative

A number of streams could potentially be impacted by various projects included as part of the Proposed Action alternative. Table 7-8 lists these projects and the impacted streams.

### Table 7-8. Streams Potentially Impacted by the Proposed Action Alternative

| MMA | TFP Project Number(s) | Stream Name | WRIA Number |
|---|---|---|---|
| 1 North Bellevue | 079, 173 | Yarrow Creek | 08-0252 |
| 2 Bridle Trails | 171 | Valley Creek | 08-0266 |
| 4 Wilburton | 197, 211, 234 | Sturdevant Creek | 08-0260 |
| 8 Richards Valley | 231 | Kelsey Creek | 08-0259 |
| 9 East Bellevue | 078, 175 | Vasa Creek | 08-0156 |
| | | Phantom Creek | 08-0154 |
| | | South Sammamish Northern Stream | 08-0160 |
| | | South Sammamish Middle Stream | None Assigned |
| | | South Sammamish Southern Stream | 08-0161 |
| | 078 | Wilkins Creek | 08-0151 |
| | | Unnamed tributaries to Lake Sammamish | None Assigned |
| 11 Newcastle | 192, 205 | Lewis Creek | 08-0162 |
| | 163,192,194, 228 | Vasa Creek headwaters | 08-0156 |
| 12 Bel-Red | 215 | Goff Creek | None Assigned |
| | | Kelsey Creek | 08-0259 |
| | 091, 106, 208, 210, 213, 214, 215, 218 | West Tributary, Kelsey Creek | 08-0264 |
| 14 Newport Hills | 156, 229 | Lakehurst, Northern Stream | 08-0281 |

The proposed projects would result in a greater impervious surface area than under the existing condition. Because impervious surfaces can result in increased stormwater runoff, 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, compared to undeveloped watersheds. Potential changes in hydrology include increases in run-off volume, peak discharge rate, bankfull flow, and baseflow. These can in turn cause changes in bank erosion or bank stability, embeddedness, and the amount and distribution of large woody debris in the stream. The threshold level at which impervious surfaces contribute to an impaired fish habitat condition varies depending on the specific conditions in a given watershed. 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.

Most of the proposed projects would result in an increase in impervious surface, specifically those that would provide additional lanes for traffic on existing roads, new road segments, and the construction of bicycle lanes and sidewalks. The potential for increased pollution from stormwater runoff is greater for those projects that would provide for additional motorized capacity (i.e. an increase in pollution generating surfaces).

Although bicycle lanes and sidewalks would increase impervious surface and so may increase the amount of stormwater runoff, these surfaces do not generate the pollutant loads thatroadways do, and so contribute comparably less to pollutants entering the landscape. Many of the proposed TFP 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 off-set (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, consistent with its permit obligations under the National Pollutant Discharge Elimination System. In addition, BCC 24.06.130 requires that all new facilities and expansion of existing facilities of 5,000 square feet or more incorporate design features to limit the amount of runoff and minimize pollutants in the runoff. Project-level analysis would identify potential impacts from the generation of additional stormwater runoff and would identify appropriate avoidance or minimization measures, in consultation with regulatory agencies.

Prior to implementation of each individual TFP project, project-level environmental analysis will be required, which will identify streams and fish species that would be directly impacted by the project; and quantify the potential direct and indirect impacts to the species and their habitat, as well as their contribution to cumulative impacts. Specific required and recommended mitigation measures will also be identified in the project-level environmental analysis.

Proposed projects that would potentially have direct impacts on streams or stream buffers could have direct impacts on salmonids species and other fish species. Direct impacts may result from changes in water temperature due to removal vegetation, changes in water quality due to stormwater runoff, and changes in sedimentation from construction and maintenance activities. Proposed projects that include new lighting may result in impacts to 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. Project-level analysis would identify potential impacts and appropriate avoidance or minimization measures would be determined at that time, in consultation with regulatory agencies. Projects impacting 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). These performance standards include requirements that lights be directed away from streams and planting of dense vegetation along the outer edge of stream buffers to limit pet or human use.

Projects that include bridges or new culverts may benefit fish species by removing barriers to passage. This 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 extended.

BCC 20.25H.055C.3.e requires that any new culverts be designed according to guidelines contained in the Design of Culverts for Fish Passage Manual (WDFW 2003). Depending on the individual transportation project, existing culverts may be extended in length, rather than replaced; however, they are 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.
- 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 rights of way that have demonstrated no technically feasible alternative with less critical area impact are prohibited from disturbing habitat used for salmonids 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 aerial coverage and disturbance, and be the minimum width necessary to accommodate the function/objective (BCC 20.25H.055.C.2b). Minimizing aerial coverage and disturbance can reduce impacts to riparian forest habitat and large woody debris recruitment into streams from such habitats.

Crossings are also required to have no significant adverse impact on overall peak flows, duration or volume or flood storage capacity, or hydroperiod (BCC 20.25H.055.C.2b). Such hydraulic requirements can be met by bridging stream channels.

Typically relocation of a stream channel or closing a stream channel in a culvert or pipe are not allowed under the City’s Critical Area Ordinance. However, as an allowed use under BCC 20.25H.055, new or expanded public rights of way projects can be allowed to relocate an open

stream channel or close a channel in a culvert or pipe (20.25H.080B), through a Critical Areas Report process. The Critical Areas Report process requires that projects demonstrate that the proposal leads to equivalent or better protection of critical area functions (e.g. stream functions) than would occur under the standard application of the code (i.e. no relocation or piping allowed).

Any stream channel modification, including instream 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 describe impacts to critical areas, including cumulative impacts, and describe both required and recommended mitigation (BCC20.25H.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 7.2, 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. If no technically feasible alternative with less impact on a critical area or critical area buffer exists, then compliance with applicable measures contained in BCC 20.25.055.C.2.b. are required. For aquatic resources, applicable requirements include:

- Location and design shall result in the least impacts on the critical area or critical area buffer;
- Disturbance of the critical area and critical areas buffer, including disturbance of vegetation and soils, shall be minimized;
- 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;
- Any crossing over of a wetland or a stream shall be designed to minimize critical area and critical area buffer coverage and critical areas and critical area buffer disturbance, for example by using a 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 buffer than multiple intrusions into the critical area or critical area buffer;
- All work shall be consistent with applicable City codes and standards;
- The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume of flood storage capacity, or hydroperiod;
- 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;
- Areas on 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 BCC 20.25H.210.

Potential impacts to individual wetlands and changes in the functions and values of these wetlands from the proposed projects will be evaluated at the individual project level

### 7.2.4. Wildlife and Vegetation

Potential impacts on wildlife and vegetation that may result from implementation of proposed projects included in the No Action and Proposed Action alternatives are discussed in this section.

#### No Action Alternative

Potential impacts resulting from implementation of proposed projects included under the No Action alternative will be the same as impacts associated with the Proposed Action alternative (see following section). TFP-159 is also included in the No Action alternative, implementation of which could potentially impact bald eagles. Additional areas may be identified during project-level review.

#### Proposed Action Alternative

Vegetation in the city that may be impacted by the proposed projects includes wetland vegetation, vegetated stream and wetland buffers, and trees and shrubs located adjacent to roads. Wetland, streams, and buffers for each are discussed above. Vegetation removal would result in the loss of habitat for wildlife species in the city. Where vegetated medians and planting strips between new sidewalks and existing roads are provided, some replacement habitat would be created. 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 large size are important habitat for a variety of species, including bald eagles that often use them as nest trees.

Direct impacts on bald eagles could occur in the vicinity of TFP-159 if large trees in the vicinity of a nest tree are removed. Prior to construction, project-level analysis would be conducted to determine the proximity of any vegetation alteration and its potential impacts on bald eagles.

Impacts on peregrine falcons are not expected as the existing aerie is located on a building ledge in Downtown Bellevue and so it is assumed that the peregrine falcons associated with it are accustomed to noise and activity associated with construction activities.

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 impact other cavity nesting birds as well, reducing the amount of habitat available for them.

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 impacted by the proposed projects, and appropriate avoidance or minimization measures would be determined at that time.

As described in Section 7.2 above, 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. If no technically feasible alternative with less impact on a critical area or critical area buffer exists, then compliance with applicable measures contained in BCC 20.25.055.C.2.b. are required. For species of local importance, applicable requirements include:

- Location and design shall result in the least impacts on the critical area or critical area buffer;
- Disturbance of the critical area and critical areas buffer, including disturbance of vegetation and soils, shall be minimized;
- 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;
- Any crossing over of a wetland or a stream shall be designed to minimize critical area and critical area buffer coverage and critical areas and critical area buffer disturbance, for example by using a 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 buffer than multiple intrusions into the critical area or critical area buffer;
- All work shall be consistent with applicable City codes and standards;
- The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume of flood storage capacity, or hydroperiod;
- 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;
- Areas on 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 BCC 20.25H.210.

### 7.2.5. Shorelines

Potential impacts on shorelines that may result from implementation of proposed projects included in the No Action and Proposed Action alternatives are discussed in this section.

#### No Action Alternative

Project-level analysis will be conducted on individual projects to determine impacts on shorelines and whether a conditional use permit would be required for the proposed activity. Project TFP-078 is being designed to allow for improvements to fish passage, water quality, and storm drainage and so may improve shoreline conditions.

## Proposed Action Alternative

Project-level analysis will be conducted on individual projects to determine impacts on shorelines and whether a conditional use permit would be required for the proposed activity. Project TFP-221 is the replacement of traffic signals and so is unlikely to result in shoreline impacts. Project TFP-078 is being designed to allow for improvements to fish passage, water quality, and storm drainage and so may improve shoreline conditions. Cumulatively, the increase in impervious surface from the proposed projects may negatively impact shoreline functions by increasing run-off and associated pollutant loads to receiving water bodies. Stormwater treatment will be evaluated at the project level.

As described in Section 7.2 above, 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. If no technically feasible alternative with less impact on a critical area or critical area buffer exists, then compliance with applicable measures contained in BCC 20.25.055.C.2.b. are required. For shorelines, applicable requirements include:

- Location and design shall result in the least impacts on the critical area or critical area buffer;
- Disturbance of the critical area and critical areas buffer, including disturbance of vegetation and soils, shall be minimized;
- 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;
- Any crossing over of a wetland or a stream shall be designed to minimize critical area and critical area buffer coverage and critical areas and critical area buffer disturbance, for example by using a 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 buffer than multiple intrusions into the critical area or critical area buffer;
- All work shall be consistent with applicable City codes and standards;
- The facility or system shall not have a significant adverse impact on overall aquatic area flow peaks, duration or volume of flood storage capacity, or hydroperiod;
- 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;
- Areas on 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 BCC 20.25H.210.

# 7.3. Mitigation

Where unavoidable impacts to critical areas are identified in association with a project, mitigation is required per BCC 20.25H.210 through 20.25H.225. Priorities for mitigation are to avoid the impact if possible, by not constructing the project; minimizing impacts by limiting the degree or magnitude of the project or using other measure to reduce the impact; and finally performing 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 operation during the life of the action; or
- Compensating for the impact by replacing, enhancing, or providing substitute resources or environments.

Lastly, monitoring and taking remedial action as needed may be employed.

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 dev ices.

Temporary impacts must also be mitigated for but a mitigation and restoration plan may not be required.

If an adverse impact is anticipated due to one of the TFP projects found in the Proposed Action alternative, one or more of the following mitigation measures 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 20.25H125.. 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 include:

- 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 buffer with dense vegetation to limit pet or human use; and

- applying pesticides, insecticides, and fertilizers within 150 feet of the edge of the buffer per the City of Bellevue Environmental Best Management Practices.

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; and
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.

Mitigation ratios for wetlands directly impacted are shown in Table 7-9. These ratios may be increased if where the proposed mitigation would result in a lower category of wetland or reduced functions compared to the wetland being impacted.

### Table 7-9. Wetland Mitigation Ratios

| Wetland Category | Acreage impacted | Replacement Acreage |
|---|---|---|
| Category I | 1 | 6 |
| Category II | 1 | 3 |
| Category III | 1 | 2 |
| Category IV | 1 | 1.5 |

Source: Bellevue City Code 20.25H.105.C.1.

## 7.3.3. Aquatic Resources

If a project results in impacts on 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:

- Lights shall be directed away from the stream;
- Toxic runoff from new impervious area shall be routed away from the stream;
- Treated water may be allowed to enter the stream critical area buffer;
- The outer edge of the stream critical area buffer shall be planted with dense vegetation to limit pet or human use; and

- Use of pesticides, insecticides, and fertilizers within 150 feet of the edge of the stream critical area buffer shall be in accordance with the City of Bellevue's "Environmental Best Management Practices" now 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 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

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 impacted by the proposed projects, and 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 the 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 have 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 BCC20.25H.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 transportation facilities plan projects. Habitat assessments prepared for individual projects will use the most current list available in BCC 20.25H for analysis purposes.

### 7.3.5. Shorelines

No impacts on shorelines are anticipated at this time; therefore, no mitigation is suggested. However, if during project specific review, impacts on shorelines are identified, mitigation measures would be put in place. Project TFP-078 is being designed to allow for improvements to fish passage, water quality, and storm drainage and so may improve shoreline conditions. If other projects result in similar impacts, similar design features could be considered.

## 7.4. Significant Unavoidable Adverse Impacts

Significant adverse impacts will be avoided or minimized through implementation of mitigation measures as described in section 7.3. Although proposed projects will 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 vegetative cover available. Although stormwater would be treated to the extent possible, and current BMPs would be employed to reduce volumes of stormwater runoff from reaching streams or rivers, 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. If no feasible mitigation measures are identified during project-level environmental analysis to mitigate these effects, a significant unavoidable adverse impact would occur.

# Chapter 8. References

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# Chapter 9. Distribution List

A notice of availability, a compact disk, or a copy of the Final 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, Division Administration

U.S. Department of Housing and Urban Development, Region 10

## Tribal, State, and Regional Agencies

Muckleshoot Indian Tribe/Fisheries Department

The Tulalip Tribes

Washington State Department of Community, Trade and Economic Development

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

Puget Sound Energy

## County Agencies

King County Department of Development and Environmental Services

Office of the King County Executive

King County Department of Transportation

King County 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

Beaux Arts Village

Seattle Chamber of Commerce

## 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

## Media

Daily Journal of Commerce

Seattle Times

Seattle Post Intelligencer

# Appendix A

Completed or Deleted Projects from the Previous 2006–2017 Transportation Facilities Plan

Tables A-1 and A-2 summarize the projects that were included in the previous 2006–2017 Transportation Facilities Plan (TFP) but are not included in the proposed 2009–2020 TFP. Table E-1 lists projects that have been completed since the adoption of the 2006–2017 TFP. Table A-2 lists projects that were not completed but are not proposed for inclusion in the Proposed 2009–2020 TFP update.

## Table A-1. Completed 2006–2017 TFP Projects

| TFP # | CIP # | Project Name/Location |
|---|---|---|
| TFP-002 | PW-R-57 | Lakemont Boulevard SE/171st Avenue SE to Newport Way |
| TFP-011 | PW-R-105 | 150th Avenue SE/SE 36th Street to Newport Way |
| TFP-024 | PW-I-70 | Bel-Red Road at NE 30th Street |
| TFP-030 | PW-I-88 | 112th Avenue SE at SE 6th Street |
| TFP-043 | PW-R-118 | SE 16th Street/145th Place SE to 148th Avenue SE |
| TFP-075 | PW-W/B-64 | 119th Avenue SE/SE 60th Street to Lake Heights Street |
| TFP-081 | PW-R-128 | Forest Drive/Coal Creek Parkway to SE 63rd Street |
| TFP-083 | PW-W/B-69 | NE 24th Street/Northup Way to 130th Avenue NE |
| TFP-153 | PW-M-14 | NE 10th Street/176th Avenue NE/NE 13th Street/183rd Avenue - Northup Way to NE 15th Place |
| TFP-155 | PW-I-89 | Lakemont Boulevard at Village Park Drive |
| TFP-186 | PW-W/B-70 | 140th Avenue NE/NE 40th Street to the north city limits |
| TFP-187 | PW-M-13 | 148th Avenue SE/150th Avenue SE – SE 28th Street to SE 36th Street |
| TFP-188 | PW-I-90 | 148th Avenue SE at Lake Hills Boulevard |
| TFP-189 | PW-R-149 | NE 10th Street Extension |
| TFP-206 | PW-M-16 | 97th Avenue SE/Bellevue Way to I-90 |

## Table A-2. Deleted 2006–2017 TFP Projects

| TFP # | CIP # | Project Name/Location |
|---|---|---|
| TFP-039 | PW-R-122 | 130th Avenue NE/Bel-Red Road to NE 20th Street |
| TFP-076 | -- | Eastgate Way/Richards Road to 148th Avenue SE |
| TFP-089 | PW-I-91 | 124th Avenue NE at Bel-Red Road |
| TFP-092 | -- | 156th Avenue NE at Northup Way |
| TFP-095 | PW-I-83 | 156th Avenue NE at Bel-Red Road<br>(Microsoft to construct based on developer agreement with the City of Redmond) |
| TFP-176 | -- | 148th Avenue NE at SR 520 |
| TFP-199 | -- | Lake Hills Boulevard/143rd Avenue SE to 148th Avenue SE |
| TFP-200 | -- | 124th Avenue SE north of SE 41st Place to connect with I-90 Trail |
| TFP-201 | -- | SE 36th Street/Factoria Boulevard/I-90 Trail intersection |
| TFP-202 | -- | SE 36th Street east of Factoria Boulevard to 142nd Avenue SE |
| TFP-203 | -- | 156th Avenue NE/SE - NE 8th Street to Lake Hills Boulevard |
| TFP-204 | -- | Sunset Elementary School to 132nd Avenue SE |

# Appendix B

Scoping Notice, Comments, and Responses

# The Weekly Permit Bulletin

**September 18, 2008**

Providing official notice of land use applications, meetings, decisions, recommendations, hearings, and appeals of land use decisions within the City of Bellevue

## GENERAL INFORMATION REGARDING USE OF OPTIONAL DNS PROCESS

When the **SEPA** field indicates a **Determination of Nonsignificance (DNS)** is expected, the optional DNS process is being used and a DNS is likely. This may be the only opportunity to comment on the environmental impacts of the proposal. The proposal may include mitigation measures under applicable codes and the project review process may incorporate or require mitigation measures regardless of whether an Environmental Impact Statement (EIS) is prepared. A copy of the subsequent Threshold Determination for the proposal may be obtained upon request. The Threshold Determination will also be noticed in a subsequent issue of this Weekly Permit Bulletin.

## Applications

### NOTICE OF APPLICATION
**Woxland Residence Deck Addition**
**Location:** 4505 172nd Avenue SE
**Neighborhood:** Eastgate/Cougar Mountain
**File Number:** 08-132157-LO
**Description:** Application for Critical Areas Land Use Permit approval to demolish an existing wood staircase and construct a new 228 sq. ft. wood deck and stairs, and a 16 sq. ft. concrete landing pad within a Critical Areas/Steep Slope Buffer. The proposed project will include mitigation in the form of 600 sq. ft. of new native landscape plantings.
**Approvals Required:** Critical Areas Land Use Permit and ancillary permits and approvals.
**SEPA:** Exempt
**Minimum Comment Period Ends: October 2, 2008, 5 p.m.** Refer to page one for information on how to comment on a project.
**Date of Application:** August 29, 2008
**Completeness Date:** September 11, 2008
**Applicant Contact:** Frank Neel, The Showplace, Inc, 425-885-1595 ext. 41
**Planner Email:** spnichols@bellevuewa.gov
**Planner:** Sally Nichols, 425-452-2727

### NOTICE OF APPLICATION
**Kurth Shoreline Substantial Development Permit**
**Location:** 408 W Lake Sammamish Pkwy SE
**Neighborhood:** Sammamish/East Lake Hills
**File Number:** 08-132518-WG
**Description:** Application for a Shoreline Substantial Development Permit for a floating dock and boatlift on Lake Sammamish. The dock is approximately 528 square feet in area.
**Approvals Required:** Shoreline Substantial Development Permit, Concurrency Determination and ancillary permits and approvals.
**SEPA:** Determination of Nonsignificance (DNS) is expected. Refer to page one General Information Regarding Use of Optional DNS Process.
**Minimum Comment Period Ends: October 20, 2008, 5 p.m.** Refer to page one for information on how to comment on a project.
**Date of Application:** September 5, 2008
**Completeness Date:** September 11, 2008
**Applicant:** Johnathan Kurth, 206-954-5200
**Planner Email:** lhyatt@bellevuewa.gov
**Planner:** Leah Hyatt, 425-452-6834

### RENOTICE OF APPLICATION
**8th St. Properties Commercial Office Building**
**Location:** 10833 NE 8th St.
**Neighborhood:** West Bellevue
**File Number:** 07-144354-LD
**Reason for renotice:** To notice new location of building on proposed site.
**Description:** Application for Design Review approval to construct a 32-story office tower on a 2.87 acre site in the Downtown-Office District 1. Proposal includes a landscaped plaza, single level of service retail and 5 levels of underground parking. Revisions include moving the office tower building approximately 32 feet to the west and approximately 10 feet to the north, reducing the width of the tower podium building along the eastern façade by approximately 20 feet, and moving the mid-block vehicular connection to the north so that it is entirely on the proposal site.
**Approvals Required:** Design Review approval, Concurrency Determination, and ancillary permits and approvals.
**SEPA:** Determination of Nonsignificance (DNS) is expected. Refer to page one General Information Regarding Use of Optional DNS Process.
**Minimum Comment Period Ends: October 2, 2008, 5 p.m.** Refer to page one for information on how to comment on a project.
**Date of Application:** December 27, 2007
**Completeness Date:** January 17, 2008

**Applicant Contact:** Todd Stine, Ruffcorn Mott Hinthorne Stine, 206-405-4443
**Planner Email:** spnichols@bellevuewa.gov
**Planner:** Sally Nichols, 425-452-2727

**NOTICE OF APPLICATION**
**East Creek Rehabilitation**
**Location:** 13541 SE 27th Place
**Neighborhood:** Woodridge
**File Number:** 08-129544-LO
**Description:** Application for a Critical Areas Land Use Permit with a SEPA Threshold Determination for the rehabilitation of a portion of East Creek, a Type "F" stream, by removing 120 feet of culvert, regarding the streambed for positive slope and revegetation of stream buffer. The stream was placed in a culvert without permits, prompting enforcement action # 07-131972-EA
**Approvals Required:** Critical Areas Land Use Permit, Clear and Grade and ancillary permits and approvals.
**SEPA:** Determination of Nonsignificance (DNS) is expected. Refer to page one General Information Regarding Use of Optional DNS Process.
**Minimum Comment Period Ends: October 2, 2008, 5 p.m.** Refer to page one for information on how to comment on a project.
**Date of Application:** August 21, 2008
**Completeness Date:** September 9, 2008
**Applicant:** Paul Vedmed, A & M Auto/Truck Repair/M
**Applicant Contact:** Jim Shannon, David Evans & Assoc Inc, 425-586-9798
**Planner Email:** kleclair@bellevuewa.gov
**Planner:** Kevin LeClair, 425-452-2928

