CHAPTER 6

Draft EIS
January 2008
Summary

CHAPTER 6
DEIS ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES SUMMARY

As referenced in **Chapter 1** of this SDEIS, this chapter provides a summary of the environmental impacts, mitigation measures and significant unavoidable adverse impacts identified in the DEIS (January 2008)[1]. For a complete discussion of the analysis and information regarding these environmental impacts and mitigation measures please refer to Chapter 3 of the DEIS.

6.1 SUMMARY OF DEIS ENVIRONMENTAL IMPACTS

6.1.1 EARTH ENVIRONMENTAL IMPACTS

- **Redevelopment Alternatives 1 - 3 would require grading for construction of infrastructure components, for parking structures and to achieve suitable finish grades for building construction. For purposes of this Draft EIS, a preliminary grading concept was formulated that likely represents a worst-case, maximum assessment of fill material needs to support redevelopment at the site. The concept assumes that the majority of the site would be raised via imported fill material approximately 3 to 6 feet above the existing site grade. It is estimated that up to approximately 63,000 to 75,000 cubic yards (CY) of cut and up to approximately 680,000 to 700,000 CY of fill would result under this concept. Specific grading plans for redevelopment and infrastructure projects would be formulated as part of the future design and permit process.**

    - Site grading activities could potentially disturb contaminated soils within the site. As part of the site cleanup process, soil management provisions and institutional controls would be adopted to address site construction and redevelopment activities in relation to cleanup requirements and plans.

- **Existing soil and geologic conditions at the site could potentially affect construction, including the potential for settlement, landslides (landslide potential would only relate to portions of the site with steep slopes and/or unsupported shorelines) and erosion under any of the EIS Alternatives. Landslide potential would be limited given that steep slope areas are primarily located beyond the site boundary or within the railroad corridor; similarly, erosion hazard potential would also be limited. Typical construction mitigation measures would be implemented and could include using deep foundation systems for heavy structures, preloading a building site prior to construction, employing temporary erosion control measures and Best Management Practices, and constructing catchment areas or retaining walls to retain landslide debris, if warranted.**

[1] Please note that the following reflects the summary of environmental impacts mitigation measures and significant unavoidable adverse impacts presented in pages 1-11 through 1-67 of the DEIS.

Earth (continued)

The entire Puget Sound region, including the New Whatcom site, lies within a seismically active area, and the potential for moderate to high levels of ground

shaking would be considered during the specific design and permit process for future site improvements under any of the EIS Alternatives. The entire site may be subjected to earthquake shaking and should be considered to have a high risk for liquefaction, with or without redevelopment.

- The site is located over deposits of relatively soft to loose soils that could be susceptible to amplified earthquake ground motions at various frequencies which could result in impacts such as lateral spreading and seismically induced landslides. Seismic design using the most recent design codes (including the International Building Code) and generally accepted engineering standards and practices would be conducted as part of the building/infrastructure design and permit process for future site improvements. This could include conducting future site-specific seismic analyses, as appropriate.

- A potential exists for loss of soil strength (loss of bearing capacity for shallow foundations or the reduction in lateral and vertical capacities of deep foundations), ground surface settlement, and lateral displacement of soils supporting the future structures where founded in or over liquefiable soils. Impacts associated with soil liquefaction could be mitigated in a number of ways including ground improvement, use of deep foundations, and/or designing buildings and infrastructure for potential soil liquefaction impacts. Implementation of specific mitigation measures would be determined during the site-specific building/infrastructure design and permit process for future site improvements.

- **Landfill refuse is present at the old Roeder Avenue Landfill (located in the central portion of Area 1) and the old Cornwall Avenue Landfill (located in the western portion of Area 10). The potential effects of long-term settlement, migration of methane gas from the landfills, and other landfill-related issues would need to be addressed as part of the site-specific design and permit process for future buildings and infrastructure at those portions of the site under any of the EIS Alternatives.**

  - The potential for methane gas could require methane monitoring when excavating and/or installing deep foundations near these landfills. These mitigation measures could include foundation ventilation systems, methane monitoring or collection systems, or gas barrier systems. Redevelopment over or adjacent to landfill areas would be feasible assuming mitigation measures are considered and implemented.

