3.7 VISUAL QUALITY

This section covers existing visual character and aesthetics, and policies and regulations applicable to the study area. This provides the context for discussing changes which could be expected to result from the implementation of the project alternatives.

3.7.1 Affected Environment

3.7.1.1 Existing Conditions

The visual character and aesthetics within the study area vary greatly because of the diversity of land use, intensity of development, and architectural style. The visual character ranges from a dense urban residential and commercial neighborhood to a pedestrian-biased, more traditional main street; from an active marina to a waterfront beach park; and from larger waterfront condominiums to comparatively smaller single-family homes. Vegetative cover in the study area is also diverse, ranging from forested areas such as the ravine, to areas that are predominately covered with structures and pavement, such as some of the multi-family development parcels and the marinas. Views of Meydenbauer Bay and downtown Bellevue from within the study area also reflect the diversity of visual character. Light and glare, another aspect of visual quality, varies depending on the development type and intensity. The diversity of visual character and prominent features within the study area are described below by the visual analysis areas identified in Figure 3.7-1. Note: for ease of comparison, all figures for Section 3.7 are included at the end of the section narrative, following page 3-146.

In addition, visual simulations (Figures 3.7-2 and 3.7-3) were prepared as part of the analysis to illustrate visual conditions from different established viewpoints, as well as to compare baseline conditions against the project alternatives. Figure 3.7-2 illustrates a typical view of the site from the south side of the bay and from streets such as Shoreland Drive SE. It also illustrates a view of the marina and the shoreline similar to what boaters would see from Meydenbauer Bay. From this viewpoint, most of the study area is visible in the foreground with downtown Bellevue in the background. Other features visible from this viewpoint include a portion of the bay, several three- and four-story multi-family residences, single-family residences along the steep slopes of the bay, and Bellevue Marina.

Figure 3.7-3 illustrates the view looking south toward the bay near the intersection of 100th Avenue SE and Main Street. From this location, most of the view to the bay is blocked by existing development. The two- and three-story apartment buildings and their parking lots and landscape areas are visible from this location. Views of the single-family residences on the slopes across the bay are partially visible above the roof lines and behind a few large existing deciduous and coniferous trees.

North of Lake Washington Boulevard NE, West of 100th Avenue NE

The visual character in this area is relatively consistent with fairly uniform density and character throughout (Figure 3.7-4). The multi-story residences (both condominiums and apartments) are older and with outdoor elements such as balconies and awnings, some of which appear to be in disrepair. A couple of the older apartment buildings within this area were converted to condominiums in the last two years. This ownership change resulted in some minor upgrades at the time of the conversion, although the building exteriors did not change substantially. Office

buildings along the west side of 100th Avenue NE are currently undergoing renovation, which will upgrade the building exteriors. Views of Meydenbauer Bay are limited in this area, except from upper stories that look out across the development south of Lake Washington Boulevard NE. Several apartments and condominiums (e.g., Bayside Place Condominium, Boulevard 99 Apartments, Meydenbauer Terrace Apartments, and Oasis Apartments) in this area have open garage space on the ground floor. The garages are lit with bright ceiling lights that produce glare. Street trees along NE 1st Street and 99th Avenue NE filter lights coming from the adjacent areas.

North of Main Street, east of 100th Avenue NE

Development along NE 1st Street facing Downtown Park includes two large architecturally similar, higher density mixed-use buildings (Figure 3.7-5). Each building contains some ground floor retail with condominiums or apartments above. Another multi-story mixed-use building is under construction to the south. Although the character, bulk, and scale of the buildings are uniform within this analysis area, they differ somewhat from the development west of 100th Avenue NE, due to the location of the downtown boundary, at the east edge of the 100th Avenue NE right-of-way. This creates an unbalanced urban form and streetscape with differing development intensity on opposing sides of 100th Avenue NE, although some transition is provided by the development standards of the Downtown's Perimeter Design District that apply on the east side of 100th Avenue NE.

Pedestrians cannot see Meydenbauer Bay from this subarea since views of Meydenbauer Bay are blocked by development south of Lake Washington Boulevard. Prominent views from this subarea are only available from those floors that are higher than the surrounding development. The pathway on the east side of The Seasons Apartments has low-level security lighting. Large pedestrian lights in Downtown Park and light from large buildings in the downtown area produce a large amount of glare along NE 1st Street.

South of Main Street, East of 100th Avenue SE

Main Street in Old Bellevue is an important pedestrian street (Figure 3.7-6). Main Street consists of two lanes with on-street parking, small retail shops, and high levels of pedestrian activity that provide a unique identity for the area. The section of Main Street within the study area features a high-intensity mixed-use building with ground floor retail and condominiums above, adjacent to the Chevron station. Development along this section of Main Street is distinctly different than along Main Street to the east of the study area, but is similar to the development under construction across Main Street. In general, there is little streetscape continuity along Main Street within the study area because of the contrasting height and character of the multi-story building and the adjacent single-story gas station set back farther from the street. Multi-story condominiums located along Meydenbauer Way SE are similar in bulk and scale to others in the analysis area and are similarly situated along the street and, therefore, are visually compatible. Light and glare along Main Street are largely due to building and street lighting as well as headlights of vehicles entering and leaving the gas station. Light and glare along Meydenbauer Way SE are limited to low-level street lighting and building security lighting.

South of Lake Washington Boulevard NE, between 100th Avenue SE and 99th Avenue NE

Development within this area is visually confusing (Figure 3.7-7). There is little architectural similarity between structures, and the multi-story apartments and condominiums appear oriented in different directions with little relationship to the adjacent streets or buildings. There is limited streetscape continuity along Lake Washington Boulevard NE because of inconsistent setbacks and lack of continuous street trees. The combination of a steep grade change and a sharp curve in the road east of the 99th Avenue NE intersection intensifies the sense of disconnection and visual confusion in this subarea. Similarly, the steep grade change and curve in 100th Avenue SE between Meydenbauer Way SE and Lake Washington Boulevard have the same effect. Meydenbauer Bay and the Bellevue Marina are only visible from a point midway up the slope. Light and glare along 100th Avenue SE primarily comes from vehicular circulation at the Chevron gas station. The glare from the headlights is particularly noticeable to pedestrians walking up the hill toward Main Street. Lights from the Bellevue Marina are relatively low level and do not appear to spill into adjacent residential areas. Light and glare from development across Meydenbauer Bay are dominant in this analysis area.

South of Lake Washington Boulevard NE, West of 99th Avenue NE

This analysis area appears somewhat suburban in character because of the single-family residences on larger lots, individual driveways with front yards, and turf lawns separated by privacy screens of vertical vegetation. Residential development is generally two or three stories and does not create significant light or glare, other than residential or security lighting. Street lighting levels are very low (Figure 3.7-8).

Views to Meydenbauer Bay from Lake Washington Boulevard NE are completely blocked by the development along this section of roadway. Private residential docks on the bay are constructed of timber and range from 70 to 120 feet long. The docks are in fair to poor condition and serve a few private boats. The relatively steep slopes and natural vegetation have been altered by residential development. Property is maintained primarily for access and leisure but does appear relatively natural because of the vegetation present. Light and glare from development across Meydenbauer Bay are visible from this subarea.

Meydenbauer Beach Park

The current Meydenbauer Beach Park is a community park primarily used for picnicking, sunbathing, swimming, and fishing (Figure 3.7-9). The character of the park differs across the site in part because of the variety of landforms within its boundaries. The northwestern end of the park near the shoreline contains a small public dock, an artificial swimming beach, and concrete steps. A restroom building and play area are located near the beach. The slopes of the ravine are mostly wooded and consist of a mature mixed deciduous canopy with an understory dominated by invasive English ivy. A pedestrian path, access drive, and parking area characterize the bottom of the ravine north of Lake Washington Boulevard NE. The park is closed from dusk to dawn and only contains minimal security lighting along the major pedestrian areas.

Bellevue Marina

The visual character of the marina is dominated by the adjacent expanse of paved parking areas and roads (Figure 3.7-10). Three roads are located within 200 feet of the Lake Washington shoreline on either side of the marina; on the northwest is 99th Avenue NE, and on the east are 100th Avenue SE and Meydenbauer Way SE. All three roads provide access to the marina, the park, and adjacent private properties. The marina contains three piers. Pier 1 consists of a timber deck with timber and steel piling. The pier also supports an historic timber building. A two-story timber building containing two residential units lies adjacent, just upland of the pier. Both Pier 2 and Pier 3 are covered and obstruct views of Meydenbauer Bay. Light and glare generated by the marina parking lot and security lighting are very low.

3.7.1.2 Regulatory Setting

State Environmental Policy Act (WAC 197-11)

SEPA and its implementing regulations (WAC 197-11) mandate consideration of aesthetics and visual quality among the elements of the built environment to be considered in the EIS. The description of significant impacts includes altered or obstructed views and light and glare hazards that may result from the project alternatives.

The Bellevue Land Use Code (LUC) provides direction for aesthetics, views, light, and glare in several different chapters. The study area falls within four different districts and four different overlay zones, including Downtown Perimeter Design District, Transition Area Overlay District, Shoreline Overlay District, and Critical Areas Overlay District (see Section 3.4, *Land Use*).

Pertinent regulations for the study area include the following LUC sections:

- 20.25A.070 Downtown-Old Bellevue District
- 20.25A.090 Perimeter Design District
- 20.25A.100 Downtown Core Design District
- 20.25A.060 Walkways and Sidewalks
- 20.25A.115 Design Guidelines – Building/Sidewalk Relationships
- 20.25A.110 Design Review criteria

Bellevue Comprehensive Plan

The Bellevue Comprehensive Plan is a broad statement of community goals and policies that directs the orderly and coordinated physical development of the City. Many elements of the Comprehensive Plan provide policy direction for the Meydenbauer Bay Park and Land Use Plan. The Urban Design Element of the Comprehensive Plan (City of Bellevue 2008) addresses creating and promoting an attractive, lively, and aesthetically pleasing environment in Bellevue. Each subarea plan in the Comprehensive Plan further identifies guidelines for signature streets, key gateways, and compatible transitions. The study area falls within the boundaries of three subarea plans: North Bellevue; Downtown; and Southwest Bellevue. The subarea plans provide development and design guidance for properties located within the subarea boundaries. Goals

and policies within the Bellevue Comprehensive Plan directly related to this analysis include the following:

Urban Design Element
Selected Visual Quality Goals:

- To create an attractive, lively, and gracious city for people.
- To promote an image of quality and distinction in the harmonious blending of the natural and built environments.
- To give visual prominence to pedestrian facilities and environments.
- To provide compatible transitions between areas of different land use intensity and to "soften" new development where it adjoins less intensive uses.
- To soften the visual impact of the automobile on the city.

Shoreline Management Program Element
Selected Visual Quality Goals:

- To ensure that the city's shorelines are planned for optimal use of this limited resource, to provide amenities to protect the natural environment, and to enhance the aesthetic quality of the shoreline.
- To increase public, physical, and visual access to and along the city's shoreline areas.

POLICY S-DT-105. Provide a visual and physical connection from downtown to Meydenbauer Bay that terminates in a significant waterfront presence. The connection will provide unique recreation, retail, and tourism opportunities.

Meydenbauer Bay Park and Land Use Plan Planning Principles

The Meydenbauer Bay Park and Land Use Plan Steering Committee is directed to provide guidance to City staff in developing work products to accomplish the Meydenbauer Bay Park. The Steering Committee is guided by several broad planning principles approved by the City Council for the project (City of Bellevue 2007). The principles that provide visual quality guidance include:

- **Principle 1: Remarkable and memorable shoreline experience.** The park will be an extraordinary community-wide public asset. The new park will greatly increase waterfront access, recreational opportunities for all Bellevue residents, and in conjunction with its proximity to the Downtown Park and the neighborhood, establish Bellevue as a waterfront city. The surrounding area should complement and take advantage of the unique shoreline location.

- **Principle 4: Increased physical and visual access.** Corridors that visually open up the waterfront from upland areas and that facilitate pedestrian movement from Downtown Park to the waterfront should be maximized. It is critical that corridors and public spaces overcome real or perceived physical obstacles to reaching the shoreline

- **Principle 7: Superior design.** The park should be reinforced, communicated, and celebrated through high quality urban design, landscape architecture, building design, and streetscape treatment, not only within the park itself but also throughout nearby public spaces and park connections. The plan should reflect a high standard of excellence.

Bellevue Parks and Open Space System Plan

The Bellevue Parks and Open Space System Plan (City of Bellevue 2003) provides the following guidance for the visual quality of Bellevue's park system.

> Chapter 2:
> "Bellevue's park system should preserve and enhance the City's beauty and provide visual relief from the impacts of urban living. Street trees, flowers, lawns, forests and water provide a pleasant visual setting contributing to our community's health and well-being. The term "City in a Park" exemplifies the Bellevue experience of urban living surrounded by large natural open space areas..."
>
> Chapter 5:
> "Visual and physical connections from the Downtown Park to Meydenbauer Bay will provide vital links between the downtown and Meydenbauer Bay Parks. Also, preserving and creating views of Mt. Rainier, and Meydenbauer Bay remain important goals. View corridors allow people to visually expand their horizons and place their immediate surroundings within a greater geographic context. The Downtown experience is enriched because of the experience of the ability to view dramatic natural features which have made our region famous."

3.7.2 Impacts

3.7.2.1 Methods

This Draft EIS evaluates a No-Action Alternative and two action alternatives (Alternative 1 and Alternative 2), as described in Chapters 1 and 2. The No-Action Alternative provides a baseline against which to measure both short-term and long-term impacts of the action alternatives on visual resources. The visual quality assessment is a structured analysis of the scenic resources within a project area. The method used for this EIS is based on an inventory of existing visual conditions and an evaluation of the visual effects resulting from the project alternatives for consistency with the City of Bellevue's plans and policies.

This visual analysis included the following steps:

- Describe the general visual environment.
- Identify viewer groups affected by the proposed alternatives and assign representative viewpoints for each group.
- Assess the degree of change in the visual quality resulting from each project alternative.
- Identify measures to address adverse impacts on visual quality for each alternative.

Impacts on aesthetics or visual character associated with upland urban development typically relate to the intensity, bulk/scale/height, visual compatibility, streetscape continuity, and light and glare. Impacts associated with the park area would relate to the development-related qualities listed above and to the character of landscape elements, such as shrub massing, tree canopy form, landforms, and the size and intensity of plazas and other hardscape features.

The perception of visual and aesthetic impacts of the proposed Meydenbauer Bay Park and Land Use Plan on the study area and on adjacent properties depends largely on the degree to which the overall scale and form of development and landscape incorporates features of the local setting and the values and preferences of viewers.

Existing visual conditions were described using data collected during field studies and from topographic maps, land use maps, documented project information, and photographs (Figures 3.7-4 through-3.7-10). Two representative viewpoints were selected that illustrate the visual character of the study area from two different perspectives, one from across the bay (Figure 3.7-2) and the other from 100th Avenue SE and Main Street looking south toward the bay (Figure 3.7-3). Photo simulations (Figures 3.7-11 – 3.7-17) were then developed that show each project alternative from these two representative viewpoints. The analysis that follows describes the visual quality, overall and from the two viewpoints, for each project alternative.

The primary viewer groups in the vicinity of the study area include the following: motorists and pedestrians using area roadways, including Meydenbauer Way SE, 100th Avenue NE, 100th Avenue SE, Main Street, Lake Washington Boulevard, 99th Avenue NE; residents, and other users of the surrounding properties; visitors to the study area; and residents across the bay. Sensitive viewers include those residents whose private views would be modified, such as those who live near the bay and have indoor and/or outdoor views of the park and the marina from their properties.

The type, degree, and significance of potential impacts on visual resources were assessed based on the state and local regulations and policies, as described in Section 3.7.1.2 (*Regulatory Setting*). A significant impact on visual resources would be one that is reasonably likely to result in a more than moderate adverse impact. The project alternatives were determined to result in a significant effect on visual quality if they would:

- Conflict with local policies protecting visual resources;
- Obstruct views of shoreline and water from public areas (Bellevue Comprehensive Plan, SH-27) or
- Reduce the availability of public views from public spaces such as streets, street intersections, parks, plazas, and areas of pedestrian concentration (LUC 20.25A.110).

3.7.2.2 No-Action Alternative

Prominent visual features in the study area that would likely change under the No-Action Alternative include areas adjacent to the existing and proposed park, such as those areas east of 100th Avenue SE and south of Main Street and single-family residential areas south of Lake Washington Boulevard between the park ravine and 99th Avenue NE. Under the No-Action Alternative, the area west of 99th Avenue NE would be primarily expanses of lawn with some trees and shrubs, as well as a small surface parking lot. Local views to the bay from Lake Washington Boulevard near 99th Avenue NE would increase. Portions of the properties east of 100th Avenue SE would be redeveloped with multi-story buildings, similar to the character and bulk/scale of the buildings along Main Street, providing increased streetscape continuity.

Viewpoint 1 – View from the South Shore of Meydenbauer Bay (Figure 3.7-11)

Views from across the bay and from the water would continue to be influenced by Bellevue Marina, Meydenbauer Beach Park, and the three- and four-story condominium developments along 100th Avenue SE and Meydenbauer Way SE. Views of the marina would continue to be dominated by the large, all-weather shelters that cover both Piers 2 and 3. Under the No-Action Alternative the visible area west of 99th Avenue NE would be primarily expanses of lawn with some trees and shrubs, as well as a small surface parking lot. A connecting path along the shoreline also might be visible, though there would no new distinguishing structures within the park.

Light and Glare

Park safety lighting would be visible, but lighting levels would be minimal.

Viewpoint 2 – View from the Intersection of 100th Avenue SE and Main Street Looking South Toward the Bay (Figure 3.7-3)

Views from the intersection of 100th Avenue SE and Main Street would continue to be dominated by the multi-family condominiums and apartments located along the steep slopes above Meydenbauer Bay. Several of the structures, including the Vue Condominiums and the Bayvue Village Apartments, have a consistent architectural style. Because of the height of these structures and their location on the slope, pedestrian views of the bay from the street would be blocked. There would continue to be few public views of the water from this perspective. Views to the east of 100th Avenue SE would continue to be dominated by paved parking areas and condominium rooftops. The property that is currently occupied by the Chevron station would be redeveloped to multi-story mixed-use condominiums, or other allowable uses in the existing zoning such as a restaurant, hotel, or spa. The new buildings would be similar to those across Main Street, providing greater streetscape continuity.

Light and Glare

Light and glare from building and street lighting along Main Street would be partially visible from this viewpoint. Light and glare within the vicinity of the intersection at 100th Avenue SE and Main Street would likely decrease, although the new multi-story mixed-use buildings south of Main Street and east of 100th Avenue SE would likely have some light spillover from new building interior lighting and exterior security lighting. Light and glare from the Chevron station and associated vehicles would be eliminated.

3.7.2.3 Alternative 1

Prominent visual features in the study area that would likely change under Alternative 1 are similar to those noted above for the No-Action Alternative. Additional local views that would be affected include those from 100th Avenue NE between Downtown Park and the waterfront, views of the marina and the bay from surrounding water-view properties, and views from across Meydenbauer Bay looking toward downtown Bellevue.

In general, new park landscape areas would have a softer, more natural character than the highly manicured residential landscapes they would replace. New structures in the park would have

larger building footprints than the multi-family residential buildings that would be removed, but without an increase in currently allowed heights. Streetscape improvements along Lake Washington Boulevard, 99th Avenue NE, 100th Avenue NE, Main Street, Meydenbauer Way, and NE First Street would improve visual continuity throughout most of the study area. Portions of the properties east of 100th Avenue SE would be redeveloped with multi-story buildings, similar to the character and bulk/scale of the buildings along Main Street, providing increased streetscape continuity.

Viewpoint 1 – View from the South Shore of Meydenbauer Bay (Figure 3.7-12)

In Alternative 1, the greatest visual contrast would occur at the Bellevue Marina, along the shoreline and along the steep slopes of the bay west of 99th Avenue NE. Compared to the No-Action Alternative, the water and the shoreline would be more visible with the removal of Pier 3 and the shelter over Pier 2. The visual character of the properties west of 99th Avenue NE would feature additional park landscaping and facilities, a more natural shoreline, and a relocated swimming beach. Between tree openings, a two-story parking garage with a rooftop terrace along Lake Washington Boulevard would be visible. Several two- and three-story structures east of the Vue Condominiums and west of 100th Avenue SE would be replaced with a terraced park landscape.

Light and Glare

Light and glare generated from traffic, streetlights, the marina, and buildings would likely decrease as a result of the development and expansion of the park proposed in Alternative 1. This would be due to both limitations on park hours of operation and removal of numerous building west of 100th Avenue SE. As a result of eliminating 100th Avenue SE, light and glare visible within the adjacent portion of the study area and across the bay would decrease somewhat. Light and glare associated with the new buildings south of Main Street and east of 100th Avenue SE would likely increase overall glare in the vicinity of the new buildings.

Viewpoint 2 – View from the intersection of 100th Avenue SE and Main Street looking south toward the Bay (Figure 3.7-14)

Views from the intersection of 100th Avenue SE and Main Street in Alternative 1 would be more open than under the No-Action Alternative. The removal of the two- and three-story apartment buildings west of 100th Avenue SE along the slope of Meydenbauer Bay would increase views of the shoreline and the water beyond. The park redevelopment and landscape terraces proposed in Alternative 1 would provide a more natural setting and soft landscape transition from Main Street to the marina below. A large plaza at the intersection of 100th Avenue SE and Main Street would accommodate large groups of people and would provide an expansive view of the bay from its elevated position. Several mature trees would be removed. New trees would be planted to screen the park from existing residential buildings and frame views of the bay.

Light and Glare

Light and glare generated from traffic and buildings would decrease compared to the No-Action Alternative. Light and glare generated by the traffic on 100th Avenue SE would be eliminated. New plaza lighting would illuminate entry plaza features and landscaping but would be designed to minimize spillover.

Alternative 1A – Road Open Variant (Figure 3.7-15)

Viewpoint 1 – View from the South Shore of Meydenbauer Bay

In Alternative 1A, the visual contrast from the No-Action would be similar to that described in Alternative 1. Views of 100th Avenue SE from the water and across the bay would be similar to the No-Action but would be improved with the addition of street trees and pedestrian amenities.

Light and Glare

Changes to light and glare would be similar to Alternative 1; however, light and glare from vehicles using 100th Avenue SE would be the same as the No-Action Alternative.

Viewpoint 2 – View from the Intersection of 100th Avenue SE and Main Street, Looking South Toward the Bay

In Alternative 1A, views from the intersection of 100th Avenue SE and Main Street would be somewhat altered relative to the No-Action Alternative. The removal of the two- and three-story apartment buildings west of 100th Avenue SE would provide increased views of the bay, but 100th Avenue SE would be visible from this location. Additional trees and shrubs would be planted along 100th Avenue SE and on the landscape terraces in between paths.

Light and Glare

Changes to light and glare would be similar to Alternative 1; however, light and glare from vehicles using 100th Avenue SE would be the same as the No-Action Alternative.

3.7.2.4 Alternative 2

Prominent visual features in the study area that would likely change under Alternative 2 are similar to those noted above for the No-Action Alternative. Additional local views are similar to those noted above for Alternative 1.

Park landscape areas, non-park building character, and streetscapes would be similar to Alternative 1. Park buildings would be larger than those in Alternative 1, providing increased indoor views of the bay from public buildings but decreased outdoor public views of the bay from Lake Washington Boulevard near 99th Avenue NE.

In addition, the proposed elevated viewing platform structure would be visible from windows and balconies of neighboring condominiums. Depending on the height at which the structure is viewed, it may be visually prominent. The structure would be most visible from the second story of 10000 Meydenbauer Bay Condominiums because it is approximately at the same height as the second-floor windows.

Viewpoint 1 – View from the South Shore of Meydenbauer Bay (Figure 3.7-13)

Views of the Bellevue Marina and shoreline would be considerably modified in Alternative 2 compared to the No-Action Alternative. With the removal of Piers 2 and 3, views of the water and the shoreline would be more open. The expansion of Pier 1 to the west would shift views of boats closer to the mouth of the bay. The areas west of 99th Avenue NE would include stone and lawn terraces, a swimming beach, and a community building with a parking garage below. Some additional planting and outdoor terrace on top of the community building would be partially

visible from across the bay. Native landscaping along the slopes would be increased, providing a visual screen in front of portions of the new building. Several apartment buildings west of 100th Avenue SE would be removed and replaced with a multi-level, terraced café with flexible space for program support such as boat storage/rental tucked underneath. An elevated walkway would extend out toward the bay and would be visible, as would the shoreline promenade and floating boardwalk. An elevator tower connecting this elevated walkway to the shoreline below also would be visible.

Light and Glare

Light and glare generated from traffic, streetlights, the marina, and buildings would likely decrease slightly or be similar to the No-Action Alternative. This would be due to both limitations on park hours of operation and fewer moorage slips. As a result of the removal of 100th Avenue SE, light and glare visible across the bay would likely decrease. The new terraced community building and elevated structure would have lower light levels than the existing buildings located on these parcels. Building lighting would be reduced when the park is closed. Light and glare associated with the new buildings south of Main Street and east of 100th Avenue SE would likely increase overall glare within the vicinity of the new buildings.

Viewpoint 2 – View from the Intersection of 100th Avenue SE and Main Street, Looking South Toward the Bay (Figure 3.7-16)

In Alternative 2, the greatest visual contrast would be experienced close to the intersection of 100th Avenue NE and Main Street. A large public entry plaza would extend from the existing road elevation onto the site, replacing the multi-story apartment buildings. The entry plaza would encourage more human activity along Main Street. Views from vehicles driving along Main Street and Lake Washington Boulevard to the bay would be increased, but the most noticeable change would be the expansive bay view from the southern edge of the entry plaza within the study area. Foreground views from the intersection would be of a linear, terraced water feature and landscape plantings lining the grand stairs that lead to the shoreline.

Light and Glare

Light and glare generated from traffic and buildings would decrease compared to the No-Action Alternative. Light generated by the traffic on 100th Avenue SE would be eliminated. New plaza lighting would illuminate the entry plaza, water features, and landscaping but would be designed to minimize spillover.

Alternative 2A – Road Open Variant (Figure 3.7-17)

Viewpoint 1 – View from the South Shore of Meydenbauer Bay

In Alternative 2A, the visual contrast relative to the No-Action Alternative would be similar to that described above for Alternative 2. Views of 100th Avenue SE from the water and across the bay would be similar to the No-Action Alternative but would be improved with the addition of street trees and pedestrian amenities. Much of 100th Avenue SE would be hidden behind the elevated walkway that extends from the plaza to the shoreline.

Light and Glare

Light and glare effects would be similar to Alternative 1; however light and glare from vehicles using 100th Avenue SE would be the same as the No-Action Alternative.

Viewpoint 2 – View from the intersection of 100th Avenue SE and Main Street looking south toward the Bay

Views from the intersection of 100th Avenue SE and Main Street in Alternative 2A would be considerably altered from the No-Action Alternative. The removal of the two and three-story apartment buildings west of 100th Avenue SE would increase views of the bay from the street-level pedestrian entry plaza. Views from the intersection looking toward the entry plaza would be interrupted by the street and street trees.

Light and Glare

Light and glare effects would be similar to Alternative 2; however, light and glare from vehicles using 100th Avenue SE would be the same as under the No-Action Alternative.

3.7.3 Mitigation Measures

In general, visual and aesthetic changes associated with the project alternatives would be consistent with the 12 planning principles (City of Bellevue 2007); City of Bellevue policies S-DT-87 and S-DT-105; as well as LUC 20.25A.070, 20.25A.090, 20.25A.100, 20.25A.060, 20.25A.115, and 20.25A.110. The City of Bellevue Design Review Criteria (LUC 20.25A.110) and design review process would address the use of additional screening or other design mitigation techniques as part of future project-level reviews.

Designs were developed and reviewed with the Steering Committee to ensure that concerns related to aesthetics and visual quality receive attention early in the process. Depending on alternative, some of the specific park structural elements could be modified at the project level in terms of their location, massing, height, and architectural design to ensure sensitivity to surrounding uses.

These context-sensitive solutions include elements such as new landscaping and plantings along roadways in the study area, a more natural shoreline, and restored habitat areas that have been incorporated into the Meydenbauer Bay Park and Land Use Plan.

Similarly, future projects would be required to comply with code requirements such as those that regulate lighting (e.g., low-level light-emitting diode [LED] lighting in park areas, full cut-off lighting fixtures for parking areas, and low-hanging street lamps for pedestrian zones) to minimize light impacts. Mitigation measures could also include reducing the height/scale of the elevated structure in Alternative 2 or relocating the elevator that provides access from the upper plaza levels to the shoreline.

3.7.4 Summary of Impacts

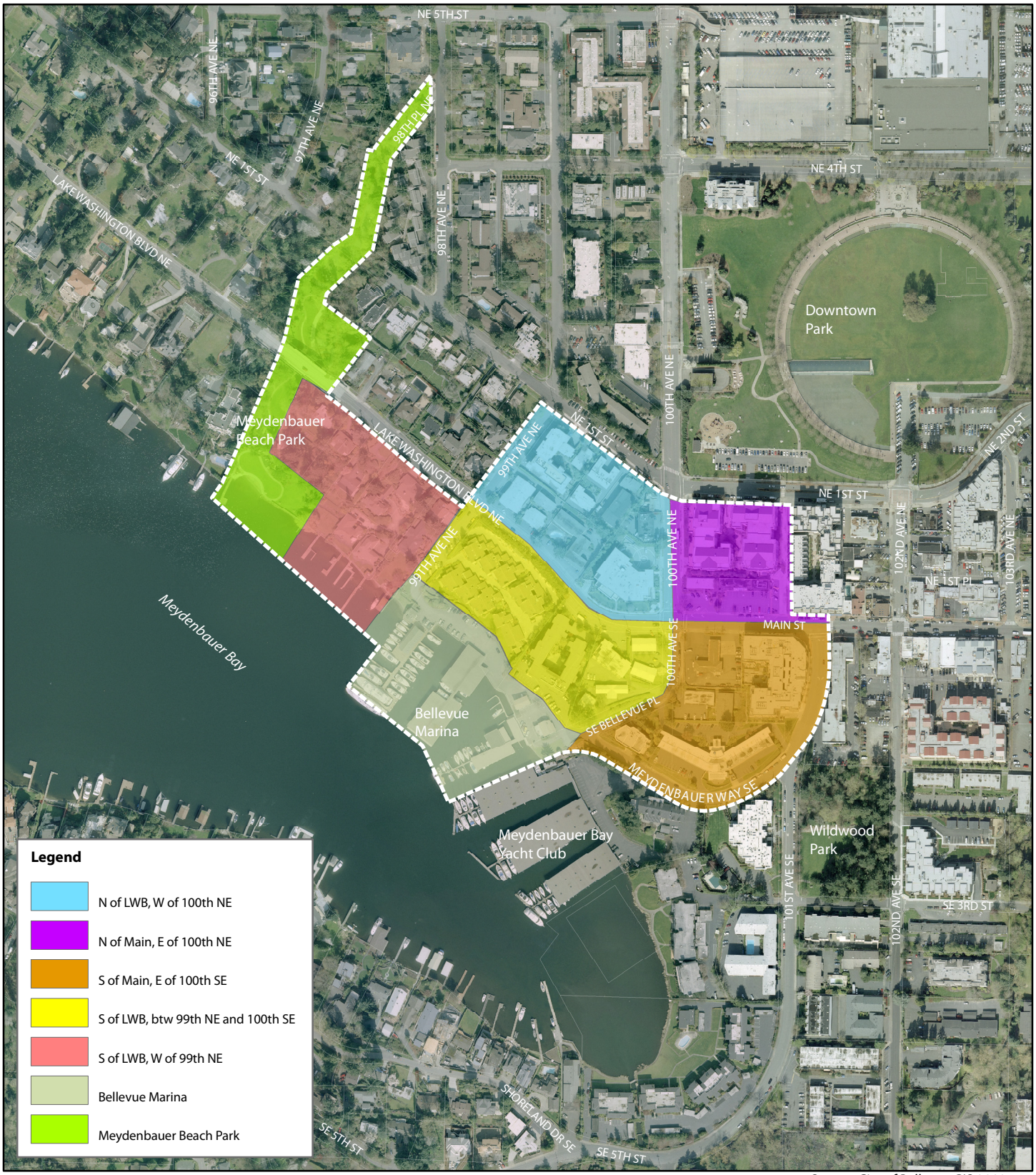
Implementation of the action alternatives would, in general, have a strong positive impact on the visual quality of the study area. Visual impacts depend largely on the values and preference of the viewer. One value that has been clearly expressed by the community and which is

documented in the Bellevue Comprehensive Plan is the desire to create views of the dramatic natural features that make Bellevue a truly memorable place. Such improvements would be more pronounced in the two action alternatives due to two primary factors. The action alternatives would both create usable space at important view opportunity locations and both would remove built structures that currently obstruct views. The No-Action Alternative also provides some minor improvements for view creation along a portion of the project site that is north of 99th Avenue NE. These improvements are due in large part to increased access along the shoreline. The relative difference between view creation in Alternatives 1 and 2 varies because of the degree to which they incorporate the two primary factors listed above. Alternative 2 would create more locations for view opportunities both north of 100th Avenue SE and north of 99th Avenue NE than Alternative 1 due to increased ease of circulation and accessibility. Alternative 1 would, however, remove more built structures that may obstruct both public and sensitive viewer views.

The improvements in aesthetic quality of the overall park setting would be more pronounced in the two action alternatives than in the No-Action Alternative. Both action alternatives propose considerable improvements to the aesthetic quality of the shoreline and the marina due to shoreline restoration and the removal of all-weather structures that currently cover Piers 1 and 2. Many of the private views from across the bay looking back toward the study area and downtown would be improved in both Alternatives 1 and 2 as both would create a more picturesque and natural foreground.

The visual impacts of the upland area development would be the same under Alternatives 1 and 2 but would be more pronounced than the No-Action Alternative, which proposes no changes to the upland areas. The proposed upland development in the action alternatives would create more view opportunity spaces for the public, not only of the bay but also of the park. The bulk, scale, and architectural quality of the development would be similar to the character of the adjacent existing development along Main Street.

In summary, the project alternatives would result in no significant unavoidable adverse impacts on the visual quality of the study area. While expected visual and aesthetic changes would be considerable, they would be consistent with the City of Bellevue Comprehensive Plan (City of Bellevue 2008) and other applicable policies and are generally considered to be beneficial. The measures that would be imposed as part of future design- and project-level review as described above, together with other City development regulations and design standards, would mitigate any adverse visual quality impacts resulting from future redevelopment.



Source: City of Bellevue GIS 2009

0 125 250 500 Feet

Figure 3.7-1: Visual Analysis Areas

Meydenbauer Bay Park and Land Use Plan EIS
City of Bellevue

Figure 3.7-2: Visual Simulations View 1 Existing Conditions.

Figure 3.7-3: Visual Simulations View 2 Existing Conditions and No-Action Alternative.

View from Lake Washington Boulevard NE Looking North at Existing Apartment Building

View of Office Building on 100th Avenue NE

View from NE 1st Street Looking South at a Converted Condominium Building

Office Building at the Corner of 100th Ave NE and Lake Washington Boulevard NE

Figure: 3.7-4. Visual Analysis Area Photos.