**NOTICE OF APPLICATION**
**108th Preliminary Short Plat**
**Location:** 1215 108th Ave SE
**Neighborhood:** West Bellevue
**File Number:** 08-114727-LN
**Description:** Application for Preliminary Short Plat approval to subdivide one single family lot (0.49 acres) into two single family lots. The existing house will remain.
**Approvals Required:** Preliminary Short Plat approval, Concurrency Determination, and ancillary permits and approvals.
**SEPA:** Exempt
**Minimum Comment Period Ends: October 2, 2008, 5 p.m.** Refer to page one for information on how to comment on a project.
**Date of Application:** April 24, 2008
**Completeness Date:** July 31, 2008
**Applicant Contact:** Richard Chan, 206-949-5595
**Planner Email:** csaari@bellevuewa.gov
**Planner:** Carol Saari, 425-452-2731

**NOTICE OF APPLICATION**
**Vuemont South Open Space- Tract L Hazard Tree Removal**
**Location:** Tract L of Vuemont South
**Neighborhood:** Eastgate/Cougar Mountain
**File Number:** 08-131890-GH
**Description:** Application for a clearing and grading permit in a wetland critical area for the removal of 11 hazardous cottonwood trees and restoration of the area with a mixture of native plan species.
**Approvals Required:** Clearing and Grading Permit, Transportation –Right of Way Use Permit and ancillary permits and approvals.
**SEPA:** Determination of Nonsignificance (DNS) is expected. Refer to page two General Information Regarding Use of Optional DNS Process.
**Minimum Comment Period Ends: October 2, 2008, 5 p.m.** Refer to page one for information on how to comment on a project.
**Date of Application:** August 25, 2008
**Completeness Date:** September 9, 2008
**Applicant Contact:** Chris Vandall, City of Bellevue Parks and Community Development, 425-452-7679
**Planner Email:** kleclair@bellevuewa.gov
**Planner:** Kevin LeClair, 425-452-2928

**Decisions**

**NOTICE OF DECISION**
**Godsey Residence Deck and Dining Room Addition**
**Location:** 643 154th Ave SE
**Neighborhood:** West Lake Hills
**File Number:** 08-123661-LO
**Description:** Critical Areas Land Use approval to expand into the critical area structure setback of a Category I wetland.
**Decision:** Approval with Conditions.
**SEPA:** Exempt
**Concurrency Determination:** N/A
**Appeal Deadline Ends: October 2, 2008 5 p.m.**
**Date of Application:** June 27, 2008
**Completeness Date:** July 24, 2008
**Notice of Application Date:** August 7, 2008
**Applicant Contact:** Bridget Smith, Bridget Smith Consulting, 206-781-8404
**Planner Email:** corr@bellevuewa.gov
**Planner:** Carol Orr, 425-452-2896

**NOTICE OF DECISION**
**Griffith Residence**
**Location:** 15340 SE 53rd St.
**Neighborhood:** Eastgate/Cougar Mountain
**File Number:** 08-125437-LO
**Description:** Critical Areas Land Use permit approval to modify a critical area buffer to construct a 650 sq. ft. pervious deck and 400 sq. ft. of landscaping within the top of slope critical area buffer. No construction or

plantings are proposed within the steep slope critical area.
**Decision:** Approval with conditions
**SEPA:** Determination of Nonsignificance
**Appeal Deadline Ends: October 2, 2008 5 p.m.**
**Date of Application:** July 1, 2008
**Completeness Date:** July 29, 2008
**Notice of Application Date:** August 7, 2008
**Applicant Contact:** Dan Yarger, Daniel R Yarger Design & Construction, 206-325-4425
**Planner Email:** mcross@bellevuewa.gov
**Planner:** Mark Cross, 425-452-6938

**NOTICE OF DECISION**
**Crossroads Bible Church Parking Lot Expansion and Reconfiguration**
**Location:** 15815 SE 37th Street
**Neighborhood:** Eastgate/Cougar Mountain
**File Number:** 08-113042-LO
**Description:** Application for a Critical Areas Land Use Permit to modify the 75ft toe-of-slope structure setback to allow the construction of a retaining wall structure that enables the creation of 99 new parking stalls serving the existing church use. The total amount of on-site parking would be increased to 701 stalls resulting from the reconfiguration of the existing parking lot and the new expansion proposed as a result of the toe-of-slope structure setback modification request.
**Decision:** Approval with Conditions
**SEPA:** Determination of Non-Significance
**Concurrency Determination:** N/A
**Appeal Deadline Ends: October 2, 2008, 5 p.m.**
**Date of Application:** March 21, 2008
**Completeness Date:** August 14, 2008
**Notice of Application Date:** August 21, 2008
**Applicant Contact:** Greg Ransom, Taylor Gregory Butterfield Architects, 425-778-1530
**Planner Email:** rpittman@bellevuewa.gov
**Planner:** Reilly Pittman, 425-452-4350

**NOTICE OF DETERMINATION OF SIGNIFICANCE, NOTICE OF ENVIRONMENTAL IMPACT STATEMENT SCOPING PERIOD, AND NOTICE OF PUBLIC MEETING**
**2009-2020 Transportation Facility Plan**
**Location**: City Wide
**File Number**: 08-132179-LE
**Description:** The City of Bellevue Transportation Department is proposing to update the existing 2006-2017 Transportation Facility Plan (TFP). The TFP entails a program of transportation improvements to be implemented over the next 12 years and provides the basis for the City's Transportation Impact Fee Program. The TFP serves as the City's intermediate-range transportation facility planning document.
**EIS Required**: The City of Bellevue (Lead Agency) has determined that this proposal is likely to have probable significant environmental impacts and an EIS is required.
**Approvals required**: City Council Adoption
**SEPA EIS Scoping and Comment Deadline Ends:** October 9, 2008, 5 p.m. Comments are invited on the scope of the referenced Environmental Impact Statement pursuant to WAC 197-11-408. Comments on the scope of the impacts to be analyzed may be submitted in writing through October 9, 2008, and should be addressed to the Lead Agency contact below. Agencies, affected tribes, and members of the public are invited to comment. Comments on the scoping of the EIS may address reasonable alternatives; probable significant adverse impacts; mitigation measures and impacts that are not significant and may be eliminated from detailed study. Areas of analysis preliminarily identified by the Lead Agency include transportation, air quality, land use, noise, aesthetic and elements of the natural environment.
**Public Meeting/Open House**: No scoping meeting scheduled.
**Applicant Contact**: Michael Ingram, City of Bellevue Transportation Dept., 425-452-4166
**Applicant Contact Email**: mingram@bellevuewa.gov
**Lead Agency Contact**: Matthews Jackson, 425-452-2729
**Lead Agency Contact Email**: mjackson@bellevuewa.gov

# SUMMARY OF ISSUES RAISED DURING SCOPING

## 2009 – 2020 Transportation Facilities Plan

Scoping for this Environmental Impact Statement was initiated by public notice provided on September 18, 2008. One comment was received on the scope of the EIS from Ms Karen Walter of the Muckleshoot Indian Tribe Fisheries Division. No comments were received on the scope of the EIS from other individuals or agencies.

Ms. Walter's comments were received by email, as reproduced below; the City's response follows.

> **From:** Karen Walter [mailto:Karen.Walter@muckleshoot.nsn.us]
> **Sent:** Thursday, October 09, 2008 4:48 PM
> **To:** Jackson, Matthews
> **Subject:** City of Bellevue's 2009–2020 Transportation Facility Plan, Notice of Determination of Significance, Notice of Environmental Impact Statement Scoping Period and Notice of Public Meeting
>
> Matt,
>
> The Muckleshoot Indian Tribe Fisheries Division has reviewed the Notice of Determination of Significance, Notice of Environmental Impact Statement Scoping Period, and Notice of Public Meeting for the 2009–2020 Transportation Facility Plan. The Draft Environmental Impact Statement for this project should analyze the following topics:
>
> - Culverts that block salmonid passage (both adults and juveniles) and/or the transportation of wood, water, and sediment necessary to create fish habitat and the impact these structures have on salmonid distribution and productivity. As part of this analysis, the DEIS should discuss the mitigation measures that will be implemented to address these impacts.
> - The impacts that may occur to salmonids as a result of stormwater discharges from roads within the planning area. These impacts may include displacement, loss of feeding opportunities, increase stress and disease, increase predation, etc.
> - The impacts that may occur to riparian areas and their ability to create and sustain salmonid habitat as a result of road projects covered by the plan.
>
> We appreciate the opportunity to comment on this proposal. Please call me at 253-876-3116 should you have any questions.
>
> Karen Walter
> Watersheds and Land Use Team Leader
> Muckleshoot Indian Tribe Fisheries Division
> 39015 172nd Ave SE
> Auburn, WA 98092

Following is the City's response:

The Transportation Facilities Plan is a 12-year plan for transportation infrastructure. It provides a financially-constrained list of priority projects and provides the basis for calculation of transportation impact fees that apply to certain development projects. The environmental review for this plan is a "non-project" (or programmatic) under SEPA and involves review of the impacts of a "no-action" package of previously-approved transportation projects and a package of additional proposed transportation projects. With either alternative, additional, project-specific environmental analysis of particular projects will be evaluated as each moves into the implementation phase.

Following are responses to the particular points raised:

1. "Culverts that block salmonid passage (both adults and juveniles) and/or the transportation of wood, water, and sediment necessary to create fish habitat and the impact these structures have on salmonid distribution and productivity. As part of this analysis, the DEIS should discuss the mitigation measures that will be implemented to address these impacts."

   **Response:** City code requires that new culverts be designed according to the Washington State Department of Fish and Wildlife "Design of Road Culverts for Fish Passage" document. Culvert expansions are treated as new when the expansion is associated with a project increasing vehicular capacity and (i) there are fish present downstream; (ii) there is potential fish habitat upstream, and (iii) the benefits of so designing the culvert are substantial when compared to expanding the culvert based on its then-existing design (BCC 20.25H.055.C.3). Chapter 7, the analysis of natural environment impacts, identifies fish species present in Bellevue streams and TFP projects that cross or fall within the buffer areas of streams.

2. "The impacts that may occur to salmonids as a result of stormwater discharges from roads within the planning area. These impacts may include displacement, loss of feeding opportunities, increase stress and disease, increase predation, etc."

   **Response:** The City has a Stormwater Management Program (see www.bellevuewa.gov/pdf/Utilities/Bellevue_2008_NPDES_Stormwater_Management_Program_(SWMP).pdf), consistent with its permit obligations under the National Pollutant Discharge Elimination System. Projects in the Transportation Facilities Plan will introduce additional impervious surface. City code requires that new facilities and expansion of existing facilities of 5000 square feet or more incorporate design features to limit the amount of runoff and minimize pollutants in the runoff (BCC 24.06.130). Chapter 7, the analysis of natural environment impacts, includes discussion of runoff and impervious surfaces related to the TFP projects.

3. "The impacts that may occur to riparian areas and their ability to create and sustain salmonid habitat as a result of road projects covered by the plan."

   **Response:** The City's Critical Areas regulations designate buffer areas along riparian zones, specify performance standards and indicate the mitigation and restoration requirements associated with any impingement into the buffer zone (BCC 20.25H). Chapter 7, the analysis of natural environment impacts, identifies TFP projects that may cross streams or impinge on stream buffer zones and shoreline buffer zones.

# Appendix C

Comments and Responses on the Draft EIS

Comment letters were submitted upon review of the Draft EIS for the 2009-2020 TFP by the following three agencies:

1. Muckleshoot Indian Tribe, Fisheries Division, dated February 23, 2009
2. State of Washington Department of Community, Trade and Economic Development (CTED), dated February 2, 2009
3. City of Bellevue Transportation Department Title VI Coordination Team, dated February 23, 2009.

Table C-1 presents a summary of the comments submitted, and responses to those comments. The comment letters are presented in this appendix, following Table C-1.

## Table C-1. Responses to Comments on Draft EIS

| Comment Number | Response |
|---|---|
| Comment Letter No. 1. Muckleshoot Indian Tribe, Fisheries Division | |
| 1-1 | Section 7.2.3 has been revised to explicitly list lighting as a potential impact. A reference to BCC20.25H.080 was also added, which requires that new lighting to be directed away from streams. |
| 1-2 | Section 7.2.3 has been revised to explicitly list potential disturbance from humans and pets as a potential impact. A reference to BCC20.25H.080 was also added, which requires that dense vegetation be planted along the outer edge of stream critical area buffers to limit such disturbance. |
| 1-3 | Text has been added at the beginning of the chapter to clarify that cumulative impacts cannot be quantified at the programmatic level because the projects have not yet been designed; therefore detailed information on individual project footprints is not yet known. However, the project-level environmental review that will be conducted at project implementation does require that a project's contribution to cumulative impacts be evaluated. |
| 1-4 | Section 7.2.3 has been revised to explicitly list additional potential impact mechanisms. Project-level analysis will provide detailed analysis of impact mechanisms; direct, indirect, and cumulative impacts; and mitigation. |
| 1-5 | Additional impact mechanisms have been added to Section 7.2.3. Project level analysis will provide detailed analysis of impact mechanisms; direct, indirect, and cumulative impacts; and mitigation. |
| 1-6 | Project-level analysis will model stormwater impacts to individual streams and to the species that inhabit them. Detailed analysis of impacts to those species will be included in the project level analysis. |
| 1-7 | Information on the existing amount of impervious surface within the MMAs and the City has been added to Section 7.1.4. The net change in impervious surface from the proposed projects cannot be calculated at this time because not all projects are fully designed. Increase in impervious surface will be analyzed at the project level. |
| 1-8 | Information describing culvert design requirements per BCC 20.25H.055C.3 was moved from section 7.1.4 to Section 7.2.3 to clarify that any new or extended culverts would be designed to facilitate fish passage. The specific impacts or benefits of any new or extended culverts will be analyzed at the project level. |
| 1-9 | Information describing culvert design requirements per BCC 20.25H.055C.3 was moved from section 7.1.4 to Section 7.2.3 to make it clearer that any new or extended culverts would be designed to facilitate fish passage. The impacts or benefits of any new or extended culverts will be analyzed at the project level. |

| Comment Number | Response |
|---|---|
| 1-10 | Information describing culvert design requirements per BCC 20.25H.055C.3 was moved from section 7.1.4 to Section 7.2.3 to make it clearer that any new or extended culverts would be designed to facilitate fish passage. The impacts or benefits of any new or extended culverts will be analyzed at the project level. |
| 1-11 | The comment is noted. Road maintenance activities should also comply with critical areas regulations, as defined in BCC 20.25H. |
| 1-12 | Culverts replacement or alteration in association with individual TFP projects will comply with the requirements of BCC 20.25H.055C.3. The City is currently conducting an inventory to determine which culverts are barriers to fish. Barrier culverts not associated with a TFP project will not be replaced as part of the TFP implementation, because that is outside of the scope of the TFP. |
| 1-13 | Because the TFP is a program, in which projects have not yet been designed, it is not feasible to quantify specific impacts at the programmatic level. Specific impacts and mitigation measures will be addressed at the project level. |
| 1-14 | Section 7.2.3 has been revised to explicitly list lighting as a potential impact. A reference to BCC20.25H.080 was also added, which requires that new lighting to be directed away from streams. |
| 1-15 | Section 7.2.3 has been revised to explicitly list potential disturbance from humans and pets as a potential impact. A reference to BCC20.25H.080 was also added, which requires that dense vegetation be planted along the outer edge of stream critical area buffers to limit such disturbance. |
| 1-16 | Cumulative impacts cannot be quantified at this time as not all projects in the TFP have been designed. Direct, indirect, and cumulative impacts will be addressed at the project level, as will mitigation for individual projects. A 1:1 mitigation ration is the minimum required per BCC 20.25H.085B. Text has been added to clarify that the City has the discretion to require a higher ratio when appropriate. |
| 1-17 | Section 7.3.3 was revised to clarify that project specific mitigation measures would be developed at 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. |
| 1-18 | Culverts replacement or alteration in association with individual TFP projects will comply with the requirements of BCC 20.25H.055C.3. The City is currently conducting an inventory to determine which culverts are barriers to fish. Barrier culverts not associated with a TFP project will not be replaced as part of the TFP implementation, because that is outside of the scope of the TFP. |
| 1-19 | The need to extend culverts will be assessed at the project level. Culverts replacement or alteration in association with individual TFP projects will comply with the requirements of BCC 20.25H.055C.3. |
| 1-20 | Road maintenance activities should also comply with critical areas regulations, as defined in BCC 20.25H. Maintenance activities that affect transport of wood or sediment in a stream would require individual project-level analysis. |
| Comment Letter No. 2. State of Washington Department of Community, Trade and Economic Development | |
| 2-1 | The City is not proposing an amendment to the Comprehensive Plan; therefore no specific follow-up action is warranted. |
| Comment Letter No. 3. City of Bellevue Transportation Department Title VI Coordination Team | |
| 3-1 | The comment is noted. Demographic and related project impact summaries by major sub-areas have been included as Appendix H in the Final EIS. |

Comment Letter No. 1


# MUCKLESHOOT INDIAN TRIBE
## Fisheries Division
39015 - 172nd Avenue SE • Auburn, Washington 98092-9763
Phone: (253) 939-3311 • Fax: (253) 931-0752


February 23, 2009

Mr. Michael Paine
City of Bellevue Department of Development Services
P.O. Box 90012
Bellevue, WA 98009-9012

**RE: Bellevue's 2009-2020 Transportation Facilities Plan, Draft Environmental Impact Statement**

Dear Mr. Paine:

The Muckleshoot Indian Tribe Fisheries Division has reviewed the Draft Environmental Impact Statement (DEIS) for the above referenced project. We are forwarding the attached comments in the interest of protecting and restoring the Tribe's treaty protected fisheries resources.

We appreciate the opportunity to comment on this proposal and would be happy to meet with the City to discuss these comments. You can reach me at 253-876-3116 if the City would like to meet.

Sincerely,

Karen Walter
Watersheds and Land Use Team Leader

Cc: Larry Fisher, WDFW, Region 4

## I. Impact Concerns

As noted in the DEIS, there are several projects that have the potential to adversely affect streams and wetlands and their buffers within WRIA 8 (ex. Table 7-2, Table 7-4, Table 7-7). The DEIS acknowledges some, but not all of the potential impacts that may occur as result of implementing both the no-action and proposed action projects.

The impacts that may occur that should be identified in the FEIS are as follows:

1 1. The projects may result in additional artificial lighting impacts to streams used by salmonids which could lead to an increase in predation of juvenile salmonids from fish and birds predators that use visual cues for hunting.

2 2. The construction of sidewalks could increase the amount of human disturbance to salmonids in the affected streams as people and pets may have increased access to these areas.

3 3. The DEIS fails to identify and quantify the potential cumulative impacts to streams, wetlands, and their buffers as a result of implementing either the No Action or Proposed Action projects. The DEIS specifically states that project-level analysis would identify potential impacts and appropriate avoidance or minimization measures, which means that the impact assessment is left to individual projects. Based on our experience, few projects ever consider cumulative impacts and as a result, these impacts likely occur without mitigation.

4 4. The potential impacts to salmonids list on page 7-17 are incomplete. As mentioned above, there may be increases in predation and disturbance as a result of both alternatives. Other impacts not considered in the DEIS include those associated with stormwater and culverts as discussed below.

Stormwater Impacts

5 There will also likely be stormwater impacts that are not discussed in the DEIS, which were identified in our scoping comments. These impacts include displacement from preferred habitats; loss of feeding opportunities; increased chronic and acute response to metals, pesticides, and other toxic contaminants, increased stress and disease; increased predation, etc. Unless stormwater can be treated and infiltrated, the projects will result in increases in stormwater discharges as noted in the DEIS. The DEIS fails to consider that increases in receiving water volumes and flow durations may adversely impact juvenile salmonids because stormwater discharged from the project sites has the potential to increase the duration of water velocities in the receiving water that exceed juvenile resting, holding and swimming speeds. The result is that juvenile salmonids are flushed from habitats; forced to maintain station without feeding subjecting them to reduced growth, increased susceptibility to disease and predation. All of these conditions can result in reductions in survival and fish production.

6

7 Part of the problem is that most of the affected streams have been modified from historical conditions. Changes in the duration of elevated water velocities, combined with the historical loss of salmonid overwintering or high flow refugia habitats; the conversion of stream channels to predominately riffle and glides, and the reduction of the number and sizes of in-channel wood has resulted in adverse impacts to salmonid habitat and likely impacts to overwintering salmonids as a result as described above. It is important to note that compliance with the NPDES permit and compliance with the Washington Department of Ecology's Stormwater Manual does not sufficiently address impacts to salmonids and will require additional mitigation.

Culvert impacts

8 There are impacts to salmonid habitat as a result of culverts that is not discussed in the DEIS. For example, culverts result in the direct loss of habitat due to construction activities for the culvert and the culvert replacing the native streambed material and the disconnection between the stream channel and its adjacent banks and riparian areas. Culvert construction can require significant channel realignment, eliminating natural meanders, bends, spawning riffles and other diversity in the channel that provide salmonids with their habitat needs. Culverts can also shorten the length of stream channels, leading to increased velocities and bed instability that reduce spawning opportunities and decrease egg survival. Existing riffles and gravel bars immediately downstream of culverts can be scoured if flow velocity is increased through the culvert. Gravel scour while salmonid eggs are incubating in redds can result in high egg mortality. Culverts can cause changes in sediment transport and deposition rates due to construction or due to a change in hydraulics caused by changes to the alignment, siting or design of the culvert that can all lead to salmonid habitat degradation.

9 Culvert construction can negatively impact rearing habitat by causing a direct loss of rearing habitat when it is replaced with a pipe. Any reduction in stream length is a reduction in usable rearing habitat. Culverts cut off natural bends, meanders, side channels and backwater channels, directly eliminating such habitat. Most side channels and backwater channels experience higher fish usage than the main stream channel, especially during winter flood flows, so the loss of such habitat can be especially harmful to fish survival. Culvert placement that lowers the natural water level of pools, ponds, backwaters or wetlands within or adjacent to the stream can decrease the amount and type of rearing habitat. Culvert projects may also require the removal of trees and woody debris at the site, thus eliminating the function of channel structure, pool formation, channel stability, food production, and instream cover. The removal of these trees and woody debris can occur for the entire right-of-way width as a regular maintenance activity.

10

11 In addition, road maintenance activities at stream crossings can adversely affect salmonids by removing trees on the streambank; removing spawning sized gravels from culverts and streambeds through dredging; and removing wood from culverts and adjacent stream banks due to concerns for culvert blockages and flow conveyance. These activities often occur without mitigation.

12 Finally, if existing culverts that are fish passage barriers are not removed or replaced through this plan, then existing fish passage barriers will continue to adversely affect salmon distribution and productivity, likely without mitigation.

13 The FEIS should discuss all of the potential impacts identified above for all affected streams and identify potential mitigation measures as discussed in the mitigation recommendations below.

## II. Mitigation Recommendations

14 1. To address lighting concerns, the projects should be required to minimize lighting at all stream crossings and for any lighting that is needed, the light should be shielded and directed away from streams.