- **The potential for ground subsidence exists where underground void spaces exist at depth due to past coal mining activities, potentially along the bluff near the southeast portion of Areas 5 and 7. A coal mine hazards evaluation would be conducted at the future building/infrastructure design and permit stage in accordance with City requirements under any of the EIS Alternatives. Site-specific ground improvement and foundation modifications would be implemented, as appropriate.**

- **All structural fill and backfill material placed as part of site redevelopment under any of the EIS Alternatives should be densely compacted, which could cause vibrations**

and potential settlement of structures in the immediate vicinity of the construction work. Placement of significant depths of fill (more than 3 to 4 feet) could also cause some ground subsidence in the immediate area of fill. Potential impacts to any on or offsite structures would be mitigated by site-specific analysis and design of fill placement near any settlement-sensitive structures during the building/infrastructure permit process.

- **Alternatives 1 through 3 include construction of certain bridges to connect to existing roadways. While the bridge spans would likely be supported on drilled shaft foundations (a type of deep foundation), approach embankments could involve placement of fill materials over compressible soils which could potentially cause some settlement and lateral loading of adjacent facilities and increased downdrag loading on nearby deep foundations. These potential impacts would be mitigated by site-specific analysis during the future design and permit stage for the bridge approach fills. If plans to construct the bridge connections are pursued in the future, these projects could be subject to further environmental review and permitting requirements.**

- **For this Draft EIS, it is assumed that most onsite structures would be pile-supported; however, the potential for use of other foundation support methods would be considered during the final design and permit process for future site structures. Increased levels of noise and vibration could occur within about 50 to 100 feet of pile-driving activities; pile driving could result in the potential for soil densification and surface soil settlement, potentially causing impacts to adjacent structures and utilities. The impact of vibrations could potentially extend a short distance offsite for pile-supported structures to be located near the perimeter of the site. Mitigation measures for pile-driving activities could include pre- and post-construction surveys of nearby buildings, monitoring of ground movements, vibration monitoring during pile installation, and use of vibratory hammers versus impact hammers when practicable. In addition, auger-cast piles could be used, as an alternative to driven piles, to limit the potential for vibration and ground settlement.**

  - The anticipated number of deep foundation piles that could be needed for full buildout under the EIS Alternatives has been estimated to range from 3,000 under the No Action Alternative to 23,000 under Alternative 1.

- **Each of the alternatives includes similar forms of new roadway and utility development, marina and in-water improvements, and recreational development (parks and trails) that would be implemented over the long term. The operational impacts are assumed to be similar among all EIS Alternatives, including the No Action Alternative.**

  - A reasonable estimate of potential sea level rise in Bellingham Bay by 2100 is considered to be up to approximately 2.4 feet over current levels. As part of site redevelopment, it is assumed that site grades would be raised several feet above existing grades, which could mitigate several potential impacts including the effects of long-term sea level rise in Bellingham Bay and the effects of a tsunami wave.

Earth (continued)

- Based on a major rupture along the Cascadia Subduction Zone, a tsunami could result and potentially pose a temporary hazard at the site. The potential impacts of a tsunami in Bellingham Bay include the adverse effects of temporary inundation by the tsunami wave and damage/injury caused by debris carried by the wave. To address the potential impact of a tsunami, mitigation measures would include public notification and warnings.

- Additional vehicle traffic on an expanded road and bridge network at the site would result in some level of additional ground vibrations typical of those commonly encountered in urban settings. Traffic vibrations would not be anticipated to result in significant impacts under any of the EIS Alternatives.

- Under Alternatives 1, 2 and 2A, the BNSF railroad corridor and railroad operations would be relocated to the perimeter of the site. Vibration levels from railroad traffic would generally be anticipated to be similar to levels along other parts of the railroad corridor that currently exists in the urban area and in proximity to existing buildings. If permit applications are submitted in the future for relocation of the railroad corridor, additional environmental review would likely be required; noise and vibration analyses could be required at that time.

- Landfill refuse is present in the central portion of Area 1 and the western portion of Area 10. Methane could potentially accumulate under impervious surfaces over time if not properly mitigated. The potential for impacts of methane migration from the landfills would need to be addressed as part of the site-specific design and permit process for future buildings and infrastructure near those portions of the site. Specific mitigation measures could include installation of active foundation ventilation systems and implementation of a methane monitoring program. However, the operation and monitoring of these systems would not be considered a significant operational impact for any of the EIS Alternatives.

- **The No Action Alternative represents the lowest level of site redevelopment and infrastructure improvements, and would result in the lowest level of potential construction impacts. Due to typically lighter building loads associated with marine and light industrial uses, this alternative could require the smallest number of foundation piles. It is likely that some or most of the new industrial buildings would not require deep foundation systems. The No Action Alternative assumes a much smaller volume of fill materials, currently estimated at up to 150,000 cubic yards, as raising of site grades would not necessarily be conducted to support industrial uses.**

  - Other impacts noted above would also pertain to the No Action Alternative, both during construction and operation of future industrial redevelopment. Similar mitigation measures would be implemented to preclude significant impacts.