Multi-Family Residences South of Downtown Park

Future Mixed-use Building Under Construction North Side of Main Street

Streetscape Along 100th Ave NE Looking North

Figure: 3.7-5. Visual Analysis Area Photos.

Mixed-use Building on South Side of Main Street

Condominium at Intersection of SE Bellevue Place and Meydenbauer Way SE

Chevron Station at the Corner of 100th Ave SE and Main Street

Figure: 3.7-6. Visual Analysis Area Photos.

Apartments and Condos South Side of Lake Washington Boulevard NE, West of 100th Ave SE

View Toward Meydenbauer Bay from 100th Ave NE and Main Street

Condominiums South of Lake Washington Boulevard NE

Figure: 3.7-7. Visual Analysis Area Photos.

View from Single-family Residential Lots on the North Side of Lake Washington Boulevard NE

View of Meydenbauer Bay Looking Down 99th Avenue NE

Single-family Residential Landscapes Along 99th Avenue NE

Figure: 3.7-8. Visual Analysis Area Photos.

Play Structure at Existing Meydenbauer Beach Park

Lawn and Artificial Beach at Meydenbauer Beach Park

Pedestrian Path through Meydenbauer Beach Park

Steep Trails along Ravine at Meydenbauer Beach Park

Figure: 3.7-9. Visual Analysis Area Photos.

Bellevue Marina Parking Lot and Adjacent Condominiums near 100th Avenue SE

Historic Whaling Building at Pier 1

Retaining Wall at Edge of Bellevue Marina Parking Lot

Pier 3 at Bellevue Marina

Figure: 3.7-10. Visual Analysis Area Photos.

Figure 3.7-11: Visual Simulations View 1 No-Action Alternative.

Figure 3.7-12: Visual Simulations View 1 Alternative 1.

Figure 3.7-13: Visual Simulations View 1 Alternative 2.

Figure 3.7-14: Visual Simulations View 2 Alternative 1.

Figure 3.7-15: Visual Simulations View 2 Alternative 1A Road Open Variant.

Figure 3.7-16: Visual Simulations View 2 Alternative 2.

Figure 3.7-17: Visual Simulations View 2 Alternative 2A Road Open Variant.

3.8 CULTURAL AND HISTORIC RESOURCES

This section provides a brief history of the study area, existing conditions of cultural and historic resources on site, and of applicable plans, policies, regulations, and laws related to cultural resources within the study area. This section draws upon the findings of the Preliminary Cultural Resources Assessment for the City of Bellevue's Meydenbauer Bay Park and Land Use Plan (CRC 2008). The full report was prepared for the City of Bellevue as Technical Memorandum 7 of the Meydenbauer Bay Park and Land Use Plan and can be accessed by contacting the City of Bellevue. The assessment provides the context for analyzing and describing changes that could result from implementing the project alternatives.

3.8.1 Affected Environment

The area of focus for the initial cultural assessment is the area defined as the Area of Potential Effect (APE) (Figure 1.1-2) or study area. A secondary study area is also defined that includes areas outside of the primary study area that may be relevant to those cultural resources addressed on site in the primary study area. The assessment was developed to determine the potential for any as-yet unrecorded cultural resources within this area and includes existing archaeological, ethnographic, historical, and other information, including stakeholder input.

3.8.1.1 Summary of Site History

Archaeological evidence dated to the last several thousand years in the greater Puget Sound region represents seasonal campsites and village locations on waterfronts and elsewhere. Five traditional Indian place names have been recorded in the general vicinity of the study area. Pre-contact (pre-AD 1850) Native American land use in the general Meydenbauer Bay area may have consisted primarily of subsistence activities such as hunting, plant gathering, and fishing. Specialized fishing for salmon using traps, prongs, and nets was also conducted along the Lake Washington shorelines. Weirs and willow and stone traps likely were used to catch anadromous fish found in creeks.

In 1869, William Meydenbauer filed a claim for a tract of land that became known as Meydenbauer's Bay. The land was heavily timbered, but his family built a cabin and planted an orchard of fruit trees. In 1885, new settlers, Isaac Bechtel and his family built a cabin on the bay on the west side of the Meydenbauer Beach Park ravine. Additional settlers came to this area following the 1889 Seattle fire. These early homesteaders were largely engaged in berry farming and timber harvesting; trees were cut down and large rafts of logs were floated to mills in Seattle.

A fleet of steamers began service across Lake Washington in 1892, and a car ferry started in 1915; the Bellevue dock for these services was located at the end of 100th Avenue SE, at the current site of the Meydenbauer Bay Yacht Club. In 1898, Bellevue's second public school was built on Main Street and 100th Avenue SE, at the current location of the Chevron gas station. By 1906, Meydenbauer Bay had become a popular destination for swimming, canoeing, and dancing at the newly built Wildwood Park Dance Pavilion. The American Pacific Whaling Company moved to Meydenbauer Bay after the opening of the Lake Washington Ship Canal in 1916. The Bellevue location was used as a winter harbor for the company's Alaskan fleet (CRC 2008). However, a fire soon destroyed most of the new moorage. In 1941, the whaling company buildings were leased to the U.S. government and became a Coast Guard Station for the duration of the Second World War. Following the war, the whaling company experienced economic

challenges; when the company closed its doors by 1947, it was the last operating whaling company in the United States.

3.8.1.2 Existing Conditions

Summary of Existing Conditions

No archaeological sites are recorded with the Department of Archaeology and Historic Preservation (DAHP) within the study area (DAHP n.d.). One structure within the study area has been recorded on an historic structures inventory prepared for the City of Bellevue (Tobin and Pendergrass 1993). There are no known Indian Allotments or Traditional Cultural Places recorded within the study area.

Archeological Sites

No archaeological sites are recorded within the study area; however, no archaeological surveys appear to have been conducted within the study area. Any as-yet unidentified buried archaeological deposits in the study area could potentially range in age from about 12,000 years old to the recent historic period. These could include ancient Native American sites; recent sites dating to the 19th century period of contact between Indian people and outside homesteaders, trappers, or loggers; and sites related to the early history of Bellevue up until and including the first half of the 20th century.

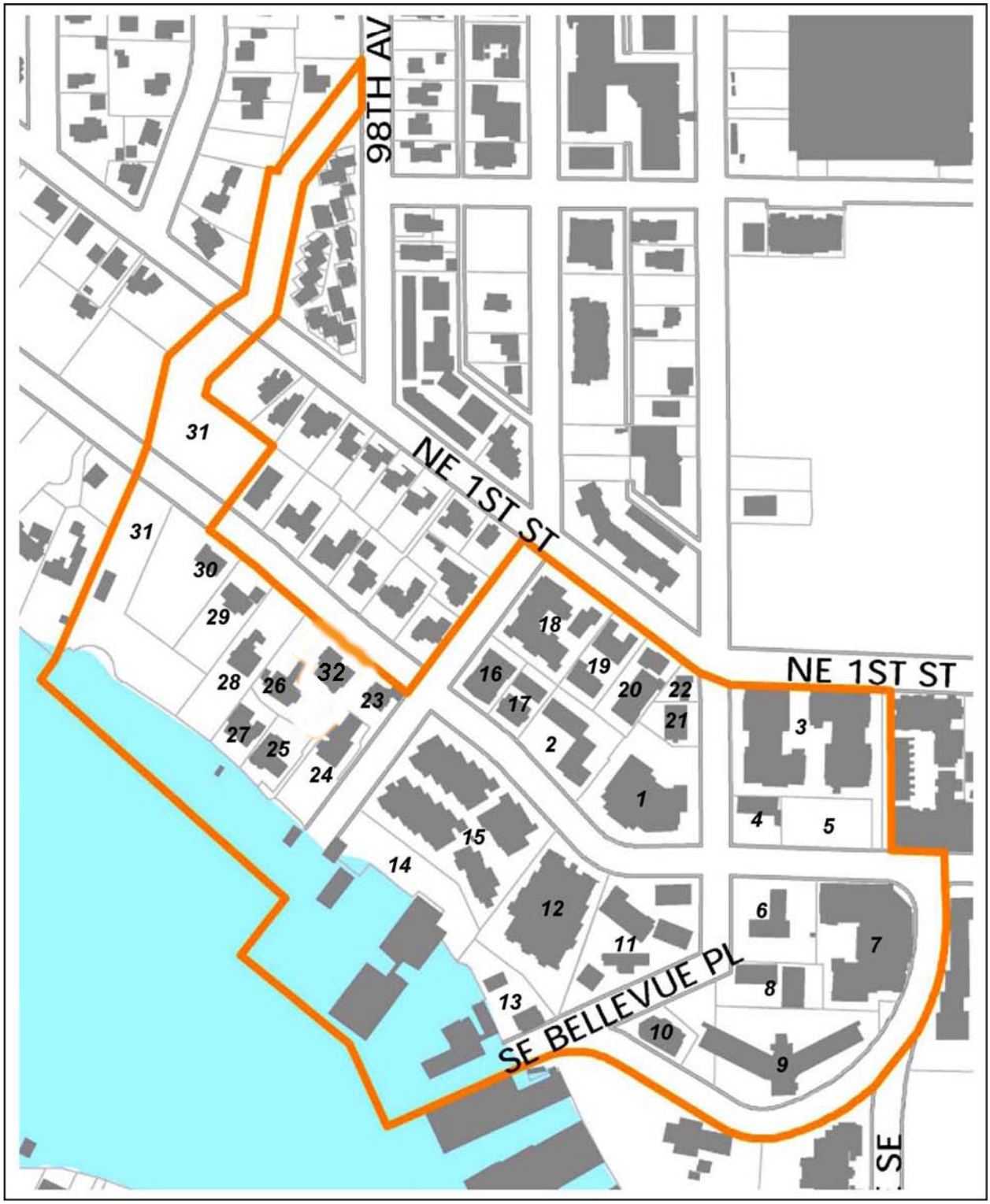
Meydenbauer Bay is within territory used by Southern Lushootseed speakers that include ancestral families of the Duwamish Tribe (Eells 1891; Suttles and Lane 1990). Historically, the Duwamish shared many broadly defined traditions with inland Puget Sound people, including lacustrine or riverine settlement patterns; subsistence emphasis on salmon and other fish, land game, and a variety of abundant vegetable foods; and household and village communities linked by family and exchange relations (Suttles and Lane 1990).

By the mid-1850s, Euro-American settlement in the Pacific Northwest had drastically impacted Indian people and their traditions; many families were forcibly relocated and interned during this period. In 1855, following negotiations between Indian people and the U.S. government, the Treaty of Point Elliot was invoked by federal authorities to compel many Indian people to relocate to reservations (Ruby and Brown 1992). Some Indian people strove to remain off-reservation and later became members of the Duwamish Tribe, Snoqualmie Tribe, or Muckleshoot Tribe (Duwamish et al. 1933; Lane 1975).

It should be noted that the historical level of Lake Washington was several feet lower than the current lake level (because of the opening of the Lake Washington Ship Canal in 1916, which lowered the lake and caused the Black River to dry up); this differing lake level might influence the location of any potential archaeological sites relative to the current shoreline.

Built Structures

The Office of the King County Assessor has identified 14 structures within the study area as older than 50 years, and 7 structures between 40 and 49 years old. Figure 3.8-1 provides a key to the following table (Table 3.8-1), which provides a summary of structure information for parcels in the study area. In total, 21 structures older than 40 years that contain existing Residential (Res.), Business (Bus.), or Recreational (Rec.) uses are highlighted in Table 3.8-1 below.



Source: Cultural Resource Consultants, Inc. 2008

Figure 3.8-1: Location of Built Structures

Table 3.8-1. Summary of Built Structure Information.

Key to Figure 3.8-1	Address	Parcel No.	Year Built	Use	Historic Inventory Status
1	1 100th Avenue NE	438920-0325	2001	Bus.	N/A
2	9920 Lake Washington Boulevard NE	438920-0310	1959	Res.	
3	10001 NE 1st Street	154510-0122	1999	Res.	N/A
4	108 100th Avenue NE	154510-0121	1946	Bus.	
5	10001 NE 1st Street	154510-0127	1999	Res.	N/A
6	10011 Main Street	322505-9033	1969	Bus.	N/A
7	10047 Main Street	029395-0000	2000	Res.	N/A
8	114 100th Avenue SE	322505-9034	1958	Res.	
9	10022 Meydenbauer Way SE	066600-0516	1968	Res.	
10	10000 Meydenbauer Way SE	857990-0000	1989	Res.	N/A
11	9959 Lake Washington Boulevard NE	438920-0335	1957	Res.	
12	9951 Lake Washington Boulevard NE	896350-0000	1967	Res.	
13	100 100th Avenue SE	438920-0347	1953	Res.	
13	100 100th Avenue SE	438920-0347	1975	Res.	N/A
14	2 99th Avenue NE	438920-0370	1928	Bus.	Inventoried
14	2 99th Avenue NE	438920-0370	1928	Bus.	Inventoried
14	2 99th Avenue NE	438920-0370	1936	Bus.	Inventoried
15	9905 Lake Washington Boulevard NE	933370-0000	1979	Res.	N/A
16	9906 Lake Washington Boulevard NE	438920-0300	1963	Res.	
17	9910 Lake Washington Boulevard NE	438920-0305	1957	Res.	
18	9909 NE 1st Street	058720-0000	1970	Res.	N/A
19	9925 NE 1st Street	438920-0285	1959	Res.	
20	9933 NE 1st Street	066050-0000	1959	Res.	
21	27 100th Avenue NE	438920-0266	1969	Bus.	N/A
22	35 100th Avenue NE	438920-0265	1946	Bus.	
23	3 99th Avenue NE	438920-0501	1920	Res.	
24	1 99th Avenue NE	438920-0500	1911	Res.	
25	9821 Lake Washington Boulevard NE	438920-0462	1985	Res.	N/A
26	9815 Lake Washington Boulevard NE	438920-0460	1914	Res.	
27	9817 Lake Washington Boulevard NE	438920-0463	1981	Res.	N/A
28	9807 Lake Washington Boulevard NE	438920-0450	1914	Res.	
29	9755 Lake Washington Boulevard NE	438920-0435	1967	Res.	
30	9747 Lake Washington Boulevard NE	438920-0405	1933	Res.	
31	(Park)	438920-1295		Rec.	
32	9819 Lake Washington Boulevard NE	438920-0461	1983	Res	

Source: CRC 2008.

A 1993 historic structures inventory (updated in 1997) recorded only one structural complex within the study area as historic, the American Pacific Whaling Fleet Buildings (No. 14), now used as the Bellevue Marina (Tobin and Pendergrass 1993). No other inventory is known to have been conducted on the other structures.

Relevant Newspaper Accounts

Newspaper accounts from July 1977 indicate that two human skulls identified as Native American were found buried about 1 foot deep in the "front yard" of a Meydenbauer Bay home (Miletich 1977; Suffia 1977), likely within the secondary study area. The skulls were reportedly found associated with corroded metal hardware suggestive of the early contact period (i.e., mid- to late-19th century). The exact address of the discovery is not recorded in available information, but a local resident later noted (Buerge 1992) that the house was located along the 9700 block of Lake Washington Boulevard NE, which places the house east of the ravine. No information is available regarding the disposition of the skulls or any subsequent investigation of the discovery location (pers. comm., Megan Carlisle, Archivist, Eastside Heritage Center, June 2008, as cited in CRC [2008]).

3.8.1.3 Regulatory Setting

Prehistoric and Native American resources are protected by a series of federal laws, regulations, and guidelines. The City of Bellevue is preparing this portion of the Draft EIS to satisfy SEPA requirements. Within the state of Washington, the federal National Register of Historic Places (NRHP) program is administered by the Washington State Department of Archaeology and Historic Preservation (DAHP) - the sole state agency with technical expertise with regard to cultural resources.

Under SEPA, the DAHP provides formal opinions to local governments and state agencies regarding the historic significance of a site and potential impacts of proposed projects. State laws that apply to cultural resources include RCW 27.44, Indian Graves and Records Act, and RCW 27.53, Archaeological Sites and Resources. Federal regulations include Section 106 of the National Historic Preservation Act of 1966 (NHPA) and mandate consultation with affected Indian Tribes.

Resources are typically defined as significant or potentially significant if they are identified as being of special importance to an ethnic group or Indian tribe, or if the resource is considered to meet certain eligibility criteria for local, state, or national historic registers, such as the NRHP. Criteria used for an assessment of potential eligibility for the Washington Heritage Register are similar to NRHP criteria (National Park Service 1991); resources should be at least 50 years old and retain qualities of structural integrity and historical significance. The DAHP mandates an inventory of standing structures older than 50 years that lie within a given project boundary. The King County Historic Preservation Office encourages inventory of structures older than 40 years within county limits.

Under these acts and programs, the City of Bellevue is responsible for making a reasonable and good faith effort to identify Indian Tribes that attach significance to this site.

To comply with the NHPA and state and local regulations, the following entities will be invited to review the Draft EIS and provide their input or any additional information regarding traditional use of the study area for inclusion in the Final EIS:

- DAHP State Historic Preservation Officer (SHPO)
- King County Landmarks and Heritage Program
- Eastside Heritage Center
- Duwamish Tribe
- Snoqualmie Tribe
- Muckleshoot Tribe

The City of Bellevue should submit a final cultural resources assessment to DAHP and potentially affected Tribes for comment prior to the initiation of any land-altering activities.

3.8.2 Impacts

3.8.2.1 Methods

This Draft EIS evaluates a No-Action Alternative and two action alternatives (Alternative 1 and Alternative 2), as described in Chapters 1 and 2. The No-Action Alternative provides a baseline against which to measure both short-term and long-term impacts of the action alternatives on cultural resources. This cultural resources analysis is based on guidance provided by WAC 197-11-960 (SEPA environmental checklist) regarding the identification, characterization, and mitigation of cultural resources impacts. The method for assessing impacts for historic and cultural impacts draws upon the findings of the Preliminary Cultural Resources Assessment for the City of Bellevue's Meydenbauer Bay Park and Land Use Plan (CRC 2008) and guidance from 36 CFR Part 800 of the NHPA – Protection of Historic Properties. The assessment provides the context for analyzing and describing changes that could result from implementing the project alternatives. Assessment of impacts and their significance begins with the identification of cultural resources and historic properties within and near the study area, evaluation of the significance of such properties, and then consideration of the scope of potential short-term and long-term impacts.

The type, degree, and significance of potential impacts on cultural resources were assessed based on the federal, state, and local regulations and policies, as described in Section 3.8.1.3 (*Regulatory Setting*). A significant impact on cultural resources would be one that is reasonably likely to result in a more than moderate adverse impact, as described below.

Impacts on historic and cultural resources typically result from activities that occur in the vicinity of the resource. Adverse impacts on buried archaeological deposits or traditional cultural properties are consequences of ground disturbance, excavation, earthmoving, and construction activities. Adverse impacts on aboveground resources, such as historic structures, often result from building demolition, partial removal of structural elements, addition of new building features, and changes in the surrounding historical context of a resource.

Short-term impacts on buried archaeological sites include those related to ground-disturbing activities. Possible physical impacts on historic structures result from renovation or new construction efforts, and/or vibration effects from nearby heavy machinery operation. Long-term

impacts also include these, as well as potential limitations on access to any identified traditional sites.

Cumulative impacts result from development that could adversely affect the historical characteristics of a locality, as well as future access to lands by groups engaged in traditional activities.

The programmatic assessment of impacts in the following sections addresses the potential effects of *changes to the proposed development pattern* of each of the alternatives on historic and cultural resources over time. NHPA Section 106 compliance and consultation will be required prior to the execution of any public sector, project-specific land-alteration activities. Definitions of adverse impacts on eligible resources will be identified and addressed in consultation with the DAHP at that time.

3.8.2.2 No-Action Alternative

Under the No-Action Alternative, limited redevelopment and site disturbance would occur on upland parcels (i.e., Chevron station and Brant Photography) and within the expanded Meydenbauer Beach Park (i.e., connecting the shoreline trail, minor regrading, modest landscaping, and other minor improvements). While inadvertent discovery of archeological resources could result from any excavation, the potential for discovery of archeological artifacts within the study area is anticipated to be low.

The proposed demolition of residences and single-family piers on properties the City acquired for park use under this alternative have not been identified as historically significant. Although no cultural or historic impacts are anticipated from removal of these structures, the City of Bellevue will inventory the affected structures older than 40 years in age that have not been previously evaluated for their eligibility for local, state, or national historic registers as recommended by the King County Historic Preservation Office prior to any alteration or removal of structures. Compliance with NHPA Section 106 requirements also would be conducted as necessary at that time.

3.8.2.3 Alternative 1

Under Alternative 1, a significant portion (if not all) of the upland parcels would likely redevelop as a result of the proposed changes to land use policy, development regulations, and park expansion and improvements. Similarly, proposed park improvements would completely disturb affected parcels during site development. As a result, Alternative 1 would alter the landscape and disturb parcels with below-grade structures in the short term through construction and in the long term through new development within much of the entire study area. Therefore, the potential for the discovery of archeological artifacts within the study area is higher, relative to the No-Action Alternative, because of related increases in ground disturbance. However, the potential for discovery of archeological artifacts within the study area is still anticipated to be low since past development activities within the study area to date have not resulted in the discovery of culturally significant finds.

To ensure the preservation of potential archaeological finds that could be underground within the study area, the City of Bellevue will comply with the NHPA Section 106 requirements prior to any public sector land alterations, in consultation with DAHP as necessary.

The residences, commercial structures, and piers proposed for demolition under Alternative 1 have not been identified as historically significant at this time. Although no cultural or historic impacts are anticipated from the proposed removal of these structures, the City of Bellevue will inventory affected structures older than 40 years in age that have not been previously evaluated for eligibility for local, state, or national historic registers, as recommended by the King County Historic Preservation Office prior to any alteration or removal of structures. Compliance with NHPA Section 106 requirements will be conducted as necessary at that time.

Alternative 1 would preserve the existing Whaling Building and increase the opportunities for historic interpretation of the unique history of the site, relative to the No-Action Alternative. Proposed park planning principles (specifically, Principle 9) suggest the incorporation of park themes that reflect the early days of Bellevue. Such programmatic elements could include adaptation of the existing Ice House, enhanced preservation of the Whaling Building, interpretive signage that reflects the ferry history, ravine enhancements, and development of interpretive trail programs.

3.8.2.4 Alternative 2

Alternative 2 would generally result in the same effects on historic and cultural resources as those identified for Alternative 1, as described above. Interpretive opportunities of the proposed park site would likely be somewhat different than those programmed for Alternative 1, but they would similarly preserve the Whaling Building and increase the overall opportunity for enhancing public awareness of the unique history of this site in Bellevue, relative to the No-Action Alternative.

Alternative 2 would ensure the preservation of potential archaeological finds that could be underground through compliance with the NHPA Section 106 requirements prior to any public sector land alterations, in consultation with DAHP as necessary. Although no cultural or historic impacts are anticipated from the proposed removal of structures, the City of Bellevue will inventory affected structures older than 40 years in age that have not been previously evaluated for eligibility for local, state, or national historic registers, as recommended by the King County Historic Preservation Office prior to any alteration or removal of structures. Compliance with NHPA Section 106 requirements for historic structures will be conducted, as well, as necessary at that time.

3.8.3 Mitigation Measures

Although no cultural or historic impacts are anticipated under the project alternatives, the following measures are suggested to streamline future project-specific activities related to redevelopment of the park and to avoid, minimize, and offset potential adverse effects on existing and potential historic resources and inadvertent underground finds:

- Inventory and document archaeological deposits and traditional cultural properties in the study area. Identification efforts should include the consultation and review by DAHP and tribal cultural resources specialists. The cultural resources field assessment should be defined to include the proposed construction footprint of any ground-disturbing activities.

- Inventory and document structures older than 40 years old that have not been previously evaluated for eligibility for local, state, or national historic registers, as recommended by the King County Historic Preservation Office.

- Mitigate potential adverse impacts on historic and cultural resources through impact avoidance through redesign, construction monitoring, and documentation of the resource consistent with Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards.

Although the likelihood of subsurface archaeological resources within or in the immediate vicinity of the APE is low, there is always a possibility that undocumented subsurface prehistoric or historic-era remains or human interments could be present that would be adversely affected. If suspected human remains are discovered during ground-disturbing activities associated with future project-specific actions, all such activity would cease immediately within the vicinity of the discovery site. Any such discovery would require immediate notification of State Police, the SHPO, and all appropriate Native American Tribes.

The City of Bellevue will comply with the NHPA Section 106 requirements and mitigation measures as part of permitting for future projects and prior to any land, pier, or structural alterations as necessary.

3.8.4 Summary of Impacts

None of the project alternatives are expected to result in adverse impacts on cultural or historic resources in the study area. Relative to the No-Action Alternative, the two action alternatives would result in minor beneficial impacts, in the form of preserving the existing Whaling Building and increasing the opportunities for historic interpretation of the unique history of the site. Interpretive opportunities would likely be somewhat different among the two action alternatives, but they represent similar levels of potential for interpretation and education.

Significant unavoidable adverse impacts on cultural or historic resources are not anticipated under any of the project alternatives.

3.9 TRANSPORTATION

This section describes the existing transportation facilities and conditions and the regulatory setting within the Meydenbauer Bay Park and Land Use Plan study area, and within the larger transportation study area (Figure 3.9-1). The transportation study area encompasses a somewhat larger area to assess transportation elements such as roadway network, parking, public transportation, pedestrian and bicycle facilities, emergency services, and travel demand management.

For purposes of the transportation analysis, existing conditions are defined as the 2008 scenario. The reported existing transportation data include p.m. peak hour traffic volumes and operational analysis of p.m. peak hour intersection conditions from actual field counts.

3.9.1 Affected Environment

This subsection provides an overview of the existing conditions within the study area and the larger transportation study area, as applicable, and also summarizes the regulatory setting. As noted above, the transportation study area extends beyond the study area to incorporate specific intersections and road sections analyzed.

3.9.1.1 Existing Conditions

Roadway Network / Infrastructure

The City's Comprehensive Plan (City of Bellevue 2008) identifies five basic roadway functional classifications:

- **Freeways** – Provide multi-lane high speed operating conditions for long distance auto and freight travel between cities, regions, and states.
- **Major Arterial Streets** – Provide efficient direct routes for long distance auto travel within the region and connect freeway interchanges to major concentrations of commercial activities.
- **Minor Arterial Streets** – Provide connections between major arterials and concentrations of residential and commercial activities.
- **Collector Arterial Streets** – Collect or distribute traffic within a neighborhood and provide connections to minor or major arterials.
- **Local Streets** – Provide access to abutting land uses and carry local traffic to the collector arterials.

The primary characteristics in defining the roadway functional classification are vehicular mobility (with freeways providing the most, and local streets the least) and access to adjacent properties (with local streets providing the most, and freeways the least). The roadway functional classifications for streets within the study area, as designated by the Comprehensive Plan, are shown in Table 3.9-1. Within the immediate vicinity of the study area, the roadway network consists of local streets (99th Avenue NE, 100th Avenue SE, Bellevue Place SE, Meydenbauer Way SE, 102nd Avenue NE and SE, and 103rd Avenue NE) and collector arterials (Lake Washington Boulevard NE, Main Street, 101st Avenue SE, and NE 1st Street). North of Main Street, 100th Avenue NE is designated a minor arterial, and four blocks to the east, Bellevue Way is designated a major arterial.

Table 3.9-1. Roadway Functional Classification and Description.

Study Area Roadway	Functional Classification	Posted Speed Limit (mph)	Direction[1]	Number of Lanes	On-Street Parking	Non-Motorized Facilities[2]
Lake Washington Blvd.	Collector	30	E-W	2	South	SOBS, NBF
Main Street	Collector	25	E-W	2	Both	SBS, NBF
NE 1st Street (w/of 100th)	Collector	25	E-W	2	Both	SOBS, NBF
NE 1st Street (e/of 100th)	Collector	25	E-W	2	South	SBS, NBF
99th Avenue NE (n/o Lake Washington Blvd)	Local	25	N-S	2	Both	SOBS, NBF
99th Avenue NE (s/o Lake Washington Blvd)	Local	25	N-S	2	East	NPF, NBF
100th Avenue NE (s/o NE 1st)	Minor Arterial	30	N-S	2	None	SBS, NBF
100th Avenue NE (n/o NE 1st)	Minor Arterial	30	N-S	2 to 3	East	SBS, NBF
100th Avenue SE	Local	25	N-S	2	East	SOS, NBF
Bellevue Place SE	Local	25	E-W	2	South	SOS, NBF
Meydenbauer Way SE	Local	25	E-W	2	North	SOBS, NBF
101st Avenue SE	Collector	25	N-S	2	Both	SBS, NBF
102nd Avenue NE and SE	Local	25	N-S	2	East (n/o Main)	SBS, NBF
103rd Avenue NE	Local	25	N-S	2	Both	SBS, NBF
Bellevue Way	Major Arterial	30	N-S	6	None	SBS, NBF

[1] N-S = North-south, E-W = East-West.
[2] NBF = No bicycle facilities, BOS = Bicycle lanes on one side, BBS = Bicycle lanes on both sides, BOBS = Bicycle lanes on one or both sides, NPF = No pedestrian facilities, SOS = Sidewalk on one side, SBS = Sidewalk on both sides, SOBS = Sidewalk on one or both sides.
Source: City of Bellevue 2008.

Several Comprehensive Plan policies are relevant to the function of existing roadways in the study area, including TR-41, TR 44, and TR-46, as described below.

TR-41. Classify City streets according to their function, so that needed traffic capacity may be preserved, and planned street improvements will be consistent with those functions.

- 101st Avenue SE and Main Street are not functioning well as arterials if through-traffic diverts to 100th Avenue SE to avoid congestion and delay. The existing traffic volume on 100th Avenue SE (a local street) is relatively low and is consistent with its service to adjacent land uses. The existing volumes indicate 47 vehicles (in the northbound direction) on 100th Avenue SE (south of Main Street), and 37 southbound (south of Main Street) during the p.m. peak hour. The project's public outreach process has raised concerns about keeping 100th Avenue SE open, as it is often used as a bypass route because of the signal at 100th Avenue SE/Main Street, and lack of a signal at 101st Avenue SE/Main Street.

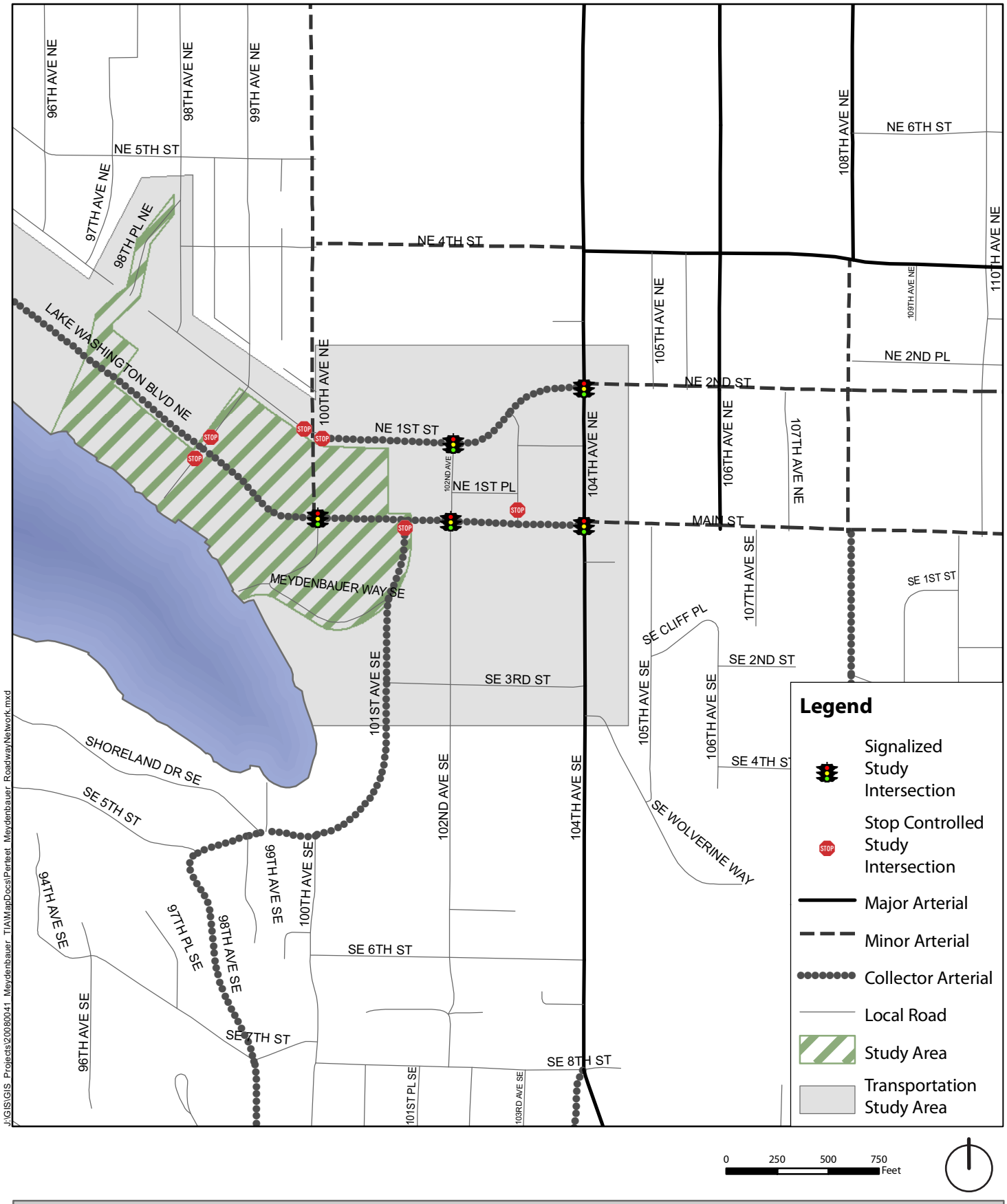


Figure 3.9-1: Road Network

TR-44. Design arterials and streets to fit the character of the areas through which they pass.

- 100th Avenue SE is too steep to satisfy arterial design standards, and arterial function would not be compatible with the present or planned future land use.

TR-46. Maintain and enhance safety for all users of the roadway network using measures such as an accident reduction program, increased enforcement, traffic-calming measures, improved pedestrian safety, increased street lighting, and driveway access control.

- Use associated with the project alternatives would necessitate increased attention to pedestrian safety for arterial crossings on routes between the Lake Washington waterfront and nearby activity areas, including Old Bellevue, Downtown Park, and the greater downtown area.

Existing Vehicular Access and Circulation

Vehicular access to the various groups of parcels within the study area is described below (as showing in Figure 2.1-1 in Chapter 2; park parcels are shown unshaded).

Meydenbauer Beach Park Site

The park site currently consists of the existing Meydenbauer Beach Park, nine single-family residences, the Bellevue Marina, three duplexes, and the Bayvue Village Apartments. The existing Meydenbauer Beach Park is currently accessed from 98th Place NE, a two-lane road that extends from 98th Avenue NE (just north of NE 4th Street), and continues south through a ravine to the park's parking area. The single-family residences are all accessed via driveways from either Lake Washington Boulevard NE or 99th Avenue NE. Lake Washington Boulevard NE is a two-lane road, and 99th Avenue NE is a two-lane road with diagonal parking on the east side.

The Bellevue Marina and its parking lot are accessed from a driveway at the south end of 99th Avenue NE. Bollards separate the parking lot on the parcel boundary of the former Yacht Basin and parking for the duplexes as well as additional parking for Pier 3, which is accessed from a driveway at the south end of SE Bellevue Place.