15 2. For projects that could increase the amount of human disturbance to salmonids in streams, these sites should have native trees and shrubs that encourage visual buffers and discourage stream access.

16 3. To address cumulative impacts from these projects, the FEIS needs to quantify these impacts (i.e. loss of riparian area; increases in road fill and culvert extensions that affect streams; increases in stormwater discharges, etc.) and develop mitigation measures for all of the impacted streams. Mitigation measures may need to occur outside of the right of ways to avoid a loss in stream and riparian habitat functions

16 cont. and values. Some of these measures are considered on page 7-23; however, since there is no real cumulative impact assessment the extent of these mitigation measures is unknown at this time. Furthermore, using a replacement ratio of 1:1 for streams and stream buffers will likely result in a net loss of these resources.

17 4. To address stormwater impacts from discharged stormwater into affected streams, the affected streams should be enhanced to increase the amount of low velocity habitats to offset the increases in flow volumes and durations.

18 To address culvert impacts, the projects identified in Tables 7-4 and 7-7 should replace all existing culverts that are fish passage barriers with a bridge or a culvert large enough to pass wood, water, and
19 sediment loads relevant to the affected stream. If any culverts need to be extended, then the impacted stream will need mitigation to address the loss of existing habitat (length and type) and the loss of riparian area and tree removal. If future maintenance is needed at these sites, then these maintenance
20 activities need to include the relocation of wood and sediment that would otherwise transport to downstream areas.

Comment Letter No. 2

STATE OF WASHINGTON

# DEPARTMENT OF COMMUNITY, TRADE AND ECONOMIC DEVELOPMENT

128 - 10th Avenue SW • PO Box 42525 • Olympia, Washington 98504-2525 • (360) 725-4000

February 2, 2009

Carol Helland
Land Use Director
City of Bellevue Planning Department
11511 Main Street
Post Office Box 90012
Bellevue, Washington 98009-9012

Dear Ms. Helland:

Thank you for sending the Washington State Department of Community, Trade and Economic Development (CTED) the following materials as required under RCW 36.70A.106. Please keep this letter as documentation that you have met this procedural requirement.

**City of Bellevue - Proposed Draft Environmental Impact Statement 2009-2020 Transportation Facilities Plan. These materials were received on 01/26/2009 and processed with the Material ID # 14016.**

1 We have forwarded a copy of this notice to other state agencies. If this is a draft amendment, adopted amendments should be sent to CTED within ten days of adoption and to any other state agencies who commented on the draft.

If you have any questions, please call me at 360.725.3063.

Sincerely,

Cynthia L Ritchey
for

Sam Wentz
GIS Coordinator
Growth Management Services

Comment Letter No. 3

February 23, 2009

Carol V. Helland
Land Use Division Director
Environmental Coordinator
City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012

RE: 2009-2020 Transportation Facilities Plan Draft Environmental Impact Statement (EIS)

Dear Ms. Helland:

The City of Bellevue Transportation Department Title VI Coordination Team is responsible for monitoring department activities for compliance with Title VI of the Civil Rights Act. Title VI, and its associated Executive Orders on Environmental Justice and Limited English Proficiency, share the goal of ensuring non-discrimination in the provision of the city's programs and services.

This letter is a follow up to a comment submitted on November 20, 2006 related to the draft EIS for the 2006-2017 Transportation Facilities Plan (TFP). That comment included four aspects to be incorporated into the development of future versions of this procedural document: 1) Statement of the City's policy for complying with Title VI; 2) Expanded public involvement efforts to include communities of concern; 3) Statement in the Fact Sheet informing people about access to alternative formats of the document; and 4) Analysis of the impacts of the proposed alternative on identified communities concern.

After reviewing the 2009-2020 draft TFP EIS and its development process, we appreciate efforts made to advance compliance with federal non-discrimination guidelines, such as including the Title VI Assurance in the document. In addition, an effort was made early in the TFP project list development process to engage a broader spectrum of Bellevue residents through outreach sessions at the North Bellevue Senior Center, Crossroads Mini-City Hall, and Factoria Mall Open House. For future EIS documents, the project team should continue that same level of diligence up through the comment period notification.

1 The City's Title VI Plan requires that all EIS documents provide a comprehensive summary of the demographic data and impacts of the proposed projects on communities of concern, such as concentrations of those individuals living below the poverty level. The Title VI Team strongly encourages the project team to include this information as an appendix to the 2009-2020 TFP EIS.

If you have any questions about the Title VI requirements, please contact me at 425-452-4270.

Sincerely,

Jen Ben
Transportation Title VI Coordinator
City of Bellevue
PO Box 90012
Bellevue, WA 98009-9012

# Appendix D

Land Use Projections

Figures D-1 and D-2 illustrate the Transportation Analysis Zones (TAZs) that have been defined for the City of Bellevue transportation analysis.

Table D-1 presents existing (2008) and projected 2020 land use that has been allocated to each TAZ. For each TAZ:

- Existing (2008) land use is presented in the unshaded row
- Projected 2020 land use is presented in the shaded row

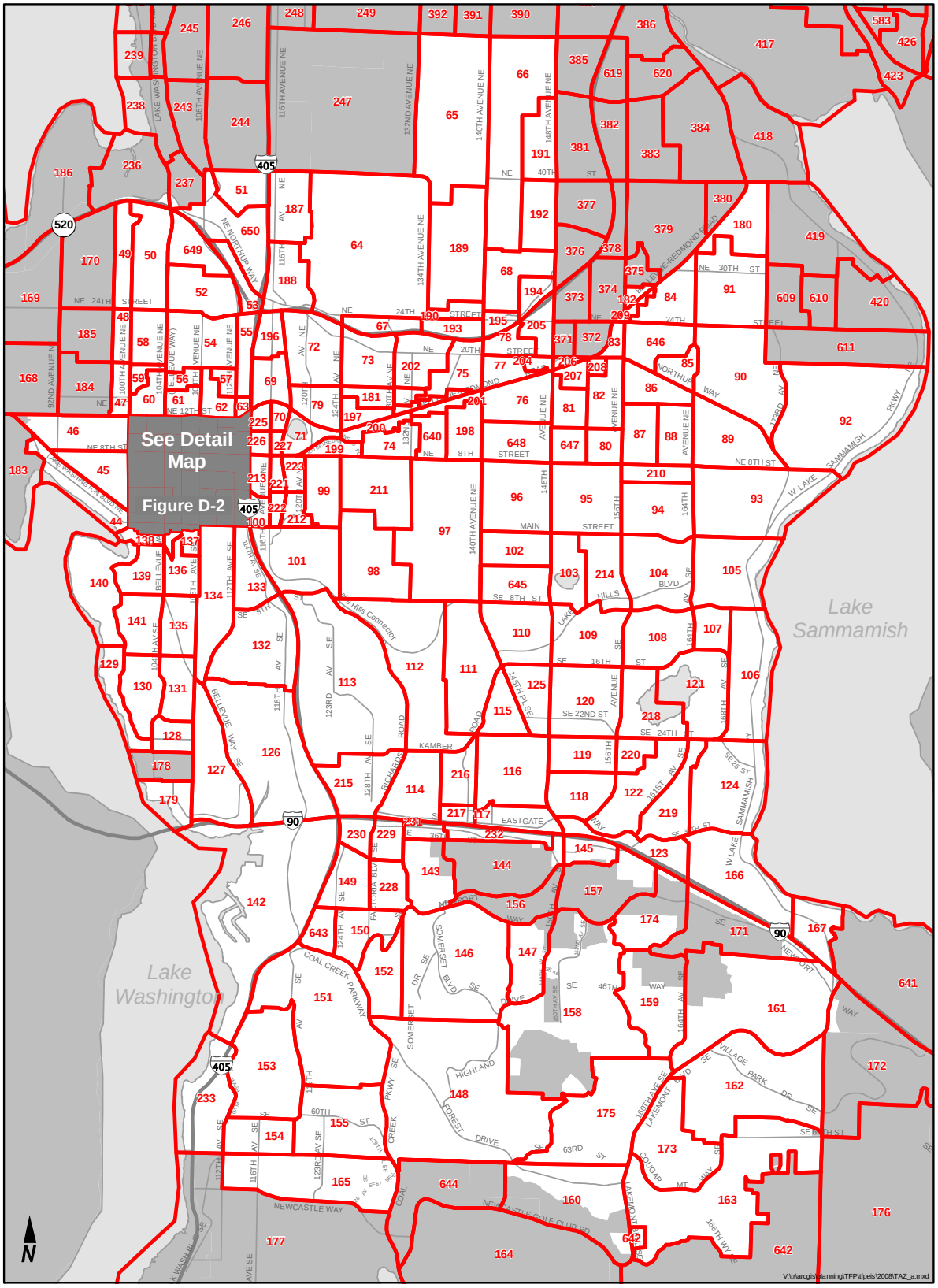


Figure D-1. Citywide Transportation Analysis Zones

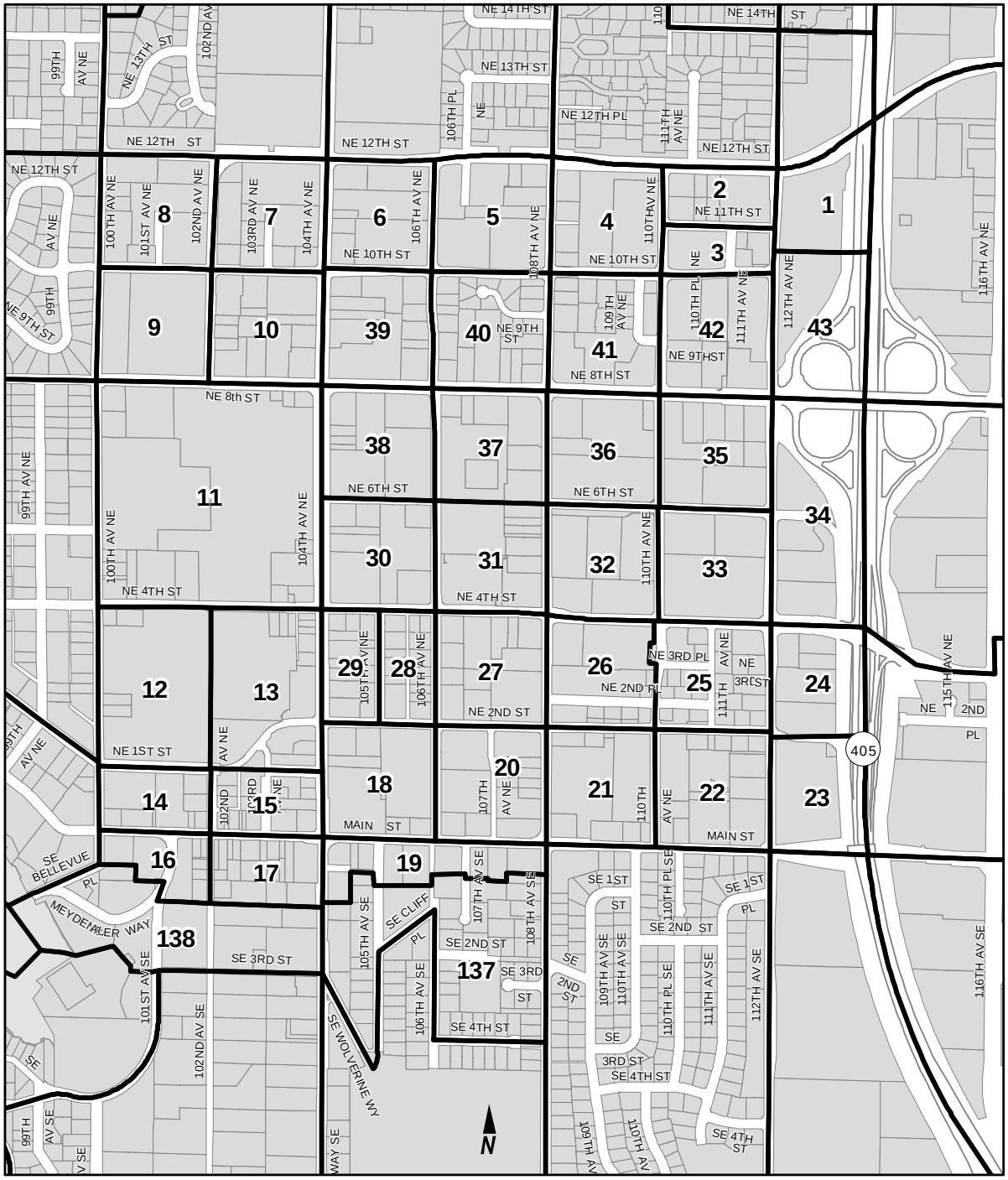


Figure D-2. Downtown Transportation Analysis Zones (Detail from Figure D-1)