Refer to Section 6.2.1 later in this Chapter for a summary of mitigation measures related to Earth and Section 3.1 in DEIS Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.2 AIR QUALITY ENVIRONMENTAL IMPACTS

- **Construction activities resulting in soil disturbance, dust emissions, combustion pollutants from onsite construction equipment and from offsite trucks hauling soil, cement or building materials, would create a temporary addition of pollutants and odors to the local air shed over the phased construction period. Construction activities and associated temporary air impacts would be similar under all of the EIS Alternatives**.

  - Construction activities would produce a range of air emissions, including particulates (PM), dust, carbon monoxide (CO) and nitrogen oxides (NO_x). It is expected that construction activities would be intermittent and phased over time and would be conducted consistent with typical air quality control measures required by federal, state and local regulations. Therefore, it is anticipated that construction activities would not result in onsite or offsite adverse air quality impacts or significant risks to on or offsite sensitive receptors (residential uses, schools, hospitals).

  - It is assumed that the new roadway connections to the existing City street network would pose the greatest potential for short-term construction impacts to existing offsite sensitive receptors due solely to proximity. However, as these improvements would be phased over the long-term and would be temporary in nature, only short-term air quality impacts would result during construction; such impacts are not anticipated to be significant.

- **Operational emissions and related potential air quality impacts, could result from the primary emission sources in the site area including traffic and non-road (railroad and marine vessels) sources.**

  - On-road emission sources would primarily include vehicles and trucks and would be generally similar under the Redevelopment Alternatives. Redevelopment of the New Whatcom site would increase vehicle trips and associated emissions within this historically industrial area but would provide for a relatively small contribution to the regional concentrations of criteria pollutants (PM, CO, and Ozone). These emissions would not be expected to pose significant air quality impacts to existing sensitive receptors within the area due mainly to ambient air quality conditions in the area (Whatcom County is currently in attainment for all air quality criteria pollutants) and the distance of the majority of onsite roadways to the nearby sensitive receptors groups. Further, the potential for air quality impacts from on-road sources throughout the region, as well as the site area, is expected to be offset by an increase in the efficiency of future vehicles and the availability of cleaner fuels over the long term (at both 2016 and 2026).

    The Draft EIS analysis of local traffic-related air quality impacts results confirm that acceptable air quality conditions would result and mobile source CO emissions would conform to all applicable air quality standards at all onsite and offsite intersections; vehicular traffic would not result in unacceptable, operational air quality impacts in the site area.

  - Non-road emissions sources would include railroad operations, marine vessel traffic and point source emissions.

Air Quality (continued)

- *Railroad Operations*. Alternatives 1 and 2 assume that a portion of the current railroad corridor on the site would be relocated to the eastern and southern border of

  the site by 2016; Alternative 2A assumes relocation by 2026. This relocation would position the rail line adjacent to the bluff and could increase the NO_x and PM concentrations for some receptors, including residences located near Laurel Street; however, the limited frequency of trains in the area and the distance to most receptors following the relocation would limit the duration of potential exposure. The railroad corridor relocation is not anticipated to result in any significant impacts. Further, the EPA has proposed standards to reduce emissions of diesel trains. The potential relocation would be subject to a specific permitting and environmental review process in the future.

- *Marine Vessels.* Under all of the EIS Alternatives, a new marina would be developed at the ASB on the New Whatcom site which would likely result in an increase in recreational boat traffic. Although the number of small recreational vessels would increase, large marine vessel traffic is expected to decrease with New Whatcom redevelopment. An overall net increase or decrease in air quality emissions generated by marine vessels would not likely result in the short term, but a net improvement in air quality could be realized over the long-term due to new marine vessel technology and reduced large marine vessel traffic. EPA also has proposed standards to reduce emissions from marine diesel emissions.

- *Point Source Emissions*. Under the Redevelopment Alternatives, decommissioning of the onsite Encogen facility is assumed to occur by 2026. The result of this effort could be removal of up to approximately 76 tons of criteria pollutants entering the atmosphere per year in the site area. (It should be noted that it is possible that the Encogen facility could relocate to another site in the Bellingham area.) Based on the transition of the site from industrial operations to a mixed-use neighborhood, and the assumed removal of the Encogen facility from the site, a reduction in criteria pollutants associated with implementation of New Whatcom redevelopment could result in a net benefit to air quality in the site area. In the interim, no significant impacts to onsite uses would result from ongoing Encogen operations.