The portion of the Bayvue Village Apartments lying west of 100th Avenue SE is accessed from both Lake Washington Boulevard NE and 100th Avenue SE/SE Bellevue Place, a two-lane local road. The portion of the Bayvue Village Apartments lying east of 100th Avenue SE is accessed from 100th Avenue SE. The apartment complex includes five buildings west of 100th Avenue SE and two building east of 100th Avenue SE, with surface parking lots accessed from Lake Washington Boulevard NE and 100th Avenue SE.

Upland Parcels Site 1 (North of Lake Washington Boulevard and West of 100th Avenue NE)

This upland parcels site consists of three commercial buildings with a total of 25,785 square feet and 115 multi-family dwelling units on six parcels. Vehicular access to the three commercial buildings is from 100th Avenue NE. Vehicular access to the multi-family buildings is provided via NE 1st Street, 99th Avenue NE, and Lake Washington Boulevard NE. The Tantallon Building (located on the northwest corner of 100th Avenue NE at Lake Washington Boulevard NE) has driveway access from Lake Washington Boulevard NE to a below-grade parking garage.

Upland Parcels Site 2 (North of Main Street and East of 100th Avenue NE)

This site consists of three parcels, including 291 multi-family residential units and 10,500 square feet of commercial space. The Seasons Apartments has two vehicular access points; driveways from both 100th Avenue NE and Main Street lead to a below-grade parking garage.

The One Main building located on the north side of Main Street is currently under construction. This facility will have vehicular access from Main Street. The Brant photography building has a surface parking lot with vehicle ingress from Main Street, and egress to 100th Avenue NE.

Upland Parcels Site 3 (South of Main Street and East of 100th Avenue SE)

This parcel site is bounded by Main Street to the north, 100th Avenue SE/SE Bellevue Place to the west, Meydenbauer Way SE to the south, and 101st Avenue SE to the east. It includes seven parcels with 139 multi-family residential units and 10,683 square feet of commercial space. A Chevron fuel station is located on the southeast corner of Main Street and 100th Avenue SE. Driveways to the multi-family residential units are from 100th Avenue SE, Meydenbauer Way SE, and 101st Avenue SE. The Chevron station is accessed by two driveways on Main Street.

Upland Parcels Site 4 (South of Lake Washington Boulevard and West of 100th Avenue SE)

This site consists of two parcels with 57 multi-family residential units. Vehicular access to the Whaler's Cove Condominiums is from 99th Avenue NE. Vehicular access to the Vue Condominiums is from Lake Washington Boulevard and the south end of SE Bellevue Place.

Existing Traffic Operations and Volumes

Under GMA, local governments are required to set acceptable levels of service (LOS) for their transportation systems. Inside the urban growth area, each jurisdiction decides what level of vehicle traffic congestion it will accept – as measured by LOS – and adopts this standard as part of the transportation element of its comprehensive plan. When an application for a project is submitted, the jurisdiction determines (generally through the SEPA process) whether the impacts of the project would cause the LOS in affected parts of the transportation system to fall below the acceptable standard. If the project would cause the LOS to fall below this standard, the local government has the authority either to prohibit the development's approval or to require the developer to commit to, or pay for, transportation improvements to mitigate the impacts. According to the GMA, such improvements must be completed "concurrent with the development," defined as within 6 years.

The levels of congestion at intersections are usually used to measure LOS. A rating between A and F is assigned according to a standard method used by transportation professionals to indicate the overall degree of congestion and delay. Motorists typically consider acceptable conditions to include LOS A, LOS B, LOS C, and LOS D – covering a range from free-flowing traffic to modest delays. Most motorists will tolerate LOS E operations (which entail long traffic delays) in urban conditions. LOS F, characterized by extreme traffic congestion and very long delays, is undesirable and warrants consideration of improvements to increase roadway capacity.

Existing traffic volumes are based on 2008 and 2009 traffic counts. Within the transportation study area, Bellevue Way currently handles the highest traffic volume, with 1,692 vehicles

during the p.m. peak hour, just north of Main Street. Adjacent to the park, Lake Washington Boulevard NE (just west of 100th Avenue NE) has traffic volumes of 576 vehicles during the p.m. peak hour. Main Street (just west of Bellevue Way) has traffic volumes of 975 vehicles during the p.m. peak hour. 101st Avenue SE, just south of Main Street, carries 260 vehicles during the p.m. peak hour, and 100th Avenue SE south of Main Street carries another 85 vehicles.

Existing traffic volumes, channelization, and levels of service for the p.m. peak hour are shown in Figure 3.9-2 and Table 3.9-2. The LOS analysis uses the methodology outlined in the Highway Capacity Manual 2000 Update, Special Report 209 (TRB 2000), Transportation Research Board and Synchro 7.0 support software developed by the Trafficware Corporation. The intersection of Main Street at Bellevue Way currently operates at LOS D. None of the study intersections currently operate below LOS D.

Table 3.9-2. 2009 Existing p.m. Peak Hour LOS Summary.

		2009 (Existing Conditions)		
Intersection		**Control Type[1]**	**Delay[2]**	**LOS[3]**
NE 1st Street	100th Avenue NE	TWSC	24.1	C
NE 1st Street	102nd Avenue NE	Signal	3.7	A
Bellevue Way	NE 2nd Street	Signal	27.8	C
Lake Washington Blvd	99th Avenue NE	TWSC	11.3	B
Main Street	100th Avenue NE	Signal	19	B
Main Street	101st Avenue NE	OWSC	20.4	C
Main Street	102nd Avenue NE	Signal	6.8	A
Main Street	103rd Avenue NE	OWSC	16.2	C
Main Street	Bellevue Way	Signal	48.4	D

[1.] Signal = Signalized intersections. OWSC = One-way stop controlled intersections. TWSC = Two-way stop controlled intersections.
[2.] Delay, or control delay, is measured in seconds per vehicle. At signalized intersections, the reported delay is the average of all the control delay experienced for all movements. At unsignalized intersections, reported delay is based on the worst approach delay.
[3.] LOS refers to Level of Service. LOS is based on the methodologies outlined in the 2000 Highway Capacity Manual.

Source: Compiled by Perteet 2009.

LOS conditions for stop-controlled intersections are calculated differently than for signalized intersections. Stop-controlled intersection LOS is based on the worst delay by approach. An unacceptable (failing LOS) assumes a delay of greater than 50 seconds.

At signalized intersections, the LOS calculation is based on an average delay for all approaches at the intersection. A failing LOS assumes an average delay of greater than 80 seconds. Nine intersections within the transportation study area were analyzed:

- NE 1st Street at 100th Avenue NE (Stop controlled)
- NE 1st Street at 102nd Avenue NE (Signalized)
- Bellevue Way at NE 2nd Street (Signalized)
- Lake Washington Boulevard NE at 99th Avenue NE (Stop controlled)
- Main Street at 100th Avenue NE (Signalized)
- Main Street at 101st Avenue NE (Stop controlled)
- Main Street at 102nd Avenue NE (Signalized)

- Main Street at 103rd Avenue NE (Stop controlled)
- Main Street at Bellevue Way (Signalized)

The City recently completed its 2009-2020 Transportation Facilities Plan (TFP) (City of Bellevue 2009a), which identifies a 12-year transportation program of planned improvements balanced to projected revenues. Improvements are based on projects identified in long-range facility plans for different subareas within the City. The TFP also serves as the basis for the City's Impact Fee Program. The TFP includes the following projects near the study area, most of which would increase vehicular capacity.

- **TFP 190: NE 2nd Street (Bellevue Way to 112th Avenue NE)** – 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 add dedicated right-turn pockets at some intersections ($7,454,000 is currently funded in the 2007-2013 CIP). The final design will be consistent with the outcomes of an ongoing NE 2nd Street and Main Street Pre-Design process.

- **TFP 222: Bellevue Way / NE 4th Street** – 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.

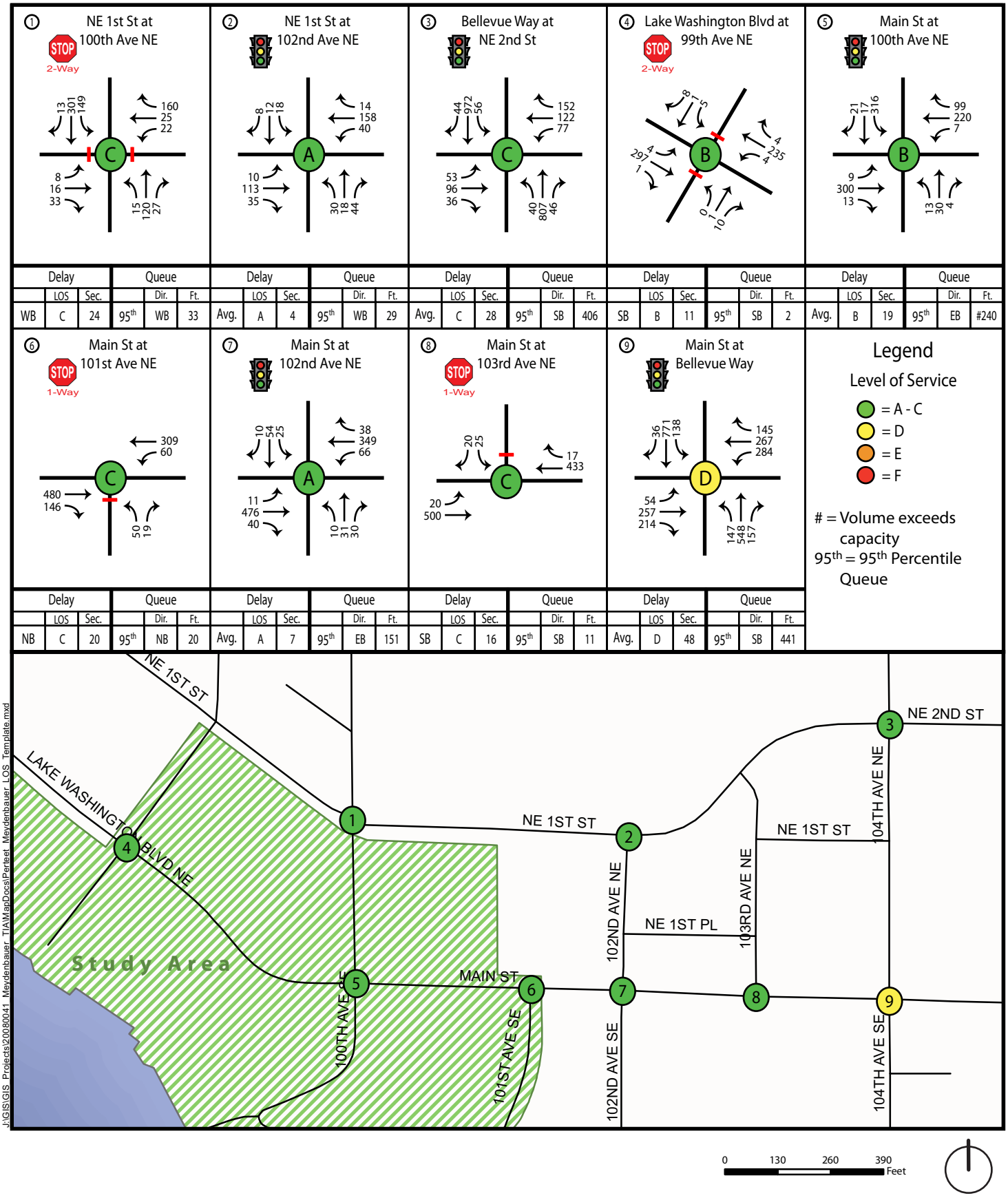
- **TFP 225: Bellevue Way / NE 2nd Street -** Add a northbound right-turn lane and a second southbound left-turn lane. Project implementation will be coordinated with potential future private development in the immediate vicinity.

- **TFP 234: Main Street (100th Avenue NE to 116th Avenue NE) -** Improve pedestrian and bicycle facilities; currently in a predesign process.

In addition to these projects, the City's 2009-2020 TFP includes other projects within the greater downtown Bellevue area, and other areas surrounding the study area.

Collisions and Safety

Collision records were provided by the City of Bellevue for roadways within the study area covering the period between January 1, 2006, and December 31, 2008. The 3-year collision history includes the number of accidents, type of accident, and number of injuries or fatalities for the nine intersections (as listed in Table 3.9-3), and for midblock locations between those intersections (as listed in Table 3.9-4). The City of Bellevue does not make any distinctions based on severity of the collision when reporting general accident types. Collisions are categorized as injury accidents, fatalities, or property damage only collisions. The most common types of collisions included rear-ends, followed by right-angle/broadside accidents. Rear-end collisions typically occur where congestion causes queues to form, where sight distance is a problem, or where traffic slows unexpectedly to make a right or left turn. This type of accident is associated with signalized corridors with heavy congestion. Right-angle/broadside collisions are typically seen at intersections where conflicting traffic interacts. They typically occur at intersections where cars run red lights and at mid-block locations. This occurs when left-turning traffic exiting or entering mid-block driveways must cross-conflicting traffic.



①	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
WB	C	24	95th	WB	33

②	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	A	4	95th	WB	29

③	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	C	28	95th	SB	406

④	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
SB	B	11	95th	SB	2

⑤	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	B	19	95th	EB	#240

⑥	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
NB	C	20	95th	NB	20

⑦	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	A	7	95th	EB	151

⑧	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
SB	C	16	95th	SB	11

⑨	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	D	48	95th	SB	441

J:\GIS\GIS Projects\20080041 Meydenbauer TIA\MapDocs\Perteet Meydenbauer LOS Template.mxd

Figure 3.9-2: 2008 Existing Level of Service and Volumes

Table 3.9-3. Collision History for Transportation Study Area Intersections (1/1/2006 to 12/31/2008).

	Approach Turn	Rear End	Right Angle/ Broadside	Sideswipe/ Lane Change	Parked Vehicle/ Fixed Object	Head On	Backing	Other	Pedestrian	**Total**	Fatalities	Injuries
Lake Washington Blvd at 99th Ave NE	0	0	0	0	0	0	0	0	0	**0**	0	0
Main Street at 100th Avenue NE/SE	0	0	0	0	0	0	0	0	0	**0**	0	0
Main Street at 101st Avenue SE	0	0	1	0	1	0	0	0	0	**2**	0	0
Main Street at 102nd Avenue NE/SE	0	5	3	0	0	0	0	0	1	**9**	0	1
Main Street at 103rd Avenue NE	0	0	1	0	0	0	0	1	0	**2**	0	0
Main Street at Bellevue Way	1	6	2	1	1	0	0	1	0	**12**	0	8
100th Avenue NE at NE 1st Street	2	0	0	0	1	0	0	0	0	**3**	0	2
NE 1st Street at 102nd Avenue NE	0	0	0	0	0	0	0	0	0	**0**	0	0
NE 2nd Street at Bellevue Way	1	5	5	1	0	0	0	0	0	**12**	0	3
TOTAL	4	16	12	2	3	0	0	2	1	**40**	0	14

Table 3.9-4. Collision History for Transportation Study Area Mid-Block Locations (1/1/2006 to 12/31/2008).

	Approach Turn	Rear End	Right Angle/ Broadside	Sideswipe/ Lane Change	Parked Vehicle/ Fixed Object	Head On	Backing	Other	Pedestrian / Bicycle	**Total**	Fatalities	Injuries
Lake WA Blvd – 99th Ave NE to 100th Ave NE	0	0	0	0	0	0	0	0	0	**0**	0	0
Main St – 100th Ave NE to 101st Ave SE	0	0	0	0	0	0	0	0	0	**0**	0	0
Main St – 101st Ave SE to 102nd Ave NE	0	0	0	0	0	0	0	0	0	**0**	0	0
Main St – 102nd Ave NE to 103rd Ave NE	0	1	0	0	0	0	0	0	1	**2**	0	1
Main St – 103rd Ave NE to Bellevue Way	0	2	3	2	0	0	0	0	1	**8**	0	1
100th Ave NE - Main St to NE 1st St	0	1	0	0	0	0	0	0	0	**1**	0	0
NE 1st St – 100th Ave NE to 102nd Ave NE	0	1	0	1	1	0	0	0	0	**3**	0	0
NE 2nd St – 103rd Ave NE to Bellevue Way	0	1	0	0	0	0	0	0	0	**1**	0	1
102nd Ave NE - Main St to NE 1st St	0	0	0	0	1	0	0	0	0	**1**	0	0
Bellevue Way - Main St to NE 1st St	0	4	0	0	0	0	0	0	0	**4**	0	0
TOTAL	0	10	3	3	2	0	0	0	2	**20**	0	3

Within the transportation study area, the intersections with the highest number of collisions during the 3-year period of analysis included Main Street at Bellevue Way, and NE 2nd Street at Bellevue Way. At Main Street/Bellevue Way, half of the accidents were rear-end collisions, most of which occurred on Bellevue Way. At NE 2nd / Bellevue Way, five collisions were rear-end (three of them occurring on Bellevue Way), and five collisions were right angle/broadside.

The midblock location with the highest number of collisions was along Main Street between 103rd Avenue NE and Bellevue Way. At this location, there were a total of eight collisions of various types. Along Bellevue Way, between Main Street and NE 1st Street, there were four rear-end collisions.

Existing Parking and Utilization

This subsection provides an overview of the existing parking conditions within the study area. A parking inventory and utilization study was conducted in June 2007 by TENW as part of the initial Meydenbauer Bay Park and Land Use Planning effort (City of Bellevue 2008b). The inventory of parking supply was conducted for both on-street and off-street surface parking. It extended beyond the study area and included an analysis of 20 zones within the Old Bellevue area, and west of the Old Bellevue area to the north and south of Lake Washington Boulevard NE. Within the 20 zones, there were 286 on-street and 1,264 off-street spaces, for a total of 1,550 parking spaces.

On-street parking spaces are located on a number of streets within or near the transportation study area (Figure 3.9-3). While the on-street parking is not metered, there are generally time restrictions in place for on-street parking.

In June 2008, Perteet, Inc. performed a spot check of the accuracy of the original TENW inventory/utilization survey. The spot check was conducted almost exactly 1 year from the date of the original survey and included a review of approximately 30 percent of the total number of stalls identified in the original survey (6 of the 20 zones were analyzed). The 2008 spot check analysis indicated that while there were some minor differences in both parking supply and demand for specific zones or locations when compared with 2007, the overall supply and demand for the spot check area is similar to, and consistent with, the survey completed in 2007.

The original 2007 survey revealed that when combining the on-street and off-street spaces, the parking supply was 46 percent occupied during the weekday, and 50 percent occupied on the weekend. An occupancy target of 85 percent is widely accepted among parking experts as the "effective capacity" for parking systems, especially in a mixed-use urban zone (the remaining 15 percent represents a necessary cushion for efficient turnover).

The survey determined that the on-street spaces were 45 percent occupied during the weekday, and 62 percent occupied during the weekend. In general, on-street parking demand was higher on the weekends than on weekdays. However, there were certain blocks within the transportation study area where on-street parking was near or over capacity on both weekdays and weekends, including the following:

- NE 1st Street between 102nd Avenue NE and Bellevue Way, north side (13 spaces) – 96 percent average occupancy (weekday and weekend average).

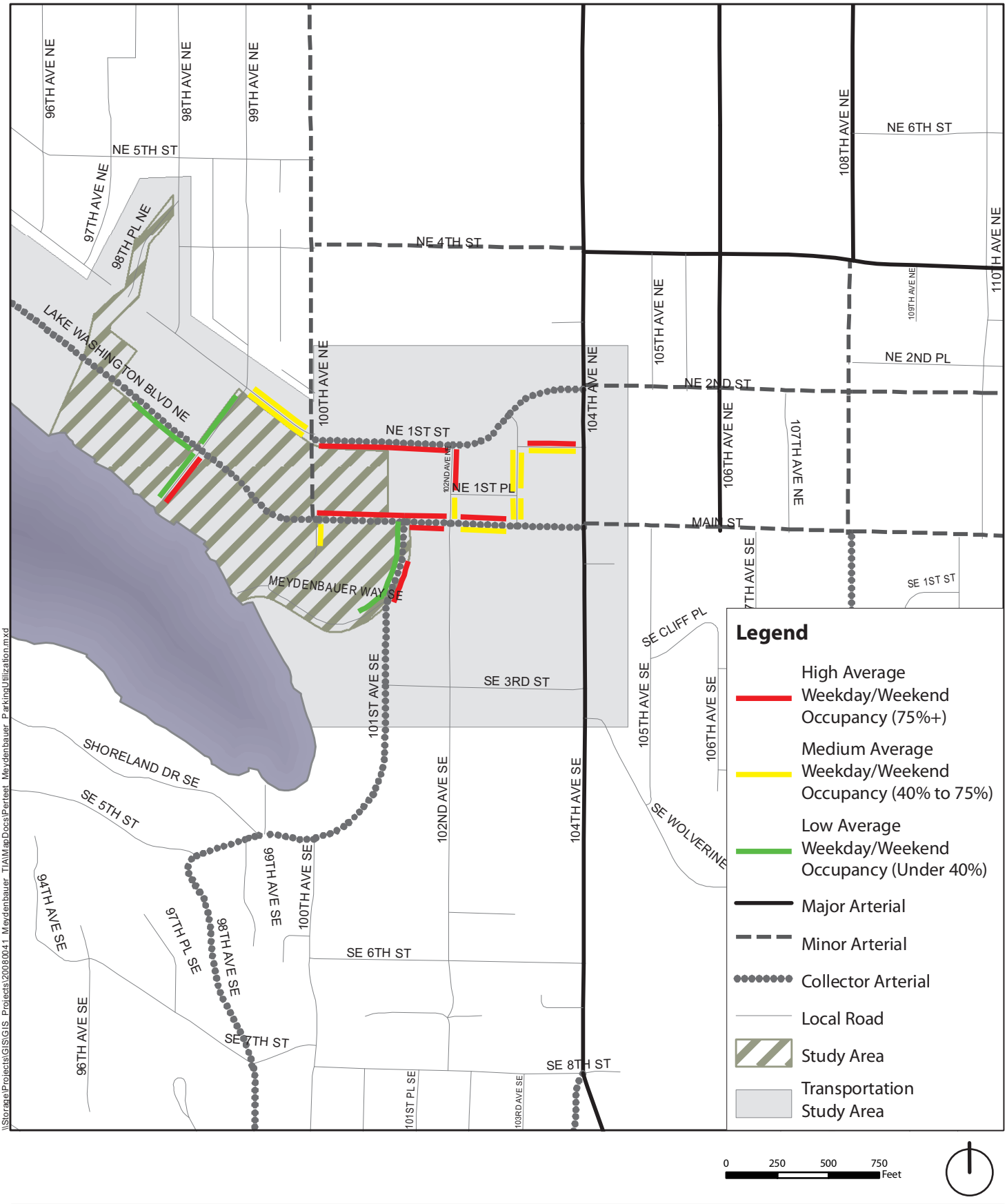


Figure 3.9-3: On-Street Parking Utilization

- 102nd Avenue NE between NE 1st Place and NE 1st Street, west side (6 spaces) – 80 percent average occupancy (weekday and weekend average).

- Main Street between 100th Avenue NE and 102nd Avenue NE, north side (13 spaces) – 96 percent average (weekday and weekend average).

- Main Street between 101st Avenue SE and 102nd Avenue SE, south side (4 spaces) – 88 percent average occupancy (weekday and weekend average).

- 101st Avenue SE south of Main Street, east side (4 spaces) – 100 percent average occupancy (weekday and weekend average).

- 99th Avenue NE, south of Lake Washington Boulevard, east side (12 spaces) – 79 percent average occupancy (weekday and weekend average).

- NE 1st Street between 103rd Avenue NE and 104th Avenue NE, north side (13 spaces) – 96 percent average occupancy (weekday and weekend average).

The off-street surface parking included commercial, recreational, and residential uses. Gated garages and lots were not inventoried, due to being inaccessible. Publicly accessible parking was inventoried as part of the analysis. The off-street parking demand was relatively equal on both weekdays and weekends (47 percent both days).

The survey indicates that the overall utilization of existing on-street and off-street parking spaces within the vicinity of the study area is below capacity. While some on-street locations are at capacity as described above, other on-street locations within convenient walking distance of the study area are underutilized on both weekdays and weekends. Table 3.9-5 shows the existing parking facilities within and adjacent to the study area.

The City's Downtown Implementation Plan policies call for a public/private comprehensive examination of short-term parking problems in the downtown area, as well as investigating a program to allow downtown developers to pay a fee into a "pool" in lieu of providing parking on site. Pooled funds would then be used to provide short-term public parking where needed (City of Bellevue 2002). The report recommended (among other things) new downtown parking structures and a parking management program.

Public Transportation

Public transportation service within the study area and larger vicinity is provided by King County Metro and Sound Transit. Both providers operate most of their service through the Bellevue Transit Center (BTC), located along NE 6th Street between 108th Avenue NE and 110th Avenue NE (1.08 miles from the study area). There are a total of 17 bus routes serving the BTC. Three bus routes operate within the vicinity of the study area: King County Metro routes 222 and 234, and Sound Transit route 550.

Table 3.9-5. Existing Parking & Utilization at Locations within the Study Area (2007 Survey[5]).

Location	Existing Spaces[1]	Weekday Use	Weekday Utilization	Weekend Use	Weekend Utilization	Average Utilization
Meydenbauer Beach Park						
Beach Park surface parking lot	28	10	36%	8	29%	32%
Bellevue Marina surface parking lot	60	20	33%	13	22%	28%
Bayvue Village Apartments surface parking lot	31	7	23%	11	35%	29%
Lake Washington Blvd on-street (south side)	10	0	0%	1	10%	5%
99th Avenue NE on-street (west side)	5	2	40%	0	0%	20%
Bellevue Pl / 100th Ave SE on-street(west side)[2]	4	0	0%	0	0%	0%
TOTAL	**138**	**39**	**28%**	**33**	**24%**	**26%**
Upland Parcels Site (North of Lake Washington Boulevard and West of 100th Avenue NE)						
Boulevard 99 Apartments surface lot	14	3	21%	6	43%	32%
Bayside Place Condos surface lot	19	4	21%	8	42%	32%
Meydenbauer Terrace surface lot	1	0	0%	1	100%	50%
Oasis Apartments surface lot	19	6	32%	9	47%	39%
Lochleven Apartments	4	0	0%	0	0%	0%
Tantallon Bldg surface lot	3	2	67%	0	0%	33%
Meyden Baker Building	21	5	24%	0	0%	12%
NE 1st Street on-street (south side)	4	1	25%	3	75%	50%
TOTAL	**85**	**21**	**25%**	**27**	**32%**	**28%**
Upland Parcels Site (North of Main Street and East of 100th Avenue NE)						
Brant Photography surface parking lot	11	3	27%	7	64%	45%
Main Street on-street (north side to 102nd)[3]	13	12	92%	13	100%	96%
NE 1st Street on-street (south side to 102nd)	12	8	67%	10	83%	75%
TOTAL	**36**	**23**	**64%**	**30**	**83%**	**74%**

Table 3.9-5. Existing Parking & Utilization at Locations within the Study Area (2007 Survey[5]).

Location	Existing Spaces[1]	Weekday Use	Weekday Utilization	Weekend Use	Weekend Utilization	Average Utilization
Upland Parcels Site (South of Main Street and East of 100th Avenue NE)						
Chevron Parking surface parking lot	20	16	80%	12	60%	70%
Meydenbauer Way on-street (north side)	20	7	35%	6	30%	33%
Bellevue Pl/ 100th Ave SE on-street (east side)	9	6	67%	7	78%	72%
TOTAL	**49**	**29**	**59%**	**25**	**51%**	**55%**
Upland Parcels Site (South of Lake WA Blvd and West of 100th Avenue SE)						
Whaler's Cove Condominiums surface lot	16	9	56%	0	0%	28%
The Vue Condo lot	9	1	11%	3	33%	22%
Lk Washington Blvd on-street (south side)	9	5	56%	5	56%	56%
99th Ave NE on-street (east side)[4]	12	12	100%	7	58%	79%
TOTAL	**46**	**27**	**59%**	**15**	**33%**	**46%**

[1] Does not include garage spaces.
[2] 2008 spot check identified no spaces at this location.
[3] 2008 spot check found 4 spaced closed during adjacent building construction.
[4] 2008 spot check found 9 spaces at this location.
[5] Unmarked parking area estimates at marina updated in subsequent site analysis.

Bus route service in the study area is consistent with the Comprehensive Plan (Figure TR.7), which designates Main Street and 100th Avenue NE as transit local access streets. The only route service to the immediate vicinity of the study area is route 234. This route provides service between Kenmore and downtown Bellevue. The route terminates in Old Bellevue, where it makes a one-way loop. From the BTC, the route traverses south on 108th Avenue NE, turns west on Main Street, north on 100th Avenue NE, east on NE 1st/NE 2nd Streets, south on Bellevue Way before turning east again on Main Street. The route operates between 5:30 a.m. and 10 p.m. on weekdays with 30-minute headways.

On weekends, the route operates between 8 a.m. and 8 p.m. on hourly headways. Route 234 is a high ridership route and will receive additional service hours as a result of funding through King County's Transit Now Initiative, passed in 2006. The route is expected to operate on 15-minute headways once additional hours are added. Within the vicinity of the study area, transit stops are located at the following locations:

- North side of Main Street west of Bellevue Way
- North side of Main Street between 100th Avenue NE and 101st Avenue SE
- East side of 100th Avenue NE north of Main Street

Route 222 provides service between the Eastgate Park-and-Ride and downtown Bellevue via the Factoria and Beaux Arts neighborhoods. From Beaux Arts, the route traverses north along 104th Avenue SE and Bellevue Way. It turns east on Main Street, and north on 110th Avenue NE before reaching the BTC. The route operates between 6 a.m. and 11 p.m. on weekdays, with 30-minute headways. On Saturdays, the route operates between 8 a.m. and 11 p.m., generally with 30-minute headways. On Sundays, the route operates between 7 a.m. and 10 p.m. on hourly headways. The nearest stop to the study area is located on Main Street east of Bellevue Way.

Route 550 is operated by Sound Transit. This route operates regional express service between downtown Seattle and downtown Bellevue. From Seattle, the route uses I-90 to Bellevue Way. The route turns east on NE 4th Street and north on 108th Avenue NE before reaching the BTC. The route continues past BTC to serve the Ashwood neighborhood, where it terminates. The route operates between 5 a.m. and midnight on weekdays. Headways vary from 5 to 30 minutes, depending on time of day. Weekend service is between approximately 6 a.m. and midnight, with headways approximately 30 minutes. The nearest stop to the study area is at Bellevue Way and Main Street (approximately ¼ mile distance).

The City is in the process of implementing a downtown circulator that would operate on 10-minute headways, with connections to major activity centers and the BTC. The circulator is anticipated to begin service in September 2010 under a partnership between the City and King County Metro Transit. The route will be a two-directional U-shaped route operating on Bellevue Way, NE 10th Street, and 110th Avenue NE. The route will terminate in a loop off of Main Street at 107th Avenue NE. The nearest stop (Bellevue Way at Main Street) is approximately ¼ mile from the study area. The route will operate for a trial period of 5 years and, if successful, may continue beyond 2015.

Non-Motorized (Pedestrian / Bicycle) Transportation

Pedestrian facilities currently exist on most of the roadways within the study area, as listed in Table 3.9-1. These include sidewalks on one or both sides of the street and signalized crosswalks at intersections.

Many of the existing sidewalks are narrow and directly adjacent to traffic lanes. Pedestrian crosswalks are mostly limited to major intersections. Pedestrian signals are pedestrian-activated, which means that walk signs do not come on automatically (although they can be programmed to do so). The only street in the study area that is lacking any pedestrian facilities is 99th Avenue NE, south of Lake Washington Boulevard NE. Along Lake Washington Boulevard NE, there is a sidewalk along the north side of the road, but no pedestrian facility along the south side adjacent to the future park site.

Within Meydenbauer Beach Park, trails connect the parking area to the beach. In addition, trails and stairways connect the park to sidewalks on the north and south sides of both Lake Washington Boulevard NE and NE 1st Street.

The City completed its 2009 Pedestrian and Bicycle Transportation Plan in February 2009 (City of Bellevue 2009b). The projects, policies, and maps have been adopted into the City's Comprehensive Plan. The plan identifies a pedestrian system throughout the city. Within the study area, a number of pedestrian system streets are identified as being incomplete, and projects are recommended, as listed and summarized in Table 3.9-6. No existing bicycle lanes currently provide access to the study area. There are bike lanes on the Lake Washington Boulevard NE bridge over Meydenbauer Beach Park. Bicyclists may share the road with vehicles on all roadways within the transportation study network.

The 2009 Pedestrian and Bicycle Transportation Plan identifies a bicycle system throughout the city. Several streets within the study area (Lake Washington Boulevard/Main Street, 100th Avenue NE, 100th Avenue SE/SE Bellevue Place, 101st Avenue SE, and NE 1st Street, east of 100th Avenue NE) are part of the bicycle network, and the plan recommends bicycle-related improvements along some of these streets. Recommended projects are listed and summarized in Table 3.9-6.

Transportation Demand Management (TDM)

TDM includes a range of actions or programs to improve the efficiency of the transportation system. The primary purpose is to minimize the number of vehicles using the road system while providing a variety of mobility options for people to travel. TDM programs are designed to reduce unnecessary travel (through telecommuting or flexible hours), to maximize the people-moving capability of vehicles (through ride-sharing and transit), and to shift travel to non-peak periods (through flex time or other means). This is done through incentives or disincentives, such as pricing incentives (charging the true cost of parking), subsidies for ridesharing and transit, provision of showers and lockers for non-motorized commuters, helping people overcome perceived hurdles (e.g., providing a guaranteed ride home), promoting improved land use policy, and encouraging flexible work hours. To encourage the use of alternative transportation modes, the City has created chooseyourwaybellevue.org, a one-stop resource for alternatives, including walking and biking.

Table 3.9-6. Planned Pedestrian and Bicycle Improvement Projects.

Project/Location	Project Designation	Planned Improvements
Pedestrian Improvement Projects		
Lake Washington Boulevard NE	Project S-318-S	Construct 6' wide sidewalk/4' wide landscape strip on south side from NE 10th Street to 100th Avenue NE (Low priority).
Meydenbauer Way	Project S-423-S	Construct 5' wide sidewalk on south side where missing (High priority).
SE Bellevue Place / 100th Avenue SE	Project S-102-E	Construct a 12' wide sidewalk and 4' wide landscape strip on east side (High priority).
98th Place NE (between Meydenbauer Beach Park and 98th Avenue NE)	Project S-412-N	Construct a 5' wide sidewalk and 4' wide landscape strip on north/west side (Medium).
NE 4th Street (between 98th Avenue NE and 99th Avenue NE)	Project S-412-S	Construct a 5' wide sidewalk and 4' wide landscape strip on south side (Medium priority).
NE 1st Street (between 103rd Avenue NE and Bellevue Way)	Project S-209-S	Construct an 8' wide sidewalk and 4' wide landscape strip on south side (High priority).
Bicycle Improvement Projects		
Lake Washington Boulevard NE	Project B-208-S t	Add a wide bike shoulder on the south side from NE 10th Street to 100th Avenue NE. This forms part of the City's Lake to Lake Trail system (High priority).
100th Avenue NE	Project B-209-E and Project B-209-W	Add wide bike shoulders on the east and west sides of 100th Avenue NE between Main Street and NE 8th Street (Medium priority).
NE 2nd Street	Projects B-401-N and B-401-S	Add a wide outside lane on the north and south sides of NE 2nd Street between 102nd Avenue SE and 114th Avenue NE (Medium priority).
Main Street	Projects B-210-N and B-210-S	Add a wide bike shoulder on the north and south sides of Main Street from 100th Avenue NE to Bellevue Way. This forms part of the City's Lake to Lake Trail system (High priority).
101st Avenue SE	Projects B-211-E and B-211-W	Add bike shoulders on the east and west sides of 101st Avenue SE, particularly on uphill portions, and implements slow street design that accommodates bicycles (Low priority).
Bellevue Way (south of Main Street)	Projects B-402-E and B-402-W	Add a wide outside lane on the east and west sides of Bellevue Way between Main Street and 108th Avenue SE (Medium priority).