## Table D-1. Existing (2008) and Projected Future (2020) Land Use

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 1 | 481,383 | - | - | - | - | - | - | - |
| 2020 | 1 | 481,383 | - | - | - | - | - | - | - |
| 2008 | 2 | 1,750 | 8,520 | - | - | - | - | 361 | - |
| 2020 | 2 | 1,750 | 10,520 | - | - | - | - | 413 | - |
| 2008 | 3 | 22,139 | 2,400 | | | | | 202 | - |
| 2020 | 3 | 22,139 | 4,900 | - | - | - | - | 282 | - |
| 2008 | 4 | 16,210 | 1,199 | - | 82,001 | - | - | 159 | - |
| 2020 | 4 | 18,500 | 9,450 | - | 216,351 | - | - | 205 | - |
| 2008 | 5 | 25,480 | 8,632 | - | - | 41,080 | 1 | 366 | 100 |
| 2020 | 5 | 22,715 | 34,132 | - | - | 86,080 | - | 799 | 210 |
| 2008 | 6 | 6,000 | 99,883 | - | - | - | - | - | - |
| 2020 | 6 | 6,000 | 83,653 | - | - | - | - | 327 | - |
| 2008 | 7 | 9,408 | 52,520 | 22,398 | 55,950 | - | - | - | - |
| 2020 | 7 | 24,408 | 72,520 | 22,398 | 55,950 | - | - | - | - |
| 2008 | 8 | 13,605 | 7,005 | - | - | - | 2 | 129 | - |
| 2020 | 8 | 13,605 | 22,005 | - | - | - | - | 129 | - |
| 2008 | 9 | - | 99,675 | - | - | - | - | 79 | - |
| 2020 | 9 | - | 119,675 | - | - | - | - | 179 | - |
| 2008 | 10 | 16,270 | 154,879 | - | - | - | - | - | - |
| 2020 | 10 | 16,270 | 184,879 | - | - | - | - | 400 | - |
| 2008 | 11 | 16,457 | 1,534,994 | - | - | - | - | - | - |
| 2020 | 11 | 16,457 | 1,784,994 | - | - | 100,000 | - | 35 | 200 |
| 2008 | 12 | - | 1,295 | - | 14,660 | - | - | 19 | - |
| 2020 | 12 | - | 1,295 | - | 14,660 | - | - | 19 | - |
| 2008 | 13 | - | 59,788 | - | - | - | - | - | - |
| 2020 | 13 | 15,000 | 67,870 | - | - | - | - | 40 | - |
| 2008 | 14 | 10,633 | 20,603 | 4,253 | - | - | - | 404 | - |
| 2020 | 14 | 10,633 | 35,603 | 4,253 | - | - | - | 466 | - |
| 2008 | 15 | 5,063 | 80,788 | - | - | - | - | 71 | - |
| 2020 | 15 | 5,063 | 121,533 | - | - | - | - | 71 | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 16 | - | 9,625 | 5,050 | - | - | - | 129 | - |
| 2020 | 16 | - | 21,125 | 2,950 | - | - | - | 209 | - |
| 2008 | 17 | 15,082 | 51,951 | 7,200 | - | - | - | 140 | - |
| 2020 | 17 | 45,082 | 95,284 | 7,200 | - | - | - | 278 | - |
| 2008 | 18 | - | 149,724 | 4,064 | - | - | - | - | - |
| 2020 | 18 | - | 189,724 | 4,064 | - | - | - | 800 | - |
| 2008 | 19 | 49,999 | 46,875 | - | - | - | - | - | - |
| 2020 | 19 | 49,999 | 67,575 | - | - | - | - | 217 | - |
| 2008 | 20 | 248,119 | 78,083 | - | - | - | 1 | 341 | - |
| 2020 | 20 | 258,119 | 98,083 | - | - | - | - | 498 | - |
| 2008 | 21 | 2,825 | 99,074 | - | - | - | - | - | - |
| 2020 | 21 | 2,825 | 119,074 | - | - | - | - | 400 | - |
| 2008 | 22 | 368,705 | 38,283 | - | - | - | - | 417 | - |
| 2020 | 22 | 373,705 | 38,283 | - | - | - | - | 457 | - |
| 2008 | 23 | - | - | - | - | 95,074 | - | - | 180 |
| 2020 | 23 | - | - | - | - | 149,074 | - | - | 300 |
| 2008 | 24 | 108,083 | - | - | 4,625 | - | - | - | - |
| 2020 | 24 | 158,083 | - | - | 4,625 | - | - | - | - |
| 2008 | 25 | 89,653 | 19,130 | - | 1,200 | - | 1 | 196 | - |
| 2020 | 25 | 89,653 | 61,630 | - | 1,200 | 189,000 | - | 604 | 378 |
| 2008 | 26 | 499,779 | 25,129 | - | - | - | - | 248 | - |
| 2020 | 26 | 799,779 | 25,129 | - | - | - | - | 248 | - |
| 2008 | 27 | 444,174 | 65,354 | - | - | - | - | - | - |
| 2020 | 27 | 792,174 | 85,354 | - | - | - | - | 250 | - |
| 2008 | 28 | 3,400 | 57,178 | 3,120 | 2,855 | - | - | - | - |
| 2020 | 28 | 33,400 | 77,178 | 3,120 | 2,855 | - | - | 350 | - |
| 2008 | 29 | 10,021 | 115,551 | 34,700 | - | - | - | 134 | - |
| 2020 | 29 | - | 90,000 | - | - | - | - | 368 | - |
| 2008 | 30 | 46,200 | 77,093 | - | 39,044 | - | - | - | - |
| 2020 | 30 | 1,071,200 | 370,000 | - | 39,044 | 157,500 | - | 200 | 200 |
| 2008 | 31 | 369,427 | 279,163 | - | - | - | - | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2020 | 31 | 369,427 | 296,163 | - | - | - | - | 506 | - |
| 2008 | 32 | 1,587,583 | - | - | 28,284 | - | - | - | - |
| 2020 | 32 | 1,587,583 | - | - | 28,284 | - | - | - | - |
| 2008 | 33 | 238,833 | - | - | - | - | - | - | - |
| 2020 | 33 | 238,833 | - | - | 125,000 | 90,000 | - | - | 300 |
| 2008 | 34 | 143,265 | 13,790 | - | - | - | - | - | - |
| 2020 | 34 | 143,265 | 13,790 | - | - | - | - | - | - |
| 2008 | 35 | - | 37,056 | - | 300,000 | - | - | - | 5 |
| 2020 | 35 | 733,000 | 266,000 | - | 500,000 | - | - | 456 | - |
| 2008 | 36 | 211,352 | 25,990 | - | 28,625 | - | - | - | - |
| 2020 | 36 | 1,681,352 | 55,990 | - | 28,625 | - | - | - | - |
| 2008 | 37 | 947,895 | 118,013 | - | - | - | - | - | - |
| 2020 | 37 | 1,447,895 | 138,013 | - | - | - | - | - | - |
| 2008 | 38 | 793,019 | 331,894 | - | 12,182 | 137,162 | - | 140 | 303 |
| 2020 | 38 | 793,019 | 331,894 | - | 12,182 | 137,162 | - | 148 | 337 |
| 2008 | 39 | 542,763 | 68,354 | - | - | 312,242 | - | - | 382 |
| 2020 | 39 | 1,016,617 | 93,354 | - | 210,000 | 457,000 | - | 150 | 654 |
| 2008 | 40 | 35,023 | 57,930 | - | - | - | - | - | - |
| 2020 | 40 | 500,000 | 70,000 | - | - | - | - | 576 | - |
| 2008 | 41 | 514,230 | - | - | - | - | 3 | 209 | - |
| 2020 | 41 | 514,230 | - | - | - | - | - | 396 | - |
| 2008 | 42 | 169,035 | 30,117 | - | - | 144,783 | - | 789 | 249 |
| 2020 | 42 | 169,035 | 30,117 | - | - | 144,783 | - | 1,100 | 249 |
| 2008 | 43 | - | - | - | - | 61,350 | - | - | 211 |
| 2020 | 43 | 30,000 | - | - | - | - | - | - | - |
| 2008 | 44 | 36,092 | - | - | 12,162 | - | 121 | 206 | - |
| 2020 | 44 | 36,092 | - | - | 12,162 | - | 112 | 200 | - |
| 2008 | 45 | - | 24,031 | - | 17,200 | - | 162 | 270 | - |
| 2020 | 45 | - | 24,031 | - | 17,200 | - | 162 | 290 | - |
| 2008 | 46 | - | - | - | - | - | 288 | - | - |
| 2020 | 46 | - | - | - | - | - | 288 | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 47 | - | - | - | - | - | 104 | - | - |
| 2020 | 47 | - | - | - | - | - | 104 | - | - |
| 2008 | 48 | - | - | - | 7,735 | - | 80 | - | - |
| 2020 | 48 | - | - | - | 7,735 | - | 80 | - | - |
| 2008 | 49 | - | - | - | - | - | 174 | - | - |
| 2020 | 49 | - | - | - | - | - | 174 | - | - |
| 2008 | 50 | - | - | - | - | - | 251 | - | - |
| 2020 | 50 | - | - | - | - | - | 290 | - | - |
| 2008 | 51 | - | - | - | - | - | 111 | 108 | - |
| 2020 | 51 | - | - | - | - | - | 111 | 108 | - |
| 2008 | 52 | 25,524 | 62,260 | - | 29,093 | - | 200 | - | - |
| 2020 | 52 | 25,524 | 62,260 | - | 29,093 | - | 200 | - | - |
| 2008 | 53 | 175,449 | - | - | - | - | - | - | - |
| 2020 | 53 | 175,449 | - | - | - | - | - | - | - |
| 2008 | 54 | 222,383 | - | - | 53,625 | - | 135 | 36 | - |
| 2020 | 54 | 222,383 | - | - | 53,625 | - | 135 | 36 | - |
| 2008 | 55 | 364,125 | 3,218 | - | - | - | 1 | - | - |
| 2020 | 55 | 364,125 | 3,218 | - | - | - | 1 | - | - |
| 2008 | 56 | - | - | - | - | - | 69 | 6 | - |
| 2020 | 56 | - | - | - | - | - | 69 | 6 | - |
| 2008 | 57 | - | - | - | - | - | 59 | - | - |
| 2020 | 57 | - | - | - | - | - | 59 | - | - |
| 2008 | 58 | 4,396 | - | - | 118,044 | - | 167 | 41 | - |
| 2020 | 58 | 4,396 | - | - | 185,165 | - | 167 | 41 | - |
| 2008 | 59 | - | - | - | - | - | 38 | 17 | - |
| 2020 | 59 | - | - | - | - | - | 38 | 17 | - |
| 2008 | 60 | - | - | - | - | - | 43 | 527 | - |
| 2020 | 60 | - | - | - | - | - | 43 | 527 | - |
| 2008 | 61 | - | - | - | - | - | 60 | 229 | - |
| 2020 | 61 | - | - | - | - | - | 60 | 229 | - |
| 2008 | 62 | - | - | - | - | - | 95 | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2020 | 62 | - | - | - | 2,000 | - | 95 | - | - |
| 2008 | 63 | 139,050 | - | - | - | - | - | - | - |
| 2020 | 63 | 139,050 | - | - | - | - | - | - | - |
| 2008 | 64 | - | - | - | 46,400 | - | 790 | 72 | - |
| 2020 | 64 | - | - | - | 46,400 | - | 790 | 72 | - |
| 2008 | 65 | - | - | - | - | - | 256 | - | - |
| 2020 | 65 | - | - | - | - | - | 256 | - | - |
| 2008 | 66 | - | - | 1,250 | 22,616 | - | 199 | 75 | - |
| 2020 | 66 | - | - | 1,250 | 22,616 | - | 199 | 75 | - |
| 2008 | 67 | 210,345 | - | - | 21,122 | - | 16 | 24 | - |
| 2020 | 67 | 210,345 | - | - | 21,122 | - | 18 | 24 | - |
| 2008 | 68 | - | - | - | 5,782 | - | 91 | 643 | - |
| 2020 | 68 | - | - | - | 5,782 | - | 91 | 643 | - |
| 2008 | 69 | 385,780 | - | - | 36,460 | - | 26 | - | - |
| 2020 | 69 | 617,280 | - | - | 121,460 | - | 26 | - | - |
| 2008 | 70 | 195,198 | - | - | - | - | - | - | - |
| 2020 | 70 | 355,000 | 30,000 | - | - | - | - | - | - |
| 2008 | 71 | 226,082 | 204,620 | 37,235 | - | - | - | 70 | - |
| 2020 | 71 | 226,082 | 204,620 | 37,235 | - | - | - | 70 | - |
| 2008 | 72 | 289,487 | 135,165 | 584,852 | - | - | - | - | - |
| 2020 | 72 | 489,487 | 135,165 | 509,852 | - | - | - | 650 | - |
| 2008 | 73 | 220,758 | 84,440 | 636,213 | - | - | - | - | - |
| 2020 | 73 | 220,758 | 140,440 | 236,213 | - | - | - | 600 | - |
| 2008 | 74 | - | - | - | - | - | 65 | 201 | - |
| 2020 | 74 | - | - | - | - | - | 65 | 201 | - |
| 2008 | 75 | 212,772 | 339,509 | 411,109 | - | - | 1 | - | - |
| 2020 | 75 | 212,772 | 412,509 | 361,109 | - | - | 1 | 125 | - |
| 2008 | 76 | 100,000 | - | - | - | - | 141 | - | - |
| 2020 | 76 | 100,000 | - | - | - | - | 154 | - | - |
| 2008 | 77 | 65,803 | 151,615 | 5,100 | 19,125 | - | - | - | - |
| 2020 | 77 | 65,803 | 181,615 | - | 19,125 | - | - | 200 | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 78 | 166,048 | 181,303 | 65,590 | 5,310 | - | - | - | - |
| 2020 | 78 | 166,048 | 186,303 | 65,590 | 5,310 | - | - | - | - |
| 2008 | 79 | 75,000 | 95,000 | 1,100,100 | - | - | - | - | - |
| 2020 | 79 | 2,575,000 | 140,000 | 200,100 | - | - | - | 600 | - |
| 2008 | 80 | 50,893 | - | - | - | - | 2 | 589 | - |
| 2020 | 80 | 50,893 | - | - | - | - | 2 | 609 | - |
| 2008 | 81 | - | - | - | - | - | 141 | - | - |
| 2020 | 81 | - | - | - | - | - | 141 | - | - |
| 2008 | 82 | 47,125 | 61,670 | - | - | - | 3 | 1,139 | - |
| 2020 | 82 | 47,125 | 61,670 | - | - | - | 3 | 1,159 | - |
| 2008 | 83 | - | 134,101 | - | - | - | - | - | - |
| 2020 | 83 | 19,000 | 160,000 | - | - | 200,000 | - | 300 | 400 |
| 2008 | 84 | 14,750 | - | - | - | - | 245 | - | - |
| 2020 | 84 | 14,750 | - | - | - | - | 245 | - | - |
| 2008 | 85 | - | - | - | 4,707 | - | 103 | - | - |
| 2020 | 85 | - | - | - | 4,707 | - | 109 | - | - |
| 2008 | 86 | - | 9,300 | 1,100 | 39,031 | - | 17 | 949 | - |
| 2020 | 86 | - | 9,300 | 1,100 | 39,031 | - | 17 | 949 | - |
| 2008 | 87 | 16,537 | 781,190 | 5,020 | 18,545 | - | - | 70 | - |
| 2020 | 87 | 16,537 | 831,190 | 5,020 | 18,545 | 100,000 | - | 470 | 200 |
| 2008 | 88 | 3,435 | 9,140 | 52,000 | 50,736 | - | - | 453 | - |
| 2020 | 88 | 13,074 | 9,140 | 52,000 | 50,736 | - | - | 453 | - |
| 2008 | 89 | - | - | - | 47,400 | - | 462 | 88 | - |
| 2020 | 89 | - | - | - | 47,400 | - | 462 | 88 | - |
| 2008 | 90 | - | - | - | 60,200 | - | 770 | 69 | - |
| 2020 | 90 | - | - | - | 65,611 | - | 770 | 69 | - |
| 2008 | 91 | - | - | - | 57,772 | - | 463 | - | - |
| 2020 | 91 | - | - | - | 57,772 | - | 465 | - | - |
| 2008 | 92 | - | - | - | 42,675 | - | 862 | 3 | - |
| 2020 | 92 | - | - | - | 42,675 | - | 866 | 3 | - |
| 2008 | 93 | - | - | - | - | - | 602 | 122 | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2020 | 93 | - | - | - | - | - | 603 | 122 | - |
| 2008 | 94 | - | - | - | 110,110 | - | 315 | - | - |
| 2020 | 94 | - | - | - | 110,110 | - | 315 | - | - |
| 2008 | 95 | 3,750 | 28,717 | - | 106,479 | - | 280 | 177 | - |
| 2020 | 95 | 6,484 | 32,425 | - | 106,479 | - | 287 | 202 | - |
| 2008 | 96 | 9,937 | 17,125 | - | 175,370 | - | 200 | 572 | - |
| 2020 | 96 | 9,937 | 20,379 | - | 175,370 | - | 201 | 574 | - |
| 2008 | 97 | 7,138 | 10,313 | - | 49,800 | - | 199 | 140 | - |
| 2020 | 97 | 7,138 | 10,313 | - | 49,800 | - | 201 | 140 | - |
| 2008 | 98 | - | - | - | 168,679 | - | 205 | - | - |
| 2020 | 98 | - | - | - | 168,679 | - | 204 | - | - |
| 2008 | 99 | 384,575 | 9,930 | 37,625 | 1,180 | - | 59 | 262 | - |
| 2020 | 99 | 384,575 | 9,930 | 37,625 | 1,180 | - | 59 | 290 | - |
| 2008 | 100 | 694 | 2,469 | - | 30,000 | 66,675 | - | - | 162 |
| 2020 | 100 | 694 | 18,846 | - | 30,000 | 66,675 | - | - | 162 |
| 2008 | 101 | 436,261 | 68,002 | 23,845 | 69,158 | - | 9 | 336 | - |
| 2020 | 101 | 436,261 | 68,002 | 23,845 | 69,158 | - | 9 | 336 | - |
| 2008 | 102 | - | - | - | 296,149 | - | - | 754 | - |
| 2020 | 102 | - | - | - | 296,149 | - | - | 754 | - |
| 2008 | 103 | 49,413 | 150,188 | - | - | - | 4 | - | - |
| 2020 | 103 | 49,413 | 180,187 | - | - | - | 4 | - | - |
| 2008 | 104 | - | - | - | 9,625 | - | 573 | 33 | - |
| 2020 | 104 | - | - | - | 9,625 | - | 573 | 33 | - |
| 2008 | 105 | - | - | - | - | - | 293 | - | - |
| 2020 | 105 | - | - | - | - | - | 311 | - | - |
| 2008 | 106 | - | - | - | - | - | 183 | - | - |
| 2020 | 106 | - | - | - | - | - | 184 | - | - |
| 2008 | 107 | - | - | - | - | - | 173 | - | - |
| 2020 | 107 | - | - | - | - | - | 173 | - | - |
| 2008 | 108 | - | - | - | 297,049 | - | 225 | - | - |
| 2020 | 108 | - | - | - | 297,049 | - | 226 | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 109 | 10,600 | - | - | 30,000 | - | 262 | 170 | - |
| 2020 | 109 | 13,696 | - | - | 30,000 | - | 262 | 170 | - |
| 2008 | 110 | 6,875 | 75,854 | - | 85,475 | - | 340 | 61 | - |
| 2020 | 110 | 6,875 | 75,854 | - | 85,475 | - | 340 | 80 | - |
| 2008 | 111 | - | 2,000 | 5,625 | 11,072 | - | 255 | 325 | - |
| 2020 | 111 | - | 2,000 | 5,625 | 11,072 | - | 264 | 325 | - |
| 2008 | 112 | 25,268 | - | 7,200 | - | - | 98 | 642 | - |
| 2020 | 112 | 25,268 | - | 7,200 | - | - | 111 | 668 | - |
| 2008 | 113 | - | - | 3,400 | 156,078 | - | 887 | - | - |
| 2020 | 113 | - | - | 3,400 | 156,078 | - | 892 | - | - |
| 2008 | 114 | 191,504 | 34,775 | 748,306 | 50,150 | - | - | - | - |
| 2020 | 114 | 191,504 | 70,275 | 748,306 | 50,150 | - | - | - | - |
| 2008 | 115 | - | 4,223 | - | - | - | 136 | 52 | - |
| 2020 | 115 | - | 4,223 | - | - | - | 136 | 52 | - |
| 2008 | 116 | 216,276 | 2,100 | 1,442 | 652,860 | - | 42 | 359 | - |
| 2020 | 116 | 216,276 | 2,100 | 1,442 | 718,416 | - | 42 | 359 | - |
| 2008 | 117 | 346,654 | 8,195 | 89,037 | - | 5,202 | - | - | 181 |
| 2020 | 117 | 346,654 | 8,195 | 89,037 | - | 170,500 | - | - | 341 |
| 2008 | 118 | 396,958 | 165,824 | 3,000 | 205,918 | 29,791 | - | - | 108 |
| 2020 | 118 | 396,958 | 165,824 | 3,000 | 205,918 | 54,000 | - | - | 108 |
| 2008 | 119 | - | - | - | 75,578 | - | 125 | - | - |
| 2020 | 119 | - | - | - | 75,578 | - | 126 | - | - |
| 2008 | 120 | 19,206 | 7,900 | - | 86,675 | - | 355 | 162 | - |
| 2020 | 120 | 19,206 | 7,900 | - | 86,675 | - | 355 | 162 | - |
| 2008 | 121 | - | - | - | - | - | 324 | - | - |
| 2020 | 121 | - | - | - | - | - | 324 | - | - |
| 2008 | 122 | 1,027,270 | 2,920 | 887,357 | - | 263,760 | 1 | 4 | 240 |
| 2020 | 122 | 1,655,160 | 2,920 | 887,357 | - | 263,760 | 1 | 4 | 240 |
| 2008 | 123 | - | - | - | - | - | 9 | 256 | - |
| 2020 | 123 | - | - | - | - | - | 20 | 256 | - |
| 2008 | 124 | - | 5,668 | - | 42,550 | - | 578 | 29 | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2020 | 124 | - | 5,668 | - | 42,550 | - | 578 | 29 | - |
| 2008 | 125 | - | 4,700 | - | 31,940 | - | 180 | 142 | - |
| 2020 | 125 | - | 4,700 | - | 31,940 | - | 180 | 142 | - |
| 2008 | 126 | 71,054 | 2,700 | 39,974 | 2,600 | - | 1 | 311 | - |
| 2020 | 126 | 72,454 | 2,700 | 58,734 | 20,878 | - | 1 | 381 | - |
| 2008 | 127 | - | - | - | 14,700 | - | 419 | - | - |
| 2020 | 127 | - | - | - | 14,700 | - | 419 | - | - |
| 2008 | 128 | - | - | - | 54,112 | - | 76 | - | - |
| 2020 | 128 | - | - | - | 54,112 | - | 76 | - | - |
| 2008 | 129 | - | - | - | - | - | 81 | - | - |
| 2020 | 129 | - | - | - | - | - | 81 | - | - |
| 2008 | 130 | - | - | - | 44,750 | - | 173 | - | - |
| 2020 | 130 | - | - | - | 44,750 | - | 173 | - | - |
| 2008 | 131 | - | 9,000 | - | - | - | 167 | 10 | - |
| 2020 | 131 | - | 9,000 | - | - | - | 167 | 10 | - |
| 2008 | 132 | 710,678 | 69,808 | 57,775 | - | - | - | 50 | - |
| 2020 | 132 | 822,927 | 69,808 | 90,455 | - | - | - | 50 | - |
| 2008 | 133 | 388,992 | 211,385 | - | - | 645,870 | - | - | 535 |
| 2020 | 133 | 388,992 | 211,385 | - | - | 884,615 | - | - | 766 |
| 2008 | 134 | 56,201 | 2,400 | 600 | 55,690 | - | 352 | 157 | - |
| 2020 | 134 | 56,201 | 2,400 | 600 | 55,690 | - | 352 | 157 | - |
| 2008 | 135 | 5,250 | 3,550 | 550 | 60,252 | - | 150 | 67 | - |
| 2020 | 135 | 5,250 | 3,550 | 550 | 60,252 | - | 150 | 77 | - |
| 2008 | 136 | 28,900 | - | - | 178,216 | - | 25 | 171 | - |
| 2020 | 136 | 28,900 | - | - | 178,216 | - | 25 | 171 | - |
| 2008 | 137 | 10,900 | - | - | - | - | 31 | 174 | - |
| 2020 | 137 | 10,900 | - | - | - | - | 35 | 174 | - |
| 2008 | 138 | 21,083 | 8,325 | - | 30,220 | - | 1 | 203 | - |
| 2020 | 138 | 21,083 | 13,825 | - | 30,220 | - | 1 | 259 | - |
| 2008 | 139 | - | - | - | 22,797 | - | 76 | 698 | - |
| 2020 | 139 | - | - | - | 22,797 | - | 76 | 754 | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 140 | - | 1,900 | 9,983 | 25,375 | - | 168 | 116 | - |
| 2020 | 140 | - | 1,900 | 9,983 | 25,375 | - | 170 | 134 | - |
| 2008 | 141 | - | - | - | - | - | 146 | - | - |
| 2020 | 141 | - | - | - | - | - | 146 | - | - |
| 2008 | 142 | 3,250 | 813 | 4,063 | 750 | - | 566 | 109 | - |
| 2020 | 142 | 3,250 | 813 | 4,063 | 750 | - | 595 | 109 | - |
| 2008 | 143 | 1,861 | - | 7,861 | 101,700 | 12,182 | 114 | 10 | 81 |
| 2020 | 143 | 1,861 | - | 7,861 | 101,700 | 12,182 | 114 | 10 | 81 |
| 2008 | 144 | 7,070 | 5,112 | - | - | - | 521 | 14 | - |
| 2020 | 144 | 7,070 | 5,112 | - | - | - | 521 | 14 | - |
| 2008 | 145 | - | 100,219 | - | 4,745 | - | - | - | - |
| 2020 | 145 | - | 100,219 | - | 4,745 | - | - | - | - |
| 2008 | 146 | - | - | 9,240 | 124,571 | - | 1,012 | - | - |
| 2020 | 146 | - | - | 9,240 | 124,571 | - | 1,012 | - | - |
| 2008 | 147 | - | - | - | 34,917 | - | 153 | - | - |
| 2020 | 147 | - | - | - | 34,917 | - | 153 | - | - |
| 2008 | 148 | 3,560 | - | - | 65,410 | - | 1,213 | - | - |
| 2020 | 148 | 3,560 | - | - | 65,410 | - | 1,213 | - | - |
| 2008 | 149 | - | 646,577 | 31,050 | 12,036 | - | - | 288 | - |
| 2020 | 149 | 15,000 | 682,577 | 31,050 | 12,036 | - | - | 828 | - |
| 2008 | 150 | - | - | - | 384,439 | - | 14 | 395 | - |
| 2020 | 150 | - | - | - | 384,439 | - | 14 | 395 | - |
| 2008 | 151 | - | - | - | 4,692 | - | 633 | 34 | - |
| 2020 | 151 | - | - | - | 4,692 | - | 644 | 34 | - |
| 2008 | 152 | 3,901 | - | - | 12,955 | - | 199 | 2 | - |
| 2020 | 152 | - | - | - | 12,955 | - | 203 | 2 | - |
| 2008 | 153 | 14,698 | 24,477 | - | 3,420 | - | 339 | - | - |
| 2020 | 153 | 14,698 | 24,477 | - | 81,400 | - | 425 | - | - |
| 2008 | 154 | - | - | - | - | - | 231 | 2 | - |
| 2020 | 154 | - | - | - | - | - | 241 | 2 | - |
| 2008 | 155 | - | 66,614 | - | 40,000 | - | 380 | 442 | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2020 | 155 | 3,800 | 70,414 | - | 40,000 | - | 384 | 442 | - |
| 2008 | 156 | 12,879 | - | - | - | - | 190 | 116 | - |
| 2020 | 156 | 12,879 | - | - | - | - | 190 | 116 | - |
| 2008 | 157 | 97,870 | - | 34,450 | 39,764 | 61,614 | 290 | 52 | 126 |
| 2020 | 157 | 97,870 | - | 34,450 | 39,764 | 61,614 | 290 | 52 | 126 |
| 2008 | 158 | - | - | - | 40,000 | - | 1,165 | 75 | - |
| 2020 | 158 | - | - | - | 40,000 | - | 1,165 | 75 | - |
| 2008 | 159 | - | - | - | 11,682 | - | 480 | 4 | - |
| 2020 | 159 | - | - | - | 11,682 | - | 480 | 4 | - |
| 2008 | 160 | - | - | - | - | - | 330 | - | - |
| 2020 | 160 | - | - | - | - | - | 330 | - | - |
| 2008 | 161 | - | 5,806 | - | 8,387 | - | 1,010 | 4 | - |
| 2020 | 161 | - | 5,806 | - | 58,921 | - | 1,010 | 4 | - |
| 2008 | 162 | 21,948 | 54,450 | - | - | - | 490 | 400 | - |
| 2020 | 162 | 21,948 | 54,450 | - | - | - | 490 | 400 | - |
| 2008 | 163 | - | - | - | 65,450 | - | 442 | 216 | - |
| 2020 | 163 | - | - | - | 65,450 | - | 551 | 216 | - |
| 2008 | 164 | - | - | - | 59,783 | - | 1,031 | 232 | - |
| 2020 | 164 | - | - | - | 59,783 | - | 1,031 | 232 | - |
| 2008 | 165 | - | 88,500 | - | - | - | 1,939 | 154 | - |
| 2020 | 165 | - | 88,500 | - | - | - | 1,939 | 154 | - |
| 2008 | 166 | - | 1,670 | - | - | - | 342 | - | - |
| 2020 | 166 | - | 1,670 | - | - | - | 342 | - | - |
| 2008 | 167 | 7,896 | 5,909 | - | 64,428 | - | 1,040 | 334 | - |
| 2020 | 167 | 7,896 | 5,909 | - | 64,428 | - | 1,040 | 334 | - |
| 2008 | 168 | - | - | - | 21,830 | - | 440 | - | - |
| 2020 | 168 | - | - | - | 21,830 | - | 440 | - | - |
| 2008 | 169 | - | - | - | 51,566 | - | 698 | - | - |
| 2020 | 169 | - | - | - | 51,566 | - | 698 | - | - |
| 2008 | 170 | - | - | - | - | - | 322 | - | - |
| 2020 | 170 | - | - | - | - | - | 322 | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 171 | - | - | - | - | - | 148 | - | - |
| 2020 | 171 | - | - | - | - | - | 148 | - | - |
| 2008 | 172 | - | - | - | - | - | 247 | 431 | - |
| 2020 | 172 | - | - | - | - | - | 247 | 431 | - |
| 2008 | 173 | 2,150 | - | 988 | 1,992 | - | 188 | - | - |
| 2020 | 173 | 2,150 | - | 988 | 1,992 | - | 191 | 20 | - |
| 2008 | 174 | - | - | - | - | - | 300 | 19 | - |
| 2020 | 174 | - | - | - | - | - | 300 | 19 | - |
| 2008 | 175 | - | - | - | 8,768 | - | 443 | 174 | - |
| 2020 | 175 | - | - | - | 8,768 | - | 457 | 174 | - |
| 2008 | 176 | - | - | - | 11,800 | - | 587 | 470 | - |
| 2020 | 176 | - | - | - | 11,800 | - | 587 | 470 | - |
| 2008 | 177 | 20,652 | 90,300 | - | 132,717 | - | 2,231 | 534 | - |
| 2020 | 177 | 20,652 | 90,300 | - | 132,717 | - | 2,231 | 534 | - |
| 2008 | 178 | - | - | - | - | - | 124 | - | - |
| 2020 | 178 | - | - | - | - | - | 124 | - | - |
| 2008 | 179 | - | - | - | - | - | 121 | - | - |
| 2020 | 179 | - | - | - | - | - | 121 | - | - |
| 2008 | 180 | - | - | - | - | - | 333 | - | - |
| 2020 | 180 | - | - | - | - | - | 333 | - | - |
| 2008 | 181 | 20,000 | 25,000 | 295,000 | - | - | - | - | - |
| 2020 | 181 | 20,000 | 100,000 | 50,000 | - | - | - | 200 | - |
| 2008 | 182 | 73,060 | - | - | 35,400 | 39,609 | - | - | 81 |
| 2020 | 182 | 73,060 | - | - | 35,400 | 39,609 | - | - | 81 |
| 2008 | 183 | 16,813 | 4,609 | - | 115,783 | - | 572 | - | - |
| 2020 | 183 | 16,813 | 4,609 | - | 115,783 | - | 572 | - | - |
| 2008 | 184 | - | - | - | 118,590 | - | 157 | - | - |
| 2020 | 184 | - | - | - | 118,590 | - | 157 | - | - |
| 2008 | 185 | 7,735 | - | - | 155,052 | - | 106 | - | - |
| 2020 | 185 | 7,735 | - | - | 155,052 | - | 106 | - | - |
| 2008 | 186 | - | - | - | - | - | 745 | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2020 | 186 | - | - | - | - | - | 745 | - | - |
| 2008 | 187 | - | - | - | - | - | 49 | - | - |
| 2020 | 187 | - | - | - | - | - | 55 | - | - |
| 2008 | 188 | 219,633 | 21,828 | 19,350 | 26,000 | - | 35 | - | - |
| 2020 | 188 | 219,633 | 21,828 | 19,350 | 26,000 | - | 35 | - | - |
| 2008 | 189 | - | - | - | - | - | 198 | 2 | - |
| 2020 | 189 | - | - | - | - | - | 198 | 2 | - |
| 2008 | 190 | 99,093 | - | - | 171,505 | - | 3 | - | - |
| 2020 | 190 | 99,093 | - | - | 171,505 | - | 3 | - | - |
| 2008 | 191 | 12,100 | 385,961 | 12,161 | 25,266 | - | - | 989 | - |
| 2020 | 191 | 12,100 | 385,961 | 12,161 | 60,057 | - | - | 1,009 | - |
| 2008 | 192 | 6,375 | - | - | - | - | - | 1,371 | - |
| 2020 | 192 | 6,375 | - | - | - | - | - | 1,388 | - |
| 2008 | 193 | 10,170 | 90,250 | 6,780 | - | - | - | - | - |
| 2020 | 193 | 10,170 | 90,250 | 6,780 | - | - | - | - | - |
| 2008 | 194 | 215,740 | - | - | - | 80,544 | - | - | 416 |
| 2020 | 194 | 215,740 | - | - | - | 80,544 | - | - | 416 |
| 2008 | 195 | 21,892 | 67,190 | 7,300 | - | - | - | - | - |
| 2020 | 195 | 21,892 | 67,190 | 7,300 | - | - | - | - | - |
| 2008 | 196 | 178,784 | - | 47,377 | - | - | 33 | - | - |
| 2020 | 196 | 278,784 | - | 47,377 | - | - | 33 | - | - |
| 2008 | 197 | 6,064 | 86,730 | 332,752 | - | - | - | - | - |
| 2020 | 197 | 31,564 | 92,730 | 332,752 | - | - | - | - | - |
| 2008 | 198 | 15,655 | - | - | - | - | - | 1,191 | - |
| 2020 | 198 | 15,655 | - | - | - | - | - | 1,191 | - |
| 2008 | 199 | 188,410 | 10,537 | - | - | - | - | 340 | - |
| 2020 | 199 | 188,410 | 10,537 | - | - | - | - | 350 | - |
| 2008 | 200 | 318,140 | 4,875 | - | 6,490 | - | - | - | - |
| 2020 | 200 | 318,140 | 4,875 | - | 6,490 | - | - | 50 | - |
| 2008 | 201 | 153,515 | - | - | 4,800 | - | - | - | - |
| 2020 | 201 | 153,515 | - | - | 4,800 | - | - | 50 | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 202 | 639,175 | 178,925 | 346,520 | - | - | - | - | - |
| 2020 | 202 | 647,625 | 258,925 | 20,000 | - | - | - | 300 | - |
| 2008 | 203 | 43,525 | 78,991 | 129,040 | 17,700 | - | - | - | - |
| 2020 | 203 | 43,525 | 78,991 | 129,040 | 17,700 | - | - | - | - |
| 2008 | 204 | - | 92,621 | - | - | - | - | - | - |
| 2020 | 204 | - | 122,621 | - | - | - | - | 125 | - |
| 2008 | 205 | 71,755 | 288,792 | 7,820 | - | - | - | - | - |
| 2020 | 205 | 71,755 | 299,292 | 7,820 | - | - | - | - | - |
| 2008 | 206 | - | 18,150 | 7,800 | 22,675 | - | - | - | - |
| 2020 | 206 | - | 18,150 | 7,800 | 22,675 | - | - | - | - |
| 2008 | 207 | 12,028 | 3,250 | - | 108,700 | - | 4 | 122 | - |
| 2020 | 207 | 12,028 | 3,250 | - | 108,700 | - | 4 | 122 | - |
| 2008 | 208 | 18,795 | - | - | - | - | 2 | 117 | - |
| 2020 | 208 | 18,795 | - | - | - | - | 2 | 117 | - |
| 2008 | 209 | 56,980 | 8,600 | - | 67,306 | - | - | - | - |
| 2020 | 209 | 56,980 | 8,600 | - | 67,306 | - | - | - | - |
| 2008 | 210 | 109,875 | 20,625 | - | 18,565 | - | 25 | 102 | - |
| 2020 | 210 | 109,875 | 20,625 | - | 18,565 | - | 25 | 102 | - |
| 2008 | 211 | - | - | - | 15,230 | - | 349 | 77 | - |
| 2020 | 211 | - | - | - | 15,230 | - | 349 | 77 | - |
| 2008 | 212 | 237,922 | 95,000 | 52,097 | 472,826 | - | - | - | - |
| 2020 | 212 | 237,922 | 95,000 | 52,097 | 472,826 | - | - | - | - |
| 2008 | 213 | 98,732 | 63,347 | - | 19,950 | 98,137 | - | - | 180 |
| 2020 | 213 | 98,732 | 123,347 | - | 19,950 | 98,137 | - | - | 180 |
| 2008 | 214 | - | 81,726 | - | 86,775 | - | 263 | - | - |
| 2020 | 214 | 7,600 | 81,726 | - | 86,775 | - | 263 | 90 | - |
| 2008 | 215 | 71,816 | - | - | 30,804 | - | 168 | 502 | - |
| 2020 | 215 | 71,816 | - | - | 30,804 | - | 168 | 502 | - |
| 2008 | 216 | 226,554 | 2,100 | 8,700 | 56,947 | - | - | 48 | - |
| 2020 | 216 | 226,554 | 2,100 | 8,700 | 56,947 | - | 6 | 148 | - |
| 2008 | 217 | 559,114 | 100,528 | - | 31,742 | - | - | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2020 | 217 | 559,114 | 100,528 | - | 31,742 | 127,056 | - | - | 160 |
| 2008 | 218 | - | 1,750 | - | - | - | 76 | - | - |
| 2020 | 218 | - | 1,750 | - | - | - | 82 | - | - |
| 2008 | 219 | 88,000 | - | - | 42,550 | - | 167 | 151 | - |
| 2020 | 219 | 88,000 | - | - | 42,550 | - | 180 | 151 | - |
| 2008 | 220 | - | - | - | - | - | 74 | - | - |
| 2020 | 220 | - | - | - | - | - | 74 | - | - |
| 2008 | 221 | - | 83,988 | - | - | - | - | - | - |
| 2020 | 221 | - | 125,000 | - | - | - | - | - | - |
| 2008 | 222 | - | 16,377 | - | - | - | - | - | - |
| 2020 | 222 | - | 146,377 | - | - | - | - | - | - |
| 2008 | 223 | - | 145,000 | - | - | - | - | - | - |
| 2020 | 223 | - | 145,000 | - | - | - | - | - | 250 |
| 2008 | 224 | - | - | - | - | - | - | - | - |
| 2020 | 224 | 80,000 | 55,000 | 80,000 | - | - | - | 100 | - |
| 2008 | 225 | 175,679 | - | - | 669,083 | - | - | - | - |
| 2020 | 225 | 175,679 | - | - | 669,083 | - | - | - | - |
| 2008 | 226 | 62,918 | 26,473 | - | - | - | - | - | - |
| 2020 | 226 | 62,918 | 26,473 | - | - | - | - | - | - |
| 2008 | 227 | - | 140,180 | - | - | - | - | - | - |
| 2020 | 227 | - | 140,180 | - | - | - | - | - | - |
| 2008 | 228 | 149,298 | 59,719 | - | 43,286 | - | 29 | 435 | - |
| 2020 | 228 | 149,298 | 64,769 | - | 43,286 | - | 36 | 572 | - |
| 2008 | 229 | 943,262 | 151,752 | 22,306 | - | - | 1 | - | - |
| 2020 | 229 | 943,262 | 151,752 | 22,306 | - | - | 1 | - | - |
| 2008 | 230 | 331,359 | 72,820 | 22,902 | - | - | - | - | - |
| 2020 | 230 | 331,359 | 72,820 | 22,902 | - | - | - | - | - |
| 2008 | 231 | 146,302 | 13,848 | - | - | - | - | - | - |
| 2020 | 231 | 146,302 | 13,848 | - | - | - | - | - | - |
| 2008 | 232 | 297,679 | - | - | - | - | - | - | - |
| 2020 | 232 | 297,679 | - | - | - | - | - | - | - |