- **Under the No Action Alternative, it is assumed that air emissions could increase from additional onsite industrial activities and associated truck traffic. The increase in industrial activities has the potential to result in an increase in pollutant loading within the site area airshed. However, it is assumed that each of the industrial operations would obtain and comply with all necessary air quality permits and, therefore, no significant air quality impacts would be expected.**

Refer to Section 6.2.2 later in this Chapter for a summary of mitigation measures related to Air Quality and DEIS Section 3.2 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.3 WATER RESOURCES ENVIRONMENTAL IMPACTS

- **Construction activities would have the potential to impact water resources adjacent to the site (i.e. Bellingham Bay and Whatcom Waterway), primarily from erosion and sedimentation, but also from pollutants generated by construction equipment and concrete work that could enter nearby waters. Temporary erosion and sedimentation control measures and accidental spill response measures would be implemented to address these potential impacts, per a National Pollution Discharge Elimination System (NPDES) permit from Ecology and compliance with applicable City of Bellingham stormwater management requirements.**

  - The potential for construction impacts related to water quality could vary among the EIS Alternatives, depending upon the amount, type and timing of site work. However, it is assumed that the EIS Alternatives would result in similar types of construction impacts on a year-by-year basis, and mitigation measures to avoid or minimize such impacts would generally be similar as well.

  - Short-term water quality impacts could include increases in turbidity and suspended solids. With proper control of stormwater runoff during construction, use of Best Management Practices (BMPs), and effective accidental spill response planning, adverse impacts from fine sediment, alkaline (high) pH (i.e. related to concrete work), and construction-related accidental hazardous material spills would be expected to be avoided or limited to small, short-term occurrences with no lasting adverse effects.

  - Some minor introductions of fine sediments to the Bellingham Bay or the Whatcom Waterway from runoff during both heavy rainstorms and due to shoreline restoration work, pile removal and new pile installation and other in-water work would be likely; however, implementation of Stormwater Pollution Prevention Plan (SWPPP) measures required by the NPDES permit, and other measures required by federal, state and City of Bellingham permits, would preclude adverse impacts to habitat in the Bay or Waterway.

  - The removal and upland disposal of existing piles would eliminate a significant existing source of contamination from the marine environment in the site area. In the long-term, such removal would more than compensate for short-term water quality impacts from pile removal and other in-water construction.

- **A permanent stormwater control system would be installed to serve long-term redevelopment. The system is assumed to be in place in all redevelopment areas by 2016. The system would be designed and constructed in accordance with standards set forth in the City of Bellingham Stormwater Management Ordinance, which is based on the Ecology Manual (2005).**

  - The permanent stormwater conveyance system for the site is assumed to be based on a gravity flow system. Redevelopment Areas 1–9 would be served by conveyance systems that outfall to the Bay or Waterway, subsequent to water quality treatment. Eight new outfalls would be constructed/reconstructed to discharge runoff from the site. Discharge from Area 10 would occur via sheet flow or dispersion trenches.

Water Resources (continued)

- Existing outfalls to the Bay, serving offsite stormwater collection systems that pass through the site, would continue to discharge runoff and would not be altered by redevelopment of the site.

- Stormwater flow rates and treatment volumes for each redevelopment area were estimated using the Ecology Manual (2005) continuous hydrological model. Outfalls would be designed to accommodate the applicable design storm flow rates to prevent conveyance problems, flooding, or scouring of the Bay and Waterway.

- Stormwater originating on all pollution-generating surfaces (i.e. roads and parking areas) would be treated for water quality before discharge to the Bay or Waterway. Water quality treatment would be provided to meet Basic Treatment standards designed in accordance with the Ecology Manual (2005). Treatment methods would likely include wet vaults, bioretention facilities, swales and/or filter strips. Stormwater runoff from roofs would be conveyed directly to outfalls for discharge.

- The Port anticipates participating in the LEED-ND Pilot Program. The LEED-ND includes guidelines for stormwater design and low-impact development which could be implemented as part of the redevelopment, as feasible. These guidelines include Innovation and Design Process Points for a Clean Ocean Marina and stormwater design to minimize impervious surfaces and provide innovative water quality treatment techniques.