Source: 2009 Pedestrian and Bicycle Transportation Plan.

The City's Commute Trip Reduction (CTR) program actively promotes TDM measures on an ongoing basis. The GMA requires large employers (with more than 100 employees arriving at the job site in the peak morning commute period) to develop CTR plans, to encourage employees to use other means of travel such as carpools, transit, flex-days, and telecommuting to reduce single-occupant vehicle (SOV) travel during peak commute periods. The City administers this program within the city limits through its Transportation Department. The program requires CTR employers to set targets to reduce commuter trips by SOV and to identify and implement TDM techniques to meet those targets. The City updated its CTR Plan in 2008 (City of Bellevue 2008c). The plan identifies goals and targets to reduce SOVs, assesses existing conditions for major employment sites, and identifies strategies for the City and employers.

The state of Washington revised the CTR program with the CTR Efficiency Act of 2006. It allows the designation of Growth and Transportation Efficiency Centers (GTECs) by jurisdictions. GTECs are designated mixed-use urban areas with concentrations of jobs or housing that can support multiple modes of transportation through flexible, coordinated actions. The City designated downtown Bellevue as a GTEC. The Downtown Bellevue GTEC program, as summarized in the Connect Downtown GTEC report, completed in February 2008, addresses additional populations not traditionally reached under the base CTR program, such as employers with fewer than 100 employees (98 percent of all downtown employers), retail/hospitality industries, and residents. It presents, as a target, a 10 percent reduction in drive-alone commuting

for all employees in the downtown area by 2011 (City of Bellevue 2008c). The plan includes marketing, incentives, and commute service strategies for obtaining the GTEC goal.

Fire and Emergency Access

The Bellevue Fire Department has nine fire stations within the city (see Section 3.12, *Public Services and Utilities)*. The transportation study area is served by Fire Station #1, located at 766 Bellevue Way SE. Fire Station #5 is also nearby, at 9621 NE 24th Street. The Bellevue Fire Department operates a medic unit at the Overlake Hospital Medical Center, located at 1035 116th Avenue NE.

Access to the Meydenbauer Beach Park is provided by 98th Place NE, which has a turn-around at the street terminus. Access to other parts of the study area, including the Bellevue Marina, is provided by 99th Avenue NE, 100th Avenue SE, Meydenbauer Way SE, Main Street, and Lake Washington Boulevard NE.

3.9.1.2 Regulatory Setting

Because much of the local regulatory setting provides the necessary context to describe the existing conditions of the transportation network in the study area, regulatory information and definitions have been incorporated as appropriate into the above analysis of existing conditions. The overall regulatory setting is summarized below.

The Growth Management Act of 1990 requires local jurisdictions to adopt goals, policies, and projects to manage progress toward a defined vision for the future. Elements of the Comprehensive Plan are used to guide the City Council in its decision-making and legislative actions. The Transportation Element of the Comprehensive Plan includes goals and policies for all travel modes and facilities within Bellevue's transportation system, to structure planning processes and inform investment decisions. The Transportation Element of the Comprehensive Plan includes various subarea transportation facility plans, such as the Downtown Subarea Plan (City of Bellevue 2002).

Subarea transportation facility plan project lists are generated from various long-range transportation plans, such as the Downtown Implementation Plan, or sub-systems of the transportation system, such as the Bellevue Transit Plan (City of Bellevue 2003a), and the Pedestrian and Bicycle Transportation Plan. The goal of these plans is to identify the improvements needed within the transportation system to fulfill the vision, goals, and policies set forth in the Comprehensive Plan. Completed long-range plans include a range of projects designed to meet the mobility goals of the plan area.

High priority projects from the comprehensive plan are incorporated into the City's Transportation Facilities Plan (TFP), which is updated every 2 years. The TFP is the City's 12-year transportation planning document, and it is financially constrained in that it matches the project list with expected revenues during the program period. The TFP provides the first level of project prioritization necessary to identify projects for funding in the adopted Capital Investment Program (CIP) Plan (City of Bellevue 2007a). It also serves as the basis for the City's Transportation Impact Fee Program. Finally, it describes current and future environmental conditions through a related programmatic EIS. The TFP EIS documents potential cumulative

environmental impacts resulting from the projected (12-year) land use growth and implementation of the identified TFP projects (City of Bellevue 2009c).

The final step in the City's planning process to finance transportation system improvements is the development of the 7-year CIP plan, updated every 2 years. The City's CIP is organized into major program areas including Parks, Public Safety, Neighborhood Enhancement, and Transportation. The Transportation CIP includes projects related to roadways, intersections, walkways/bikeways, and maintenance/minor capital investments.

Information was collected from other publicly available studies and reports. Key documents on the City of Bellevue's transportation conditions and comprehensive plans in the study area include the following:

- City of Bellevue website (http://www.bellevuewa.gov)
- King County website (http://www.metrokc.gov)
- Sound Transit website (http://www.soundtransit.org)
- City of Bellevue Comprehensive Plan (City of Bellevue 2008a)
- Downtown Implementation Plan and Subarea Plan Update (City of Bellevue 2003b)
- Bellevue Capital Investment Program Plan, 2007 – 2013 (City of Bellevue 2007a)
- Transportation Facilities Plan, 2009-2020 (City of Bellevue 2009a)
- Bellevue Transit Plan (City of Bellevue 2003a)
- City of Bellevue Accident Data Reports, 2006-2008 (City of Bellevue 2009d)
- 2005 State of Mobility Report (City of Bellevue 2006)
- Pedestrian and Bicycle Transportation Plan (City of Bellevue 2009b)
- Downtown Circulator Implementation Plan (City of Bellevue 2007b)

3.9.2 Impacts

This section provides an overview of the impacts associated with the project alternatives through comparison with the No-Action Alternative. The analysis year of 2020 was selected to assess the impacts on transportation facilities within the study area during the afternoon, or p.m. peak period, consistent with the City of Bellevue's adopted Traffic Standards Code (BCC Chapter 14.10).

3.9.2.1 Methods

This section identifies the methodologies used to evaluate the transportation changes between the No-Action Alternative and Alternatives 1 and 2. The comparisons include changes in vehicle access and circulation, the number of trips generated, the level of traffic congestion at intersections (operational analysis), the number of parking spaces provided and utilized, collisions and safety, public transportation, pedestrian and bike circulation, and emergency access. Quantitative comparisons are provided for trips generated, level of intersection congestion, and parking. The methodologies are described below in some detail for these items. The remaining parameters are evaluated and compared qualitatively.

Potential transportation impacts were assessed based on the methodologies and parameters that follow. However, only a few of the transportation parameters have recognized thresholds for determining significance. The most well-recognized and well-used is the level of service (LOS)

standard for traffic operations. Generally, a significant impact on transportation resources was considered one that is reasonably likely to result in a more than moderate adverse impact.

Vehicle Access and Circulation

The changes in the access to properties from public streets are described for each of the alternatives, beginning with the No-Action Alternative. The changes are described first for the street system, followed by the park site, and then for the areas surrounding the park – described as "upland parcels" (see Figure 1.1-3). While future projects would be required to meet City access standards, no recognized threshold exists for assessing a significant impact on vehicle access and circulation.

Traffic Counts and Trip Generation

Existing p.m. peak hour traffic counts for intersections in the study area were obtained from the City of Bellevue. Detailed traffic conditions (intersection turning movement volumes and channelization) were collected for nine intersections during 2008 and early 2009. The traffic volumes and the Bellevue-Kirkland-Redmond (BKR) EMME model were used to forecast future 2020 baseline traffic volumes under the No-Action Alternative and Alternatives 1 and 2. Estimates of trips generated from the park land uses in Alternatives 1 and 2 were added to the post-processed 2020 EMME traffic forecasts for affected intersections under the project alternative scenarios.

The number of vehicle trips generated under future conditions would depend on the planned land uses. Each land use type correlates to a specific rate of trips, usually calculated on a per-square-foot basis. The trip generation was prepared for the p.m. peak hour. The trip generation for the parcels outside of the park (upland parcels) were included internal to the BKR EMME travel demand forecasting model, based on the land uses identified for those parcels, for each alternative. The trip generation for the park site under the No-Action Alternative was included internal to the BKR EMME model. For the park site's two action alternatives, trip generation estimates were developed separately using the Institute of Transportation Engineers (ITE) Trip Generation Manual (ITE 2003).

The trip generation for the park site for the two action alternatives was based on three methodologies:

1) Use of trip generation rates for *identical* uses identified in the Trip Generation Manual, 7th Edition, published by the ITE.
2) Use of trip generation rates for *other* uses identified in the Trip Generation Manual, where there was no category that matched the park land use, but were similar in type.
3) Estimate of trip generation based on a professional judgment of the type of use, and the likely p.m. peak trip generation. This methodology was used in cases where there were no specific or similar categories identified in the Trip Generation Manual.

While future projects would be required to meet any City standards for trip reduction, no recognized threshold exists for assessing significant impacts related to trip generation.

Travel Demand and Operational Analysis

The intersection traffic operational conditions within the study area were evaluated using a level of service (LOS) analysis. LOS refers to the degree of congestion measured in average delay, based on the methodologies in the Highway Capacity Manual 2000 Update, Special Report 209, (TRB 2000) and Synchro 7.0 support software developed by the Trafficware Corporation. LOS A represents free-flow conditions (motorists experience little or no delay and traffic levels are well below roadway capacity), while LOS F represents forced-flow conditions (motorists experience very long delays as traffic demand exceeds roadway capacity).

For future conditions, traffic forecasts were developed for the project alternatives using the BKR EMME computer model. The EMME forecasts were post-processed to develop the baseline intersection volumes for each alternative (post-processing is the process of adjusting the traffic forecasts from the EMME model to account for the difference between the existing traffic counts and EMME model estimates). Estimates of trips generated from the park land uses were added to the post-processed EMME traffic forecasts to generate intersection volumes. Once the intersection volumes were estimated, intersection levels of service were determined using the methodology identified above.

At signalized intersections, the LOS calculation is based on an average delay for all approaches at the intersection (Table 3.9-7). A failing LOS (i.e., F or an average delay of greater than 80 seconds) due to the project alternatives would be considered significant.

LOS calculations for stop-controlled intersections are calculated differently than for signalized intersections. Stop-controlled intersection LOS is based on the worst delay by approach. For an all-way stop-controlled intersection, the LOS is based on the average delay for all approaches. An unacceptable (failing LOS) indicates a delay of greater than 50 seconds.

Parking Demand and Utilization

The existing parking supply in the study area was surveyed in June 2007 to identify the number of spaces, including on- and off-street, and the utilization. A spot-check was completed in June 2008 to verify the survey results. The survey provided a snapshot of existing conditions. For each of the future alternatives, Perteet estimated the number of new parking spaces that would be needed to serve the proposed land uses according to three methodologies and sources: (1) parking generation rates identified in the ITE Parking Generation manual (ITE 2004); (2) parking requirements for land uses as identified in the City's Land Use Code; and (3) estimated parking demand where ITE or Land Use Code information was not available. That information was used by park planners to size the parking supply proposed for each of the project alternatives, and the differences are reported.

The threshold of significance for the project alternatives is not a fixed number, but a standard of providing adequate parking for future park users. The goal is to accommodate park-related parking and to minimize overflow into the surrounding residential neighborhoods and into the adjacent Old Bellevue business district.

Table 3.9-7. Level of Service Criteria for Signalized and Unsignalized Intersections.

Level of Service	Signalized Intersections Traffic Flow Characteristics	Unsignalized Intersections (Total Delay in Seconds)
A	Very low delay (i.e., less than 10.0 seconds per vehicle). Occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10
B	Delay in the range of 10.1 to 20.0 seconds per vehicle. Occurs with good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	> 10 and ≤ 15
C	Delay in the range of 20.1 to 35.0 seconds per vehicle. Higher delays may result from fair progression and/ or longer cycle lengths. Individual cycle failures may begin to appear in this level. The number of vehicles stopping is significant, although many pass through the intersection without stopping.	> 15 and ≤ 25
D	Delay in the range of 35.1 to 55.0 seconds per vehicle. The influence of congestion is more noticeable. Longer delays may result from a combination of unfavorable progression, longer cycle length, or high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 25 and ≤ 35
E	Delay in the range of 55.1 to 80.0 seconds per vehicle. **This is considered to be the limit of acceptable delay.** This delay generally indicates poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.	> 35 and ≤ 50
F	Delay in excess of 80.0 seconds per vehicle. **This is considered to be unacceptable to most drivers.** This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios (those over 1.00) with many individual cycle failures. Poor progression and long cycle lengths may also contribute to delays.	> 50

v/c = volume to capacity ratio.
Source: TRB 2000.

Collisions and Safety

A collision history is provided previously in Section 3.9-2 for the study area. There is no accepted methodology to predict future collisions. A qualitative comparison of alternatives was used for this subject.

Public Transportation

The most well-recognized threshold for gauging access to public transportation is the availability of a regularly scheduled transit route within a one-quarter mile walking distance. The project alternatives all meet this standard, and a qualitative comparison was conducted.

Non-Motorized (Pedestrian/Bicycle) Circulation

The availability of a sidewalk, paved shoulder, or other hard-surfaced pathway that provides barrier-free pedestrian access to public facilities is a critical element of transportation mobility. The project alternatives all meet this threshold, and a qualitative comparison was conducted.

Emergency Access

Travel time for emergency vehicles, especially from the nearest fire station, is an important consideration in assessing the adequacy of emergency access. While there is no recognized threshold, any increase in emergency vehicle travel time over existing or future baseline conditions warrants careful consideration. The access for fire and emergency services is compared qualitatively.

3.9.2.2 Comparison of Impacts Among Alternatives

The results of the impact analysis are summarized below for the transportation elements considered, including vehicle access and circulation, trip generation, traffic queuing, parking demand and utilization, collisions and safety, public transportation, non-motorized transportation, and emergency access.

Vehicular Access and Circulation

No-Action Alternative

There are no planned changes in vehicular access from existing conditions to the No-Action Alternative. However, some specific driveway locations may change as a result of property redevelopment. Specifically, allowable density increases to both the Brant Photography and Chevron sites under the No-Action Alternative could result in their redevelopment (see Figure 1.3-1).

Alternative 1

Under Alternative 1, vehicular access and circulation would change relative to existing conditions and the No-Action Alternative (see Figure 1.3-2):

- 100th Avenue SE/SE Bellevue Place would be closed to vehicular traffic south of Main Street, and replaced with a pedestrian promenade linking Main Street to the Lake Washington shoreline. The promenade would be in the location where the Bayvue Village Apartments exist today. The existing signal would remain.

- 99th Avenue NE, south of Lake Washington Boulevard, would remain, but it would be reconfigured slightly from its current alignment and the alignment under the No-Action Alternative. Today, the roadway traverses in a southwest direction, and the right-of-way is between the parcel line of the Whaler's Cove Condominiums to the east, and the parcel lines of single-family residences to the west. Under Alternative 1, the road would meander to the southwest and terminate at the new pier, rather than following the parcel line of the Whaler's Cove Condominiums.

- 98th Place NE and the parking area at its terminus would be removed under Alternative 1, replaced with a trail that links 98th Avenue NE to the shoreline.

- Meydenbauer Way SE would terminate near the shoreline, with no connection to 100th Avenue SE as exists today and under the No-Action Alternative. It would provide access for passenger drop-offs to the eastern end of the park.

Additional access changes in Alternative 1 are identified by the parcels as grouped below (see Figure 2.1-1).

- **Meydenbauer Bay Park** - The existing vehicular access and parking lot via 98th Place NE would be closed and replaced with a trail system linking 98th Avenue NE to the shoreline. Vehicular access to the park would be accommodated from three streets (Lake Washington Boulevard, 99th Avenue NE, and Meydenbauer Way SE). As part of Alternative 1, 100th Avenue SE/SE Bellevue Place would be closed to vehicular traffic south of Main Street, and the existing vehicular access from this street would be closed. A surface parking lot would be located off of Lake Washington Boulevard (west of 99th Avenue NE) with two driveway access points. The primary parking area for the park, a below-grade parking garage with 90 spaces, would be accessed from the west side of 99th Avenue NE (south of Lake Washington Boulevard). In addition, the terminus of 99th Avenue NE would include a drop-off for the marina and Whaling Building. All residential units and their access points that exist today within the future park site would be removed.

- **Upland Parcels (North of Lake Washington Blvd, West of 100th Avenue NE)** -The new overlay district in this site would allow for greater densities, and five parcels could be redeveloped. It is still likely that vehicular access to these parcels and associated parking would remain via NE 1st Street, 99th Avenue NE, and Lake Washington Boulevard. Other buildings that would not be affected by the overlay district include the Bayside Place Condominiums, Tantallon building, Heller building, and Meyden Baker building. Access to these buildings would not change unless those buildings are also redeveloped.

- **Upland Parcels Site (North of Main Street, East of 100th Avenue NE)** - Vehicular access to this site would remain the same as under the No-Action Alternative. Specifically, allowable density increases to the Brant Photography site could result in its redevelopment, and vehicular access would likely be from 100th Avenue NE.

- **Upland Parcels (South of Main Street, East of 100th Avenue NE)** - Four parcels could be redeveloped within this site. The Chevron site may redevelop, but no change in access is expected under Alternative 1 compared to the No-Action Alternative. Under Alternative 1, 100th Avenue SE would be closed for the entry plaza. The Bayvue Village Apartments (east) and the Meydenbauer Apartments may be redeveloped as part of a new overlay district that would allow greater densities. Vehicular access to these parcels would likely be from 101st Avenue SE / Meydenbauer Way SE. It is possible that a shared driveway off of Main Street could access both the Chevron site and these parcels to the south.

- **Upland Parcels (South of Lake Washington Blvd, West of 100th Avenue SE)** - The two parcels within this site include the Whaler's Cove Condominiums, and the Vue Condominiums. Vehicular access to the Whaler's Cove Condominiums would continue to be from 99th Avenue NE. Vehicular access to the Vue Condominiums would be from Lake Washington Boulevard as it is today and under the No-Action Alternative. The access to the building at the south end would be reconfigured under Alternative 1, as 100th Avenue SE/SE Bellevue Way would be closed. Instead of a driveway entering the parcel off of SE Bellevue Way, Meydenbauer Way would be reconfigured, and a driveway to the Vue Condominiums would be from the terminus of Meydenbauer Way SE.

Alternative 1A

Vehicular access and circulation for Alternative 1A would be the same as Alternative 1, except that 100th Avenue SE/SE Bellevue Place would remain open for two-way traffic south of Main Street, with the existing traffic signal in-place as in the No-Action Alternative. New development on the east side of 100th Avenue SE/SE Bellevue Place could have driveway access from 100th Avenue SE/SE Bellevue Place (Figure 1.3-2).

Alternative 2

Under Alternative 2, vehicular access and circulation would be the same as described above for Alternative 1. 100th Avenue SE/SE Bellevue Place would be closed to vehicular traffic south of Main Street, and a pedestrian plaza and promenade would be built in its place, linking Main Street to the shoreline. The primary differences would be that parking would remain in the ravine (as under the No-Action Alternative), a smaller garage (70 spaces), access off of 99th Avenue NE, and a second garage (42 spaces) accessed off of Lake Washington Boulevard. The entry plaza would be in the location where the Bayvue Village Apartments exist today. The existing signal at Main Street / 100th Avenue SE would remain (Figure 1.3-3).

Alternative 2A

Under Alternative 2A, vehicular access and circulation would be the same as Alternative 2, except for the access to/from parcels adjacent to 100th Avenue SE/SE Bellevue Place. New development as a result of the overlay district to the east of 100th Avenue SE could draw its vehicular access from 100th Avenue SE/SE Bellevue Place. In addition, the parking garage west of 100th Avenue SE would have a driveway directly from 100th Avenue SE, rather than or in addition to, from the terminus of Meydenbauer Way SE (Figure 1.3-3).

Trip Generation

Table 3.9-8 displays the result of the trip generation analysis for each of the project alternatives. Compared to the No-Action Alternative, Alternative 1 would generate 76 more peak hour vehicle trips, and Alternative 2 would generate 123 more. The trip generation for Alternative 1A is the same as for Alternative 1, and the trip generation for Alternative 2A is the same as for Alternative 2.

Table 3.9-8. Trip Generation Comparison of Alternatives (Traffic Analysis Zones 16, 44, and 138).

Land Use	No-Action		Alternative 1		Alternative 2	
	Land Use	p.m. Peak Hr Trips	Land Use	p.m. Peak Hr Trips	Land Use	p.m. Peak Hr Trips
Finance/Insurance/ Real Estate & Services	57,175 sf	68	57,175	68	57,175	68
Retail	29,450 sf	75	34,950 sf	89	34,950 sf	89
Warehousing, Commerce, Transportation, Utilities, Manufacturing	2,950 sf	4	2,950 sf	4	2,950	4
Institutional	42,382 sf	45	42,382 sf	45	42,382 sf	45
Single-Family Dwelling Units	113	54	113	54	112	54
Multi-Family Dwelling Units	625	299	679	325	679	325
Meydenbauer Beach Park	Varies	31	Varies	67	Varies	114
Total Trip Generation		576		652		699

Source: Developed by Perteet.

Traffic Operational Analysis

LOS was calculated at nine study intersections in the year 2020, for all project alternatives for the p.m. peak hour. The 95th percentile queue length (in feet) for the worst approach at an intersection is also estimated. This means that 95 times out of 100, the queue at the intersection would not exceed the estimated length. Queues for the intersection approaches whose volumes for the 95th percentile cycle exceed capacity are designated with a # footnote in Figures 3.9-4 through 3.9-8. This traffic was simulated for two complete cycles of 95th percentile traffic to account for the effects of spillover between cycles. The *m* footnote for a queue length indicates that volume for the 95th percentile queue is metered by an upstream signal.

Table 3.9-9 presents the results of this analysis, showing intersection LOS and average vehicle delay for each alternative. By 2020, the only intersection that would degrade to a LOS F is 100th Avenue NE/NE 1st Street. This intersection would operate at LOS F under the No-Action Alternative and Alternatives 1A and 2A, all of which would leave 100th Avenue NE open to two-way traffic south of Lake Washington Boulevard. With the closure of 100th Avenue NE under Alternatives 1 and 2, the intersection would operate at LOS E with a lower average delay. Because this intersection is stop controlled, the LOS is based on the worst approach, in this case the eastbound approach to the intersection. The stop control is for the eastbound and westbound legs only. By the year 2020, the added volumes on 100th Avenue NE do not leave sufficient gaps for traffic on eastbound NE 1st Street to traverse the intersection.

No-Action Alternative

The 2020 traffic volumes and LOS are shown in Figure 3.9-4. Increasing regional traffic would result in higher traffic volumes and greater delays compared to existing conditions. As indicated above, one intersection (100th Avenue NE/NE 1st Street) would operate at LOS F in 2020 under the No-Action Alternative.

Table 3.9-9. Alternatives – 2020 p.m. Peak Hour LOS and Delay (in seconds).

	Control Type	Intersection	No-Action			Alt 1 100th Closed			Alt 2 100th Closed			Alt 1A 100th Open			Alt 2A 100th Open		
			Delay	Dir	LOS	Delay	Dir	LOS	Delay	Dir	LOS	Delay	Dir	LOS	Delay	Dir	LOS
1	Stop	100th & NE 1st	54.2	EB	**F**	38.2	EB	E	39.6	EB	E	55.8	EB	**F**	61.3	EB	**F**
2	Signal	102nd & NE 1st	5.3		A	6		A	6		A	5.3		A	5.3		A
3	Signal	2nd & Bellevue	30.0		C	30.2		C	30.3		C	33.5		C	33.5		C
4	Stop	Lake Washington Blvd& 99th	11	SB	B	12	SB	B	12.2	SB	B	12.2	NB	B	12.3	NB	B
5	Signal	Main & 100th	22.8		C	15.6		B	15.4		B	26.9		C	27.4		C
6	Stop	Main & 101st	23.9	NB	C	39.9	NB	E	44.1	NB	E	23.8	NB	C	24.5	NB	C
7	Signal	Main & 102nd	9.5		A	13.5		B	14.1		B	10.5		B	10.9		B
8	Stop	103rd & Main St	17.2	SB	C	17.4	SB	C	16.6	SB	C	15.6	SB	C	15.5	SB	C
9	Signal	Main & Bellevue	41.1		D	41.5		D	42.3		D	44.9		D	45.4		D

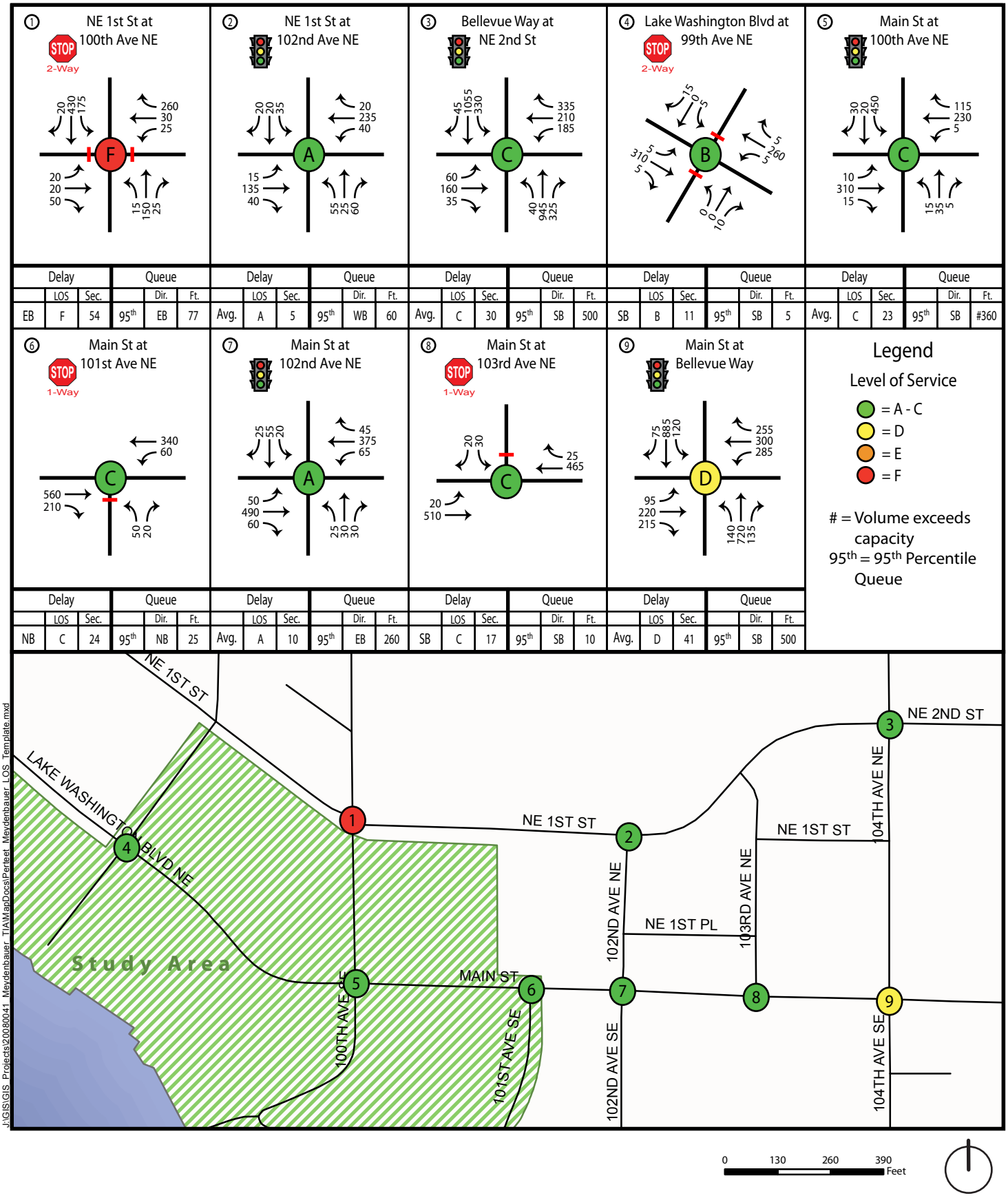


Figure 3.9-4: 2020 No-Action PM Peak Hour Level of Service and Volumes

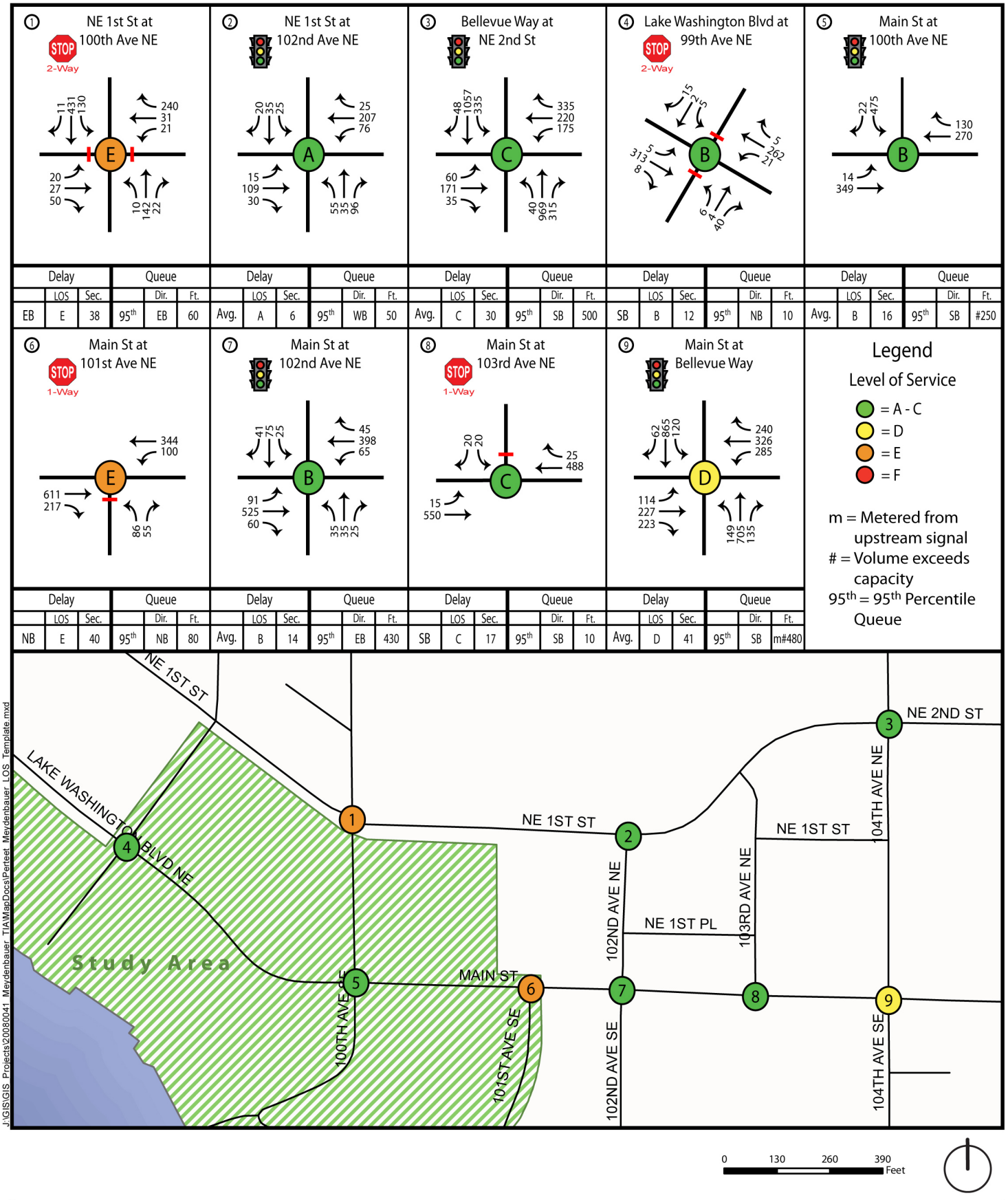
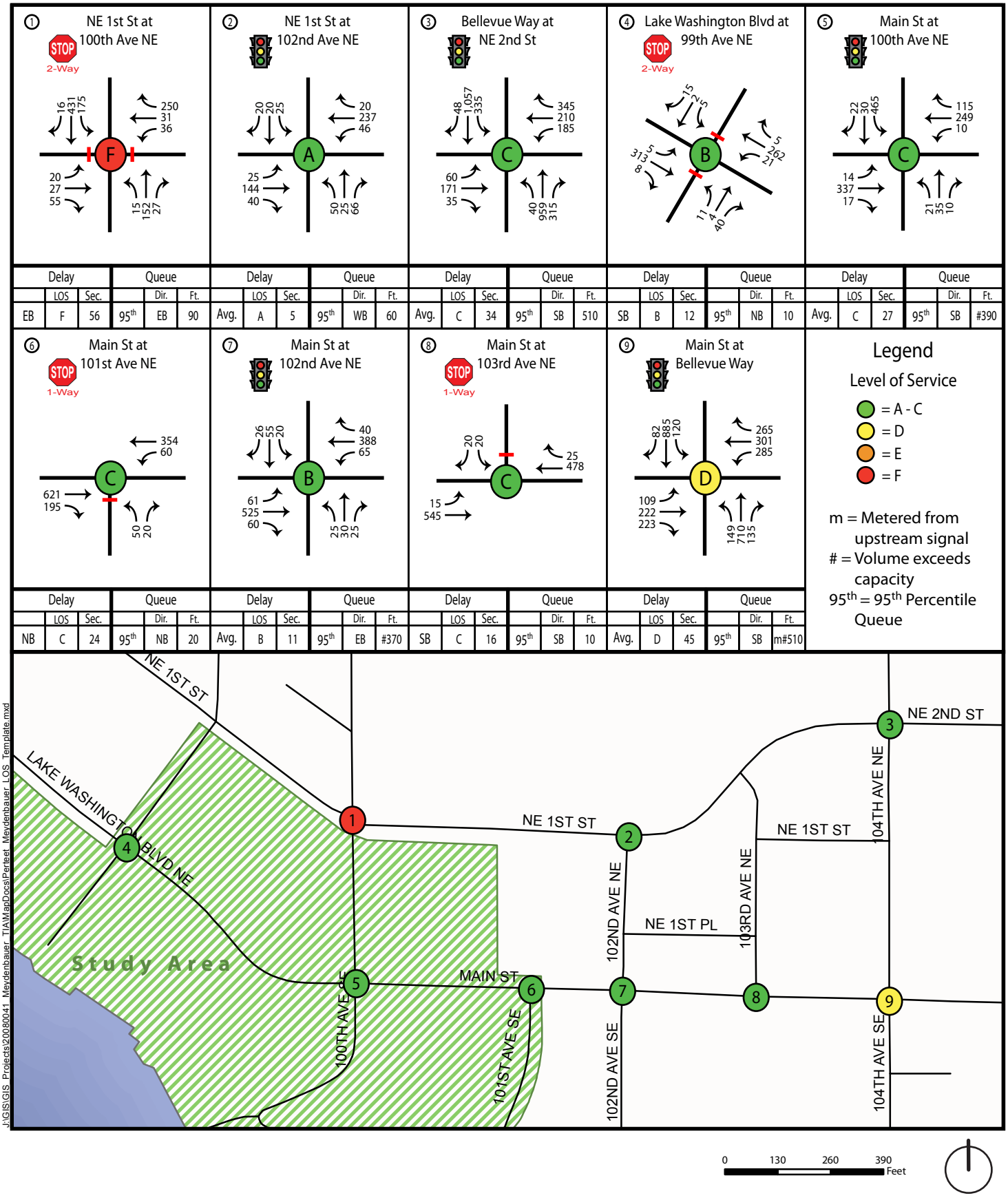