| Year | TAZ | Square Footage | | | | | Dwelling Units | | |
|---|---|---|---|---|---|---|---|---|---|
| | | OFFICE | RETAIL | INDUSTRIAL | INSTITUT (Gov+Hosp +Edu) | HOTEL | SFDU | MFDU | HOTEL Rooms |
| 2008 | 233 | - | - | - | - | - | 172 | - | - |
| 2020 | 233 | - | - | - | - | - | 172 | - | - |
| 2008 | 234 | - | - | - | - | - | - | - | - |
| 2020 | 234 | - | - | - | - | - | - | - | - |
| 2008 | 235 | - | - | - | - | - | - | - | - |
| 2020 | 235 | - | - | - | - | - | - | - | - |
| 2008 | 640 | - | - | - | - | - | 39 | - | - |
| 2020 | 640 | - | - | - | - | - | 62 | - | - |
| 2008 | 641 | - | - | - | - | - | 59 | 160 | - |
| 2020 | 641 | - | - | - | - | - | 59 | 160 | - |
| 2008 | 642 | - | - | - | - | - | 6 | - | - |
| 2020 | 642 | - | - | - | - | - | 6 | - | - |
| 2008 | 643 | - | - | - | - | - | 86 | - | - |
| 2020 | 643 | - | - | - | - | - | 86 | - | - |
| 2008 | 644 | 400 | - | - | 100,950 | - | - | - | - |
| 2020 | 644 | 400 | - | - | 100,950 | - | - | - | - |
| 2008 | 645 | 6,995 | 17,180 | - | - | - | 28 | 30 | - |
| 2020 | 645 | 6,995 | 17,180 | - | - | - | 30 | 30 | - |
| 2008 | 646 | 320,100 | - | - | 246,718 | - | - | - | - |
| 2020 | 646 | 320,100 | - | - | 246,718 | - | - | - | - |
| 2008 | 647 | - | - | - | - | - | 111 | - | - |
| 2020 | 647 | - | - | - | - | - | 111 | - | - |
| 2008 | 648 | 265,406 | 2,100 | - | 110,522 | - | 120 | 87 | - |
| 2020 | 648 | 265,406 | 2,100 | - | 110,522 | - | 120 | 87 | - |
| 2008 | 649 | 370,000 | - | - | - | - | - | 344 | - |
| 2020 | 649 | 370,000 | - | - | - | - | - | 344 | - |
| 2008 | 650 | 393,972 | 16,725 | 173,850 | 31,574 | - | - | 476 | - |
| 2020 | 650 | 408,972 | 20,725 | 173,850 | 31,574 | - | - | 726 | - |

# Appendix E

## Transportation System Impact Analysis Methodology

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 consideration of number of factors 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 2020 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 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 economic activities tend to avoid areas where traffic congestion is severe. The cost of development and economic returns enjoyed may also be affected by regulations that tend 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 travel demand model used for this analysis was calibrated to match 2006 traffic counts. The model is known as the Bellevue-Kirkland-Redmond (BKR) Transportation Model and is maintained under terms of an interlocal 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 first step in forecasting travel demand is the identification of land use information for transportation analysis zones (TAZs) in the study area.[1] 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. A table with Bellevue's land uses by TAZ can be found in Appendix D.

The next step in transportation modeling is to distribute trip production (origins) with trip attractions (destinations). This is accomplished with a gravity model that uses survey data about where people live and how far they travel for work, shopping, school, etc. The survey information comes from the PSRC's traffic model.

The model then determines 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. People choose a particular mode for each trip based on a variety of factors including convenience, cost, travel time, household income, number of autos available, etc. The BKR model predicts the number of motor vehicle trips using each mode (mode split) based on formulae that reflect regional trends and are consistent with PSRC's traffic model. (The BKR model does not represent trips made by walk or bike modes.)

PSRC's survey data also provide information about the proportions of trips made during peak periods and the balance of the day, for different trip purposes and travel modes. These data are used to construct a PM peak-hour trip table. The traffic model is used to determine route choices for trips made between zone pairs. This procedure also considers delay due to congestion on each section of roadway.

[1] TAZs are defined based on population and are thus small where densities are high and larger in suburban and rural areas. Maps of Bellevue's TAZs can be found in Appendix C.

At this point the model is tested using a series of comparisons with screenline traffic count data. This process compares the actual 2006 volumes on a number of arterials crossing an imaginary north-south or east-west line, a screenline[2], with the modeled results. (The 2006 base year volumes were established by field counts.) The model is validated to closely match the total volumes traveling across each screenline, rather than matching the volumes on specific roadway segments. This process provides an acceptable level of accuracy for forecasting vehicle demand on the roadway system in the Bellevue, Kirkland, and Redmond areas.[3] For this EIS analysis, base year level of service calculations are presented for 2006 conditions, which is the latest year for which traffic counts are available at time of model development and the base year for model calibration.

As a final step, intersection LOS calculations are prepared in a “post processing” stage. Since it is not possible to calibrate a base year model to 100% accuracy due to the many model input files, processes and network tweaking (including locations of centroid loadings as well as representations of congested arterial speeds and capacity), one cannot just "read off" raw turning movement volumes simulated in a future model. Although volumes crossing calibration screenlines may be accurate to within + - 5% the same volumes dispersed / distributed down to the superblock or block level can be quite erratic. (One should bear in mind that this is a planning tool which produces general approximations and not an operational model which is detailed down to the feet and inches.) However, if one compares the base year model volumes to actual counts, the differences captured will represent the errors in calibrations. The closer these link differences approaches zero, the closer the model is to perfect calibration. In this way, it is possible to negate many "poorly" modeled areas. If a base year link has a "suspect" volume, the future year will also have a "suspect" volume. However, the difference in these results from base year to forecast year represent the changes we wish to capture.

In order to establish differences in intersection traffic volumes and turning movements, the following steps are taken:

- The change in volume attributable to changes in the roadway network is determined by modeling the 2020 roadway network on the 2006 base year land use.
- The change in volume attributable to changes in land use is determined by modeling the 2020 roadway network with the 2020 land use.

These differences or deltas in volume attributable to changes in the roadway network from base year to forecast year (resulting from arterial improvements, new roadway links, etc), and change in volume attributable to changes in land use (resulting from changes in density and changes in type of use) are captured and applied to the actual base year counts. This technique is referred to as "post-

[2] An example of the use of a screenline is the aggregate volume of north-south vehicles on 140th, 148th, 156th, 164th Avenues NE and W. Lake Sammamish Pkwy crossing an imaginary east-west line between Main and NE 8th.

[3] The validation effort for the base model on which the 2020 forecast model used in this TFP analysis is built included analysis of 2006 traffic volumes in each direction at 273 locations across 33 screenlines. The simulated traffic fell within +/- 10% of observed counts at nearly all screenlines. Overall, on a system-wide basis, the “goodness of fit ratio” ($R^2$) was computed to be 0.98, indicating an excellent fit (1.0 equals a perfect fit).

processing", and the final traffic projections are referred to as "post-processed" turning movements. The current model is calibrated to reflect 2006 existing conditions and the post-processing consequently used 2006 actual traffic data.

# Land Use Projections

The land use projections used here distribute projected growth among the different geographic areas of the city, based on the “opportunity” for development. This is determined by assessing the difference between the potential for development under the Land Use Code—the existing code together with proposed changes in regulations for the Bel-Red area—and the current intensity of development. 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.[4]

The land use projections used in this EIS are for the year 2020. The 2020 land use projections are applied to the TFP networks in both the No Action alternative (Alternative 1) and the Proposed Action alternative (Alternative 2) 2009–2020 TFP. Refer to Table E-1 for 2008 (existing) and Table E-2 and for the projected 2020 land use by major category for each Mobility Management Area. Table E-3 summarizes the projected change in land use in each Mobility Management Area between 2008 and 2020. See Figure E-1 for a map of Mobility Management Areas.

### Table E-1. Land Use by Major Category–Year 2008

| | 2008 Square Footage | | | | 2008 Dwelling Units | | |
|---|---|---|---|---|---|---|---|
| MMA | Office | Retail | Industrial | Others | Single Family | Multi-Family | Hotel Rooms |
| 1 North Bellevue | 1,730,991 | 106,234 | 173,850 | 269,433 | 2,158 | 2,260 | 0 |
| 2 Bridle Trails | 795,348 | 565,229 | 46,841 | 318,691 | 1,637 | 3,176 | 416 |
| 3 Downtown | 8,062,862 | 3,927,537 | 80,785 | 569,426 | 8 | 4,533 | 1,430 |
| 4 Wilburton | 1,396,781 | 510,586 | 113,567 | 1,262,197 | 68 | 598 | 342 |
| 5 Crossroads | 136,785 | 861,300 | 58,120 | 108,312 | 24 | 3,317 | 0 |
| 6 Northeast Bellevue | 464,890 | 8,600 | 0 | 562,178 | 3,238 | 160 | 81 |
| 7 South Bellevue | 1,296,308 | 309,881 | 112,944 | 489,462 | 2,677 | 2,066 | 535 |
| 8 Richards Valley | 308,287 | 27,073 | 16,225 | 431,663 | 2,401 | 3,470 | 0 |
| 9 East Bellevue | 601,981 | 424,362 | 0 | 1,735,990 | 7,303 | 2,897 | 0 |
| 10 Eastgate | 3,496,311 | 430,509 | 1,737,842 | 1,044,912 | 293 | 818 | 529 |

[4] Land use projections by Traffic Analysis Zones (TAZ) are found in Appendix C. Projections outside Bellevue are based on Puget Sound Regional Council projections with additional detail provided by the staffs of Bellevue, Kirkland, and Redmond.

| | 2008 Square Footage | | | | 2008 Dwelling Units | | |
|---|---|---|---|---|---|---|---|
| MMA | Office | Retail | Industrial | Others | Single Family | Multi-Family | Hotel Rooms |
| 11 Newcastle | 147,338 | 65,368 | 52,539 | 502,641 | 8,489 | 1,084 | 207 |
| 12 Bel-Red | 3,267,884 | 2,240,016 | 4,006,508 | 112,560 | 60 | 70 | 0 |
| 13 Factoria | 1,427,820 | 930,868 | 76,258 | 452,716 | 329 | 1,120 | 0 |
| 14 Newport Hills | 14,698 | 179,591 | 0 | 48,112 | 3,694 | 632 | 0 |
| **Totals** | **23,193,883** | **10,682,061** | **6,475,479** | **8,676,364** | **39,580** | **28,028** | **3,540** |

## Table E-2. Land Use by Major Category–Year 2020

| | 2017 Square Footage | | | | 2017 Dwelling Units | | |
|---|---|---|---|---|---|---|---|
| MMA | Office | Retail | Industrial | Others | Single-Family | Multi-Family | Hotel Rooms |
| 1 North Bellevue | 1,745,991 | 110,234 | 173,850 | 338,554 | 2,188 | 2,524 | 0 |
| 2 Bridle Trails | 795,348 | 565,229 | 46,841 | 353,482 | 1,645 | 3,213 | 416 |
| 3 Downtown | 13,552,198 | 5,186,789 | 43,985 | 1,238,776 | 0 | 11,576 | 2,828 |
| 4 Wilburton | 1,396,781 | 757,975 | 113,567 | 1,262,197 | 68 | 626 | 592 |
| 5 Crossroads | 146,424 | 911,300 | 58,120 | 108,312 | 24 | 3,757 | 200 |
| 6 Northeast Bellevue | 464,890 | 8,600 | 0 | 567,589 | 3,250 | 160 | 81 |
| 7 South Bellevue | 1,409,957 | 315,381 | 164,385 | 507,740 | 2,712 | 2,276 | 766 |
| 8 Richards Valley | 308,287 | 27,073 | 16,225 | 431,663 | 2,452 | 3,506 | 0 |
| 9 East Bellevue | 615,411 | 461,323 | 0 | 1,735,990 | 7,354 | 3,033 | 0 |
| 10 Eastgate | 4,124,201 | 466,009 | 1,737,842 | 1,110,468 | 323 | 918 | 849 |
| 11 Newcastle | 147,338 | 65,368 | 52,539 | 553,175 | 8,615 | 1,104 | 207 |
| 12 Bel-Red | 6,592,136 | 2,761,415 | 2,084,888 | 197,560 | 60 | 3,370 | 400 |
| 13 Factoria | 1,438,919 | 971,918 | 76,258 | 452,716 | 340 | 1,797 | 0 |
| 14 Newport | 18,498 | 183,391 | 0 | 126,092 | 3,805 | 632 | 0 |
| **Totals** | **32,801,979** | **12,617,103** | **4,568,499** | **9,752,385** | **40,037** | **40,319** | **6,339** |

## Table E-3. Change in Land Use By Major Category–[Change from 2008 to 2020]

| | Delta Square Footage | | | | Delta Dwelling Units | | |
|---|---|---|---|---|---|---|---|
| MMA | Office | Retail | Industrial | Others | Single-Family | Multi-Family | Hotel Rooms |
| 1 North Bellevue | 15,000 | 4,000 | - | 69,121 | 30 | 264 | - |
| 2 Bridle Trails | - | (269,811) | - | 34,791 | 8 | 37 | - |
| 3 Downtown | 5,489,336 | 1,259,253 | (36,800) | 669,350 | (8) | 7,043 | 1,398 |
| 4 Wilburton | - | 247,389 | - | - | - | 28 | 250 |
| 5 Crossroads | 9,639 | 50,000 | - | - | - | 440 | 200 |
| 6 Northeast Bellevue | - | - | - | 5,411 | 12 | - | - |
| 7 South Bellevue | 113,649 | 5,501 | 51,441 | 18,278 | 35 | 210 | 231 |
| 8 Richards Valley | 1 | 1 | - | - | 51 | 36 | - |
| 9 East Bellevue | 13,431 | 36,962 | - | - | 51 | 136 | - |
| 10 Eastgate | 627,890 | 35,500 | - | 65,556 | 30 | 100 | 320 |
| 11 Newcastle | - | - | - | 50,534 | 126 | 20 | - |
| 12 Bel-Red | 3,324,252 | 521,400 | (1,921,620) | 85,000 | - | 3,300 | 400 |
| 13 Factoria | 11,099 | 41,050 | - | - | 11 | 677 | - |
| 14 Newport | 3,800 | 3,800 | - | 77,980 | 111 | - | - |
| **Totals** | **9,608,096** | **1,935,042** | **(1,906,980)** | **1,076,021** | **457** | **12,291** | **2,799** |

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.)

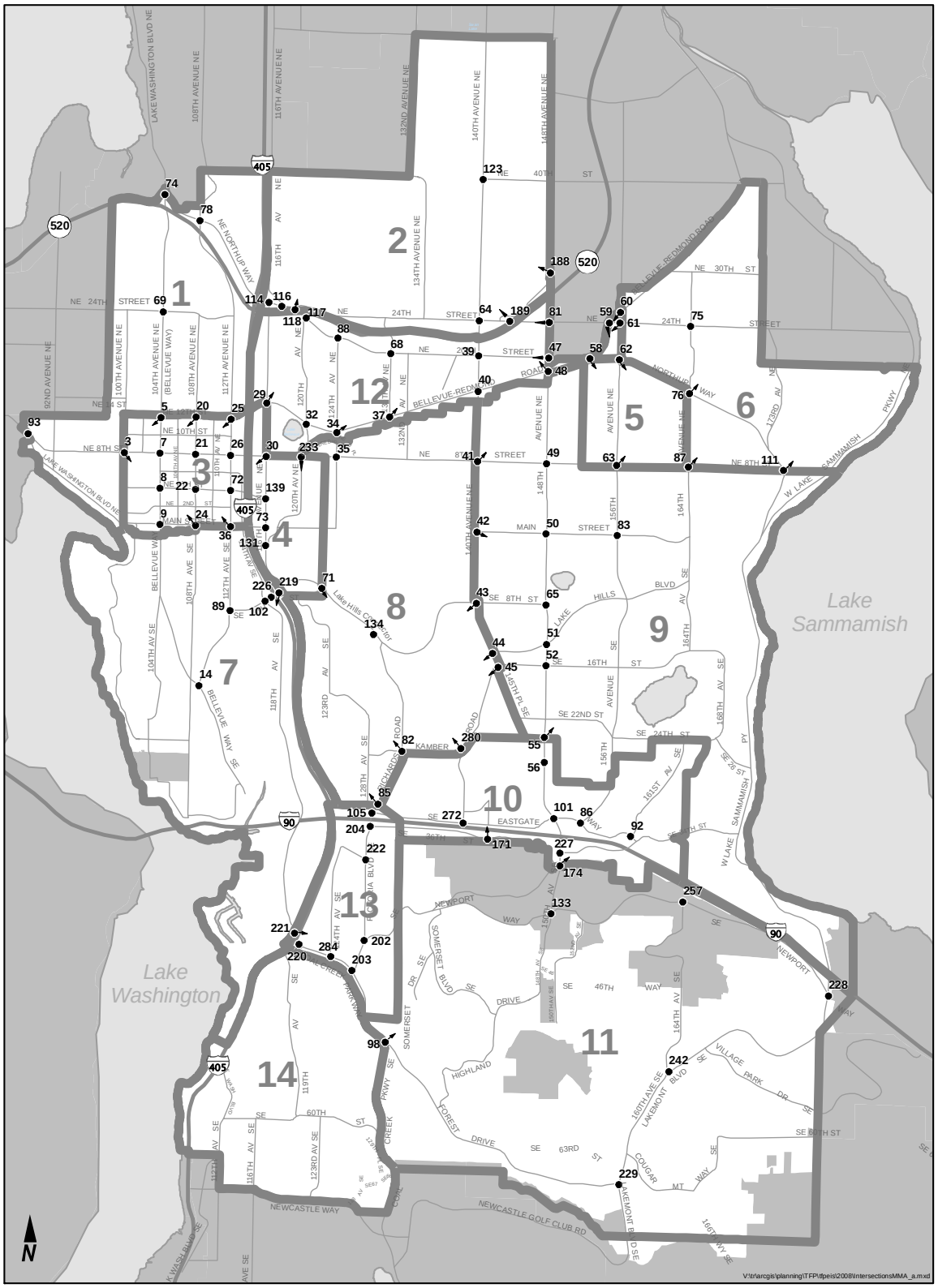


Figure E-1. Mobility Management Areas and System Intersections

# 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 trips (in a specific mode and purpose) entering and exiting a Traffic Analysis Zone (TAZ). Trip type categories are Home-based work trips, Home-base School trips, Home-based Other trips and Non-home based trips. Modes are walk, bike, bus, train, ferry, SOV and HOV. Only trips by motorized modes are modeled.

Because land use patterns 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.

Bellevue conducts periodic – every two to three years – surveys of commute trip mode choice to assess changes in commute trip mode use over time. The surveys look at both large employers (with 100 or more employees) and small employers (with fewer than 100 employees). The most recent mode "share" survey was conducted in 2005 in five Mobility Management Areas: Downtown, Bel-Red/Northup, Crossroads, Eastgate, and Factoria. Table E-4 summarizes the findings:

### Table E-4. 2005 Mode Share[1]

| Mobility Management Area[2] | Drive Alone | Carpool/ Vanpool | Bus | Other |
|---|---|---|---|---|
| Downtown (MMA-3) | 71% | 11% | 14% | 4% |
| Bel-Red/Northup (MMA-4) | 74% | 19% | 4% | 3% |
| Crossroads (MMA-5) | 83% | 11% | 2% | 4% |
| Eastgate (MMA-10) | 77% | 11% | 4% | 8% |
| Factoria (MMA-13) | 79% | 14% | 4% | 3% |

1. Based on respondents report of "modes used during previous week".

2. The boundaries of the Bel-Red/Northup MMA 4 cited in this table have significant overlap with but some differences from the new "Bel-Red" MMA 12 district that was defined in the Bel-Red area planning process and which is used elsewhere in this document (see Figure B-A for the new Bel-Red MMA boundaries).

Data collection for a new Mode Share Survey is underway in late 2008 and the results are expected to be available in early 2009.

# Traffic Operating Conditions

The City's methodology to measure mobility on roadways – or levels of service – is based on volume-to-capacity (v/c) ratios, as shown in Table E-5.

## Table E-5. Average Intersection Levels of Service Definitions (Range of Volume-to-Capacity Ratios with User Impressions)

| LOS Categories | Average Volume-to-Capacity Ratios | Description (Subjective Impression of User) |
|---|---|---|
| LOS A | Less than or equal to 0.600 | Highest drive comfort. Little delay. Free flow. |
| LOS B | 0.601 - 0.70 | High degree of drive comfort. Little delay. |
| LOS C | 0.701 - 0.80 | Some delays. Acceptable level of driver comfort. Efficient traffic operation. |
| LOS D+ (High D) | 0.801 - 0.85 | Some driver frustration. Efficient traffic operation. |
| LOS D- (Low D) | 0.851 – 0.90 | Increased driver frustration. Long cycle length. |
| LOS E+ (High E) | 0.901 - 0.95 | Near capacity. Notable delays. Low driver comfort. Difficulty of signal progression. |
| LOS E- (Low E) | 0.951 - 1.000 | At capacity. High level of congestion. High level of driver frustration. |
| LOS F | Greater than or equal to 1.001 | Breakdown flow. Excessive delays. |

The City's standards for mobility on roadways are based on an average of LOS 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 E-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
- 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 E-6 shows the Level of Service and Congestion Allowance levels for the MMAs in Bellevue:

## Table E-6. Level of Service Standards and Congestion Allowances[1]

| Mobility Management Area | Area-Wide Average LOS Standard (Maximum V/C Ratio) | Congestion Allowance |
|---|---|---|
| **Regional Center** | | |
| 3 Downtown | 0.950 | 9 |
| **Mixed Commercial/ Residential Areas** | | |
| 12 Bel-Red | 0.950 | 7 |
| 4 Wilburton | 0.900 | 3 |
| 5 Crossroads | 0.900 | 2 |
| 10 Eastgate | 0.900 | 4 |

| Mobility Management Area | Area-Wide Average LOS Standard (Maximum V/C Ratio) | Congestion Allowance |
|---|---|---|
| 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 Newcastle | 0.800 | 3 |
| 14 Newport[2] | 0.800 | --[2] |

1. Excerpted from BCC 14.10.030 and modified to reflect anticipated revisions associated with the Bel-Red plan adoption
2. No system intersections are currently identified in this mobility management area.

The intersection analysis presented in this report is based on the Highway Capacity Manual (HCM) 209/2-hour average method. This is the City's adopted LOS analysis procedure as outlined in the Traffic Standards Code (BCC 14.10). The City adopted this method in 1998. The operational method provides a complex set of procedures to analyze 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 2 the two-hour volume for each movement between the hours of 4 PM and 6 PM, which generally represents the most congested traffic conditions.
- Uniform traffic demand is assumed over the two-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 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 E-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 E-7 also shows the applicable mobility targets (in terms of volume-to-capacity ratios) for each of the MMAs.

## Table E-7. Existing and Projected Levels of Service (Two-Hour Averaged PM Peak)

Shaded cells indicate LOS that exceeds the standard for that MMA.

| ID No | Intersection | Existing (2006) | | No Action (2020) | | Proposed Action (2020) | | % Change Over Existing | |
|---|---|---|---|---|---|---|---|---|---|
| | | V/C | LOS | V/C | LOS | V/C | LOS | No Action | Proposed Action |
| **MMA 1** | **North Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 3** | | | | | | | | |
| 69 | Bellevue Way NE - NE 24th Street | 0.754 | C | **0.944** | **E+** | **0.939** | **E+** | 25.2 | 24.5 |
| 74 | Bellevue Way NE - Northup Way NE | 0.759 | C | 0.811 | D+ | 0.803 | D+ | 6.9 | 5.8 |
| 78 | 108th Ave. NE - Northup Way NE | 0.668 | B | 0.762 | C | 0.760 | C | 14.1 | 13.8 |
| 93 | Lake Washington Blvd.- NE 1st/NE 10th | 0.293 | A | 0.362 | A | 0.359 | A | 23.5 | 22.5 |
| | **Area-wide Average** | 0.619 | B | 0.720 | C | 0.715 | C | 16.3 | 15.5 |
| **MMA 2** | **Bridle Trails – LOS Standard C or V/C 0.80; Congestion Allowance: 4** | | | | | | | | |
| 64 | 140th Ave NE – NE 24th Street | 0.715 | C | **0.917** | **E+** | **0.923** | **E+** | 28.3 | 29.1 |
| 79 | 148th Ave NE – NE 40th Street | 0.536 | A | **0.867** | **D-** | **0.870** | **D-** | 61.8 | 62.3 |
| 114 | 116th Ave NE – Northup Way NE | 0.723 | C | **0.852** | **D-** | 0.712 | C | 17.8 | -1.5 |
| 116 | 115th Place NE – Northup Way | **0.823** | **D+** | **1.068** | **F** | **0.916** | **E+** | 29.8 | 11.3 |
| 118 | Northup Way - NE 24th Street | 0.532 | A | 0.727 | C | **0.821** | **D+** | 36.7 | 54.3 |
| 123 | 140th Ave. NE - NE 40th Street | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 188 | 148th Ave NE – NE 29th Place | **0.910** | **E+** | **0.989** | **E-** | **0.929** | **E+** | 8.7 | 2.1 |
| 189 | NE 29th Place – NE 24th Street | 0.410 | A | 0.563 | A | 0.566 | A | 37.3 | 38.0 |
| | **Area-wide Average** | 0.664 | B | **0.855** | **D-** | **0.819** | **D+** | 28.8 | 23.3 |
| **MMA 3** | **Downtown – LOS Standard E+ or V/C 0.95; Congestion Allowance: 9** | | | | | | | | |
| 3 | 100th Ave. NE - NE 8th Street | 0.447 | A | 0.600 | A | 0.594 | A | 34.2 | 32.9 |
| 5 | Bellevue Way NE - NE 12th Street | 0.660 | B | 0.804 | D+ | 0.801 | D+ | 21.8 | 21.4 |
| 7 | Bellevue Way NE - NE 8th Street | 0.708 | C | 0.823 | D+ | 0.822 | D+ | 16.2 | 16.1 |
| 8 | Bellevue Way NE - NE 4th Street | 0.674 | B | 0.933 | E+ | 0.930 | E+ | 38.4 | 38.0 |
| 9 | Bellevue Way - Main Street | 0.758 | C | 0.874 | D- | 0.817 | D+ | 15.3 | 7.8 |
| 20 | 108th Ave. NE - NE 12th Street | 0.397 | A | 0.637 | B | 0.624 | B | 60.5 | 57.2 |
| 21 | 108th Ave. NE - NE 8th Street | 0.695 | B | 0.941 | E+ | 0.927 | E+ | 35.4 | 33.4 |
| 22 | 108th Ave. NE - NE 4th Street | 0.605 | B | 0.765 | C | 0.765 | C | 26.4 | 26.4 |
| 24 | 108th Ave. - Main Street | 0.475 | A | 0.533 | A | 0.528 | A | 12.2 | 11.2 |
| 25 | 112th Ave. NE - NE 12th Street | 0.711 | C | 0.920 | E+ | 0.871 | D- | 29.4 | 22.5 |
| 26 | 112th Ave. NE - NE 8th Street | **1.074** | **F** | **1.238** | **F** | **1.211** | **F** | 15.3 | 12.8 |

| ID No | Intersection | Existing (2006) | | No Action (2020) | | Proposed Action (2020) | | % Change Over Existing | |
|---|---|---|---|---|---|---|---|---|---|
| | | V/C | LOS | V/C | LOS | V/C | LOS | No Action | Proposed Action |
| 36 | 112th Ave. - Main Street | 0.794 | C | 0.935 | E+ | 0.928 | E+ | 17.8 | 16.9 |
| 72 | 112th Ave. NE - NE 4th Street | 0.587 | A | 0.815 | D+ | 0.811 | D+ | 38.8 | 38.2 |
| | **Area-wide Average** | 0.660 | B | 0.832 | D+ | 0.823 | D+ | 26.1 | 24.7 |
| **MMA 4** | **Wilburton – LOS Standard D+ or V/C 0.90; Congestion Allowance: 3** | | | | | | | | |
| 30 | 116th Ave. NE - NE 8th Street | 0.708 | C | 1.069 | F | 0.913 | E+ | 51.0 | 29.0 |
| 73 | 116th Ave. - Main Street | 0.680 | B | 0.972 | E- | 0.793 | C | 42.9 | 16.6 |
| 131 | 116th Ave. SE - SE 1st Street | 0.724 | C | 0.792 | C | 0.633 | B | 9.4 | -12.6 |
| 139 | 116th Ave. NE - NE 4th Street | 0.578 | A | 0.755 | C | 0.869 | D- | 30.6 | 50.3 |
| 233 | 120th Ave. NE - NE 8th Street | 0.699 | B | **0.901** | **D-** | **0.907** | **E+** | 28.9 | 29.8 |
| | **Area-wide Average** | 0.678 | B | 0.898 | D- | 0.823 | D+ | 32.4 | 21.4 |
| **MMA 5** | **Crossroads – LOS Standard D- or V/C 0.90; Congestion Allowance: 2** | | | | | | | | |
| 58 | Bellevue-Redmond- NE 20th Street | 0.511 | A | 0.665 | B | 0.658 | B | 30.1 | 28.8 |
| 62 | 156th Ave. NE - Northup Way | 0.775 | C | **0.913** | **E+** | **0.938** | **E+** | 17.8 | 21.0 |
| 63 | 156th Ave. NE - NE 8th Street | 0.704 | C | 0.763 | C | 0.773 | C | 8.4 | 9.8 |
| | **Area-wide Average** | 0.663 | B | 0.78 | C | 0.79 | C | 17.6 | 19.2 |
| **MMA 6** | **Northeast Bellevue – LOS Standard C or V/C 0.80; Congestion Allowance: 2** | | | | | | | | |
| 75 | 164th Ave. NE - NE 24th Street | 0.551 | A | 0.757 | C | 0.755 | C | 37.4 | 37.0 |
| 76 | 164th Ave. NE - Northup Way | 0.609 | B | 0.767 | C | 0.766 | C | 25.9 | 25.8 |
| 87 | 164th Ave. NE - NE 8th Street | 0.735 | C | **0.907** | **E+** | **0.908** | **E+** | 23.4 | 23.5 |
| 111 | Northup Way - NE 8th Street | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| | **Area-wide Average** | 0.632 | B | **0.810** | **D+** | **0.810** | **D+** | 28.2 | 28.2 |
| **MMA 7** | **South Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 4** | | | | | | | | |
| 14 | 112th Ave. SE - Bellevue Way SE | 0.702 | C | 0.744 | C | 0.749 | C | 6.0 | 6.7 |
| 89 | 112th Ave. SE - SE 8th Street | 0.570 | A | 0.495 | A | 0.495 | A | -13.2 | -13.2 |
| 102 | 118th Ave. SE - SE 8th Street | 0.709 | C | **0.865** | **D-** | **0.853** | **D-** | 22.0 | 20.3 |
| 219 | I-405 NB Ramps - SE 8th Street | 0.515 | A | 0.662 | B | 0.575 | A | 28.5 | 11.7 |
| 226 | I-405 SB Ramps - SE 8th Street | 0.503 | A | 0.640 | B | 0.719 | C | 27.2 | 42.9 |
| | **Area-wide Average** | 0.600 | A | 0.681 | B | 0.678 | B | 13.5 | 13.0 |
| **MMA 8** | **Richards Valley – LOS Standard D+ or V/C 0.85; Congestion Allowance: 5** | | | | | | | | |
| 35 | 124th Ave. NE - NE 8th Street | 0.706 | C | **0.853** | **D-** | **1.005** | **F** | 20.8 | 42.4 |

| ID No | Intersection | Existing (2006) | | No Action (2020) | | Proposed Action (2020) | | % Change Over Existing | |
|---|---|---|---|---|---|---|---|---|---|
| | | V/C | LOS | V/C | LOS | V/C | LOS | No Action | Proposed Action |
| 43 | 140th Ave. SE - SE 8th Street | 0.641 | B | 0.829 | D+ | 0.793 | C | 29.3 | 23.7 |
| 44 | 145th Place SE - Lake Hills Blvd. | 0.570 | A | 0.663 | B | 0.665 | B | 16.3 | 16.7 |
| 45 | 145th Place SE - SE 16th Street | 0.648 | B | 0.787 | C | 0.770 | C | 21.5 | 18.8 |
| 71 | Lake Hills Connect- SE 8th St./7th St. | **0.905** | **E+** | **1.114** | **F** | **1.101** | **F** | 23.1 | 21.7 |
| 82 | Richards Rd. - Kamber Rd. | 0.588 | A | 0.682 | B | 0.676 | B | 16.0 | 15.0 |
| 85 | Richards Rd. - SE 32nd Street | 0.618 | B | 0.787 | C | 0.800 | C | 27. | 29.4 |
| 134 | Richards Rd. - Lake Hills Connector | 0.480 | A | 0.583 | A | 0.588 | A | 21.5 | 22.5 |
| 280 | 139th Ave. SE - Kamber Road | 0.336 | A | 0.365 | A | 0.372 | A | 8.6 | 10.7 |
| | **Area-wide Average** | 0.610 | B | 0.740 | C | 0.752 | C | 21.3 | 23.3 |
| **MMA 9** | **East Bellevue – LOS Standard D+ or V/C 0.85; Congestion Allowance: 5** | | | | | | | | |
| 41 | 140th Ave. NE - NE 8th Street | 0.794 | C | 0.966 | E- | 1.012 | F | 21.7 | 27.5 |
| 42 | 140th Ave. NE - Main Street | 0.577 | A | 0.713 | C | 0.707 | C | 23.6 | 22.5 |
| 49 | 148th Ave. NE - NE 8th Street | **0.888** | **D-** | **1.058** | **F** | **0.918** | **E+** | 19.1 | 3.4 |
| 50 | 148th Ave. NE - Main Street | 0.776 | C | **0.911** | **E+** | **0.914** | **E+** | 17.4 | 17.8 |
| 51 | 148th Ave. SE - Lake Hills Blvd. | 0.849 | D+ | **0.958** | **E-** | **0.960** | **E-** | 12.8 | 13.1 |
| 52 | 148th Ave. SE - SE 16th Street | 0.818 | D+ | **0.954** | **E-** | **0.961** | **E-** | 16.6 | 17.5 |
| 55 | 148th Ave. SE - SE 24th Street | 0.733 | C | 0.812 | D+ | 0.820 | D+ | 10.8 | 11.9 |
| 65 | 148th Ave. SE - SE 8th Street | 0.706 | C | 0.812 | D+ | 0.807 | D+ | 15.0 | 14.3 |
| 83 | 156th Ave. - Main Street | 0.602 | B | 0.756 | C | 0.761 | C | 25.6 | 26.4 |
| | **Area-wide Average** | 0.749 | C | **0.882** | **D-** | **0.873** | **D-** | 17.8 | 16.6 |
| **MMA 10** | **Eastgate – LOS Standard D- or V/C 0.90; Congestion Allowance: 4** | | | | | | | | |
| 56 | 148th Ave. SE - SE 27th Street | 0.474 | A | 0.517 | A | 0.531 | A | 9.1 | 12.0 |
| 86 | 156th Ave. SE - SE Eastgate Way | 0.656 | B | 0.868 | D- | 0.799 | C | 32.3 | 21.8 |
| 92 | 161st Ave. SE - SE Eastgate Way | 0.412 | A | 0.681 | B | 0.683 | B | 65.3 | 65.8 |
| 101 | 150th Ave. SE - SE Eastgate Way | 0.789 | C | **0.993** | **E-** | 0.891 | D- | 25.9 | 12.9 |
| 171 | 142nd Ave. SE - SE 36th Street | 0.456 | A | 0.559 | A | 0.552 | A | 22.6 | 21.1 |
| 174 | 150th Ave. SE - SE 38th Street | 0.899 | D- | 0.845 | D+ | 0.867 | D- | -6.0 | -3.6 |
| 227 | 150th Ave. SE - I-90 EB Off-Ramp | 0.817 | D+ | 0.883 | D- | 0.908 | E+ | 8.1 | 11.1 |
| 272 | 139th Ave. SE - SE Eastgate Way | 0.351 | A | 0.424 | A | 0.411 | A | 20.8 | 17.1 |
| | **Area-wide Average** | 0.607 | B | 0.721 | C | 0.705 | C | 18.8 | 16.1 |