Figure 3.9-5: 2020 Action Alternative 1 (100th Ave Closed) PM Peak Hour Level of Services and Volumes



①	Delay			Queue			②	Delay			Queue		
	LOS	Sec.		Dir.	Ft.			LOS	Sec.		Dir.	Ft.
EB	F	56	95th	EB	90		Avg.	A	5	95th	WB	60

③	Delay			Queue			④	Delay			Queue		
	LOS	Sec.		Dir.	Ft.			LOS	Sec.		Dir.	Ft.
Avg.	C	34	95th	SB	510		SB	B	12	95th	NB	10

⑤	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	C	27	95th	SB	#390

⑥	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
NB	C	24	95th	NB	20

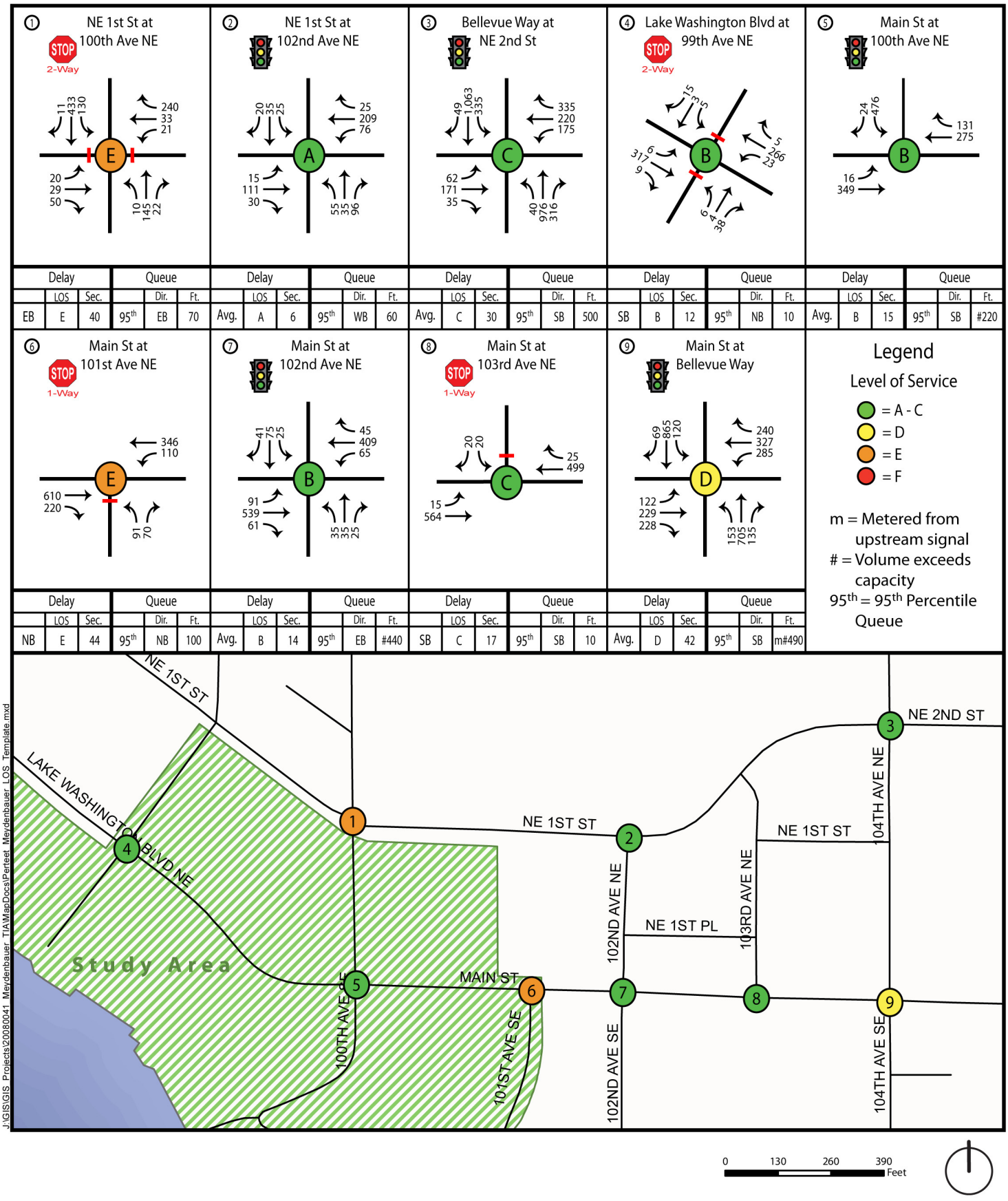
⑦	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	B	11	95th	EB	#370

⑧	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
SB	C	16	95th	SB	10

⑨	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	D	45	95th	SB	m#510

J:\GIS\GIS Projects\20080041 Meydenbauer TIA\MapDocs\Perteet Meydenbauer LOS Template.mxd

Figure 3.9-6: 2020 Action Alternative 1A (100th Ave Open) PM Peak Hour Level of Service and Volumes



①	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
EB	E	40	95th	EB	70

②	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	A	6	95th	WB	60

③	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	C	30	95th	SB	500

④	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
SB	B	12	95th	NB	10

⑤	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	B	15	95th	SB	#220

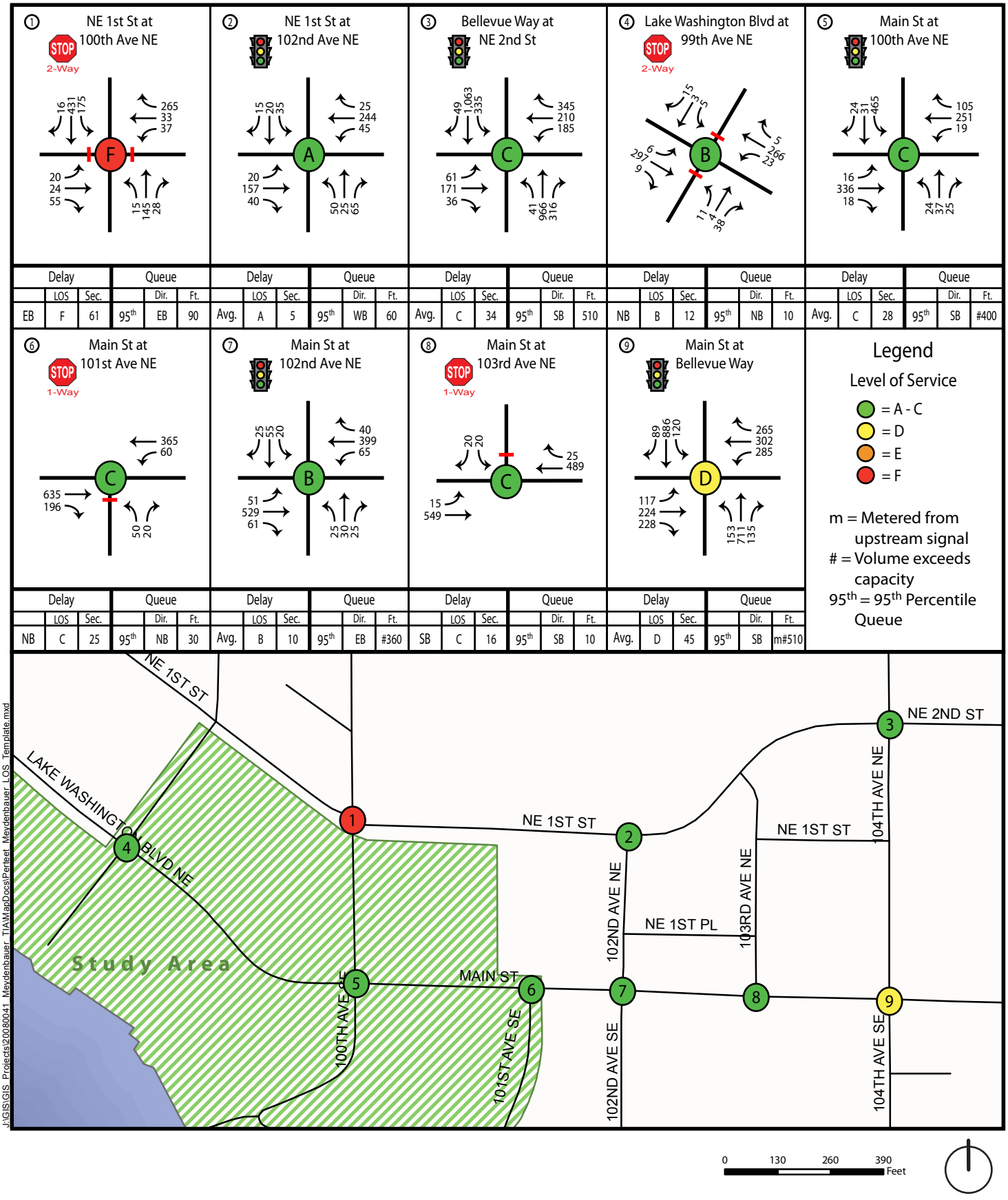
⑥	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
NB	E	44	95th	NB	100

⑦	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	B	14	95th	EB	#440

⑧	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
SB	C	17	95th	SB	10

⑨	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	D	42	95th	SB	m#490

Figure 3.9-7: 2020 Action Alternative 2 (100th Ave Closed) PM Peak Hour Level of Services and Volumes



①	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
EB	F	61	95th	EB	90

②	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	A	5	95th	WB	60

③	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	C	34	95th	SB	510

④	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
NB	B	12	95th	NB	10

⑤	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	C	28	95th	SB	#400

⑥	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
NB	C	25	95th	NB	30

⑦	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	B	10	95th	EB	#360

⑧	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
SB	C	16	95th	SB	10

⑨	Delay			Queue		
	LOS	Sec.		Dir.	Ft.
Avg.	D	45	95th	SB	m#510

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Figure 3.9-8: 2020 Action Alternative 2A (100th Ave Open) PM Peak Hour Level of Service and Volumes

Alternative 1

The Alternative 1 traffic volumes, LOS, and channelization are shown in Figure 3.9-5. All intersections studied would operate at acceptable LOS. Delay at the intersection of Main Street/100th Avenue NE be reduced by 7 seconds under Alternative 1 compared to the No-Action Alternative because of the closure of 100th Avenue south of Main Street. However, the delay would increase by 16 seconds at the intersection of Main Street/101st Avenue SE. Under Alternative 1, vehicles that previously used 100th Avenue SE would be redistributed to 101st Avenue SE. The northbound delay on 101st Avenue SE at Main Street would increase to 39.9 seconds compared with a delay of 23.9 seconds under the No-Action Alternative. The LOS at the 101st/Main Street intersection would worsen from a LOS C under the No-Action Alternative to a LOS E. Delay at the intersection of Main Street/102nd Avenue NE would worsen slightly under Alternative 1 (13.5-second delay) compared to the No-Action Alternative (9.5-second delay).

Alternative 1A

Alternative 1A traffic volumes and LOS are shown in Figure 3.9-6. Under Alternative 1A, the only intersection that would operate at LOS F is at 100th Avenue NE/ NE 1st Street, the same as under the No-Action Alternative. The delay (55.8-second delay) is slightly higher under Alternative 1A compared to the No-Action Alternative (54.2-second delay). The delay would be higher than Alternative 1 (38.2-second delay), because there would be vehicles coming through the intersection from the south, with 100th Avenue SE open.

Alternative 2

Traffic volumes, LOS, and channelization are shown in Figure 3.9-7. All intersections would operate at acceptable service levels. LOS and delay at the intersection of NE 1st Street/100th Avenue NE would improve compared to the No-Action Alternative, similar to Alternative 1. Delay at the intersection of Main Street/100th Avenue NE would improve (15.6-second delay) compared to the No-Action Alternative (22.8-second delay) because of the closure of 100th Avenue SE south of Main Street, and the reduced vehicular movement. Average vehicle delay would increase northbound on 101st Avenue SE at Main (43.8 seconds) compared to the No-Action Alternative (23.9 seconds). Delay at the intersection of Main Street/102nd Avenue NE would increase under Alternative 2 (14.1-second delay) compared to the No-Action Alternative (9.5-second delay), similar to Alternative 1.

Alternative 2A

Traffic volumes and LOS are shown in Figure 3.9-8. The only intersection that would operate at LOS F is 100th Avenue NE/NE 1st Street, similar to the No-Action Alternative. The delay (61.3-second delay) is higher than under the No-Action Alternative (54.2-second delay) because of the additional trips associated with 100th Avenue NE, which would remain open. The delay is also higher than under Alternative 2 (35.7-second delay), with 100th Avenue SE open. The LOS C at Main Street/101st Avenue intersection is the same as under the No-Action Alternative, and better than the LOS E under Alternative 2.

Traffic Queuing

Delays at intersections can cause vehicles to back up beyond turn lanes and through adjacent intersections. This is known as excessive queuing. Excessive queue lengths would vary based on the individual length between intersections. An excessive queue length would result in impacts

on adjacent intersections and overall corridor delay. Another impact from excessive queues is that vehicles at the minor approach of an intersection may have difficulty turning out, and thus creating safety issues.

No-Action Alternative

Under the No-Action Alternative, excessive queue lengths are predicted to develop at the following intersections by 2020:

- **Northbound Approach of Bellevue Way at NE 2nd Street**: The queue would be less than under existing conditions, shortening from 198 feet to 149 feet because of the addition of a northbound right-turn pocket and a second southbound left-turn pocket.
- **Southbound Approach of Bellevue Way at Main Street**: The queue would lengthen from 441 feet under existing conditions to 502 feet.
- **Eastbound Approach of Main Street at 102nd Avenue NE**: The queue would lengthen from 151 feet under existing conditions to 260 feet.
- **Southbound Approach of 100th Avenue NE at Main Street**: The queue would increase substantially compared with existing conditions, lengthening from 190 feet to 360 feet.

Alternative 1

The queue along the southbound approach of 100th Avenue NE at Main Street would be reduced from 360 feet under the No-Action Alternative to 250 feet under Alternative 1 as a result of the closure of 100th Avenue south of Main Street. Excessive queue lengths are predicted at the following intersections under Alternative 1 compared to the No-Action Alternative:

- **Eastbound Approach of Main Street at 102nd Avenue NE**: The queue would increase from 260 feet under the No-Action Alternative to 430 feet under Alternative 1. The longer queue is largely because of the increased vehicles turning left to 102nd Avenue NE and a higher number of vehicles on Main Street associated with the park land use.
- **Northbound Approach of 101st Avenue at Main Street:** The queue would increase from 25 feet under the No-Action Alternative to 80 feet under Alternative 1. This is a result of vehicles shifting to 101st Avenue SE because of the closure of 100th Avenue south of Main Street.

Alternative 1A

Excessive queue lengths are predicted at the following intersection under Alternative 1A, compared to the No-Action Alternative:

- **Eastbound Approach of Main Street at 102nd Avenue NE**: The queue would increase from 260 feet under the No-Action Alternative, to 370 feet under Alternative 1A.

Alternative 2

The queue along the southbound approach of 100th Avenue NE at Main Street would be reduced from 360 feet under the No-Action Alternative to 220 feet under Alternative 2 as a result of the

closure of 100th Avenue south of Main Street. Excessive queue lengths are predicted to develop at the following intersections under Alternative 2, compared to the No-Action Alternative:

- **Eastbound Approach of Main Street at 102nd Avenue NE:** The queue would increase from 260 feet under the No-Action Alternative to 440 feet under Alternative 2. The longer queue is due to the increased number of vehicles making a left turn to 102nd Avenue NE and a higher number of vehicles on Main Street from the park uses.

- **Northbound approach of 101st Avenue at Main Street:** The queue would increase from 25 feet under the No-Action Alternative to 100 feet under Alternative 2. This is a result of vehicles going to 101st Avenue SE because of the closure of 100th Avenue south of Main Street.

Alternative 2A

Excessive queue lengths are predicted at the following intersection under Alternative 2A, compared to the No-Action Alternative:

- **Eastbound Approach of Main Street at 102nd Avenue NE**: The queue would increase from 260 feet under the No-Action Alternative to 360 feet under Alternative 2A.

Parking Demand and Utilization

Public Parking

Public parking spaces are listed in Table 3.9-10 for each project alternative. For the park site, peak periods were used to estimate the parking demand. Because different uses have different peak periods, the total parking supply is likely overestimated. In addition, a substantial number of people are assumed to be visiting multiple attractions or uses, but only parking once. Because of these two factors, the total parking demand needed was reduced by a factor of 25 percent. Under each project alternative, the parking supply planned for the park site is expected to satisfy the typical daily demand.

No-Action Alternative

Under the No-Action Alternative, most of the public parking spaces at the marina would be removed, except for six spaces that would remain for short-term use. A new surface lot on the west side of 99th Avenue NE, south of Lake Washington Boulevard, would accommodate 36 spaces. There would be a total of 85 public parking spaces in the immediate vicinity of the park (compared with 103 public parking spaces at or adjacent to the park today), and a total of 161 public parking spaces when combining the upland parcel sites (compared with 179 total public parking spaces today).

Alternative 1

Under Alternative 1, there would be a total of 106 public parking spaces within the Meydenbauer Beach Park (an increase of 21 spaces compared to the No-Action Alternative). The public parking spaces include a 10-space surface lot off of Lake Washington Boulevard, a below-grade 90-space parking garage accessed from the west side of 99th Avenue NE, and six short-term parking spaces at the marina.

Table 3.9-10. Public Parking Spaces by Alternative.

Location	Existing Spaces	No-Action	Alternative 1	Alternative 1A	Alternative 2	Alternative 2A
Meydenbauer Beach Park Site (within and adjacent to park)						
Beach Park surface parking lot	28	28	0	0	28	28
Meydenbauer Park garage w/of 99th Ave NE	0	0	90	90	70	70
Meydenbauer Park garage w/of 100th Ave SE	0	0	0	0	42	42
Bellevue Marina surface parking lot (both sides)	60	6	6	6	6	6
Surface lot west side of 99th Ave NE, south of Lake Washington Blvd.	0	36	0	0	0	0
Lake Washington Blvd on-street (south side)	10	10	0	0	0	0
Surface Lot on south side Lk Washington Blvd	0	0	10	10	10	10
99th Ave NE on-street (west side)	5	5	10	10	0	0
TOTAL	**103**	**85**	**116**	**116**	**156**	**156**
Upland Parcels Site (North of Lake Washington Boulevard and west of 100th Avenue NE)						
NE 1st St on-street (south side)	4	4	4	4	4	4
TOTAL	**4**	**4**	**4**	**4**	**4**	**4**
Upland Parcels Site (North of Main Street and east of 100th Avenue NE)						
Main St on-street (north side to 102nd)[1]	13	13	13	13	13	13
NE 1st St on-street (south side to 102nd)	12	12	12	12	12	12
TOTAL	**25**	**25**	**25**	**25**	**25**	**25**
Upland Parcels Site (South of Main Street and east of 100th Avenue NE)						
Meydenbauer Way on-street (north side)	20	20	20	20	20	20
Bellevue Pl/ 100th Ave SE on-street (east side)	9	9	0	9	0	9
TOTAL	**29**	**29**	**20**	**29**	**20**	**29**
Upland Parcels Site (South of Lake WA Blvd and west of 100th Avenue SE)						
Lake Washington Blvd on-street (south side)	9	9	9	9	9	9
99th Ave NE on-street (east side)[2]	9	9	0	0	0	0
TOTAL	**18**	**18**	**9**	**9**	**9**	**9**
TOTAL PUBLIC PARKING SPACES	**179**	**161**	**174**	**183**	**214**	**223**

[1] 2008 spot check identified 4 spaces (of the 13) closed during adjacent building construction; [2] 2008 spot check identified 9 spaces at this location as opposed to 13 spaces in 2007 survey.

The estimated peak demand for the park uses in Alternative 1 is 98 spaces, based on a combination of factors including a review of the Institute of Transportation Engineers Parking Generation Manual (ITE 2004), the City of Bellevue Land Use Code, and estimates prepared by Perteet, Inc. where no ITE or Land Use Code information was available. Therefore, the 106 public parking spaces being provided at the park in Alternative 1 would exceed the estimated peak parking demand for the park.

Outside of the park, there would be some changes to public on-street parking as compared to existing conditions and the No-Action Alternative. Nine public on-street parking spaces on the east side of Bellevue Place/100th Avenue SE would be removed because the street would be closed. In addition, nine existing on-street parking spaces along the east side of 99th Avenue NE, south of Lake Washington Boulevard, would be removed, but ten would be provided on the west side of 99th Avenue NE, south of Lake Washington Boulevard.

Overall, when combining the park and off-site (i.e., the upland parcels) public parking spaces, there would be an increase of three public parking spaces compared to the No-Action Alternative.

Alternative 1A

Under Alternative 1A, the number of public parking spaces within the park would be the same as under Alternative 1 (i.e., 106 spaces).

Outside of the park, the nine public on-street parking spaces along the east side of SE Bellevue Place/100th Avenue SE would remain since the street would be kept open. This is the only difference compared to Alternative 1. In total, an increase of 12 public parking spaces would occur compared to the No-Action Alternative.

Alternative 2

Under Alternative 2, there would be a total of 156 public parking spaces within the Meydenbauer Beach Park. The park's on-site parking facilities include a 10-space surface lot off of Lake Washington Boulevard, a 70-stall below-grade parking garage accessed from the west side of 99th Avenue NE, a 42-stall below-grade public parking garage accessed from Lake Washington Boulevard, and six short-term parking spaces at the marina. The existing 28-stall parking lot at the south terminus of 98th Place NE would remain. The estimated peak demand for the park uses in Alternative 2 is 141 spaces, based on a combination of factors including a review of the ITE Parking Generation Manual, the City of Bellevue Land Use Code, and estimates prepared by Perteet, Inc. Therefore, the 156 public parking spaces provided in Alternative 2 exceeds the estimated peak parking demand.

Outside of the park, there would be some changes to public on-street parking as compared to existing conditions and the No-Action Alternative. Nine public on-street parking spaces on the east side of Bellevue Place/100th Avenue SE would be removed because the street would be closed. In addition, nine existing on-street parking spaces along the east side of 99th Avenue NE, south of Lake Washington Boulevard, would be removed.

Overall, when combining the park and off-site (i.e., the upland parcels) public parking spaces, the number of public parking spaces would increase by 53, compared to the No-Action

Alternative. As in Alternatives 1 and 1A, public parking would be reduced at the Bellevue Marina parking lots.

Alternative 2A

Under Alternative 2A, the number of public parking spaces within the park would be the same as under Alternative 2 (i.e., 156 spaces).

Outside of the park, the nine public on-street parking spaces along the east side of SE Bellevue Place/100th Avenue SE would remain since the street would be kept open. This is the only difference compared to Alternative 2. Under Alternative 2A, there would be an overall increase of 62 public parking spaces, compared to the No-Action Alternative. The parking locations, configuration, and number of public parking spaces would be the same as Alternative 2, except that the parking garage west of 100th Avenue SE would have a driveway directly from 100th Avenue SE, rather than from Lake Washington Boulevard.

Private Parking

No-Action Alternative

The Brant Photography and Chevron sites may redevelop under existing regulations. Additional on-site parking would be added with any such redevelopment. The redevelopment of the Brant site would provide increased parking supply, and the redevelopment of the Chevron site would provide an estimated 111 to 251 parking spaces, depending on tenant mix and unit type mix (e.g., number of bedrooms).

Alternative 1

Greater redevelopment is anticipated under Alternative 1 in comparison with the No-Action Alternative, because of the proposed overlay district for some of the upland parcels. The overlay district north of Lake Washington Boulevard and west of 100th Avenue NE could provide an increased number of parking spaces. The overlay district east of 100th Avenue SE (south of the Chevron site) would provide between 200 and 235 parking spaces.

Alternative 1A

Private parking supply under Alternative 1A would be the same as described above for Alternative 1. Parking areas of redeveloped parcels south of Main Street and east of 100th Avenue SE/SE Bellevue Place could potentially be accessed from 100th Avenue SE / SE Bellevue Place.

Alternative 2

Private parking supply under Alternative 2 would be the same as described above for Alternative 1.

Alternative 2A

Private parking supply under Alternative 2A would be the same as described above for Alternative 1A.

Collisions and Safety

No-Action Alternative

The intersections near the study area with the highest number of collisions are Main Street/Bellevue Way and NE 2nd Street/Bellevue Way. Many of the reported collisions were rear-end collisions. The midblock location with the highest number of collisions is Main Street between 103rd Avenue NE and Bellevue Way. By 2020, the p.m. peak hour traffic volumes along Bellevue Way at Main Street are expected to increase by 25 percent, and along Bellevue Way at NE 2nd Street by up to 33 percent. Along Main Street, between 103rd Avenue NE and Bellevue Way, the p.m. peak hour volume is expected to increase by 7 percent. These increases in volume could result in more collisions at these locations. However, currently planned capacity-improvements along NE 2nd Street and at Bellevue Way/NE 2nd Street may improve safety at these locations.

Pedestrian and bicycle safety would be improved on streets where sidewalks and pedestrian facilities are currently lacking and are planned to be constructed. Pedestrian improvements are programmed along Main Street, and high-priority pedestrian projects are identified in the Pedestrian and Bicycle Transportation Plan (City of Bellevue 2009b) along Meydenbauer Way, SE Bellevue Place, and NE 1st Street. These may be built by 2020 and would improve pedestrian safety. The 12-year TFP (City of Bellevue 2009a) includes one programmed bicycle improvement along Main Street: widening the shoulder on the north and south sides. The City's 2009 Pedestrian and Bicycle Transportation Plan identifies a high-priority project to add a shoulder along the south side of Lake Washington Boulevard.

Alternative 1

Main Street is expected to show a modest increase in congestion as compared to the No-Action Alternative because of the added uses at the park and upland parcel redevelopment. The p.m. peak hour traffic volume would grow by approximately 12 percent west of 102nd Avenue NE. The lengthened eastbound queue at this location could result in additional collisions, especially rear-end collisions. New sidewalks would be constructed along the south side of Lake Washington Boulevard. Future trails include a new trail from the terminus of 98th Place NE to the shoreline (which would replace the existing trail at the same location), a multi-use trail/shoreline promenade linking the Whaling Building to Meydenbauer Way SE, a trail along the west side of 99th Avenue NE linking Lake Washington Boulevard to the shoreline, and an esplanade linking Main Street to the shoreline where 100th Avenue SE exists today. All of these facilities would result in an improved separation of non-motorized users and vehicular traffic, thereby improving pedestrian and bicycle safety.

Alternative 1A

The Main Street traffic volume would grow by 6 percent west of 102nd Avenue NE, half as much as Alternative 1. The potential for additional vehicle collisions would be less than Alternative 1. However, because 100th Avenue SE/SE Bellevue Place would remain open to vehicle traffic, additional collisions could occur between vehicles and pedestrians, and between vehicles and bicyclists. Because the park would attract non-motorized trips from the downtown area, the potential for conflict between vehicles and pedestrians and cyclists is greater if 100th Avenue remains open to traffic.

Alternative 2

The p.m. peak hour traffic volume along Main Street would grow by approximately 15 percent west of 102nd Avenue NE, similar to Alternative 1. The potential for increased collisions is also similar to Alternative 1. Alternative 2 would improve pedestrian safety where new sidewalks or trails are constructed as part of the alternative, similar to Alternatives 1 and 1A, except that no new trail from terminus of 98th Place NE to the shoreline.

Alternative 2A

Compared to the No-Action Alternative, Main Street would see an increase in p.m. peak hour traffic volume of approximately 6 percent west of 102nd Avenue NE, similar to Alternative 1A. The lengthened eastbound queue at this location could result in additional collisions, especially rear-end collisions. However, because 100th Avenue SE/SE Bellevue Place would remain open, additional vehicle collisions could occur and, like Alternative 1A, an increased potential would exist for conflicts between vehicles and pedestrians & bicyclists.

Public Transportation

No-Action Alternative

Transit service within downtown Bellevue and near the study area is expected to be enhanced by the year 2020 as a result of several transit initiatives, described in Section 3.9.1.

Alternative 1

Under Alternative 1, transit service would be the same as the No-Action Alternative. Alternative 1 would result in a slight increase in transit demand (relative to the No-Action Alternative) given the additional uses at the park and the redevelopment of the upland parcels. However, the new uses are expected to be effectively served by the improved transit service, as described in Section 3.9.1.

Alternative 1A

Under Alternative 1A, transit service would be the same as the No-Action Alternative. Alternative 1A would result in a slight increase in transit demand (relative to the No-Action Alternative) given the additional uses at the park and the redevelopment of the upland parcels. However, the new uses are expected to be effectively served by the improved transit service, as described in Section 3.9.1.

Alternative 2

Under Alternative 2, transit service would be the same as the No-Action Alternative. Alternative 2 would result in a slight increase in transit demand (relative to the No-Action Alternative) given the additional uses at the park and the redevelopment of the upland parcels. However, the new uses are expected to be effectively served by the improved transit service, as described in Section 3.9.1.

Alternative 2A

Under Alternative 2A, transit service would be the same as the No-Action Alternative. Alternative 2A would result in a slight increase in transit demand (relative to the No-Action Alternative) given the additional uses at the park and the redevelopment of the upland parcels.

However, the new uses are expected to be effectively served by the improved transit service, as described in Section 3.9.1.

Non-Motorized (Pedestrian/Bicycle) Transportation

No-Action Alternative

Pedestrian and bicycle safety could be improved on streets where sidewalks and pedestrian facilities are currently lacking. Programmed pedestrian improvements along Main Street and planned high-priority pedestrian projects (identified in the Pedestrian and Bicycle Transportation Plan [City of Bellevue 2009b]) that may be built by 2020, such as along Meydenbauer Way and NE 1st Street, would improve pedestrian safety. The 12-year TFP (City of Bellevue 2009a) includes one programmed bicycle improvement (widen the shoulders on the north and south sides) along Main Street, and the City's 2009 Pedestrian and Bicycle Transportation Plan identifies a high-priority project that would add a shoulder along the south side of Lake Washington Boulevard.

Alternative 1

Compared to the No-Action Alternative, pedestrian safety would be improved where new sidewalks or trails are constructed within the study area. New sidewalks would be constructed along the south side of Lake Washington Boulevard. Future trails include a new trail from 98th Avenue NE to the Lake Washington shoreline, a multi-use trail/shoreline promenade linking the Whaling Building to Meydenbauer Way SE, a trail along the west side of 99th Avenue NE linking Lake Washington Boulevard to the shoreline, and an esplanade linking Main Street to the shoreline where 100th Avenue SE exists today. All of these facilities would result in a reduction of conflicts between nonmotorized users and vehicles (as it exists today), thereby improving pedestrian and bicycle safety and ease of use. In addition, any redevelopment of other parcels, such as the Chevron site, or within new overlay districts would likely require improved pedestrian facilities and possibly bicycle improvements along the street frontage. Pedestrian improvements would be added to all streets within the study area. These new facilities would improve pedestrian and bicycle conditions and safety.

Alternative 1A

Impacts under Alternative 1A would be similar to those described above for Alternative 1, except that 100th Avenue SE/SE Bellevue Place would remain open to vehicle traffic. A new sidewalk along the east side of 100th Avenue SE is identified as a high-priority project in the City's Pedestrian and Bicycle Transportation Plan (City of Bellevue 2009b), and would be constructed as part of any adjacent redevelopment along the east side of the roadway. However, the environment for non-motorized access to the new park could be less comfortable for use by pedestrians and cyclists, compared to Alternative 1. The high number of pedestrians expected to use 100th Avenue SE to access the park from the Old Bellevue area and Downtown Park may result in additional conflicts with moving vehicles, thereby creating potential safety issues.

Alternative 2

Impacts under Alternative 2 would be similar to those described above for Alternative 1, except that 98th Avenue NE and the existing adjacent sidewalk (east side)would not be removed. New pedestrian and bicycle facilities built under Alternative 2 would also improve pedestrian and bicycle circulation and access, relative to conditions under the No-Action Alternative.

Alternative 2A

Impacts under Alternative 2A would be similar to those described above for Alternative 2, except that 100th Avenue NE/SE Bellevue Place would remain open to vehicle traffic. As in Alternative 1A, the non-motorized access to the new park would be less comfortable for use by pedestrians and cyclists than if 100th Avenue NE were closed. The high number of pedestrians expected to use 100th Avenue SE to access the park from the Old Bellevue area and Downtown Park may result in additional conflicts with moving vehicles, thereby creating potential safety issues.

Fire and Emergency Access

No-Action Alternative

The access points for fire and emergency vehicles would be the same as existing conditions, because the roadway network would not change. Travel times for emergency vehicles are likely to incrementally increase over time as a result of the greater congestion on the local roadway system, especially along Bellevue Way, where p.m. peak hour volumes are anticipated to significantly increase by the year 2020.

Alternative 1

Access points for fire and emergency vehicles would be from Lake Washington Boulevard, 99th Avenue NE, and Meydenbauer Way SE. Access from 98th Place NE and 100th Avenue SE would no longer be available because of the removal of those roadways. Compared to the No-Action Alternative, travel times for emergency vehicles would likely have a minimal increase as a result of the slight increase in the number of vehicles using the local roadway system, primarily along Main Street.

Alternative 1A

Impacts under Alternative 1A would be similar to those described above for Alternative 1, except that access would remain from 100th Avenue SE, which would remain open.

Alternative 2

Access points for fire and emergency vehicles would be from 98th Place NE, Lake Washington Boulevard, 99th Avenue NE, and Meydenbauer Way SE. Access from 100th Avenue SE would no longer be available because of the removal of this road. Alternative 2 would have a minimal increase in travel times for emergency vehicles, compared to the No-Action Alternative and Alternative 1, as a result of a slight increase in the number of vehicles using the local roadway system, primarily along Main Street.

Alternative 2A

Impacts under Alternative 2A would be similar to those described above for Alternative 2, except that access would still remain from 100th Avenue SE, which would remain open. Compared to the No-Action Alternative and Alternative 1, travel times for emergency vehicles would likely have a minimal increase as a result of the slight increase in the number of vehicles using the local roadway system, primarily along Main Street.

3.9.2.3 Construction Impacts

Construction impacts would be similar among the project alternatives, although they would be greater under Alternatives 1 and 2 compared to the No-Action Alternative. This is because more extensive redevelopment of both park and upland parcels is associated with the action alternatives; Alternative 2 would have a slightly greater effect. Under the No-Action Alternative, development of the site could occur incrementally, and construction impacts, including temporary disruption of services, could occur over a more extended period of time.