| ID No | Intersection | Existing (2006) | | No Action (2020) | | Proposed Action (2020) | | % Change Over Existing | |
|---|---|---|---|---|---|---|---|---|---|
| | | V/C | LOS | V/C | LOS | V/C | LOS | No Action | Proposed Action |
| **MMA 11 Newcastle – LOS Standard C or V/C 0.80; Congestion Allowance: 3** | | | | | | | | | |
| 98 | Coal Creek Parkway - Forest Drive | 0.707 | C | **1.160** | **F** | **1.197** | **F** | 64.1 | 69.3 |
| 133 | 150th Ave. SE - SE Newport Way | 0.726 | C | **0.965** | **E-** | 0.719 | C | 32.9 | -1.0 |
| 228 | Lakemont Blvd. SE- SE Newport Way | 0.763 | C | **0.842** | **D+** | **0.933** | **E+** | 10.4 | 22.3 |
| 229 | Lakemont Blvd. - Forest Drive | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 242 | 164th Ave. SE - Lakemont Blvd. | ----- | ----- | ----- | ----- | 0.404 | A | ----- | ----- |
| 257 | 164th Ave. SE - SE Newport Way | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| | **Area-wide Average** | 0.732 | C | **0.989** | **D+** | **0.813** | **D+** | 35.1 | 11.1 |
| **MMA 12 Bel-Red – LOS Standard E+ or V/C 0.95; Congestion Allowance: 7** | | | | | | | | | |
| 29 | 116th Ave. NE - NE 12th Street | 0.634 | B | 0.911 | E+ | 0.866 | D- | 43.7 | 36.6 |
| 32 | 120th Ave. NE - NE 12th Street | 0.510 | A | **1.374** | **F** | 0.865 | D- | 169.4 | 69.6 |
| 34 | 124th Ave. NE - Bellevue-Redmond Rd. | 0.796 | C | 0.914 | E+ | 0.931 | E+ | 14.8 | 17.0 |
| 37 | 130th Ave. NE - Bellevue-Redmond Rd. | 0.574 | A | 0.782 | C | 0.669 | B | 36.2 | 16.6 |
| 39 | 140th Ave. NE - NE 20th Street | 0.795 | C | 0.841 | D+ | 0.862 | D- | 5.8 | 8.4 |
| 40 | 140th Ave. NE - Bellevue-Redmond Rd. | 0.694 | B | 0.822 | D+ | 0.792 | C | 18.4 | 14.1 |
| 47 | 148th Ave. NE - NE 20th Street | 0.863 | D- | 0.944 | E+ | 0.872 | D- | 9.4 | 1.0 |
| 48 | 148th Ave. NE - Bellevue-Redmond Rd. | 0.923 | E+ | **0.953** | **E-** | **0.970** | **E-** | 3.3 | 5.1 |
| 59 | Bellevue-Redmond- NE 24th Street | 0.649 | B | **0.994** | **E-** | **1.165** | **F** | 53.2 | 79.5 |
| 60 | 156th Ave. NE - Bellevue-Redmond Rd. | 0.682 | B | 0.919 | E+ | 0.806 | D+ | 34.8 | 18.2 |
| 61 | 156th Ave. NE - NE 24th Street | 0.759 | C | **1.080** | **F** | **0.980** | **E-** | 42.3 | 29.1 |
| 68 | 130th Ave. NE - NE 20th Street | 0.604 | B | 0.830 | D+ | 0.731 | C | 37.4 | 21.0 |
| 81 | 148th Ave. NE - NE 24th Street | 0.853 | D- | **0.976** | **E-** | 0.898 | D- | 14.4 | 5.3 |
| 88 | 124th Ave. NE - Northup Way NE | 0.652 | B | 0.878 | D- | 0.845 | D+ | 34.7 | 29.6 |
| 117 | 120th Ave. NE - NE 20th Street | 0.575 | A | 0.915 | E+ | 0.741 | C | 59.1 | 28.9 |
| | **Area-wide Average** | 0.704 | C | 0.873 | D- | 0.866 | D- | 24.0 | 23.0 |
| **MMA 13 Factoria – LOS Standard E+ or V/C 0.95; Congestion Allowance: 5** | | | | | | | | | |
| 105 | Richards Rd. - SE Eastgate Way | 0.721 | C | 0.813 | D+ | 0.813 | D+ | 12.8 | 12.8 |
| 202 | Factoria Blvd. - SE Newport Way | 0.618 | B | 0.668 | B | 0.632 | B | 8.1 | 2.3 |
| 203 | SE Newport Way - Coal Creek Parkway | 0.629 | B | 0.721 | C | 0.729 | C | 14.6 | 15.9 |
| 204 | Factoria Blvd. - SE 36th Street | 0.825 | D+ | 0.861 | D- | 0.849 | D+ | 4.4 | 2.9 |

| ID No | Intersection | Existing (2006) | | No Action (2020) | | Proposed Action (2020) | | % Change Over Existing | |
|---|---|---|---|---|---|---|---|---|---|
| | | V/C | LOS | V/C | LOS | V/C | LOS | No Action | Proposed Action |
| 220 | I-405 NB Ramps - Coal Creek Parkway | 0.713 | C | 0.797 | C | 0.796 | C | 11.8 | 11.6 |
| 221 | I-405 SB Ramps - Coal Creek Parkway | 0.880 | D- | 0.929 | E+ | 0.931 | E+ | 5.6 | 5.8 |
| 222 | Factoria Blvd. - SE 38th Place | 0.881 | D- | 0.927 | E+ | 0.925 | E+ | 5.2 | 5.0 |
| 284 | 124th Ave. SE - Coal Creek Parkway | **0.986** | **E-** | **1.003** | **F** | **0.999** | **E-** | 1.7 | 1.3 |
| | **Area-wide Average** | 0.782 | C | 0.840 | D+ | 0.835 | D+ | 7.4 | 6.8 |
| **MMA 14** | **Newport Hills – LOS Standard C or V/C 0.80; Congestion Allowance: 0** | | | | | | | | |
| | **No Analysis Intersections** | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| | **Area-wide Average** | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |

# Appendix F

## Air Quality Analysis Methodology

# Approach for Greenhouse Gas Emission Estimation

To estimate GHG emissions produced from motor vehicles on City streets, the City provided traffic data for all roadway segments within the TFP area. The link traffic data included average travel speed, segment length, and PM peak hour traffic volume for both the Proposed Action and No Action alternatives in the 2020 design year. The PM peak hour volumes are factored up 10% to get the daily traffic volumes.

GHG emissions include a variety of compounds, predominantly Carbon Dioxide (CO2), methane, and nitrous oxide, each of which exhibits its own GHG potency. However, for on-road tailpipe emissions, CO2 is by far the dominate contributor to GHG emissions. For purposes of comparing GHG emissions from various scenarios with other published GHG inventories, the overall GHG emissions associated with the No Action alternative and the Proposed Action alternative were assumed to consist entirely of CO2. The CO2 emissions were calculated from the fuel usage of vehicles traveling on City streets based on fuel economy data (i.e. miles per gallon of fuel). The CO2 emissions factors are then applied to the calculated total fuel usage to get the CO2 emissions emitted from motor vehicles traveling on the City streets.

The average fuel economy corresponding to the average travel speed along each segment was estimated using published fuel economy versus speed profiles derived using the California EMFAC tailpipe emission model (Urban Land Institute 2008). The use of California fuel economy data is valid for this analysis because Washington State plans to adopt the California fuel economy standards. The assumed fleet-average fuel economy for existing conditions was 25 miles per gallon (mpg) based on historical fleet-average fuel economy data over the past 10 years (National Highway Traffic Safety Administration 2008). The assumed future fleet-average fuel economy for year 2020 was set at 35 miles per gallon, corresponding to the recently-proposed update for the Corporate Automobile Fuel Economy (CAFE) standard. Table F-1 shows the existing and future average fuel economy at each travel speed.

### Table F-1. Fuel Economy versus Travel Speed

| Speed | Average Fuel Economy (1965-2007) at 25 mpg CAFÉ | Future Fuel Economy at 35 mpg CAFÉ |
|---|---|---|
| 5 | 8 | 11.4 |
| 10 | 11 | 15.9 |
| 15 | 14 | 19.3 |
| 20 | 18 | 24.7 |
| 25 | 20 | 28.5 |
| 30 | 23 | 31.8 |
| 35 | 26 | 36.4 |
| 40 | 26 | 37.1 |
| 45 | 27 | 38.4 |
| 50 | 26 | 37.1 |

| Speed | Average Fuel Economy (1965-2007) at 25 mpg CAFÉ | Future Fuel Economy at 35 mpg CAFÉ |
|---|---|---|
| 55 | 26 | 35.9 |
| 60 | 23 | 31.8 |
| 65 | 21 | 28.9 |

Based on the traffic data the City provided, the vehicle miles of travel (VMT) per day and fuel economy are calculated for each link. The daily fuel usage used by vehicles traveling on this link is then calculated by multiple daily VMT and fuel economy.

- Daily VMT = Link length (miles) * Daily traffic (vehicles per day)
- Fuel economy (miles per gallon) = Look up Table C-1 for specific travel speed
- Daly fuel usage (gallons per day) = Daily VMT * Fuel economy (miles per gallon)

The total gallons of daily fuel usage for vehicles traveling within City's street network are calculated by summing up the estimated fuel usage of each link.

- Total estimated daily fuel usage for 2020 TFP = 174,369 gallons per day
- Total estimated daily fuel usage for 2020 No Action = 174,473 gallons per day

Based on a previous GHG study in the region (ICF Jones & Stokes 2008), it was assumed fuel used by the vehicle fleet along the City streets is 50% gasoline and 50% diesel. The CO2 emission factors were assumed 19.6 pounds per gallon for gasoline and 22.4 pounds CO2 per gallon for diesel (Energy Information Administration 2008). Table F-2 shows the daily CO2 emissions produced from the City streets for both No Action and Proposed TFP Alternatives.

## Table F-2. Estimated CO2 Emissions

| Alternative | Estimated Fuel Usage (gallons/day) | Fuel Type | Fuel % | CO2 Emission Factor (lbs/gallon) | CO2 Emissions (lbs/day) | CO2 Emissions (tons/day) |
|---|---|---|---|---|---|---|
| 2020 TFP | 174,369 | Gasoline | 50% | 19.6 | 1,705,675 | 282,987 |
| | | Diesel | 50% | 22.4 | 1,951,535 | 323,777 |
| | | **Total CO2 Emissions** | | | **3,657,210** | **606,764** |
| No Action | 174,473 | Gasoline | 50% | 19.6 | 1,706,700 | 283,157 |
| | | Diesel | 50% | 22.4 | 1,952,707 | 323,972 |
| | | **Total CO2 Emissions** | | | **3,659,407** | **607,129** |

# Approach for Project-Level CO Hot-Spot Analysis

The project-level CO hot-spot analysis was performed based on the guidance document entitled Guidebook for Conformity (KJS Associates 1995) prepared for WSDOT in accordance with EPA guidance (EPA 1992). Based on these guidelines, signalized intersections within the TFP area were screened to identify the most heavily congested signalized intersections for the CO hot-spot analysis. According to EPA, the congested signalized intersections are those intersections operating at level of service (LOS) D or worse.

To establish which intersections to consider, the City provided the traffic data for system intersections within the TFP area, which is divided into 14 mobility management areas (MMA). The intersection traffic data include PM peak hour traffic volume, LOS, and vehicle to capacity (v/c) ratio for 2006 existing year and 2020 design year (No Action and proposed TFP). The intersections were ranked twice based on forecast traffic data for the proposed TFP: 1) ranking traffic volumes for intersections with LOS E or worse; 2) ranking intersection LOS. The three signalized intersections with the worst LOS and the three intersections with the highest traffic volumes were selected. Table F-3 lists the intersection ranking by volumes and by LOS, and the intersection selected order. In order to present CO hot-spot conditions at congested intersections in different areas within the City, only one intersection was selected for each MMA.

## Table F-3. Intersection Ranking for CO Hot-Spot Analysis

| Intersection | | | | TFP (2020) | | | Selected Order |
|---|---|---|---|---|---|---|---|
| No. | North-South Street | East-West Street | MMA | Volume | V/C | LOS | |
| **Traffic Volume Ranking for Intersection LOS E or Worse** | | | | | | | |
| **30** | **116th Ave NE** | **NE 8th St** | **4** | **6232** | **0.91** | **E+** | **1** |
| 26 | 112th Ave NE | NE 8th St | 3 | 5769 | 1.21 | F | |
| 233 | 120th Ave NE | NE 8th St | 4 | 5653 | 0.91 | E+ | |
| **48** | **148th Ave NE** | **Bellevue-Redmond Rd** | **12** | **5316** | **0.97** | **E-** | **3** |
| 81 | 148th Ave NE | NE 24th St | 12 | 5463 | 0.90 | E+ | |
| **49** | **148th Ave NE** | **NE 8th St** | **9** | **5088** | **0.92** | **E+** | **5** |
| **Intersection LOS Ranking** | | | | | | | |
| **26** | **112th Ave NE** | **NE 8th St** | **3** | **5769** | **1.21** | **F** | **2** |
| **98** | **Coal Creek Pkwy** | **Forest Dr** | **11** | **3897** | **1.20** | **F** | **4** |
| 59 | Bellevue-Redmond Rd | NE 24th St | 12 | 4488 | 1.17 | F | |
| **71** | **Lk Hills Connector** | **SE 8th St/7th Pl** | **8** | **3947** | **1.10** | **F** | **6** |
| 61 | 156th Ave NE | NE 24th St | 12 | 3915 | 1.08 | F | |
| 41 | 140th Ave NE | NE 8th St | 9 | 4056 | 1.01 | F | |

MMA 3 – Downtown; MMA 4 – Wilburton; MMA 8 - Richards Valley; MMA 9 - East Bellevue;
MMA 11 – Newcastle; MMA 12 - Bel-Red.

The following six signalized intersections were selected for CO hot spot analysis to represent the most congested intersections during the PM peak hour.

- 112th Avenue NE and NE 8th Street (Downtown)
- 116th Avenue NE and NE 8th Street (Wilburton)
- Lake Hills Connector and SE 8th Street/7th Place (Richards Valley)
- 148th Avenue NE and NE 8th Street (East Bellevue)
- Coal Creek Parkway and Forest Drive (Newcastle)
- 148th Avenue NE and Bellevue-Redmond Road (Bel-Red)

Project-level CO hot-spot analyses for the selected intersections were conducted using the Washington State Intersection Screening Tool (WASIST) (Washington State Department of Transportation 2005). WASIST is a computerized screening model used to estimate worst-case CO concentrations near signalized intersections. The results from WASIST are based on inputs from EPA-approved vehicle emission and dispersion models, Mobile 6 version 2.03 and CAL3QHC.

General inputs required for WASIST to describe the analysis intersections include analysis year, background concentration, county name, name of CO maintenance area, and land use type surrounding the intersection. Traffic input parameters required to describe the analysis intersections include lane configurations, traffic volumes, approach speeds, and signal timing of each intersection. Receptor inputs required to describe the receptor positions include number of receptors and distance from the edge of roadways. A receptor is the position where the CO concentration is estimated. The WASIST was run with the following input values:

- The project is located in the King County, Puget Sound CO maintenance area.
- Worst-case modeling receptors were placed on the sidewalks adjacent to each intersection. The CO concentrations at other locations (e.g., at outdoor use areas at businesses near the intersections) were expected to be lower than the concentrations forecast at the sidewalks.
- The CO hot-spot modeling was performed for the 2006 existing year and the 2020 design year.
- Background CO concentrations of 3 ppm were used for one-hour and 8-hour averaging periods as specified in the WASIST User’s Manual (Washington State Department of Transportation 2005). The modeled one-hour CO concentration was converted to an estimated 8-hour concentration by applying a 0.7 scale factor.
- Land use types surrounding the analysis intersections were based on existing land uses at each intersection. Land use type applied to each intersection is listed below:
    - 112th Avenue NE and NE 8th Street – Offices
    - 116th Avenue NE and NE 8th Street – Offices
    - Lake Hills Connector and SE 8th Street/7th Place – Deciduous Trees

  - 148th Avenue NE and NE 8th Street – Offices
  - Coal Creek Parkway and Forest Drive – Deciduous Trees
  - 148th Avenue NE and Bellevue-Redmond Road – Offices.

- The approach speed at intersections was 5 miles per hour (mph) as suggested in the WASIST User's Manual.
- PM peak hour traffic volume of each analysis intersection was provided by the City for 2006 existing conditions and 2020 design year conditions.
- The signal cycle length of 90 seconds was assumed at each intersection. Signal timing was automatically calculated based on the WASIST's "quick-and-easy" signal timing function.
- Existing lane configurations at analysis intersections were applied to existing conditions and the 2020 No Action conditions. With the proposed TFP, the proposed future lane configurations were applied to intersections where TFP improvements are proposed.

# References

Energy Information Administration. 2008. Emissions of Greenhouse Gases in the United States. U.S. Department of Energy. Washington, DC. December.

EPA (U.S. Environmental Protection Agency). 1992. Guidelines for Modeling Carbon Monoxide from Roadway Intersections. EPA-454/R-92-005. Office of Air Quality Planning and Standards. November.

ICF Jones & Stokes. 2008. Final Task 3 Report – Calculation of Greenhouse Gas Emissions. State Route 520 Bridge Replacement and High Occupancy Vehicle Project. Prepared for the Puget Sound Clean air Agency. November.

KJS Associates, Inc. 1995. Guidebook for Conformity on Project-Level Air Quality Analysis Assistance for Nonattainment Areas. September.

National Highway Traffic Safety Administration. 2008. Summary of Fuel Economy Performance. March. Available: http://www.nhtsa.dot.gov/portal/site/nhtsa/menuitem.43ac99aefa80569eea57529cdba046a0/.

Washington State Department of Transportation. 2005. Washington State Intersection Screening Tool (WASIST) User's Manual, Version 1.0. October.

Urban Land Institute. 2008. Growing Cooler: Urban Development and Climate Change. May.

# Appendix G

TNM Noise Modeling Results

## Table G-1. City of Bellevue 2009-2020 TFP – TNM Modeling Results

Shaded cells indicate noise levels exceeding 67 dBA Leq.

| Seg-ment# | Nearest Inter-section | MMA # | Segment Locations | Existing (dBA) | No Action (dBA) | TFP Action (dBA) | TFP Increase over Existing (dB) | TFP Increase over No Action (dB) |
|---|---|---|---|---|---|---|---|---|
| 2 | 239 | 0 | 156th Ave NE, north of NE 40th St | 65 | 66 | 66 | + 1 | 0 |
| 3 | 239 | 0 | NE 40th St, west of 156th Ave NE | 68 | 69 | 69 | + 1 | 0 |
| 4 | 239 | 0 | NE 40th St, east of 156th Ave NE | 66 | 68 | 68 | + 2 | 0 |
| 5 | 239 | 0 | 156th Ave NE, south of NE 40th St | 67 | 68 | 68 | + 1 | 0 |
| 7 | 138 | 6 | Bel-Red Rd, south of NE 40th St | 64 | 65 | 65 | + 1 | 0 |
| 8 | xxx | 0 | 84th Ave NE, north of NE 24th St | 65 | 65 | 65 | 0 | 0 |
| 9 | 192 | 0 | NE 24th St, east of 84th Ave NE | 60 | 61 | 61 | + 1 | 0 |
| 10 | 103 | 1 | 98th Ave NE, north of NE 24th St | 57 | 57 | 57 | 0 | 0 |
| 11 | 103 | 1 | NE 24th St, east of 98th Ave NE | 62 | 63 | 63 | + 1 | 0 |
| 22 | 77 | 2 | 130th Ave NE, south of NE 24th St | 62 | 62 | 61 | - 1 | - 1 |
| 36 | 94 | 1 | NE 8th St, east of 92nd Ave NE | 62 | 63 | 63 | + 1 | 0 |
| 37 | 100 | 1 | Lk Washington Blvd NE, east of 92nd Ave NE | 61 | 61 | 61 | 0 | 0 |
| 56 | 169 | 9 | 164th Ave NE, north of Main St | 63 | 64 | 64 | + 1 | 0 |
| 69 | 84 | 9 | Lk Hills Blvd, east of 156th Ave SE | 60 | 60 | 60 | 0 | 0 |
| 70 | 120 | 9 | W Lk Samm Pkwy, south of Northup Way | 65 | 66 | 66 | + 1 | 0 |
| 74 | 97 | 9 | SE 24th St, east of 156th Ave SE | 58 | 58 | 58 | 0 | 0 |
| 80 | 282 | 13 | 128th Ave SE, north of SE 41st St | 67 | 67 | 67 | 0 | 0 |
| 88 | 245 | 13 | 119th Ave SE, north of SE 52nd St | 63 | 64 | 64 | + 1 | 0 |
| 91 | 274 | 11 | Lakemont Blvd SE, east of Village Park Dr SE | 65 | 65 | 65 | 0 | 0 |
| 92 | 274 | 11 | Village Park Dr SE, south of Lakemont Blvd SE | 61 | 61 | 61 | 0 | 0 |
| 94 | 273 | 0 | SE Newport Way, north of Village Park Dr SE | 63 | 63 | 64 | + 1 | + 1 |
| 95 | 273 | 0 | Village Park Dr SE, west of SE Newport Way | 59 | 60 | 63 | + 4 | + 3 |
| 96 | 273 | 0 | SE Newport Way, south of Village Park Dr SE | 63 | 64 | 64 | + 1 | 0 |
| 100 | 38 | 8 | 132nd Ave NE, north of NE 8th St | 59 | 62 | 62 | + 3 | 0 |
| SLM-2 | 80 | 2 | 134th Ave NE, north of NE 24th St | 62 | 63 | 63 | + 1 | 0 |
| SLM-7 | 16 | 3 | NE 8th St, west of 108th Ave NE | 67 | 68 | 68 | + 1 | 0 |

| Seg-ment# | Nearest Inter-section | MMA # | Segment Locations | Existing (dBA) | No Action (dBA) | TFP Action (dBA) | TFP Increase over Existing (dB) | TFP Increase over No Action (dB) |
|---|---|---|---|---|---|---|---|---|
| SLM-8 | 124 | 3 | 110th Ave NE, north of NE 6th St | 62 | 66 | 66 | + 4 | 0 |
| SLM-9 | 23 | 3 | NE 2nd St, west of 108th Ave NE | 63 | 67 | 67 | + 4 | 0 |
| SLM-12 | 109 | 7 | 108th Ave SE, north of SE 25th St | 58 | 60 | 60 | + 2 | 0 |
| SLM-13 | 207 | 8 | SE 20th Pl, east of 127th Ave SE | 58 | 60 | 61 | + 3 | + 1 |
| SLM-14 | 38 | 8 | 132nd Ave NE, south of Bel-Red Rd | 58 | 62 | 61 | + 3 | - 1 |
| SLM-17 | 53 | 9 | 148th Ave SE, south of SE 22nd St | 69 | 69 | 69 | 0 | 0 |
| SLM-20 | 84 | 9 | 156th Ave SE, north of Lake Hills Blvd | 64 | 65 | 65 | + 1 | 0 |
| SLM-22 | 120 | 6 | W Lake Sammamish Pkwy, south of NE 15th Pl | 62 | 63 | 63 | + 1 | 0 |
| SLM-23 | 120 | 9 | W Lake Sammamish Pkwy, south of Northup Wy | 65 | 66 | 66 | + 1 | 0 |
| SLM-24 | 246 | 9 | W Lake Sammamish Pkwy, south of SE 38th St at Vasa Pk | 64 | 65 | 65 | + 1 | 0 |
| SLM-26 | 245 | 14 | 119th Ave SE, south of SE 54th St | 63 | 64 | 64 | + 1 | 0 |
| SLM-27 | 218 | 11 | Lakemont Blvd, north of SE 63rd St | 63 | 64 | 64 | + 1 | 0 |
| ST-2 | 77 | 2 | 130h Ave NE, north of NE 24th St | 57 | 60 | 60 | + 3 | 0 |
| 12 | 69 | 1 | Bellevue Way NE, north of NE 24th St | 67 | 68 | 68 | + 1 | 0 |
| 13 | 78 | 1 | Northup Way, east of 108th Ave NE | 65 | 66 | 66 | + 1 | 0 |
| 14 | 69 | 1 | Bellevue Way NE, south of NE 24th St | 67 | 68 | 68 | + 1 | 0 |
| SLM-1 | 69 | 1 | Bellevue Way, north of NE 24th St | 67 | 68 | 68 | + 1 | 0 |
| 1 | 123 | 2 | 140th Ave NE, north of NE 40th St | 64 | 65 | 65 | + 1 | 0 |
| 6 | 79 | 2 | 148th Ave NE, south of NE 40th St | 66 | 68 | 68 | + 2 | 0 |
| 15 | 64 | 2 | 140th Ave NE, north of NE 24th St | 65 | 65 | 65 | 0 | 0 |
| 16 | 64 | 2 | NE 24th St, west of 140th Ave NE | 64 | 66 | 66 | + 2 | 0 |
| 17 | 64 | 2 | 140th Ave NE, south of NE 24th St | 67 | 67 | 67 | 0 | 0 |
| 33 | 114 | 2 | 116th Ave NE, north of NE 12th St | 64 | 65 | 64 | 0 | - 1 |
| 98 | 188 | 2 | NE 29th Pl, north of NE 24th St | 65 | 66 | 66 | + 1 | 0 |
| SLM-3 | 79 | 2 | 148th Ave NE, north of NE 40th St | 67 | 68 | 68 | + 1 | 0 |
| SLM-4 | 123 | 2 | 140th Ave NE, at NE 48th PL | 64 | 65 | 65 | + 1 | 0 |