Traffic Operations

The proposed development would generate construction vehicle trips on local streets, primarily on Lake Washington Boulevard, Main Street, and Bellevue Way. Specific construction traffic impacts will be evaluated at the project level.

Non-Motorized Facilities

Construction activities could also result in the short-term disruption of the use of sections of the existing pedestrian facilities, including existing sidewalks adjacent to overlay zones, sidewalks adjacent to the park site, and trails within the existing park. Construction-related impacts would be temporary in nature and would extend through the duration of each construction phases.

Fire and Emergency Access

Vehicular access and emergency access to occupied structures would be maintained during the construction period.

3.9.3 Mitigation Measures

As described in the impacts sections above, increased traffic delays would occur at several locations under the action alternatives, relative to the No-Action Alternative. Most of the increases in p.m. peak hour traffic volumes, LOS, and delay on roadways, especially Main Street, would result from background growth under the No-Action Alternative. However, acceptable levels of service were shown at all of the intersections within the study area, except the intersection of 100th Avenue NE/NE 1st Street, which showed LOS F conditions under the No-Action Alternative and Alternatives 1A and 2A (with 100th Avenue open to traffic). LOS E conditions would be achieved with the closure of 100th Avenue under Alternatives 1 and 2.

3.9.3.1 Traffic Mitigation

Although the intersection of 100th Avenue NE/NE 1st Street also operates at LOS F under the No-Action Alternative, several mitigation strategies were tested at this intersection and along the Main Street corridor. The following mitigation scenarios were analyzed to improve the level of service of traffic operations at the study intersections.

- **Signal at NE 1st Street and 100th Avenue NE**: Installation of a traffic signal would improve the LOS for the eastbound traffic on 1st Street from LOS F to C under Alternative 2A. The improvement for Alternative 2 would be from LOS E to C, as shown in Table 3.9-11.

Table 3.9-11. Intersection LOS with signal at NE 1st Street and 100th Avenue NE.

Signal at NE 1st and 100th								
Alternative 2 (Closed)	Stop controlled for 1st Street				Signal			
	Approach	Delay	LOS	95th Queue	Approach	Delay	LOS	95th Queue
Average	-	8.9	A	-	-	8.2	A	-
Worst Approach	EB	39.6	E	65	EB	24.5	C	54
Alternative 2A (Open)	Stop controlled for 1st Street				Signal			
	Approach	Delay	LOS	95th Queue	Approach	Delay	LOS	95th Queue
Average	-	11.8	B	-	-	8.2	A	-
Worst Approach	EB	61.3	F	91	EB	25	C	52

- **Signal at Main Street and 101st Avenue NE:** Under Alternatives 1 and 2, signalization of Main/101st Avenue would improve the LOS for 101st Avenue traffic from LOS E to C, but similar improvement is not seen under Alternative 2A, as shown in Table 3.9-12, as the 101st Avenue traffic would operate at LOS C with and without a signal. However, installation of the signal would result in excessive vehicle queuing. Long delays and backup would occur in the westbound direction through 102nd Avenue due to the absence of a westbound to southbound left turn lane, which is made worse by a signal. The long delays experienced in the eastbound direction are due to the long vehicle queuing at Main Street and Bellevue Way and the delays due to signalization of the Main Street/101st Avenue intersection. Even though the delay for the 101st Avenue traffic under Alternative 2A is not shown to improve with signalization, the signal would present the 101st Avenue traffic with safe opportunities to make turns onto Main Street, compared to the scenario with a stop-controlled approach for 101st Avenue.

Table 3.9-12. Intersection LOS with Signal at Main Street and 101st Avenue NE.

Signal at Main and 101st								
Alternative 2 (Closed)	Stop				Signal			
	Approach	Delay	LOS	95th Queue	Approach	Delay	LOS	95th Queue
Average	-	5.5	A	-	-	7.4	A	-
Worst Approach	NB	43.8	E	92	NB	33.9	C	95
Alternative 2A (Open)	Stop				Signal			
	Approach	Delay	LOS	95th Queue	Approach	Delay	LOS	95th Queue
Average	-	2.1	A	-	-	6.8	A	-
Worst Approach	NB	24.5	C	25	NB	22.6	C	45

Additional mitigation measures reviewed included the following:

- **All-Way Stop at Main Street and 101st Avenue NE:** Installation of an all-way stop at Main Street and 101st Avenue NE could improve access to Main Street in the short term. Projected 2020 traffic volumes with an all-way stop control at this intersection would result in long vehicular queuing and increase the delays along the Main Street corridor.

From a safety perspective, it would be better for side street access compared to the existing intersection control.

- **All-Way Stop at Main Street and 102nd Avenue NE:** Removing the signal at Main Street and 102nd Avenue NE and replacing it with an all-way stop would be done in conjunction with an all-way stop at Main Street and 101st Avenue. In the short term, this measure would provide similar access to Main Street from 102nd Avenue that the existing signal provides. Projected 2020 traffic volumes with an all-way stop control at this intersection would result in long vehicular queuing and increase the delays along the Main Street corridor.
- **Signal at Main Street and 101st Avenue NE:** Installation of a signal at Main Street and 101st Avenue NE without providing a new left turn pocket would not improve delay through this intersection. Adding a 50-foot left turn pocket would require the removal of existing on-street parking.
- **Eliminating the eastbound left-turn lane at Main Street and Bellevue Way:** Restricting left turn movements from eastbound Main Street to northbound Bellevue Way to provide additional Main Street through lane capacity. This would improve the eastbound delay through the intersection by providing two eastbound through lanes, and one right-turn lane.
- **Extending the eastbound through/right-turn lane at Main Street and Bellevue Way:** Extending the outside storage lane to 103rd Avenue NE to provide additional Main Street through lane capacity would improve the eastbound delay through this intersection and reduce the length of queuing to the upstream intersections. This would require the removal of existing on-street parking.
- **Extending the eastbound right-turn lane at Bellevue Way:** Extending the right turn pocket from eastbound Main Street to southbound Bellevue Way would provide additional storage for eastbound Main Street to southbound Bellevue Way right turning vehicles. This would improve the eastbound delay through the intersection, but would require the removal of existing on-street parking.
- **Adding a westbound left-turn lane at Main Street and 101st Avenue NE:** Adding a 50-foot left turn pocket from westbound Main Street to southbound 101st Avenue NE would improve the westbound delay along Main Street. This would require the removal of existing on street parking.
- **Extending the eastbound through/right-turn lane at Main Street and Bellevue Way and adding a westbound left-turn lane at Main Street and 101st Avenue NE:** Combining these two mitigation measures improves both the westbound and eastbound delays along the corridor. This would require the removal of existing on-street parking.

As noted above, the increase in p.m. peak hour traffic volumes and delays along Main Street results from background growth, and occurs under the No-Action Alternative. While each of the mitigation measures noted above would provide limited improvement to the Main Street corridor, most would result in undesirable urban design changes through Old Bellevue. Widening for turn lanes would result in the loss of on-street parking, potential impacts on adjacent properties, and degradation of the existing pedestrian crossings.

Modifications to the intersection of Main Street and Bellevue Way could provide improvements to the LOS at this intersection. However, several other capital projects under consideration in this vicinity would emphasize NE 2nd Street as the major vehicular east-west corridor, and enhance and improve the pedestrian and bicycle experience along Main Street.

3.9.3.2 Project Construction

Project construction could cause temporary service interruptions to existing facilities, as well as short-term impacts on surrounding residents and other users. Construction could also temporarily increase response times of police, fire, and medical emergency services if routes are detoured or disrupted. Acceptable temporary routes would be developed during future project-specific design and planning in accordance with City of Bellevue LUC requirements.

3.9.3.3 Construction Mitigation

A traffic management plan would be created prior to construction of the development that would outline steps for minimizing traffic impacts during construction activities, including:

- Provide advanced notice to adjacent landowners and businesses prior to construction to minimize access disruptions.
- Provide proper road signage and warnings, such as "Truck Access," "Equipment on Road," or "Road Crossings."
- When slow or oversized wide loads are being hauled, use advance signage and traffic diversion equipment to improve traffic safety.

3.9.4 Summary of Impacts

Implementation of the project alternatives would have relatively minor impacts on transportation facilities and services in the study area. Impacts would occur both over the short term (associated with construction activities), as well as over the long term (associated with changes in traffic conditions). In the short term, construction could cause temporary service interruptions to existing transportation facilities, and could also temporarily increase response times for police, fire, and emergency services if routes are detoured or disrupted. Such impacts would be slightly more pronounced under the action alternatives relative to the No-Action Alternative, given the greater level of development proposed; however, such impacts are considered slight and insignificant under all project alternatives. A traffic management plan would be created prior to construction that would outline methods for minimizing traffic impacts during construction.

Over the long term, there would only be slight impacts on the transportation system under the action alternatives as compared to the No-Action Alternative. Under the No-Action Alternative, one study intersection (100th Avenue NE at NE 1st Street) would operate at a LOS F. The LOS and delay at this intersection actually would improve under Alternatives 1 and 2, but would remain at LOS F under Alternatives 1A and 2A. Slight increases in travel delay are expected at some of the other intersections, but not enough to significantly impact the intersection LOS. The only intersection that would have a moderate increase in delay is Main Street/101st Avenue SE. The northbound delay would increase from 23.9 seconds (LOS C) under the No-Action Alternative to 39.9 seconds (LOS E) under Alternative 1, and 44.1 seconds (LOS E) under Alternative 2. The non-motorized environment would improve under the action alternatives

(especially Alternatives 1 and 2, where 100th Avenue SE would be closed to vehicular traffic) because of the added network of trails and pedestrian facilities.

In summary, the project alternatives would result in no significant unavoidable adverse impacts on transportation facilities in the study area. Among the action alternatives, Alternative 1 would have the least long-term impact on the transportation system, as compared to the No-Action Alternative.

3.10 NOISE

This section describes the existing conditions related to the ambient noise environment in the vicinity of the study area. Noise within the study area is under the jurisdiction of the City of Bellevue and is regulated by the City of Bellevue Comprehensive Plan (2008) and Bellevue City Code (Chapter 9.18 BCC). This section presents a brief background on acoustics and a description of existing noise sources, standards, and potential noise impacts related to implementation of the project alternatives.

3.10.1 Affected Environment

3.10.1.1 Noise Basics

To understand this analysis of existing conditions and potential impacts, an understanding of the basic principles of the science and analysis of noise and vibration is helpful. Appendix B summarizes and describes the fundamental concepts and definitions used throughout this analysis. The reader is encouraged to refer to the appendix material if unfamiliar with the framework of noise measurement and analysis.

Sound Properties, Sound and the Human Ear, and Sound Propagation and Attenuation

Noise is generally defined as sound that is loud, disagreeable, unexpected, or unwanted. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave by a disturbance or vibration that causes pressure variation in air that the human ear can detect. Throughout this analysis, the terms "sound" and "noise" are analogous. Sound frequency is measured in Hertz (Hz). Because of the ability of the human ear to detect a wide range of sound-pressure fluctuations, sound-pressure levels are expressed in logarithmic units called decibels (dB) to avoid a large and awkward range in numbers.

Because the human ear is not equally sensitive to all audible frequencies, a frequency-dependent rating scale was devised to relate noise to human sensitivity. An A-weighted dB (dBA) scale performs this compensation by favoring frequencies that humans are more sensitive to. This dBA scale has been chosen by most authorities for regulating environmental noise. Figure 3.10-1 presents typical indoor and outdoor noise levels.

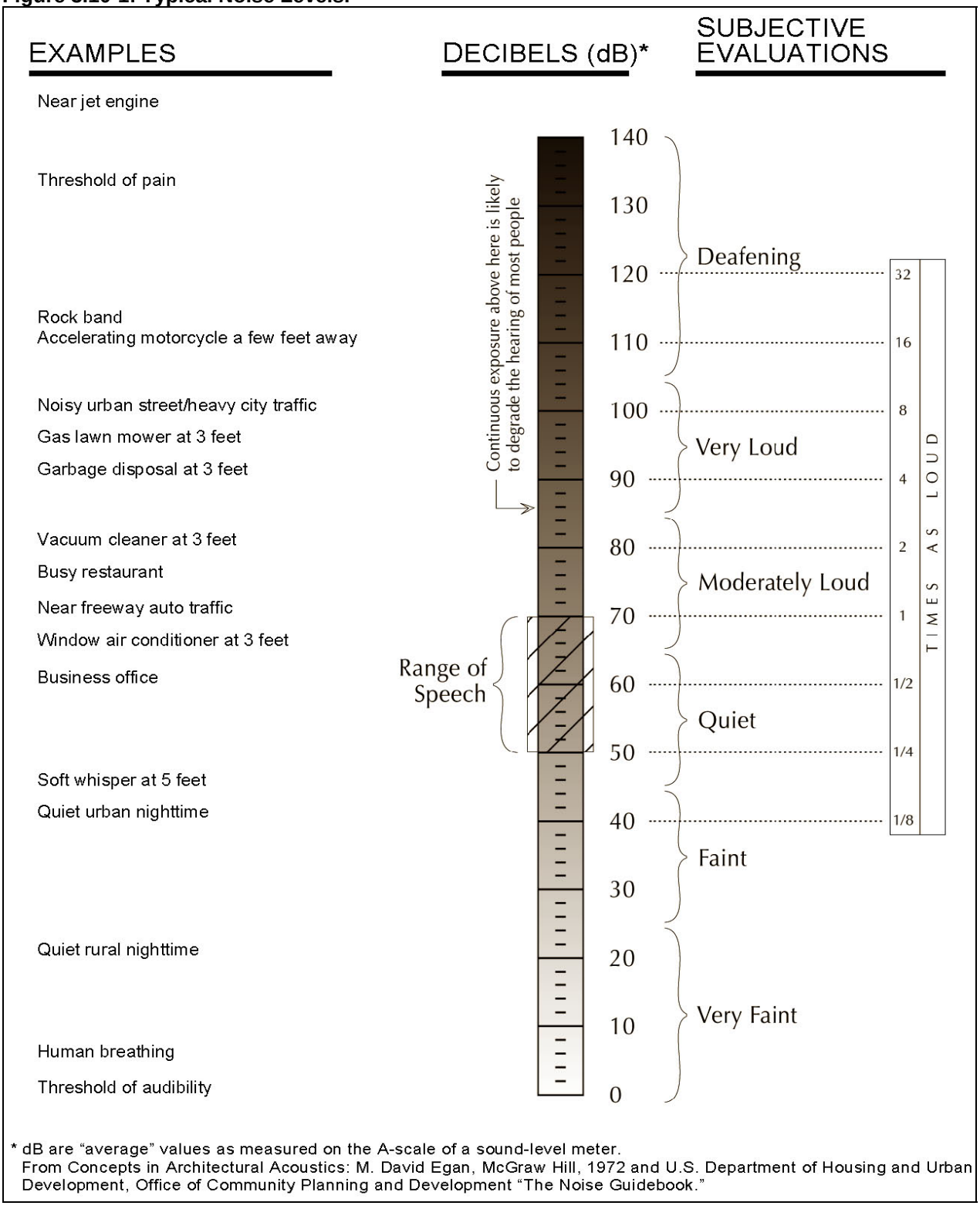
With respect to how humans perceive and react to changes in noise levels, a 1-dBA increase is imperceptible, a 3-dBA increase is barely perceptible, a 6-dBA increase is clearly noticeable, and a 10-dBA increase is subjectively perceived as approximately twice as loud (Egan 1988), as presented in Table 3.10-1. A noise level increase of 3 dBA or more is typically considered a substantial degradation of the existing noise environment.

Table 3.10-1. Subjective Reaction to Changes in Noise Levels of Similar Sources.

Change in Level (dBA)	Subjective Reaction	Factor Change in Acoustical Energy
1	Imperceptible (Except for Tones)	1.3
3	Just Barely Perceptible	2.0
6	Clearly Noticeable	4.0
10	About Twice (or Half) as Loud	10.0

Note: dBA = A-weighted decibels
Source: Egan 1988.

Figure 3.10-1: Typical Noise Levels.



Source: Developed by EDAW.

As sound (noise) propagates from the source to the receptor, the attenuation, or manner of noise reduction in relation to distance, depends on surface characteristics, atmospheric conditions, and the presence of physical barriers. Sound travels uniformly outward from a point source in a spherical pattern with an attenuation rate of 6 dBA per doubling of distance (dBA/DD). However, from a line source (e.g., a road), sound travels uniformly outward in a cylindrical pattern with an attenuation rate of 3 dBA/DD.

Noise Descriptors

The noise descriptors most often used when dealing with traffic, community, and environmental noise are defined below in Table 3.10-2.

Table 3.10-2. Common Noise Descriptors and their Definitions.

Descriptor	Definition
L_{max} (maximum noise level)	The maximum instantaneous noise level during a specific period of time. The L_{max} may also be referred to as the "peak (noise) level."
L_{min} (minimum noise level)	The minimum instantaneous noise level during a specific period of time.
L_{eq} (equivalent noise level)	The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}. In noise environments determined by major noise events, such as aircraft overflights, the L_{eq} value is heavily influenced by the magnitude and number of single events that produce the high noise levels.
L_{dn} (day-night noise level)	The 24-hour L_{eq} with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

Source: Caltrans 1998; Lipscomb and Taylor 1978.

Negative Effects of Noise on Humans

Negative effects of noise exposure include physical damage to the human auditory system, interference, and disease. Physical damage to the auditory system can lead to gradual or traumatic hearing loss, leading to permanent hearing damage. In addition, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal is considered dangerous. Noise may also contribute to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, noise level, and duration of exposure (Caltrans 1998).

Vibration

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Both natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment) can result in ground-borne vibration. As is the case with airborne sound, ground-borne vibration may be described by

amplitude and frequency. Vibration amplitude is typically expressed in peak particle velocity or root mean square (RMS), as in RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec).

The background vibration-velocity level typical of residential areas is approximately 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006). Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. The range of human perception of vibration is from approximately 50 VdB (the typical background vibration-velocity level) to 100 VdB (the general threshold where minor damage can occur in fragile buildings).

Construction-generated vibration can be transient, random, or continuous. Transient construction vibration is generated by blasting, impact pile driving, and wrecking balls. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment. Continuous vibration results from vibratory pile drivers, large pumps, horizontal directional drilling, and compressors. Table 3.10-3 summarizes the general human response to different levels of ground-borne vibration.

Table 3.10-3. Human Response to Different Levels of Ground-borne Vibration.

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there is an infrequent number of events per day.

Note: VdB = velocity decibels referenced to 1 μinch/sec (microinch per second) and based on the root mean square vibration velocity.
Source: FTA 2006.

Underwater Noise and In-Water Sensitivity

Noise behaves in much the same way in air and in water (WSDOT 2008). Water currents bend noise waves upward when propagated into the current and downward downstream when observed over long distances. Noise waves bend toward colder denser water. Bottom topography and underwater structures can block or refract noise waves.

Several descriptors are used to describe underwater noise (WSDOT 2008). Two common descriptors are the instantaneous peak sound pressure level (dBpeak) and the Root Mean Square (dB_{RMS}) pressure level during the impulse, sometimes referred to as the peak and RMS level, respectively. The peak pressure is the instantaneous maximum overpressure or underpressure observed during each pulse and can be presented in Pascals (Pa) or sound pressure level (SPL) in decibels (dB) referenced to a pressure of 1 micropascal (dB re: 1 μPa). The RMS level is the square root of the energy divided by the impulse duration. This level is the mean square pressure level of the pulse. It has been used by NMFS to describe disturbance-related effects (i.e., harassment) to marine mammals from underwater impulse-type noises. When evaluating potential injury impacts on fish, peak sound pressure (dB_{peak}) is often used.

Risk of injury or mortality for fish associated with noise is related to the effect of rapid pressure waves (WSDOT 2008). The main sensory organ in fish is the lateral-line system that detects low frequency (<100 Hz) particle motion in water. In fish species that are hearing specialist, the gas-filled swim bladder converts noise pressure waves to vibrations allowing the fish to detect noise and vibration (Popper and Fay 1973). Juvenile fish have less developed hearing abilities and are more sensitive to rapid pressure waves. Animal response to in-water noise depends on a number of factors, including noise level and frequency, distance, event duration, equipment type, frequency of noisy events over time, slope, topography, currents, weather, previous exposure to similar noises, hearing sensitivity, time of day, behavior during the noise event, etc. (Delaney and Grubb 2003).

Different species exhibit different hearing ranges, so appropriate noise metrics and frequency ratings should be used for each specific species if possible. Further description on the impacts of in-water noise on aquatic animals is presented in Section 3.3 *(Plants and Animals)*.

3.10.1.2 Existing Conditions

Existing Sensitive Land Uses

Land uses that are sensitive to noise and vibration are those uses where exposure would result in adverse effects (i.e., annoyance and/or structural damage), and uses where quiet is an essential element of their intended purpose (as documented in the City of Bellevue Noise Ordinance [Ordinance No. 5719]). Residences are of primary concern because of the potential for increased, prolonged exposure of individuals to both interior and exterior noise and vibration. Other noise-sensitive land uses are hospitals, convalescent facilities, parks, hotels, churches, libraries, and other uses where low interior noise levels are essential.

Noise-sensitive land uses located nearest the study area are residences along Lake Washington Boulevard NE, 99th Avenue NE, 100th Avenue NE/SE, Overlake Drive E, and Shoreland Drive SE. Because the study area is located in an urban area, a large number of receptors are located in the immediate vicinity. The closest of these receptors is approximately 50 feet from the study area boundaries, while others are located directly across the bay.

Existing Noise Sources

The study area is located in a suburban neighborhood environment along Meydenbauer Bay in the City of Bellevue. Currently, park land, residences, and limited commercial activities exist in the study area. The local noise environment is urban to suburban. Human-related noise (e.g., children playing, people talking), birds, aircraft flyovers, boats on the bay, and most vehicle traffic are the audible noise sources. Home maintenance equipment such as lawnmowers, hedge trimmers, and other power tools also are considered noise sources but are generally intermittent. Natural sounds from meteorological effects (e.g., wind rustling plants, running water) and waves are the predominant background ambient noise source along the shoreline.

3.10.1.3 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No federal plans, policies, regulations, or laws related to noise are applicable to the project alternatives. However, the Federal Transit Administration (FTA) has set forth guidelines for

maximum-acceptable vibration criteria for different types of land uses to address the human response to ground-borne vibration (FTA 2006):

- 65 VdB (referenced to 1 μin/sec and based on the RMS velocity amplitude) for land uses where low ambient vibration is essential for interior operations (e.g., hospitals, high-tech manufacturing, laboratory facilities).
- 80 VdB for residential uses and buildings where people normally sleep.
- 83 VdB for institutional land uses with primarily daytime operations (e.g., schools, churches, clinics, offices).

Standards have also been established to address the potential for ground-borne vibration to cause structural damage to buildings. These standards were developed by the Committee of Hearing, Bio Acoustics, and Bio Mechanics at the request of the EPA (FTA 2006). For fragile structures, the committee recommends a maximum limit of 0.25 in/sec PPV (FTA 2006).

State Plans, Policies, Regulations, and Laws

The Washington State Department of Transportation (WSDOT) uses the Federal Highway Administration (FHWA) Noise Abatement Criteria (NAC) to determine when noise mitigation is warranted for a project on a state or interstate highway. FHWA considers a traffic noise impact to occur if predicted peak-hour traffic noise levels approach defined by WSDOT as within 1 dBA of the NAC or exceed the NAC or substantially exceed (defined as an increase greater than 10 dBA resulting in at least 50 dBA Leq) existing levels. The FHWA and WSDOT noise rules are mentioned for reference purposes only to indicate the similarity of the Bellevue City Code (see below) to the federal and state transportation noise control program. The federal and state noise limits are not directly applicable to the project alternatives.

State Environmental Policy Act (WAC 197-11)

SEPA and its implementing regulations (WAC 197-11) mandate consideration of noise among the elements of the built environment to be considered. Specifically, the analysis and description of significant impacts in an EIS should include the types of noise, short- and long-term, that may result from the project alternatives (WAC 197-11-444).

Local Plans, Policies, Regulations, and Ordinances

City of Bellevue Comprehensive Plan

The following are the relevant goals and policies identified from the City of Bellevue Comprehensive Plan Environmental Element (City of Bellevue 2008) for noise:

- **GOAL:** To control the level of noise pollution in a manner that promotes the use, value, and enjoyment of property, sleep and repose, and a quality urban environment.
- **POLICY EN-88:** Ensure that excessive noise does not impair the permitted land use activities in residential, commercial, and industrial land use districts.
- **POLICY EN-89:** Protect residential neighborhoods from noise levels that interfere with sleep and repose through development standards and code enforcement.

- **POLICY EN-90:** Require a noise analysis for arterial improvements in residential areas if existing or projected noise levels exceed City-adopted standards, and implement reasonable and effective noise mitigation measures when appropriate.
- **POLICY EN-92:** Require new residential development to include traffic noise abatement design and materials where necessary to minimize noise impacts from arterials and freeways.

City of Bellevue

Chapter 9.18 of the BCC establishes limits on noise levels and durations permitted to cross property boundaries (City of Bellevue 1991). Allowable maximum sound levels depend on the land uses of the properties generating or receiving the noise. For this purpose, land uses where noise is generated or heard are classified according to a set of categories called Environmental Designations for Noise Abatement (EDNAs). EDNAs derive from the typical land uses and/or zoning of the noise source and typical land uses and/or zoning of the receiving property (Table 3.10-4). Class A EDNAs generally correspond to residential uses and parks; Class B EDNAs typically correspond to commercial uses; and Class C EDNAs are typically industrial or agricultural uses. Under the City of Bellevue noise regulations, traffic traveling on public roads is exempt from these limits, but they still can be used to indicate the relative impacts of traffic noise.

Table 3.10-4. Environmental Designations for Noise Abatement Levels[1].

EDNA of Noise Source[1]	EDNA of Noise Receiver (Ldn)[1]		
	Class A[2]	Class B	Class C
Class A	55/45	57	60
Class B	57/47	60	65
Class C	60/50	65	70

[1]EDNA= Environmental Designation for Noise Abatement, which is established based on specific zoning and/or land use; the three categories of sources and receivers describe the types of EDNAs defined in the rules.
[2]Between 10 p.m. and 7 a.m., noise limits are reduced 10 A-weighted decibels (dBA) for receiving properties within Class A EDNAs.
Source: Bellevue City Code, Chapter 9.18.

The City of Bellevue has established a separate set of noise limits for traffic traveling along arterial roadways, similar to the limits established for use on state highways (see below). Section 9.18.045(C) of the BCC sets noise limits for Class A EDNA receivers affected by arterial improvement projects (excluding the addition of bicycle lanes, sidewalks, or a minor widening). Noise analyses are required if the existing or proposed traffic noise levels are greater than or equal to 67 dBA, or if the improvement would cause an increase of 5 dBA or more in the hourly L_{eq}. In cases where such traffic noise levels or increases occur, measures to address noise might be considered if the average L_{dn} could be reduced to 60 dBA or lower. No arterial improvement projects are proposed; therefore, this provision would not apply.

Other City of Bellevue codes that would apply to this project are reproduced below.

BCC 9.18.020 Exemptions.

A. The following sounds are exempt from the provisions of this chapter:

> 2. Unamplified sounds created by domestic animals as permitted by BCC Title 20, or as regulated by Chapter 8.04 BCC; and

B. The following sounds are exempt from the provisions of this chapter at all times if the receiving property is in Class B and Class C EDNAs, and between the hours of 7:00 a.m. and 10:00 p.m. on weekdays and 9:00 a.m. and 10:00 p.m. on weekends if the receiving property is located in a Class A EDNA:

> 3. Sounds relating to temporary repair, addition or maintenance projects on existing single-family homes, grounds and appurtenances (except that sounds created by heavy equipment will be regulated pursuant to the construction noise exemption contained in subsection C of this section); and
>
> 6. Sounds created by commercial business activity including, but not limited to: handling containers and materials; or sweeping parking lots and streets (except sweeping parking lots of businesses engaged in retail trade as defined in the Standard Industrial Classification Manual is exempt until 12:00 midnight); or boarding domestic animals (except expanded hours of operation may be authorized by the applicable department director).

C. Sounds created by construction and emanating from construction sites are exempt from the provisions of this chapter 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 which are not legal holidays. Sounds emanating from construction sites on Sundays or legal holidays or outside of the exempt work hours are prohibited pursuant to BCC 9.18.040 unless expanded hours of operation are authorized by the applicable department director subject to the following criteria. Approval of expanded exempt hours may be authorized if:

> 1. Necessary to accommodate transportation mitigation such as evening haul routes; construction on schools and essential government facilities which cannot be undertaken during exempt hours; construction activities and site stabilization in the fall prior to the onset of winter weather; or emergency work; or
>
> 2. Sounds created by construction will not exceed the maximum permissible environmental noise levels contained in BCC 9.18.030 as verified by sound level monitoring conducted before and during construction by a qualified acoustic consultant.

E. Sounds originating from public parks, playgrounds, and recreation areas are exempt from the provisions of this chapter during the hours the parks, playgrounds or recreation areas are open for public use as established under Chapter 3.43 BCC, as now existing or hereafter amended and modified.

BCC 9.18.044 Posting notice of construction hours – When required.

A sign providing notice of the limitation on construction hours contained in BCC 9.18.020C shall be posted on construction sites prior to commencement of any new commercial or single-family construction or commercial addition. Notice signs are not required prior to commencement of additions or maintenance to existing single-family homes. The director of the department of planning and community development shall establish standards for size, color, layout, design, wording and placement of the signs.

3.10.2 Impacts

3.10.2.1 Methods

This noise analysis is based on guidance provided by WAC 197-11-960 (SEPA environmental checklist) regarding the identification, characterization, and mitigation of noise impacts. Noise experts assessed potential noise impacts from construction and operational activities on sensitive receptors within and near the study area. Noise (and vibration) levels of possible equipment anticipated during construction and operations were determined, and resultant noise levels at sensitive receptors were calculated assuming documented noise (vibration) attenuation rates. These results were compared to exterior noise standards established by the state of Washington, King County, and the City of Bellevue. Unless otherwise stated, standards for interior noise levels were determined to not be exceeded if exterior noise-level standards are achieved because buildings commonly provide sufficient exterior-to-interior noise reduction.

The type, degree, and significance of potential impacts on noise resources were assessed based on the federal, state, and local regulations and policies, as described in Section 3.10.1.3 (*Regulatory Setting*). A significant noise impact would be one that is reasonably likely to result in a more than moderate adverse noise impact based on exceeding applicable exterior noise standards or substantially increasing ambient noises levels. According to these criteria, implementation of Meydenbauer Bay Park and Land Use Plan would have a direct adverse effect related to noise if it would:

- Generate a substantial, temporary increase in ambient noise levels (+5 dBA) in the study area and vicinity above existing levels.
- Generate a substantial, permanent increase in ambient noise levels (+5 dBA) in the study area and vicinity above existing levels.
- Expose persons to, or generate, noise levels in excess of standards established by state and local agencies (see Table 3.10-4).
- Expose persons to, or generate, excessive ground-borne vibration or ground-borne noise levels.

3.10.2.2 No-Action Alternative

Short-Term Construction Noise

The intensity of short-term temporary construction activities under the No-Action Alternative would vary over the duration of implementing the Meydenbauer Bay Park and Land Use Plan. Under the No-Action Alternative, residential and commercial redevelopment is proposed on upland parcels, and parks and public facilities redevelopment is proposed on park parcels.

Future project construction associated with the park redevelopment includes the removal of residential structures and the addition of limited park amenities, such as a shoreline pathway linking the existing beach park to 99th Avenue NE. Future project construction associated with the residential/commercial redevelopment includes the removal of a Chevron gas station that most likely would be redeveloped as medium-density residential above-street-level retail. The Brant property on the northeast corner of Main Street and 99th Avenue NE likely would be similarly redeveloped at a smaller scale, consistent with the parcel size. These areas are adjacent to multi-family and single-family residences that are Class A zoned areas.

Typical construction equipment for these types of activities may include, but is not limited to, excavators, tractors, trucks, scrapers, graders, and pavers. Noise resulting from these large pieces of equipment could range from 74 to 89 dBA L_{eq} at 50 feet from the source (FTA 2006). Calculating 10 hours of work at 80 dBA L_{eq} equates to approximately 76 dBA L_{dn} at 50 feet. Construction noise levels would exceed 57 dBA L_{dn} and would violate the EDNA noise limits established by the City of Bellevue for Class A zoned areas. The City of Bellevue under BCC 9.18.020 exempts construction activities from EDNA standards 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. Construction noise is not exempt from applicable standards on Sundays and legal holidays. Construction-generated noise could result in annoyance and exposure of sensitive receptors (e.g., local residences) to substantial noise levels. Construction activities would typically occur during exempted hours, unless otherwise authorized, and measures listed in Section 3.10.3 would reduce noise in the surrounding environment. With appropriate measures, construction noise would not have a significant adverse effect on nearby residents, parks, and businesses in the study area.

Long-Term Operational Noise

Under the No-Action Alternative, long-term operation noise is associated with the park and residential/commercial redevelopment. Potential sources of noise associated with park redevelopment within the study area would include motor vehicle use, maintenance activities, and visitor activities such as picnicking, swimming, and boating. Noise associated with these activities could include but is not limited to vehicle noise (e.g., tires, brakes, engine acceleration), landscape maintenance equipment (e.g., hand and power tools), visitor-related noise (e.g., opening and closing of doors, people talking, yelling, music playing.), and boat engines. Potential sources of noise associated with residential/commercial redevelopment within the study area include new residents and retail and business activities. However, the limited redevelopment would have a nominal incremental increase to the existing ambient noise.

Future development and improvements would generate additional visitors and residents within the study area. Subsequently, traffic volumes and the associated noise (e.g., tires, brakes, engines acceleration) along roadways (e.g., Lake Washington Boulevard, Main Street, Meydenbauer Way, NE First Street) around the study area would increase. To increase noise a substantial amount (+3 dBA) above baseline traffic levels, trips related to the project would need to double baseline traffic quantities. No-Action Alternative traffic is currently estimated at 5,760 daily trips. In addition, as stated in Section 3.9 (*Transportation*), no adverse effect on traffic flow would result from the No-Action Alternative. Thus, long-term traffic-related noise would not substantially increase noise levels or exceed noise levels established by the City of Bellevue.

Operational noise related to maintenance, equipment operations, residents, and visitors would occur mostly in the parking lots, picnic areas, the marina, and redeveloped residential/ commercial areas where noise-producing activities would be localized. Noise emanating from most of these activities would be intermittent and minimal and occur during less-sensitive daytime hours, when the future Meydenbauer Bay Park is open for day-use recreation. Noise from motorboats would be 59 dBA L_{eq} at 120 feet (Latorre and Vasconcellos 2001), the distance of the nearest sensitive receptor to the marina. Noise levels from landscaping would be 80 dBA L_{eq} at 10 feet (EDAW 1997), the distance of the nearest sensitive receptor to landscaped areas. Both motorboats and landscaping equipment would exceed applicable thresholds (57 dBA L_{dn}) for EDNA A zoned parcels and, as a result, could cause annoyance and sleep disturbance if they were to occur during more sensitive night hours.

Noise associated with Meydenbauer Bay Park is exempt from EDNA noise standards under BCC 9.18.020 C during normal park hours (i.e., dawn to dusk), and the local police jurisdiction would typically enforce quiet hours from 10:00 p.m. to 7:00 a.m. to reduce sleep disturbance and annoyance. Noise from maintenance and equipment operations is exempt under BCC 9.18.020 C and would also occur during daylight hours when employees are performing their duties. Thus, since noise-producing activities would be exempt during daylight hours, restricted by local city code during night time hours, and enforced by local police; sleep disturbance, human annoyance, and noise in excess of applicable standards would be mitigated to less-than-significant levels.

Noise produced by long-term traffic and operational activities would be minimal and would occur mostly during less-sensitive daylight hours. Exposure of sensitive receptors is not expected to exceed standards established by the City of Bellevue, and exposure would be similar to existing conditions. There would be no direct adverse effect on noise levels associated with the No-Action Alternative.

Exposure of Sensitive Receptors to Excessive Ground-borne Vibration

Long-term project operation under the No-Action Alternative would not include any major sources of vibration. However, construction activities could result in varying degrees of temporary ground-borne vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Using FTA's recommended procedure (FTA 2006) for applying a propagation adjustment to these reference levels, predicted worst-case vibration levels would exceed 80 VdB (FTA's maximum-acceptable vibration standard with respect to human annoyance for sensitive uses) within 40 feet of vibration-sensitive receptors. It is not anticipated that sensitive receptors would be located within 40 feet of active construction projects. Thus, the No-Action Alternative would not expose any sensitive receptors to excessive levels of vibration and would not have an adverse effect on ground-borne vibration and noise.

3.10.2.3 Alternative 1

Short-Term Construction Noise

As in the No-Action Alternative, under Alternative 1, short-term construction intensity would vary over the duration of development within the study area. Short-term construction noise under Alternative 1 would be similar to the No-Action Alternative. However, the overall development would be much greater and include additional acreage and buildings along Lake Washington. The heaviest activity would occur in the portion of the study area where demolition and park infrastructure, such as parking lots, miscellaneous visitor facilities (e.g., restrooms and community building) and residential, commercial, and retail buildings in the redeveloped areas, would be constructed. Short-term construction for Alternative 1 would include the construction of sidewalk and trail networks, roadway removal, piers, picnic areas, landscaping, and the education center and community building. The redevelopment areas would include the construction of commercial, retail, and residential buildings.

Typical equipment for these types of activities may include but is not limited to excavators, tractors, trucks, scrapers, graders, cranes, and pavers. Noise resulting from these large pieces of equipment could range from 74 to 89 dBA L_{eq} at 50 feet from the source (FTA 2006). Calculating 10 hours of work at 80 dBA L_{eq} equates to approximately 76 dBA L_{dn} at 50 feet.

Therefore, since construction activities would be approximately 50 feet from residences along Lake Washington Boulevard, Main Street, Meydenbauer Way SE, 99th Avenue NE, 100th Avenue NE, and NE 1st Street. Similar to the No-Action Alternative, Alternative 1 construction noise levels adjacent to and in the study area would exceed 57 dBA L_{dn} and would violate the EDNA noise limits established by the City of Bellevue for Class A zoned areas.

The City of Bellevue under BCC 9.18.020 exempts construction activities 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. Construction noise is not exempt from applicable standards on Sundays and legal holidays. Construction-generated noise could result in annoyance and exposure of sensitive receptors (e.g., local residences) to substantial noise levels. However, construction activities would typically occur during exempted hours, unless otherwise authorized, and measures listed in Section 3.10.3 would reduce noise in the surrounding environment. With appropriate measures, construction noise would not have a significant adverse effect on nearby residents, parks, and businesses in the study area.

Long-Term Operational Noise

Potential sources of noise associated with park improvements and future redevelopment within the study area would include motor vehicle use; maintenance activities; commercial, retail, and residential activities; and visitor activities such as picnicking, swimming, fishing, and boating.

Noise associated with these activities could include but is not limited to vehicle noise (e.g., tires, brakes, engine acceleration), heating ventilation air conditioning (HVAC) system operations, outdoor patios, garbage collection, landscape maintenance equipment (e.g., hand and power tools), human-related noise (e.g., opening and closing of doors, people talking, yelling, music playing, etc.), and boat engines. These noise levels are expected to be higher under Alternative 1 relative to the No-Action Alternative given the level of park and residential/commercial redevelopment proposed and subsequent user activity expected.

Future development and improvements would generate additional visitors and residents within the study area. Subsequently, traffic volumes and the associated noise (e.g., tires, brakes, engines acceleration) along roadways (e.g., Lake Washington Boulevard, Main Street, Meydenbauer Way, NE First Street) around the study area would increase. To increase noise a substantial amount (+3 dBA) above baseline traffic levels, trips related to the project would need to double baseline traffic quantities. Alternative 1 traffic is currently estimated as 760 daily trips above baseline, which would not double the baseline traffic level from the No-Action Alternative (5,760 daily trips). In addition, as stated in Section 3.9 (*Transportation*), no adverse effect on traffic flow would result from Alternative 1. Thus, long-term traffic-related noise would not substantially increase noise levels or exceed noise levels established by the City of Bellevue.

The majority of noise related to the redevelopment of upland parcels on Lake Washington Boulevard, Main Street, Meydenbauer Way, and NE 1st Street would be from traffic. However, other potential area noise sources would include (but not be limited to) outdoor patios and balconies, restaurants, music playing, and general human-related noise (e.g., doors closing, people talking). Noise from these residential and commercial areas would be similar to what would exist under the No-Action Alternative and would occur mostly during daytime hours when people and businesses are active. Therefore, it is not anticipated that area noise sources

related to upland redevelopment parcels would exceed applicable noise standards or result in human annoyance.

Operational noise related to park maintenance, equipment operations, and visitors would occur mostly in the parking lots, picnic areas, and the marina, where noise-producing activities would be centralized. Noise emanating from most of these activities would be intermittent and minimal and occur during less-sensitive daytime hours when Meydenbauer Beach Park is open for day-use recreation. Noise from motorboats would be 59 dBA L_{eq} at 120 feet (Latorre and Vasconcellos 2001), the distance of the nearest sensitive receptor to the marina. Noise levels from landscaping would be 80 dBA L_{eq} at 10 feet (EDAW 1997), the distance of the nearest sensitive receptor to landscaped areas. Both motorboats and landscaping equipment would exceed applicable thresholds (57 dBA L_{dn}) for EDNA A zoned parcels and, as a result, could cause annoyance and sleep disturbance if they were to occur during more sensitive night hours.

Noise associated with Meydenbauer Bay Park is exempt from EDNA noise standards under BCC 9.18.020 C during normal park hours, and the local police jurisdiction would typically enforce quiet hours from 10:00 p.m. to 7:00 a.m. to reduce sleep disturbance and annoyance. Noise from maintenance and equipment operations is exempt under BCC 9.18.020 C and would also occur during daylight hours when employees are performing their duties. Thus, since noise-producing activities would be exempt during daylight hours, restricted by local city code during night time hours, and enforced by local police; sleep disturbance, human annoyance, and noise in excess of applicable standards would be mitigated to less-than-significant levels.

Exposure of Sensitive Receptors to Excessive Ground-borne Vibration

Long-term operation under Alternative 1 would not include any major sources of vibration. However, construction activities could result in varying degrees of temporary ground-borne vibration, depending on the specific construction equipment used and operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. Using FTA's recommended procedure (FTA 2006) for applying a propagation adjustment to these reference levels, predicted worst-case vibration levels would exceed 80 VdB (FTA's maximum-acceptable vibration standard with respect to human annoyance for sensitive uses) within 40 feet of vibration-sensitive receptors. It is not anticipated that sensitive receptors would be located within 40 feet of active construction projects, and no vibrations would occur during nighttime hours (see Section 3.10.3, *Mitigation Measures*). Thus, Alternative 1 would not expose any sensitive receptors to excessive levels of vibration and would have no effect from ground-borne vibration and noise.

Alternative 1A – Road Open Variant

Short-Term Construction Noise

The exposure of sensitive receptors to short-term construction noise under Alternative 1A would be similar to as described under Alternative 1. Exact construction activities and locations may differ under Alternative 1A. However, the overall intensity and duration would be similar to Alternative 1. Therefore, daily noise levels would be similar, with similar measures required. With these measures, Alternative 1A would not expose any sensitive receptors to excessive noise levels, exceed applicable thresholds, and would have no short-term significant adverse effect on noise levels in the vicinity of the study area.

Long-Term Operational Noise

The exposure of sensitive receptors to long-term operational noise under Alternative 1A would be similar to Alternative 1. Under Alternative 1A, 100th Avenue SE would remain open. Noise resulting from keeping 100th Avenue SE would be similar to Alternative 1. Traffic would not double as a result of Alternative 1A and, thus, would not increase noise a substantial amount (+3 dBA). Area noise sources related to the park and upland redevelopment areas would be consistent with the descriptions provided under Alternative 1. Alternative 1A would not expose any sensitive receptors to excessive noise levels, exceed applicable thresholds, and would have no long-term adverse effect on noise levels in the vicinity of the study area.

Exposure of Sensitive Receptors to Excessive Ground-borne Vibration

The exposure of sensitive receptors to excessive ground-borne vibration under Alternative 1A would be the same as described under Alternative 1. Thus, Alternative 1A would not expose any sensitive receptors to excessive levels of vibration and would have no adverse effect from ground-borne vibration and noise.

3.10.2.4 Alternative 2

Short-Term Construction Noise

The exposure of sensitive receptors to short-term construction noise under Alternative 2 would be similar to as described under Alternative 1. Exact construction activities and locations may differ under Alternative 2. However, the overall intensity and duration would be similar to Alternative 1; therefore, daily noise levels would be similar. Measures listed under Section 3.10.3 would also be required for Alternative 2. Thus, with implementation of these measures, Alternative 2 would not expose any sensitive receptors to excessive noise levels, exceed applicable thresholds. With appropriate measures, construction noise would not have a significant adverse effect on nearby residents, parks, and businesses in the study area.

Long-Term Operational Noise

The exposure of sensitive receptors to long-term operational noise under Alternative 2 would be similar to that described under Alternative 1.

Alternative 2 traffic is currently estimated as 1,230 daily trips above baseline. As in Alternative 1, this level would not double existing baseline traffic levels from the No-Action Alternative (5,760 daily trips), and would represent a small percentage of the overall daily trips in the vicinity of the study area. In addition, as stated in Section 3.9 (*Transportation*), no adverse effect on traffic flow would result from Alternative 2; this supports the conclusion that the increased traffic and related noise would be negligible. Area noise sources related to the park and upland redevelopment areas would be consistent with the descriptions provided under Alternative 1. Thus, Alternative 2 would not expose any sensitive receptors to excessive noise levels, exceed applicable thresholds, and would have no long-term adverse effect on noise levels in the vicinity of the study area.

Exposure of Sensitive Receptors to Excessive Ground-borne Vibration

The exposure of sensitive receptors to excessive ground-borne vibration under Alternative 2 would be the same as described under Alternative 1. Thus, Alternative 2 would not expose any

sensitive receptors to excessive levels of vibration and would have no adverse effect from ground-borne vibration and noise.

Alternative 2A – Road Open Variant

Short-Term Construction Noise

The exposure of sensitive receptors to short-term construction noise under Alternative 2A would be similar to as described under Alternative 1A. Exact construction activities and locations may differ under Alternative 2A. However, the overall intensity and duration would be similar to Alternative 1; therefore, daily noise levels would be similar. Measures listed under section 3.10.3 would also be required for Alternative 2A. Thus, with implementation of these measures, Alternative 2A would not expose any sensitive receptors to excessive noise levels, exceed applicable thresholds, and would have no significant short-term effect on noise levels in the vicinity of the study area.

Long-Term Operational Noise

The exposure of sensitive receptors to long-term operational noise under Alternative 2A would be the same as described under Alternative 1A. Noise levels resulting from keeping 100th Avenue SE open would be similar to existing levels and would not increase a substantial amount. Area noise sources related to the park and upland redevelopment areas would be consistent with the descriptions provided under Alternative 1A. Thus, Alternative 2A would not expose any sensitive receptors to excessive noise levels, exceed applicable thresholds, and would have no long-term adverse effect on noise levels in the vicinity of the study area.

Exposure of Sensitive Receptors to Excessive Ground-borne Vibration

The exposure of sensitive receptors to excessive ground-borne vibration under Alternative 2A would be the same as described under Alternative 1. Thus, Alternative 2A would not expose any sensitive receptors to excessive levels of vibration and would have no adverse effect from ground-borne vibration and noise.

3.10.3 Mitigation Measures

Under existing regulations, the City of Bellevue will require future development projects to incorporate the following mitigation measures during construction under all alternative to reduce short-term construction noise levels:

- Construction equipment shall be properly maintained and equipped with noise control, such as mufflers, in accordance with manufacturers' specifications.
- Construction activities shall be limited to between 7:00 a.m. and 6:00 p.m. on weekdays and 9:00 a.m. and 6:00 p.m. on Saturdays, during which time such activities are exempt from applicable standards.
- Construction equipment shall be arranged to minimize travel adjacent to occupied residences, and turned off during prolonged periods of non-use (longer than 10 minutes).
- Construction equipment shall be staged, and construction employee parking shall be located in designated areas only.

These measures would reduce human disturbance and restrict noise-producing construction activities to less-sensitive daytime hours. These actions would reduce human annoyance and sleep disturbance, and restrict activities to the hours when there is more activity in the area. As a result, short-term construction noise under program implementation would not create a significant adverse effect on noise levels in the study area and surrounding vicinity. No impacts associated with operation are anticipated; therefore, no additional mitigation would be required.

3.10.4 Summary of Impacts

Implementation of the project alternatives would have relatively insignificant potential noise-related impacts. Impacts could potentially occur both over the short term (associated with construction activities), as well as the long term (associated with changes to site noise sources).

In the short term, construction-activities resulting from heavy-equipment operations could temporarily impact noise levels in the study area. These potential impacts can be controlled and minimized by using properly maintained construction equipment and enforcing City code on restricted hours of operations. The potential for construction-related impacts would be slightly more pronounced under the action alternatives relative to the No-Action Alternative, given the greater level of development proposed; however, such impacts are considered slight and insignificant under all project alternatives.

Over the long term, noise would be created by additional vehicles related to increased visitation and residents, commercial activities, and increased recreation. These noise sources would be similar to existing conditions, and it is likely that noise in the study area would remain constant or increase or decrease slightly depending on the day and the amount of activity at the park and at the new commercial areas. For this reason, the potential for impacts to affect noise in the study area would be slightly more pronounced under the action alternatives relative to the No-Action Alternative, given the greater level of development proposed; however, such impacts are considered slight and insignificant under all project alternatives.

In summary, no significant unavoidable adverse noise-related impacts are expected to occur as a result of the project alternatives.

3.11 AIR QUALITY

3.11.1 Affected Environment

This section describes existing conditions related to air quality within the study area. Air quality in the City of Bellevue is under the jurisdiction of the EPA, Ecology, and the Puget Sound Clean Air Agency (PSCAA). This section presents a description of ambient air quality, monitoring station data, and regulatory standards for the study area.

3.11.1.1 Existing Conditions

Air quality in the Puget Sound region is influenced by two major factors: meteorological conditions and pollutant emissions. Meteorological factors such as wind speed, atmospheric stability, and mixing height affect the atmosphere's ability to transport and disperse pollutants. Solar radiation (sunlight) affects photochemical oxidant production in the atmosphere. These meteorological factors are all influenced by topography. Frequent short-term variations in air quality usually result from changes in atmospheric conditions. Long-term variations in air quality typically result from changes in pollutant emission rates.

The build-up of local air pollutants (e.g., carbon monoxide [CO] and particulate matter less than 10 microns in diameter [PM_{10}]) occurs during periods of air stagnation, when poor atmospheric dispersion conditions exist and persist for 24 hours or longer. These conditions are characterized by light winds and temperature inversions, occurring in the late fall, winter, and early spring. During the summer, regional pollutants (nitrogen oxides [NOx] and volatile organic compounds [VOCs]) combine and react in the presence of sunlight to form ground-level ozone. Sunny conditions with strong subsidence inversions are most favorable to the formation of high ground-level ozone concentrations.

Criteria Air Pollutants, Monitoring Data, and Current Attainment Designations

Concentrations of the following air pollutants are used as indicators of ambient air quality conditions: ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM_{10}, fine particulate matter ($PM_{2.5}$), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health, and extensive health-effects criteria documents are available, they are commonly referred to as "criteria air pollutants."

Ambient air quality is measured in the Puget Sound region by PSCAA and Ecology. Table 3.11-1 presents the most recent air quality data and lists the background levels for the study area and vicinity. While some of the stations are located outside the City of Bellevue, in general, the ambient air quality measurements are representative of the air quality in the region of the study area. Table 3.11-1 summarizes the air quality data from these stations for the most recent 3 years that data were available, 2005 through 2007.

Ambient air quality standards were not exceeded at the closest monitoring stations for ozone, $PM_{2.5}$, PM_{10}, and CO during the period from 2005 to 2007 (PSCAA 2007). Other criteria pollutants are not currently monitored because they meet air quality standards and the region is designated as in attainment for them.

Table 3.11-1. Summary of Annual Ambient Air Quality Data (2005–2007).

	2005	2006	2007
Ozone[1]			
Maximum concentration (1-hr/8-hr, ppm)	0.056/0.043	0.046/0.033	-/0.051
Number of days national standard exceeded (1-hr/8-hr)	0/0	0/0	-/0
Fine Particulate Matter ($PM_{2.5}$)[2]			
Maximum concentration ($\mu g/m^3$)	31	35	37
Number of days national standard exceeded	0	0	0
Respirable Particulate Matter (PM_{10})[2]			
Maximum concentration ($\mu g/m^3$)	91	71	60
Number of days national standard exceeded	0	0	0
Carbon Monoxide (CO)[3]			
Maximum concentration (1-hr/8-hr, ppm)	5.9/4.0	5.1/3.7	3.9/2.7
Number of days national standard exceeded (8-hr)	0	0	0

Where, ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; - = data not available.

[1] Measurements were recorded at the 15th Street and Charlestown, Seattle monitoring station.

[2] Measurements were recorded at the 4752 E Marginal Way, Seattle monitoring station.

[3] Measurements were recorded at the 148th Avenue NE, Bellevue monitoring station.

Source: PSCAA 2005, 2006, 2007.

EPA uses these types of monitoring data to designate areas according to attainment status for criteria air pollutants. The purpose of these designations is to identify those areas with air quality problems and thereby initiate planning efforts to improve air quality. The three basic designation categories are nonattainment, attainment, and unclassified. The unclassified designation is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. Maintenance is a subcategory of nonattainment where the area has met attainment goals, but not yet been officially designated as attainment. It is an interim status for areas that have met National Ambient Air Quality Standards (NAAQS) but are in the process of sustaining NAAQS before being designated as attainment. King County is currently a non-attainment area for PM_{10} and a maintenance area for CO. King County is either designated as attainment or unclassified for all remaining NAAQS (EPA 2009a).

Hazardous Air Pollutants

Hazardous air pollutants (HAPs) are defined as air pollutants that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. HAPs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health, even at low concentrations.

According to the California Almanac of Emissions and Air Quality (ARB 2008), the majority of the estimated health risk from HAPs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM). Diesel PM differs from other HAPs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition,

lubricating oil, and whether an emission control system is present. Sources of HAPs near the study area would be Interstate 405 and any major arterials roadways (e.g., Belleview Way) that have a consistent haul truck population.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The occurrence and severity of odor impacts is subjective and depends on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Odor sources in the study area and vicinity would include fast food restaurants, decaying organic matter along the water, and any waste receptacles such as dumpsters.

Greenhouse Gases

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected back toward space. The absorbed radiation is then emitted from the earth, not as high-frequency solar radiation, but lower frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency (longer wavelength) radiation. Most solar radiation passes through GHGs; however, infrared radiation is selectively absorbed by GHGs. As a result, infrared radiation released from the earth that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the "greenhouse effect," is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is extremely unlikely that global climate change over the past 50 years can be explained without the contribution from human activities (IPCC 2007).

Impacts of GHGs are borne globally, compared to the localized or regional air quality effects of criteria air pollutants and HAPs. The quantity of GHGs that it takes to ultimately effect climate change is not precisely known; nonetheless, the quantity is enormous, and no single project would be expected to measurably contribute to a noticeable incremental change in the global average temperature, or to global, local, or microclimate.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (EPA 2009b). Emissions of CO_2 are byproducts of fossil fuel combustion.

CH_4, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) largely associated with agricultural practices and landfills. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through photosynthesis and dissolution, respectively, two of the most common processes of CO_2 sequestration.

3.11.1.2 Regulatory Setting

Air quality in the study area is under the jurisdiction of the EPA, Ecology, and the PSCAA. The PSCAA is the local air pollution control agency serving King, Kitsap, Pierce, and Snohomish counties. Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

State Environmental Policy Act

As described in more detail in Section 3.1.1.2 (*Regulatory Setting*), SEPA requires all governmental agencies to consider the environmental impacts of a proposed action before making decisions.

Criteria Air Pollutants

At the federal level, the EPA implements national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970 and most recently amended in 1990 by the Clean Air Act Amendments (CAAA). Ecology is the agency responsible for coordination and oversight of state and local air pollution control programs in Washington and for implementing the Washington Clean Air Act (WCAA).

The EPA has established NAAQS for the criteria air pollutants, the six most prevalent air pollutants known to be deleterious to human health: CO, $PM_{10,}$ ozone, SO_2, NO_2, and lead. For these pollutants, federal law requires meeting the national primary standards that protect health and establishes deadlines for states to develop and implement plans to achieve and maintain air quality standards. Ecology and PSCAA have also established state and local ambient air quality standards for the six criteria pollutants; these standards are at least as stringent as the national standards. Table 3.11-2 summarizes the federal, state, and local ambient air quality standards.

PSCAA attains and maintains air quality conditions in King County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The clean air strategy of PSCAA includes the preparation of plans and programs for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. PSCAA also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA, CAAA, and WCAA. All projects are subject to adopted PSCAA rules and regulations in effect at the time of construction. Specific rules applicable to the project alternatives may include, but are not limited to: Rule 3.04 "Reasonably Available Control Technology," Article 6 "New Source Review," Article 7 "Operating Permits," and Rule 9.15 "Fugitive Dust Control Measures."

Table 3.11-2. Ambient Air Quality Standards.

	National		Washington	
Pollutant	**Primary**	**Secondary**	**State**	**PSCAA**
Carbon Monoxide (CO)				
8-Hour Average [a]	9 ppm	—	9 ppm	9 ppm
1-Hour Average [a]	35 ppm	—	35 ppm	35 ppm
Particulate Matter (PM_{10})				
Annual Arithmetic Average [b]	50 $\mu g/m^3$	50 $\mu g/m^3$	50 $\mu g/m^3$	50 $\mu g/m^3$
24-Hour Average [c]	150 $\mu g/m^3$	150 $\mu g/m^3$	150 $\mu g/m^3$	150 $\mu g/m^3$
Particulate Matter ($PM_{2.5}$)				
Annual Arithmetic Average [d]	15 $\mu g/m^3$	15 $\mu g/m^3$	—	15 $\mu g/m^3$
24-Hour Average [e]	65 $\mu g/m^3$	65 $\mu g/m^3$	—	65 $\mu g/m^3$
Ozone				
8-Hour Average [f]	0.08 ppm	0.08 ppm	-	0.08 ppm
1-Hour Average	0.12 ppm	0.12 ppm	0.12 ppm	0.12 ppm
Sulfur Dioxide (SO_2)				
Annual Average [g]	0.030 ppm	—	0.02 ppm	0.02 ppm
24-Hour Average [g]	0.14 ppm	—	0.10 ppm	0.10 ppm
3-Hour Average [a]	—	0.50 ppm	—	—
1-Hour Average [h]	—	—	0.25 ppm	0.25 ppm
1-Hour Average [g]	—	—	0.40 ppm	0.40 ppm
Lead (Pb)				
Calendar Quarter Average [g]	1.5 $\mu g/m^3$	1.5 $\mu g/m^3$	-	-
Nitrogen Dioxide (NO_2)				
Annual Average [g]	0.053 ppm	0.053 ppm	0.05 ppm	0.053 ppm

ppm = parts per million (volumetric)

$\mu g/m^3$ = micrograms per cubic meter

[a] Not to be exceeded more than once per year.

[b] Standard attained when the 3-year average of the annual arithmetic mean concentration, as determined in accordance with 40 Code of Federal Regulations (CFR) Part 50, Appendix N, is less than or equal to 50 $\mu g/m^3$.

[c] Standard attained when the 3-year average of the 99th percentile 24-hour average concentration is above 150 $\mu g/m^3$, as determined in accordance with 40 CFR Part 50, Appendix I.

[d] Standard attained when the 3-year average of the annual arithmetic mean concentration, as determined in accordance with 40 CFR Part 50, Appendix N, is less than or equal to 15.0 $\mu g/m^3$.

[e] Standard attained when the 3-year average of the 98th percentile 24-hour average concentration, as determined in accordance with 40 CFR Part 50, Appendix N, is less than or equal to 65 $\mu g/m^3$.

[f] Standard attained when the 3-year average of the annual fourth-highest daily maximum 8-hour average concentration is less than or equal to 0.08 ppm, as determined in accordance with 40 CFR Part 50, Appendix I.

[g] Never to be exceeded.

[h] Not to be exceeded more than twice on seven consecutive days.

Source: EPA 2009 (Federal); WAC 173-470 to 475 (State); PSCAA 2005 (local).

Hazardous Air Pollutants

EPA has programs for identifying and regulating HAPs. Title III of the CAAA directed EPA to promulgate national emissions standards for HAPs (NESHAP). Major sources of NESHAPs are defined as stationary sources with potential to emit more than 10 tons per year (TPY) of any HAP or more than 25 TPY of any combination of HAPs; all other sources are considered area sources. The CAAA called on EPA to promulgate emission standards in two phases. In the first phase (1992–2000), EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring Maximum Achievable Control Technology (MACT). For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), EPA is required to promulgate health risk–based emissions standards where deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The CAAA also required EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum for benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAAA required the use of reformulated gasoline in selected areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

At the local level, air quality agencies may adopt and enforce control measures. Under PSCAA Regulation III, all sources that possess the potential to emit HAPs are required to obtain permits from the district. PSCAA limits emissions and public exposure to HAPs through a number of programs and prioritize HAP-emitting stationary sources based on the quantity and toxicity of the HAP emissions and the proximity of the facilities to sensitive receptors.

Odors

Neither the state nor the federal governments have adopted any rules or regulations for the control of odors sources. However, the PSCAA has adopted Rule 9.11b that specifically addresses nuisance associated with odors.

Climate Change

On April 2, 2007, the U.S. Supreme Court ruled that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. However, there are no federal regulations or policies regarding GHG emissions applicable to the project alternatives at this time.

Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Washington state has taken significant actions to address climate change, including the signing of Executive Order 07-02 by Governor Gregoire that established the following GHG reduction goals for the state of Washington:

- By 2020, reduce greenhouse gas emissions in the state of Washington to 1990 levels, a reduction of 10 million metric tons below 2004 emissions.

- By 2035, reduce greenhouse gas emissions in the state of Washington to 25 percent below 1990 levels, a reduction of 30 million metric tons below 2004.

- By 2050, the state of Washington will do its part to reach global climate stabilization levels by reducing emissions to 50 percent below 1990 levels or 70 percent below our expected emissions that year, an absolute reduction in emissions of nearly 50 million metric tons below 2004.

- By 2020, increase the number of clean energy sector jobs to 25,000 from the 8,400 jobs we had in 2004.

- By 2020, reduce expenditures by 20 percent on fuel imported into the state by developing Washington resources and supporting efficient energy use.

In Executive Order 07-02, Governor Gregoire further ordered the Washington Climate Change Challenge group to address the following elements and process steps:

- Consider the full range of policies and strategies for the state of Washington to adopt or undertake to ensure that the economic and emission reductions goals are achieved, including policy options that can maximize the efficiency of emission reductions, including market-based systems, allowance trading, and incentives.

- Determine specific steps the state of Washington should take to prepare for the impact of global warming, including impacts on public health, agriculture, the coast line, forestry, and infrastructure.

- Assess what further steps the state of Washington should take to be prepared for the impact of global warming to water supply and management.

- Initiate active involvement by the state of Washington in the development of regional and national climate policies and coordination with British Columbia.

- Recommend how the state of Washington, as an entity, can reduce its generation of greenhouse gas emissions.

- Work with local governments to maximize coordination and effectiveness of local and state climate initiatives.

- Inform the general public of the process, solicit comments and involvement, and develop recommendations for future public education and outreach.

While at this time no legislation has been passed that specifically addresses GHGs, two bills are currently proposed in the Washington Legislature. House Bill 1819 proposes a cap on emissions of GHG, and Senate Bill 5735 proposes a voluntary state emissions reductions program.

3.11.2 Impacts

3.11.2.1 Methods

This air quality analysis is based on guidance provided by WAC 197-11-960 (SEPA environmental checklist) regarding identification, characterization, and mitigation of air quality impacts. Analysis is based on well-developed standards and analysis methods for air quality impacts from NAAQS criteria pollutants. The methodology used in this analysis compares the emissions of the alternatives so that the public and decision-makers have reasonable information about the relative air quality effects of the alternatives, even where there are no standards for determining impacts. Air quality experts assessed potential impacts from construction and operational activities within and near the study area. Short- and long-term emissions of criteria air pollutants (i.e., ozone, PM_{10}, and CO), HAPs, and odors for construction and operational activities under the three alternatives are described below in accordance with the policies and rules of PSCAA, Ecology, and the EPA for program level documents.

The type, degree, and significance of potential impacts on air quality were assessed based on the federal, state, and local regulations and policies, as described in Section 3.11.1.2 (*Regulatory Setting*). A significant air quality impact would be one that is reasonably likely to result in a more than moderate adverse air quality impact based on exceeding applicable criteria. According to these criteria, implementation of the project alternatives for Meydenbauer Bay Park and Land Use Plan would have a direct adverse effect on air quality if they would:

- Conflict with or obstruct the implementation of an applicable air quality plan.
- Violate any air quality standards or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

3.11.2.2 No-Action Alternative

Short-Term Emissions of Criteria Air Pollutants and Precursors

Implementation of the Meydenbauer Bay Park and Land Use Plan is dependent on pursuing individual projects that would be based on this programmatic EIS that would be required to comply with Bellevue land use and development standards. Each individual project would be subject to individual environmental review to ensure that project-level effects are analyzed and mitigated as necessary.

Construction-related emissions are described as short term or temporary in duration and have the potential to represent a direct effect on air quality. Construction-related activities under the No-

Action Alternative would result in emissions of criteria air pollutants (e.g., PM_{10}) and precursors (e.g., VOC and NO_X) from site preparation (e.g., excavation, grading, and clearing); exhaust from off-road equipment, material delivery vehicles, and worker commute vehicles; vehicle travel on paved roads; and other miscellaneous activities (e.g., asphalt paving, and trenching for utility installation). Specific quantities of pollutant emissions related to construction activities would be addressed as part of future project-level review. Because of the relatively small magnitude of construction operations typically associated with the park and residential/commercial redevelopment, emissions of VOCs and NO_X would not contribute substantially to an existing or potential NAAQS violation and conflict with planning efforts. However, King County is in non-attainment for PM_{10}, and PSCAA requires that all projects implement all feasible BMPs to control PM_{10} (Anderson, pers. comm. 2009). Such measures would be a requirement of future project-level review.

Therefore, while emissions of VOC and NO_X are not anticipated to contribute a substantial amount to an existing or potential NAAQS violation or conflict with planning efforts, uncontrolled construction-generated emissions of PM_{10} would conflict with PSCAA air quality planning efforts and would contribute substantially to an existing or projected air quality violation for which the study area region is in non-attainment under an applicable federal ambient air quality standard. As a result, short-term construction emissions would have a direct adverse effect on air quality if unmitigated. As described Section 3.11.3, future projects would be required to incorporate all feasible BMPs to reduce levels of PM_{10} in the study area and vicinity. With these measures, short-term effects would be less than significant.

Long-Term Emissions of Criteria Air Pollutants and Precursors

As described in Chapters 1 and 2 and the traffic analysis of this EIS (see Section 3.9), the long-term operation of the project would not cause a substantial increase in vehicle traffic on affected roadways. The No-Action Alternative traffic is currently estimated as 5,760 trips per day. This trip estimate is considered the baseline condition. Conversion of traffic p.m. peak hour trips to trips per day was conducted to normalize data to the 24-hour air quality assessment standards. Based on the trips per day estimates, vehicle operations associated with this alternative would result in negligible amounts of vehicle miles traveled (VMT), VOCs, NO_X, and PM_{10} or local CO emissions. In addition, no stationary sources would be implemented as a result of the No-Action Alternative. Consequently, the No-Action Alternative would not conflict with or obstruct the implementation of PSCAA's air planning efforts or contribute to an existing air quality violation. As a result, emissions would be below NAAQS and no violation of the State Implementation Plan (SIP) would occur. Therefore, no further general conformity analysis is required.

As stated above, long-term operational emissions would not violate air quality standards, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. There would be no direct or indirect adverse effect on the long-term emissions of criteria air pollutants and precursors as a result of the No-Action Alternative.

Exposure of Sensitive Receptors to Hazardous Air Pollutants

The No-Action Alternative would result in the short-term generation of diesel exhaust emissions from the use of off-road diesel equipment required for construction activities and HAPs related

to pier and building removal. Diesel PM has been identified as a HAP by PSCAA, Ecology, and EPA. Other minor sources of HAPs would be from demolition of single family residences and piers on the park parcels and demolition of existing structures on the upland redevelopment parcels. The dose to which the receptors are exposed to any HAP (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to HAP emission levels that exceed applicable standards). According to the California Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to HAP emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (pers. comm., Salinas, 2004).

The possible sensitive receptor exposure period for individual No-Action Alternative related projects is short (likely less than 2 years per construction phase), and mobile equipment would not operate near (within approximately 300 feet of) any sensitive receptor for long periods of time (i.e., 70 years). In addition, diesel PM is highly dispersive, and studies have shown that measured concentrations of vehicle-related pollutants, including ultra-fine particles, decrease dramatically within approximately 300 feet of the source (Zhu et al. 2002). PSCAA does not have a threshold of significance for exposure to HAPs; however, they do recommend that all available diesel exhaust control devices be installed on equipment (pers. comm., Anderson, 2009). The use of mobilized equipment and demolition activities would be temporary (i.e., less than 70 years), and the distances to sensitive receptors for the most part would be more than 300 feet. Redevelopment construction conducted on the upland redevelopment parcels under the No-Action Alternative would be within 300 feet of some residential areas, but, as with park development, the length of exposure would be less than the exposure length required to cause adverse health effects (70 years). Therefore, construction-related emissions would not be anticipated to expose sensitive receptors to substantial pollutant concentrations. Toxic best available control technologies (T-BACT), consistent with PSCAA efforts to reduce HAP exposure levels, would be among the measures required as part of future project-specific review. Such measures would reduce the direct adverse effect on HAP levels in the vicinity of the study area to less than significant.

With respect to long-term operational source HAP emissions, implementation of the No-Action Alternative would not result in a substantial increase of operation-related emissions relative to existing conditions. Specifically, the long-term operation of the No-Action Alternative would not result in a substantial amount of HAP emissions related to vehicle trips. Furthermore, implementation would not result in any new major stationary emission sources from park or upland redevelopment operations. Thus, the No-Action Alternative operation-related HAP emissions would not expose sensitive receptors to substantial pollutant concentrations. As a result, implementation of the No-Action Alternative would not result in a direct or indirect adverse effect on HAP levels in the vicinity of the study area.