| Seg-ment# | Nearest Inter-section | MMA # | Segment Locations | Existing (dBA) | No Action (dBA) | TFP Action (dBA) | TFP Increase over Existing (dB) | TFP Increase over No Action (dB) |
|---|---|---|---|---|---|---|---|---|
| SLM-5 | 123 | 2 | 140 Ave NE, north of NE 36th Pl | 64 | 63 | 64 | 0 | + 1 |
| 30 | 5 | 3 | Bellevue Way NE, north of NE 12th St | 67 | 68 | 68 | + 1 | 0 |
| 31 | 20 | 3 | 108th Ave NE, north of NE 12th St | 57 | 59 | 59 | + 2 | 0 |
| 32 | 25 | 3 | 112th Ave NE, north of NE 12th St | 65 | 65 | 65 | 0 | 0 |
| 38 | 3 | 3 | 100th Ave NE, south of NE 8th St | 64 | 65 | 65 | + 1 | 0 |
| 39 | 7 | 3 | Bellevue Way NE, south of NE 6th St | 67 | 68 | 68 | + 1 | 0 |
| 40 | 25 | 3 | NE 12th St, west of 112th Ave NE | 67 | 68 | 68 | + 1 | 0 |
| 41 | 26 | 3 | NE 8th St, west of 112th Ave NE | 69 | 69 | 69 | 0 | 0 |
| 42 | 72 | 3 | NE 4th St, west of 112th Ave NE | 67 | 68 | 68 | + 1 | 0 |
| 43 | 36 | 3 | Main St, west of 112th Ave | 66 | 67 | 67 | + 1 | 0 |
| 57 | 9 | 3 | Bellevue Way SE, south of SE 3rd St | 68 | 68 | 68 | 0 | 0 |
| 58 | 24 | 3 | 108th Ave SE, south of SE 4th St | 60 | 61 | 62 | + 2 | + 1 |
| 59 | 36 | 3 | 112th Ave SE, south of Main St | 67 | 68 | 68 | + 1 | 0 |
| SLM-6 | 25 | 3 | NE 12th St, west of 112th Ave NE | 67 | 68 | 68 | + 1 | 0 |
| SLM-10 | 36 | 3 | 112th Ave SE, south of Main St | 67 | 68 | 68 | + 1 | 0 |
| 44 | 30 | 4 | 116th Ave NE, north of NE 8th St | 67 | 69 | 69 | + 2 | 0 |
| 45 | 30 | 4 | 116th Ave NE, south of NE 8th St | 67 | 68 | 68 | + 1 | 0 |
| 60 | 73 | 4 | 116th Ave SE, south of Main St | 67 | 69 | 68 | + 1 | - 1 |
| 50 | 63 | 5 | 156th Ave NE, north of NE 8th St | 67 | 68 | 68 | + 1 | 0 |
| SLM-18 | 62 | 5 | Northup Way, east of 156th Ave NE | 64 | 65 | 65 | + 1 | 0 |
| 51 | 76 | 6 | 164th Ave NE, south of Northup Way | 63 | 65 | 65 | + 2 | 0 |
| 52 | 87 | 6 | NE 8th St, west of 164th Ave NE | 64 | 65 | 65 | + 1 | 0 |
| 53 | 87 | 6 | NE 8th St, east of 164th Ave NE | 62 | 62 | 62 | 0 | 0 |
| SLM-21 | 75 | 6 | 164th Ave NE, south of NE 24th St | 62 | 64 | 64 | + 2 | 0 |
| 66 | 14 | 7 | Bellevue Wy SE, east of 112th Ave SE | 70 | 70 | 70 | 0 | 0 |
| 67 | 102 | 7 | 118th Ave SE, south of SE 8th St | 64 | 64 | 64 | 0 | 0 |
| SLM-11 | 89 | 7 | 112th Ave SE, north of SE 8th St | 66 | 67 | 67 | + 1 | 0 |
| 61 | 71 | 8 | SE 8th St, west of Lk Hills Connector | 66 | 66 | 66 | 0 | 0 |

| Seg-ment# | Nearest Inter-section | MMA # | Segment Locations | Existing (dBA) | No Action (dBA) | TFP Action (dBA) | TFP Increase over Existing (dB) | TFP Increase over No Action (dB) |
|---|---|---|---|---|---|---|---|---|
| 62 | 71 | 8 | Lk Hills Connector, south of SE 8th St | 68 | 69 | 69 | + 1 | 0 |
| 63 | 134 | 8 | Lk Hills Connector, east of Richards Rd | 64 | 66 | 66 | + 2 | 0 |
| 64 | 43 | 8 | 140th Ave SE, north of SE 8th St | 66 | 66 | 66 | 0 | 0 |
| 68 | 43 | 8 | 145th Pl SE, south of SE 8th St | 65 | 66 | 66 | + 1 | 0 |
| 71 | 82 | 8 | Richards Rd, north of Kamber Rd | 67 | 68 | 68 | + 1 | 0 |
| 72 | 82 | 8 | Kamber Rd , east of Richards Rd | 63 | 63 | 63 | 0 | 0 |
| 75 | 280 | 8 | 139th Ave SE, south of Kamber Rd | 61 | 63 | 63 | + 2 | 0 |
| 99 | 35 | 8 | 124th Ave NE, south of NE 5th St | 61 | 63 | 63 | + 2 | 0 |
| SLM-15 | 45 | 8 | 145th Pl SE, west of 144th Ave SE | 63 | 64 | 64 | + 1 | 0 |
| ST-5 | 35 | 8 | 124th Ave NE, south of NE 5th St | 61 | 63 | 63 | + 2 | 0 |
| 46 | 41 | 9 | NE 8th St, west of 140th Ave NE | 67 | 68 | 68 | + 1 | 0 |
| 47 | 41 | 9 | NE 8th St, east of 140th Ave NE | 66 | 67 | 67 | + 1 | 0 |
| 48 | 41 | 9 | 140th Ave NE, south of NE 8th St | 66 | 66 | 66 | 0 | 0 |
| 49 | 49 | 9 | NE 8th St, east of 148th Ave NE | 66 | 67 | 67 | + 1 | 0 |
| 54 | 42 | 9 | Main St, east of 140th Ave | 61 | 62 | 62 | + 1 | 0 |
| 55 | 83 | 9 | 156th Ave NE, north of Main St | 65 | 66 | 66 | + 1 | 0 |
| 65 | 50 | 9 | 148th Ave SE, south of Main St | 69 | 69 | 69 | 0 | 0 |
| 73 | 55 | 9 | 148th Ave SE, south of SE 24th St | 70 | 70 | 70 | 0 | 0 |
| SLM-19 | 83 | 9 | 156th Ave SE, north of Main St | 65 | 66 | 66 | + 1 | 0 |
| ST-2 | 41 | 9 | 140th Ave NE, south of NE 8th St | 66 | 66 | 66 | 0 | 0 |
| 77 | 101 | 10 | SE Eastgate Way, west of 150th Ave SE | 65 | 66 | 66 | + 1 | 0 |
| 78 | 86 | 10 | 156th Ave SE, north of SE Eastgate Way | 65 | 66 | 66 | + 1 | 0 |
| 79 | 92 | 10 | SE Eastgate Way, west of 161St Ave SE | 63 | 66 | 66 | + 3 | 0 |
| 83 | 133 | 11 | 150th Ave SE, north of SE Newport Way | 66 | 68 | 68 | + 2 | 0 |
| 84 | 133 | 11 | SE Newport Way , west of 150th Ave SE | 62 | 63 | 63 | + 1 | 0 |
| 85 | 133 | 11 | 150th Ave SE, south of SE Newport Way | 63 | 64 | 64 | + 1 | 0 |
| 86 | 257 | 11 | SE Newport Way, west of 164th Ave SE | 61 | 63 | 63 | + 2 | 0 |

| Seg-ment# | Nearest Inter-section | MMA # | Segment Locations | Existing (dBA) | No Action (dBA) | TFP Action (dBA) | TFP Increase over Existing (dB) | TFP Increase over No Action (dB) |
|---|---|---|---|---|---|---|---|---|
| 87 | 257 | 11 | SE Newport Way, east of 164th Ave SE | 59 | 60 | 60 | + 1 | 0 |
| 89 | 98 | 11 | Coal Creek Parkway, south of Forest Dr SE | 68 | 69 | 69 | + 1 | 0 |
| 90 | 98 | 11 | Forest Dr SE, east of Coal Creek Parkway | 63 | 64 | 64 | + 1 | 0 |
| 93 | 228 | 11 | Lakemont Blvd SE, south of SE Newport Way | 66 | 66 | 66 | 0 | 0 |
| 97 | 242 | 11 | Lakemont Blvd SE , west of 164th Ave SE | 66 | 67 | 67 | + 1 | 0 |
| SLM-28 | 242 | 11 | Lakemont Blvd, west of Village Park Dr | 63 | 64 | 64 | + 1 | 0 |
| 18 | 81 | 12 | 148th Ave NE, north of NE 24th St | 70 | 70 | 70 | 0 | 0 |
| 19 | 61 | 12 | NE 24th St, east of 156th Ave NE | 64 | 65 | 65 | + 1 | 0 |
| 20 | 81 | 12 | 148th Ave NE, south of NE 24th St | 68 | 69 | 69 | + 1 | 0 |
| 21 | 88 | 12 | Northup Way, west of 124th Ave NE | 66 | 66 | 66 | 0 | 0 |
| 23 | 88 | 12 | 124th Ave NE, south of Northup Way | 62 | 65 | 66 | + 4 | + 1 |
| 24 | 88 | 12 | Northup Way, east of 124th Ave NE | 68 | 69 | 69 | + 1 | 0 |
| 25 | 39 | 12 | NE 20th St, east of 140th Ave NE | 67 | 68 | 68 | + 1 | 0 |
| 26 | 48 | 12 | Bel-Red Rd, east of 148th Ave NE | 66 | 67 | 67 | + 1 | 0 |
| 27 | 40 | 12 | 140th Ave NE, north of Bel-Red Rd | 66 | 66 | 66 | 0 | 0 |
| 28 | 40 | 12 | 140th Ave NE, south of Bel-Red Rd | 66 | 66 | 66 | 0 | 0 |
| 29 | 48 | 12 | 148th Ave NE, south of Bel-Red Rd | 68 | 69 | 69 | + 1 | 0 |
| 34 | 34 | 12 | NE 12th St, west of 124th Ave NE | 67 | 67 | 67 | 0 | 0 |
| 35 | 37 | 12 | Bel-Red Rd, west of 130th Ave NE | 68 | 69 | 69 | + 1 | 0 |
| 101 | 68 | 12 | 130th Ave NE, north of NE 15th/16th St | 63 | 64 | 63 | 0 | - 1 |
| 102 | 32 | 12 | 120th Ave NE, south of NE 15th/16th St | 61 | 67 | 67 | + 6 | 0 |
| 103 | 88 | 12 | 124th Ave NE, south of NE 15th/16th St | 62 | 65 | 63 | + 1 | - 2 |
| SLM-16 | 48 | 12 | 148th Ave NE, south of Bel-Red Rd | 68 | 69 | 69 | + 1 | 0 |
| ST-3 | 68 | 12 | 130th Ave NE, north of NE 15th/16th St | 63 | 64 | 63 | 0 | - 1 |
| ST-4 | 61 | 12 | 156th Ave NE, south of NE 24th St. | 67 | 68 | 68 | + 1 | 0 |
| 76 | 105 | 13 | SE Eastgate Way, east of Richards Rd | 64 | 65 | 65 | + 1 | 0 |

| Seg-ment# | Nearest Inter-section | MMA # | Segment Locations | Existing (dBA) | No Action (dBA) | TFP Action (dBA) | TFP Increase over Existing (dB) | TFP Increase over No Action (dB) |
|---|---|---|---|---|---|---|---|---|
| 81 | 202 | 13 | SE Newport Way, east of 128th Ave SE | 65 | 65 | 65 | 0 | 0 |
| 82 | 203 | 13 | Coal Creek Parkway, west of SE Newport Way | 68 | 68 | 68 | 0 | 0 |
| SLM-25 | 202 | 13 | Factoria Blvd SE, north of Newport Wy | 67 | 67 | 67 | 0 | 0 |

# Appendix H

Title VI and Environmental Justice Equity Analysis

The City of Bellevue is an increasingly diverse community. Twenty-six percent of Bellevue residents identified themselves as a race other than Caucasian in the 2000 Census – a 12 percentage point increase from the 1990 Census. Preliminary results of the American Community Study demonstrate the trend is continuing. 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 2009-2020 Transportation Facilities Plan.

## Demographic Summary

This analysis divides the city into eight subareas:

- North Bellevue and Bridle Trails
- Downtown
- Bel-Red and Wilburton
- Northeast Bellevue, Crossroads, and Overlake
- Central Bellevue
- Eastgate
- Factoria
- South Bellevue

Data is derived from the 2000 Census at the block group level. The boundaries of the block groups do not mirror the sub-areas described in Chapter 3 of this Environmental Impact Statement (EIS), but the general locations are similar enough to be illustrative.

Table H-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 or when the number of individuals is significant enough to trigger extra consideration. The thresholds for each category are described in Table H-2.

## Table H-1. Demographic Summary by Sub-Area

Shaded cells indicate areas where Title VI/Environmental Justice thresholds are exceeded.

| Sub-Area | Total Population | Total Households | % Minority | % Senior | % Living in Poverty | % Limited English Proficiency | # of Disabilities | # of Capacity Projects* | # of Non-Capacity Projects* |
|---|---|---|---|---|---|---|---|---|---|
| **North Bellevue/ Bridle Trails** | 16,215 | 7,653 | **24.8** | **13.05** | **5.58** | 6.3 | **3,707** | 1 | 5 |
| **Downtown** | 2,588 | 1,516 | 18.5 | **43.5** | **8.27** | **10.3** | **1,009** | 11 | 2 |
| **Bel-Red/ Wilburton** | 3,718 | 1,767 | **21.9** | 8.7 | **5.86** | 1.0 | 544 | 21 | 1 |
| **Overlake/ NE Bellevue/ Crossroads** | 12,417 | 4,812 | **25.3** | **14.4** | **5.4** | **10.3** | 3,837 | 2 | 4 |
| **Central Bellevue** | 44,386 | 18,801 | **25.5** | **14.1** | **6.9** | **7.6** | **11,071** | 2 | 11 |
| **Eastgate** | 3,358 | 1,527 | **25.3** | **16.1** | **10** | 7.4 | 941 | 3 | 1 |
| **Factoria** | 1,661 | 686 | **35.0** | **13.12** | 2.5 | **7.4** | 334 | 3 | 2 |
| **South Bellevue** | 38,603 | 14,341 | **24.2** | 9.2 | 2.9 | 1.5 | **6,800** | 2 | 7 |

*If a project spans the boundary of two subareas, the project is included in the count for both areas.

### Table H-2. Title VI / Environmental Justice Threshold Definitions

| Category | Threshold Trigger | Considerations |
|---|---|---|
| Race and Culture | Concentration in area exceeds the citywide average.<br>0.34% American Indian/Alaska Native<br>17% Asian<br>2% Black<br>5.7% Multi-Race<br>0.24% Pacific Islander<br>5.7% Other Race<br>5.7% Hispanic Culture | • Avenues for community-based outreach<br>• Housing and employment commute impacts |
| Disability | Any disability that exceeds 10% of the population or 1,000 people.<br>Disabilities tracked are: sensory, physical, mental, self-care, go-outside home, and employment | • Non-motorized and transit access<br>• Noise<br>• Housing impacts |
| Primary Language at Home | Any individual language group exceeds 5% of households.<br>Language Groups tracked are Asian/Pacific Islander, Indo-European, Spanish, and Other | • Peer to Peer outreach<br>• Translation of key project information |
| Senior | Concentration exceeds 13% | • Non-motorized and transit connections<br>• Noise<br>• Housing impacts |
| Living in Poverty | Concentration exceeds 5% | • Non-motorized and transit connections<br>• Housing and employment commute impacts |

## Summary of Sub-Area Characteristics, Project Distribution, and Program Impacts

### North Bellevue and Bridle Trails

This area is primarily residential with a higher concentration of single family homes. Retail and services are limited to those meeting residential needs; commercial activity is concentrated in a few office buildings. The 481-acre Bridle Trails State Park is adjacent to the area. The population distribution closely matches the citywide average – only slightly exceeding the thresholds, except for an increased concentration of Hispanic residents.

The proposed 2009-2020 TFP calls for one capacity project and five non-capacity projects - a distribution consistent with the more residential nature of the area. However, due to the adjacency of the Downtown and Bel-Red subareas, where a majority of the city's growth is expected to occur, this area will see a worsened Level of Service, or more congestion. The one capacity

project, TFP-079, is not sufficient to wholly mitigate the increased travel demand in the sub-area but this impact is not deemed disparate.

### Downtown

The Central Business District is a regional growth center and is characterized by high-rise office buildings at its core and a major concentration of retail within and nearby Bellevue Square. This sub-area also hosts Downtown Park and a variety of cultural uses. Multi-family housing can be found along the perimeter of the downtown.

The most notable demographic element is the concentration of seniors: 43.5 percent versus a citywide average of 13 percent. This concentration is assumed to influence the higher rates of people living in poverty and of people with disabilities (the threshold is triggered for physical/mobility disabilities). On the other hand, the downtown also hosts the lowest minority population of any sub-area in the city.

Along with the Bel-Red area, the Downtown has the highest number of projects in the 2009-2020 TFP: eleven capacity and two non-capacity. This focus on capacity is consistent with the policy to provide transportation infrastructure to accommodate planned growth within this center. Impacts of these projects include: increased noise, worsened LOS at select locations, and some property acquisition (partial and whole parcels). In general, these 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.

### Bel-Red and Wilburton

The Bel-Red area is currently characterized by commercial and light industrial uses with pockets of residential neighborhoods. In Wilburton, the mix of residential and commercial uses is balanced by the expansive Bellevue Botanical Gardens. This greater sub-area is home to the city’s medical district and has convenient access to freeways and the city’s principle arterials.

Updated sub-area plans for both Wilburton and Bel-Red envision a transformation of the area. Bel-Red, in particular, will transition to transit-oriented mixed use developments leading to significantly higher housing and employment densities.

The current population is generally younger and less diverse than the citywide average. A concentration of Black residents, slightly higher than the average, triggers the minority threshold.

Given the planned growth in the area, it makes sense that the 2009-2020 TFP should include 21 capacity and one non-capacity project. Because several of the capacity projects include building entirely new roadways or widening existing roadways the potential impacts of the projects is proportionately greater than in other sub-areas. Impacts include increased traffic volumes and worsened LOS, an increase in noise, and significant property acquisition (whole and partial parcels). These projects, while more severe than in other areas, are consistent with the project profile and place no undue burden, in general, on any one population group. However, as with the Downtown, 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.

## Overlake, Northeast Bellevue, and Crossroads

Crossroads and Overlake are identified employment and activity centers in the city. The area is comprised of strong single-family neighborhoods, a mix of multi-family and commercial uses, the Crossroads Shopping Mall, and several community parks.

This diverse area largely follows the citywide averages, but with slightly higher concentrations of Black and Hispanic residents. Recent immigrants from Asian countries concentrate in this area, which leads to the triggering of the Limited English Proficiency threshold.

Two capacity and four non-capacity projects are prioritized in the 2009-2020 TFP for this area. No adverse impacts are anticipated.

## Central Bellevue

In general, the area is characterized by a stable land use pattern that includes neighborhoods of single-family and multi-family homes supported by the usual commercial services and limited retail. Richards Valley is one of three areas in the city with permitted light industrial uses. The Lake Hills Greenbelt is a significant feature in the southeast quadrant of this sub-area.

Central Bellevue could be considered the most diverse sub-area because it triggers thresholds in all categories. Past community input has focused on protecting the long-standing neighborhoods from the impacts of downtown growth and regional travel demand. The distribution of projects in the 2009-2020 TFP (two capacity and eleven non-capacity) is consistent with that goal. The two capacity projects, TFP-168 and a portion of TFP-160, are both designed to reduce congestion along north-south travel routes. The non-capacity projects enhance logical travel corridors for non-motorized modes.

Greater traffic volumes in the Richards Valley area is the only adverse impact anticipated by this program and the distribution of those impacts is not deemed disparate.

## Eastgate

The Eastgate sub-area, an identified employment center, serves as a gateway to the neighborhoods in Bellevue located south of I-90 and is an axis of for travel between eastside communities and Seattle, especially with the opening of the Eastgate Park & Ride. The I-90 business corridor is home to major corporations, high technology firms, and community shopping centers.

The area has notably higher concentrations of seniors and people living below the poverty level, which may be correlated.

Three capacity projects and one non-capacity project are proposed in the 2009-2020 TFP. Despite the capacity improvements, the area will see greater traffic volumes, an impact that is not deemed disparate.

### Factoria

The Factoria sub-area, an identified employment center, is comprised of a large commercial area including Factoria Mall. The remainder of the sub-area is primarily residential with a mix of single-family and multi-family homes.

Of all the subareas, Factoria has the highest concentration of non-white residents, with Asian, Black, and Hispanic populations all exceeding thresholds.

The 2009-2020 TFP proposes five projects for the area, three capacity and two non-capacity. No adverse or disparate impacts of the program are noted.

### South Bellevue

South Bellevue is primarily residential; some neighborhoods include a mix of single and multi-family homes. Several neighborhoods are characterized by steep terrain and ravines, which provide for a more extensive tree canopy than other sub-areas.

The sub-area has relatively newer housing developments than other areas, especially East Bellevue, and therefore it is to be expected that the senior population is lower than the citywide average. Thresholds are exceeded for the concentration of Asian residents and people with disabilities.

Two capacity and seven non-capacity projects are included in the 2009-2020 TFP. With or without the planned improvements, the Newcastle area will exceed Level of Service standards; therefore the TFP imposes no disparate impacts.

## 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 sub-area plans (such as those for Bel-Red and Wilburton) that identify high priority projects;
- Growth Management Act requirements to not allow development is 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 2009-2020 TFP is not deemed disproportionate (i.e. more projects serving non-protected classes or protected classes shouldering more of the project impacts). However, it is important to track citywide plans over time 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 more 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.