Exposure of Sensitive Receptors to Substantial Odor Concentrations

Construction of the No-Action Alternative would result in diesel exhaust emissions from on-site construction equipment. The diesel exhaust emissions would be intermittent and temporary and would dissipate rapidly from the source. No other existing odor sources are located in the vicinity of the study area, and the No-Action Alternative would not include the long-term operation of any new sources of odor from park or upland redevelopment implementation. Thus, the construction and operation of the No-Action Alternative would not create, further, or change

existing objectionable odors that would affect a substantial number of people. As a result, there would be no direct or indirect adverse impact on odors under the No-Action Alternative.

3.11.2.3 Alternative 1

Short-Term Emissions of Criteria Air Pollutants and Precursors

This impact would be similar to that described above for the No-Action Alternative. The intensity and level of construction activities would be higher under Alternative 1 as a result of the larger acreage and increased features of the park and residential/commercial redevelopment. It is important to note that under Alternative 1, as in the No-Action Alternative, that individual projects (i.e., commercial/retail buildings) would undergo subsequent environmental review to ensure that emissions would not exceed established thresholds.

Construction-related activities under Alternative 1 would result in emissions of criteria air pollutants (e.g., PM_{10}) and precursors (e.g., VOC and NO_X) from site preparation (e.g., excavation, grading, and clearing); exhaust from off-road equipment, material delivery vehicles, and worker commute vehicles; vehicle travel on paved and unpaved roads; and other miscellaneous activities (e.g., asphalt paving, pier expansion, building construction, and trenching for utility installation). Detailed construction plans are not available at this time; thus, specific quantities of pollutant emissions related to full build-out are unknown and are not described in this programmatic EIS. Since PSCAA has not at this time set significance thresholds for short-term construction emissions and because of the magnitude of construction operations, it is not expected that emissions of VOCs and NO_X would contribute a substantial amount to an existing or potential NAAQS violation and conflict with planning efforts. However, King County is in non-attainment for PM_{10}, and PSCAA requires that all projects implement all feasible BMPs to control PM_{10} (pers. comm., Anderson, 2009).

Therefore, while emissions of VOC and NO_X are not anticipated to contribute a substantial amount to an existing or potential NAAQS violation and conflict with planning efforts, uncontrolled construction-generated emissions of PM_{10} would violate PSCAA air quality planning efforts and would contribute substantially to an existing or projected air quality violation for which the study area region is in non-attainment under an applicable federal ambient air quality standard. As a result, short-term construction emissions would have a direct adverse effect on air quality. Section 3.11.3 identifies measures such as the adoption of all feasible BMPs to reduce levels of PM_{10} in the study area and vicinity.

Long-Term Emissions of Criteria Air Pollutants and Precursors

This impact would be similar to the No-Action Alternative.

As described in Chapter 2 and the traffic analysis of this EIS (see Section 3.9), the long-term operation of the project would not cause a substantial increase in vehicle traffic on affected roadways, an increase of approximately 760 trips per day above baseline (5,760 trips per day) are expected to be generated by Alternative 1. Thus, the vehicle operations related to the alternative would result in negligible amounts of VMT, VOCs, NO_X, and PM_{10} or local CO emissions. Possible new stationary sources resulting from gasoline dispensing in the marina or commercial/retail stores (e.g., dry cleaners) included in the upland redevelopment parcels would be required to follow the PSCAA New Source Review permitting process to ensure that emission levels would comply with all applicable regulations and standards. Consequently, mobile and

stationary sources under Alternative 1 would not conflict with or obstruct the implementation of PSCAA's air planning efforts or contribute to an existing air quality violation. As a result, emissions would be below NAAQS, and no violation of the SIP would occur. Therefore, no further general conformity analysis is required.

As stated above, long-term operational emissions would not violate air quality standards, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. There would be no direct or indirect adverse effect on long-term emissions of criteria air pollutants and precursors as a result of Alternative 1.

Exposure of Sensitive Receptors to Hazardous Air Pollutants

This impact would be similar to the No-Action Alternative.

Alternative 1 would result in the short-term generation of diesel exhaust emissions from the use of off-road diesel equipment required for construction activities. Paving of roads and parking lots would also produce diesel emissions. Other short-term sources of HAPs would be related to the demolition of piers and the Chevron station. The possible sensitive receptor exposure period for individual projects associated with Alternative 1 would be short (likely less than 3 years for employees and local residents), and mobile equipment would not operate near (within approximately 300 feet of) any sensitive receptor for long periods of time (i.e., greater than 70 years). Therefore, construction-related emissions would not be anticipated to expose sensitive receptors to substantial pollutant concentrations. Toxic best available control technologies (T-BACT), consistent with PSCAA efforts to reduce HAP exposure levels, would be among the measures required as part of future project-specific review. Such measures would reduce the direct adverse effect on HAP levels in the vicinity of the study area to less than significant.

With respect to long-term operational source HAP emissions, implementation of Alternative 1 would be similar to the No-Action Alternative. Alternative 1 would not result in an increase of long-term operation-related HAP emissions relative to existing conditions, increased vehicle traffic, or new stationary sources from park and upland redevelopment implementation. Thus, Alternative 1-generated operation-related HAP emissions would not expose sensitive receptors to substantial pollutant concentrations. As a result, implementation of Alternative 1 would not result in a direct or indirect adverse effect on HAP levels in the vicinity of the study area.

Exposure of Sensitive Receptors to Substantial Odor Concentrations

This impact would be the same as under the No-Action Alternative, as described above. Construction of the project would result in diesel exhaust emissions from on-site construction equipment. The diesel exhaust emissions would be intermittent and temporary and would dissipate rapidly from the source. No other existing odor sources are located in the vicinity of the study area, and Alternative 1 would not include the long-term operation of any new sources of odor from park or upland redevelopment implementation. Thus, the construction and operation of Alternative 1 would not create, further, or change existing objectionable odors that would affect a substantial number of people. As a result, there would be no direct or indirect adverse effect on odors under Alternative 1.

Alternative 1A – Road Open Variant

Short-Term Emissions of Criteria Air Pollutants and Precursors

The exposure of sensitive receptors to short-term emissions of criteria air pollutants and precursors under Alternative 1A would be similar to the effects described above for Alternative 1. Exact construction activities and locations may differ under Alternative 1A. However, the overall intensity and duration would be similar to Alternative 1; therefore, emission levels would be similar. With implementation of BMPs listed in Section 3.11.3, Alternative 1A would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. As a result, there would be no direct or indirect adverse effect on short-term emissions of criteria air pollutants and precursors as a result of Alternative 1A.

Long-Term Emissions of Criteria Air Pollutants and Precursors

Long-term emissions of criteria air pollutants and precursors under Alternative 1A would be the same as described above for Alternative 1. Emissions would be distributed differently as a result of keeping 100th Avenue SE open; however, these emissions are regional in nature, and the quantity of emissions would be the same as in Alternative 1. Thus, as in Alternative 1, Alternative 1A would not emit substantial quantities of criteria air pollutants and precursors over the long term. There would be no direct or indirect adverse effect on air quality.

Exposure of Sensitive Receptors to Hazardous Air Pollutants

The exposure of sensitive receptors to excessive pollutant concentrations under Alternative 1A would be the same as described above for Alternative 1. With implementation of BMPs, Alternative 1A would not expose any sensitive receptors to excessive pollutant concentrations, and there would be no direct or indirect adverse effect.

Exposure of Sensitive Receptors to Substantial Odor Concentrations

The exposure of sensitive receptors to excessive odor concentrations under Alternative 1A would be the same as described above for Alternative 1. Thus, Alternative 1A would not expose any sensitive receptors to excessive odors, and there would be no direct or indirect adverse effect on air quality.

3.11.2.4 Alternative 2

Short-Term Emissions of Criteria Air Pollutants and Precursors

The exposure of sensitive receptors to short-term emissions of criteria air pollutants and precursors under Alternative 2 would be similar to those described above for Alternative 1. Exact construction activities and locations may differ under Alternative 2. However, the overall intensity and duration would be similar to Alternative 1; therefore, emission levels would be similar. With implementation of BMPs, Alternative 2 would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. As a result, there would be no direct or indirect adverse effect on short-term emissions of criteria air pollutants and precursors as a result of Alternative 2.

Long-Term Emissions of Criteria Air Pollutants and Precursors

Long-term emissions of criteria air pollutants and precursors under Alternative 2 would be similar to those described above for Alternative 1. Emissions would be slightly higher as a result of the 6,990 trips per day associated with Alternative 2. However, the quantity of emissions associated with 1,230 additional trips per day above baseline (5,760 trips per day) would still be well below NAAQS and in compliance with the SIP and PSCAA planning efforts. Thus, Alternative 2 would not emit substantial quantities of criteria air pollutants and precursors over the long term. There would be no direct or indirect adverse effect on air quality.

Exposure of Sensitive Receptors to Hazardous Air Pollutants

The exposure of sensitive receptors to excessive pollutant concentrations under Alternative 2 would be the same as described above for Alternative 1. With implementation of BMPs, Alternative 2 would not expose any sensitive receptors to excessive pollutant concentrations, and there would be no direct or indirect adverse effect.

Exposure of Sensitive Receptors to Substantial Odor Concentrations

The exposure of sensitive receptors to excessive odor concentrations under Alternative 2 would be the same as described above for Alternative 1. Thus, Alternative 2 would not expose any sensitive receptors to excessive odors, and there would be no direct or indirect adverse effect.

Alternative 2A – Road Open Variant

Short-Term Emissions of Criteria Air Pollutants and Precursors

The exposure of sensitive receptors to short-term emissions of criteria air pollutants and precursors under Alternative 2A would be similar to as described above for Alternative 2. Exact construction activities and locations may differ under Alternative 2A. However, the overall intensity and duration would be similar to Alternative 2; therefore, emission levels would be similar. With implementation of BMPs, Alternative 2A would not violate an air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. As a result, there would be no direct or indirect adverse effect on short-term emissions of criteria air pollutants and precursors as a result of Alternative 2A.

Long-Term Emissions of Criteria Air Pollutants and Precursors

Long-term emissions of criteria air pollutants and precursors under Alternative 2A would be similar to those described above for Alternatives 1 and 2. Emissions would be slightly higher than Alternative 1 and the same as Alternative 2. The number of trips associated with Alternative 2A is approximately 1,230 trips per day above baseline. The quantity of emissions associated with 1,230 trips would still be well below NAAQS and in compliance with the SIP and PSCAA planning efforts. Emissions would be distributed differently as a result of keeping 100th Avenue SE open; however, these emissions are regional in nature, and the quantity of emissions would be the same as in Alternative 2. Thus, Alternative 2A would not emit substantial quantities of criteria air pollutants and precursors. There would be no direct or indirect adverse effect on air quality.

Exposure of Sensitive Receptors to Hazardous Air Pollutants

The exposure of sensitive receptors to excessive pollutant concentrations under Alternative 2A would be the same as the effects described above for Alternative 1. With implementation of BMPs, Alternative 2A would not expose any sensitive receptors to excessive pollutant concentrations, and there would be no direct or indirect adverse effect.

Exposure of Sensitive Receptors to Substantial Odor Concentrations

The exposure of sensitive receptors to excessive odor concentrations under Alternative 2A would be the same as described above for Alternative 1. Thus, Alternative 2A would not expose any sensitive receptors to excessive odors, and there would be no direct or indirect adverse effect.

3.11.3 Mitigation Measures

Under existing regulations, the City of Bellevue will require future development projects to implement the following BMP control measures as applicable to reduce construction-related emissions of criteria air pollutants and precursors:

- Spray exposed soil with water or other dust suppressants to prevent visible dust emissions, particularly during demolition activities by mechanical or explosive methods.
- Cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris.
- Cover all trucks when transporting fill materials or soil, wet materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck) to minimize dust emissions during transportation.
- Cover loads of hot asphalt to minimize odors.
- Provide wheel washers to remove dirt that vehicles would otherwise carry off site to decrease PM deposits on area roadways.
- Remove dirt from public roads, sidewalks, and bicycle and pedestrian paths to reduce windblown dust on area roadways.
- Route and schedule construction trucks to minimize disruption or delays to traffic during peak travel times to reduce potential air quality impacts caused by congestion.
- Route construction trucks away from residential and business areas to minimize annoyance from dust.
- Use ultra-low sulfur fuels in construction equipment to reduce sulfur emissions.
- Locate construction equipment and truck staging areas away from sensitive receptors as practical and while considering potential impacts on other resources.
- Plant vegetative cover on graded areas that would be left vacant for more than one season to reduce windblown particulates in the area.
- Coordinate (by lead agencies) construction activities with other projects in local proximity to reduce the cumulative effects of concurrent construction projects.
- Minimize emissions by ensuring proper equipment operation:
    - Turn off the engine of construction vehicles if they are left idling for more than 15 minutes.

- Require appropriate emission-control devices (catalytic converters or particulate traps) on all construction equipment powered by gasoline or diesel fuel to reduce CO, NO_X, and PM_{10} in vehicular exhaust.
- Use relatively new, well-maintained equipment to reduce CO and NO_X emissions.

Implementation of these measures as part of future project-level approvals would reduce pollutant emissions to levels consistent with PSCAA planning efforts and emission thresholds. In addition, all feasible T-BACT would be implemented to reduce human exposure to diesel PM and associated HAPs. These actions would further reduce human exposure and bring future development into compliance with PSCAA recommendations for HAP control.

3.11.4 Summary of Impacts

Implementation of the project alternatives would have relatively insignificant potential air quality-related impacts. Impacts could potentially occur both over the short term (associated with construction activities), as well as the long term (associated with changes to site commercial sources and additional vehicle trips).

In the short term, construction-activities resulting from heavy-equipment operations could temporarily impact air pollution levels in the study area. These potential impacts can be controlled and minimized by using appropriate construction exhaust controls and BMPs. The potential for construction-related impacts would be slightly more pronounced under the action alternatives relative to the No-Action Alternative, given the greater level of development proposed; however, such impacts are considered slight and insignificant under all project alternatives.

Over the long term, air pollutant emissions would be created by additional vehicles related to increased visitation and residents. The emissions associated with these additional trips would be minimal and much less than the ambient air quality standards applicable to the project. For this reason, the potential for impacts to affect air quality would be slightly more pronounced under the action alternatives relative to the No-Action Alternative, given the greater level of development proposed; however, such impacts are considered slight and insignificant under all project alternatives.

In summary, no significant unavoidable adverse air quality-related impacts are expected to occur as a result of the project alternatives.

3.12 PUBLIC SERVICES AND UTILITIES

This section describes the environmental considerations related to public services and utilities in the study area, the effect of the project alternatives on those services, and applicable policies and regulations. Public services may include fire, police, schools, and maintenance services. Utilities may include services such as electricity, natural gas, water, wastewater or stormwater collection, and telecommunications provided by municipal agencies, special utility districts, and private companies.

3.12.1 Affected Environment

To evaluate the effects of the project alternatives on public services and utilities, the affected environment has been defined as the study area and adjacent public services or utilities that may be directly or indirectly affected by the project alternatives.

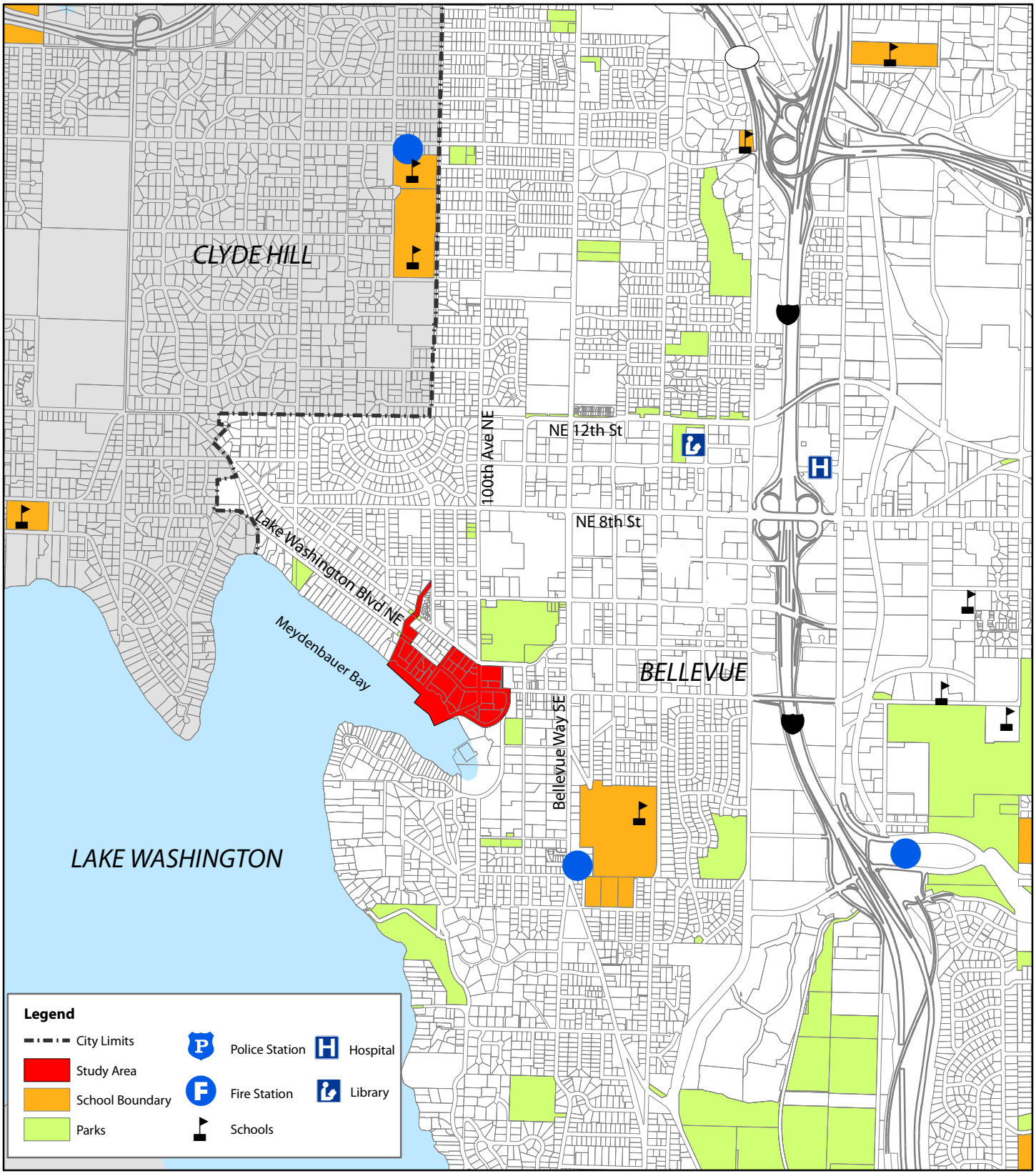
3.12.1.1 Existing Conditions

This section describes the fire and emergency medical, police, school, and library services in the vicinity of the study area. Each service has facilities in the vicinity of the study area (Figure 3.12-1).

Fire and Emergency Medical

The Bellevue Fire Department manages fire protection and prevention in the study area. The total number of fire department personnel is 237. The department's work schedule includes three platoons, 24-hour shifts, and modified Detroit schedule. The closest fire station, Fire Station 1, is 0.8 miles southeast of the study area at 766 104th Avenue SE (City of Bellevue 2009a). Fire Station 1 is staffed 24 hours a day-7 days a week with a total of 11 personnel; two firefighter/emergency medical technicians (EMTs) assigned to a medical aid unit, three firefighter/EMTs assigned to an Engine Company, four firefighter/EMTs assigned to a ladder truck (City of Bellevue 2009b), and two personnel assigned to a Battalion Command Team; one battalion chief and one firefighter/staff assistant. The Bellevue Fire Department's response time goal is 6 minutes, 90 percent of the time. The Fire Department's comprehensive emergency medical services program currently operates four Medic One units, which provide a high level of patient care to approximately 250,000 Eastside and Snoqualmie Valley residents, spread over a 301-square-mile area. The Bellevue Fire Department operates Medic 1 at Overlake Medical Hospital Center, Medic 2 at Fire Station 2, and two other paramedic units in two Eastside Fire & Rescue fire stations in East King County (outside the city limits of Bellevue; Medic 3 and Medic 14).

The closest hospital is Overlake Medical Hospital Center, located at 1035 116th Avenue NE. Overlake Hospital Medical Center is a 337-bed, nonprofit regional medical center offering a full range of advanced medical services to the Puget Sound Region (OMHC 2009). Led by a volunteer Board of Directors, Overlake Medical Hospital Center has more than 1,000 active and courtesy physicians on staff and is the only Level III Trauma Center in eastern Puget Sound.



Source: City of Bellevue GIS 2009

0 750 1,500 3,000 Feet

Figure 3.12-1: Public Services

Meydenbauer Bay Park and Land Use Plan EIS
City of Bellevue

Police

The Bellevue Police Department, staffed with 176 police officers, provides police protection in the study area. The closest police substation is the Downtown Transit Center, on the 10800 block of NE Sixth Street in the Rider Services Building, 0.6 miles from the study area (City of Bellevue 2009a). Police Headquarters is located in Bellevue City Hall on 110th Avenue NE, 0.8 miles from the study area (City of Bellevue 2009c). The study area overlaps with Police Districts 1 and 2. Each district has one officer assigned to patrol the district 24 hours a day. Response times are not published.

Schools

The Bellevue School District serves residents in the study area. The study area is located in the following school districts: Medina Elementary, Chinook Middle School, and Bellevue High School (City of Bellevue 2009a). In the 2006-2007 school year, enrollment at Medina Elementary was 545 students (BSD 2009). This school building was upgraded in 2006. In the 2008-2009 school year, enrollment at Chinook Middle School is 893 students. This school building was last remodeled in 1997. Bellevue High School 2008-2009 enrollment is 1,313 students. This school building was remodeled in 2000.

Library Services

The King County Library System provides service to residents in the study area. The closest library branch is the Bellevue Regional Library, located at 1111 110th Avenue NE, 1.5 miles northeast of the study area (KCLS 2009). The Bellevue Regional Library is the largest library in the King County Library System. The library has more than 325,000 volumes in its collection, with materials in print and electronic formats.

Utilities

Solid Waste and Recycling

Residents in the study area use the City of Bellevue's solid waste contractor, Allied Waste (Rabanco) to collect garbage, recycling, yard debris, and food scraps (City of Bellevue 2009d). Solid waste is trucked to the Factoria Transfer Station at 13800 SE 32nd Street, for shipment to the Cedar Hills Regional Landfill in Maple Valley. The transfer station collects recyclables and moderate-risk waste from residents in the study area.

Water and Sewer

The City of Bellevue Utilities Department provides drinking water, manages wastewater (sewer), and controls the storm and surface water (City of Bellevue 2009d). Storm and surface water is described in Section 3.2 (*Surface Water and Water Quality*). Bellevue's drinking water comes from the Cedar River and Tolt River watersheds in the Cascade Mountains. The City acquires its drinking water at a reasonable cost through the Cascade Water Alliance, an association of regional water districts and cities. The study area is in the drinking water system's West Area. A City of Bellevue reservoir is located southwest of the study area. Water mains that service the study area range from 4 to 24 inches in diameter.

The City of Bellevue's sewer system conveys wastewater in the study area (Figure 3.12-2). Wastewater flows through City-owned and maintained pipes into King County Metro's regional

sewerage system, where it is treated to meet federal and state water quality standards. There are City of Bellevue and King County Metro pumps stations in the vicinity of the study area, including the Grange Pump Station located on SE Bellevue Place.

A number of sewer pipes are located along the shoreline of the study area, all of which empty into an 8-inch underwater sewer line that runs along the park beach and conveys sewage to the King County Natural Resources and Parks Wastewater Treatment Division's South Treatment Plant (TWC 2008). The sewer lake lines were constructed in the 1950s and 1960s.

Sewer Lakeline Replacement Program

As stated in the City of Bellevue's 2009-2015 Preliminary Capital Investment Program Plan (City of Bellevue 2009e), the Sewer Lakeline Replacement Program includes an initial construction project to replace approximately 1,150 feet of sewer line (currently under Meydenbauer Bay) with on-shore pipe between Grange Pump Station and Meydenbauer Beach Park. This segment of sewer line is a high priority based on recent condition assessment studies. Design and construction of the project would be coordinated with the Meydenbauer Bay Park and Land Use Plan. The program would also provide ongoing condition assessments of critical pipe segments to provide predesign information for future sewer lake line replacement projects. The project is in the planning phase and anticipated for construction in 2011 (pers. comm., S. Taylor 2009).

Electricity and Natural Gas

Puget Sound Energy (PSE) supplies electricity and natural gas throughout Bellevue and the study area as part of a larger service area call the Greater Bellevue Area (City of Bellevue 2009d). As of 2007, PSE served more than 57,900 electric customers within the City of Bellevue. During the winter of 2005-2006, peak electrical load (demand) in the Greater Bellevue Area was 500 MVA (Megavolt-amperes) (City of Bellevue 2009d). As described in the Bellevue Comprehensive Plan Utilities Element (City of Bellevue 2008), based on population, employment, and development forecasts for the next 20 to 30 years, as of 2006, PSE estimates that peak winter loads in the Greater Bellevue Area will be approximately 625 MVA in 2020 and 700 MVA in 2030 (City of Bellevue 2008). Actual load growth could vary from projections because of economic cycles, land use zoning changes, and other influencing factors. Electricity is supplied to the study area via an existing 115 kilovolt (kV) transmission line along 100th Avenue NE. An existing facility, Lochleven Substation, is located at NE 8th Street and 100th Avenue NE.

As of 2007, PSE served more than 31,300 natural gas customers within the City of Bellevue. British Petroleum/Olympic Pipeline Company manages two pipelines in Bellevue. Natural gas is distributed through an underground pipeline system. Natural gas is supplied to the study area via a high pressure main located along NE 12th Street.

Telecommunications

Verizon, Qwest, and Comcast operate telephone and cable services throughout Bellevue (City of Bellevue 2009d). These services are available throughout the study area. The main telephone feeder route is located along NE 12th Street.

Source: City of Bellevue GIS 2009

0 125 250 500 Feet

Figure 3.12-2: Sewer Network

Personal wireless facility communication services include but are not limited to commercial mobile services (e.g., cellular), unlicensed wireless services, and common carrier wireless exchange services (City of Bellevue 2009d).

Personal wireless facilities use ground-based directional receivers (antennae), which may be located on freestanding poles and towers or on buildings and structures. Each antenna has ancillary power and radio equipment.

3.12.1.2 Regulatory Setting

State Environmental Policy Act (WAC 197-11)

SEPA and its implementing regulations (WAC 197-11) mandate consideration of public services and utilities among the elements of the built environment to be considered in an EIS. The description of significant impacts includes the effects on public services, such as utilities, roads, fire, and police protection that may result from the project alternatives.

Utility Franchises and Permits

Any future development would need to comply with applicable utility franchises and permits as part of project-specific permitting.

3.12.2 Impacts

This public services and utilities analysis is based on guidance provided by WAC 197-11-960 (SEPA environmental checklist) regarding identification, characterization, and mitigation of impacts. The analysis of environmental consequences of the project alternatives on public services and utilities within the study area includes a description of the methods and summary of impacts. Because of the programmatic nature of the Draft EIS, this analysis is generally qualitative. More specific, quantitative impacts would be analyzed under subsequent project-specific review and permitting.

3.12.2.1 Methods

This Draft EIS evaluates a No-Action Alternative and two action alternatives (Alternative 1 and Alternative 2), as described in Chapters 1 and 2. The No-Action Alternative provides a baseline against which to measure both short-term and long-term impacts of the action alternatives on public services and utilities. Public service-provider websites and GIS data from the City of Bellevue were reviewed to identify the locations of public facilities, including service area boundaries. Information was collected from the Bellevue Fire Department, Bellevue Police Department, Bellevue School District, Overlake Medical Hospital Center, and the King County Library System.

Utilities information was collected from the City of Bellevue Utilities Department, Comprehensive Plan (City of Bellevue 2008), website, and City of Bellevue GIS data. The impact analysis addresses both physical impacts on infrastructure (i.e., impacts that could disrupt service or require facility relocations because of proposed development) and capacity impacts (i.e., the ability of existing infrastructure to accommodate the projected growth in park visitor, employee, and/or residential populations).

The type, degree, and significance of potential impacts on public services and utilities were assessed as part of the analysis. Individual utility operators are required to operate under a number of laws and regulations; however, these relate to specific aspects of relocating or modifying a utility, such as safety, design, and construction requirements. There are no specific statutes that pertain to the significance of impacts for public services and utilities. Under SEPA, "impacts to public service and utilities" generally refers to potential significant disruption or increased demand on services. A significant impact on public services and utilities would be one that is reasonably likely to result in a more than moderate adverse effect on the following:

- Facilities or services provided by public services or utilities caused by construction of the project alternatives.
- Facilities or services provided by public services or utilities caused by long-term use and operation of the project alternatives.
- Induced growth, requiring additional facilities or services provided by public services or utilities.
- Fire and emergency medical response and law enforcement team's ability to reach an accident or crime scenes as quickly as they would without the project alternatives.
- Detours or increased traffic during construction that prevent the use of critical access routes and causes a detrimental delay in service.
- Specific utility relocation.

3.12.2.2 No-Action Alternative

Public Services

Under the No-Action Alternative, construction (short-term) and operational (long-term) impacts on public services would remain consistent with existing conditions. The potential redevelopment of two parcels north and south of Main Street and the park expansion would not limit the mobile portion of the public services (i.e., fire, ambulance, and police emergency response and school transportation). Future public service needs would be modest and would be addressed through incremental capital facility planning. Effects on public service under the No-Action Alternative would likely be short in duration and considered less than significant.

Utilities

Under the No-Action Alternative, construction and operational impacts on utilities would remain consistent with existing conditions. Future utility needs would be addressed through incremental capital facility planning. Effects on utilities under the No-Action Alternative would likely be short in duration and considered less than significant.

It should be noted that the Sewer Lakeline Replacement project is independent of the project alternatives. The current plan to abandon the existing pipeline in place and install a new pipeline landward allows for continued service with limited disruption as the new pipeline is installed. Installation of the new pipeline may include closure in portions of Meydenbauer Beach Park and Bellevue Marina. Although the sewer replacement could have temporary and minor adverse effects on the project alternatives, those potential impacts will be addressed and mitigated during a separate SEPA review for that project.

3.12.2.3 Alternative 1

Public Services

Under Alternative 1, construction impacts would cause temporary delays for emergency services such as police, fire, or ambulances; these are expected to have a short duration. Operational impacts that may cause delays to public services include the following:

- Closure of 100th Avenue SE/SE Bellevue Place;
- Termination of Meydenbauer Way SE at SE Bellevue Place; and
- Removal of vehicle access to the Meydenbauer Beach Park via 98th Avenue NE/NE 4th Street.

However, alternate routes to areas serviced by these roads exist. The proposed redesign of the paved area northeast of Bellevue Marina would need to accommodate emergency vehicle loads and clearance (pers. comm., Merritt and Carlson 2008). Effects on public services under Alternative 1 would likely be short in duration and considered less than significant.

Utilities

Under Alternative 1, both underground and overhead utilities could be affected by construction activities such as excavation, foundation construction, and earth moving. Tying in relocated utilities could result in a temporary loss of services; these are expected to have a short duration. Utilities (such as communications) tying into the existing trunk lines from the new relocated lines could require an extended period for splicing and connecting multiple cables. Depending on the construction sequence, temporary relocations may be necessary before a utility is in its final location. Operational impacts from the termination of Meydenbauer Way SE at SE Bellevue Place would limit utility access to the Sewer Lakeline pipe. The proposed redesign of the paved area northeast of Bellevue Marina would need to accommodate utility vehicle loads and clearance (pers. comm., Taylor 2009). Effects on utilities under Alternative 1 would likely be short in duration and considered less than significant.

Alternative 1A – Road Open Variant

The Road Open Variant would accommodate emergency vehicle access to mid block pathways and plazas proposed along 100th Avenue SE/SE Bellevue Place. Alternative 1A allows for greater access to these parcels when compared to Alternative 1. Effects on public services and utilities under Alternative 1A are considered less than significant.

3.12.2.4 Alternative 2

Public Services

Under Alternative 2, construction impacts would cause temporary delays for emergency services such as police, fire, or ambulances; these are expected to have a short duration. Similar to Alternative 1, operational impacts that may cause delays to public services include the following:

- Closure of 100th Avenue SE/SE Bellevue Place; and
- Termination of Meydenbauer Way SE at SE Bellevue Place.

However, alternate routes to areas serviced by these roads exist. The proposed redesign of the paved area northeast of Bellevue Marina would need to accommodate emergency vehicle loads and clearance (pers. comm., Merritt and Carlson 2009).

Unlike Alternative 1, retaining vehicle access to the upper portion of Meydenbauer Beach Park via 98th Avenue NE/NE 4th Street would benefit emergency services to the areas along the forested ravine. Effects on public services under Alternative 2 would likely be short in duration and considered less than significant.

Utilities

Impacts on utilities under Alternative 2 would be identical to those described above for Alternative 1. Effects on utilities under Alternative 2 would likely be short in duration and considered less than significant.

Alternative 2A – Road Open Variant

Impacts on utilities under Alternative 2A - Road Open Variant would be identical to those described above for Alternative 1A. Effects on public services and utilities under Alternative 2A are considered less than significant.

3.12.3 Mitigation Measures

Specific mitigation measures for potential impacts on public services or utilities would be determined during subsequent project-specific environmental review and permitting process. Mitigation would likely include measures to avoid temporary construction-related disruptions in service, including advance coordination with service providers and scheduling work during low-demand periods.

For all temporary construction activities, detailed coordination about construction locations and phasing would be provided to the appropriate parties at law enforcement and fire/emergency responder services, and school transportation services. Especially for the emergency responders, this coordination would need to include any temporary access restrictions and critical emergency access routes.

Proposed mitigation for long-term effects associated with future projects would be the same for all alternatives. They are intended to eliminate or minimize long-term impacts from future projects and ensure that such impacts do not impair existing overall levels of service, and include the following:

- Assess project-level impacts on local fire, emergency medical, police, and school services and incorporate appropriate mitigation measures.

- Install on-site security measures during construction such as fencing and securing areas where equipment is stored, to reduce potential construction-related incidents of theft and vandalism.

- Determine the exact location and depth of utilities using such techniques as direct probing or electronic instruments, and by working with individual utility providers, to verify utility locations.

- Evaluate the effect on proposed utility relocation on other nearby utility infrastructure.

3.12.4 Summary of Impacts

Future project construction associated with any of the project alternatives could cause temporary service interruptions to existing utilities. Construction could also temporarily increase police, fire, and medical emergency service response times if routes are detoured or disrupted. The greater levels of redevelopment and construction proposed under the action alternatives would represent incrementally greater levels of potential short-term impacts on public services relative to the No-Action Alternative, including the closure of 100th Avenue SE/SE Bellevue Place and the termination of Meydenbauer Way SE at SE Bellevue Place. In addition, Alternative 1 includes the removal of vehicle access to the Meydenbauer Beach Park via 98th Avenue NE/NE 4th Street.

With appropriate mitigation of future projects, no significant unavoidable adverse impacts on public services and utilities are expected under any of the project alternatives.