- **Vehicular traffic would be the primary stormwater contaminant source from operation of the New Whatcom redevelopment, similar to other urban mixed use developments. Organic and inorganic pollutants from vehicular traffic would include heavy metals, petroleum products and solids. Pollutants would also be generated from landscape maintenance and wildlife and pet waste.**

  - Based on the stormwater quality analysis conducted for Alternatives 1 and 3 at buildout in 2026, the overall quality of stormwater discharged to the Bay and Waterway from onsite water quality treatment facilities would be improved over existing conditions (both for discharge from individual outfalls or for combined discharge from all outfalls). Similar or better conditions would result at 2016.

  - Under the Redevelopment Alternatives, all stormwater parameters would be well within marine water quality standards and well within background conditions in Bellingham Bay, with the exception of fecal coliforms. Dissolved zinc would likely be above background levels at the outfalls (prior to mixing), but would be well within state standards under the Redevelopment Alternatives before discharge to the Bay or Waterway. Fecal coliforms could be above standards at all outfalls. However, it is anticipated that fecal coliform concentrations in Bellingham Bay near the site would be improved or at worst unchanged at buildout in 2026, relative to existing conditions, due to the assumed water quality treatment facilities.

  - Since no adverse water quality impacts were forecast under Alternatives 1 and 3 at buildout in 2026, Alternatives 2 and 2A would also not result in significant adverse impacts.

Water Resources (continued)

- **There are no known existing uses of groundwater (i.e industrial or domestic wells) at the site, and no installation/use of any new water supply wells is assumed as part of site redevelopment; therefore, groundwater use at the site would not change.**

- **The site is not considered a critical aquifer recharge area. Assumed redevelopment would typically replace existing impervious surfaces with new impervious surfaces (i.e. buildings and pavement); an overall decrease in the amount of impervious surfaces on the site would result from redevelopment by 2026. As a result, no significant impacts to the shallow aquifer beneath the site would be anticipated with redevelopment.**

- **Under all of the EIS Alternatives a marina would be constructed on the site of the ASB. There would be the potential for accidental spills and contaminants to enter Bellingham Bay with operation of the marina and increased use by small recreational vessels. With implementation of BMPs outlined in Ecology's *Resource Manual for Pollution Prevention in Marinas*, no significant impacts on water quality would be anticipated.**

- **It is assumed that the No Action Alternative would result in similar types of construction and operational impacts on a year-by-year basis, and mitigation measures to avoid or minimize such impacts would generally be similar to those for Alternatives 1 – 3.**

    - Operation of the No Action Alternative would result in poorer water quality for dissolved metals than under the other Redevelopment Alternatives, although water quality would still be within state standards and, except for zinc, within or near background levels. Fecal coliforms would be lowest under this alternative, because the assumed industrial uses would have fewer human-induced sources of fecal coliforms than most other land uses. Fecal coliform levels under this alternative at 2026 would likely be within state standards and less than existing conditions, due to the assumed water quality treatment facilities.

Refer to Section 6.2.3 later in this Chapter for a summary of mitigation measures related to Water Resources and DEIS Section 3.3 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.4 PLANTS AND ANIMALS ENVIRONMENTAL IMPACTS

- **Redevelopment Alternatives 1 through 3 would result in the conversion of upland areas of the site with little to no existing upland habitat to parks and open space, including new vegetated area. Riparian habitat would be provided, including restored shoreline buffer along the southern edge of the Whatcom Waterway.**

    - The amount of assumed parks/open space (upland habitat) on the site would range from 33 acres under Alternative 1 to 15 acres under Alternative 3.

Plants and Animals (continued)

- Approximately 2.4 acres of new restored sloped shoreline would be provided in place of wharf and bulkheads on the south side of the Whatcom Waterway under Alternatives 1 through 3.

- Vegetation and trees in upland park and open space area would provide songbird habitat, while restored shoreline buffer would provide habitat to a wider range of species. Shoreline vegetation would also increase the quality and function of the adjacent aquatic habitat through the provision of shoreline shading and sources of organic input and food sources (insects).

- **Grading operations and stormwater runoff associated with construction under mixed-use redevelopment on a portion of the site (including the Laurel Street Bridge) could potentially affect the offsite wetland complex southeast of Areas 7 and 10.**

    - Stormwater BMPs implemented during construction would minimize potential for sedimentation impacts to the offsite wetland.

    - The bridge structure would be subject to a future permitting and environmental review process; the potential for wetland and habitat impacts could be further evaluated at that time. Because the Laurel Street Bridge is not assumed under Alternative 3, potential impacts to the offsite wetland would not occur under Alternative 3.

- **In general, substantial benefits to aquatic habitat within the Whatcom Waterway would result from redevelopment under Alternatives 1 through 3. Redevelopment activities would include a reduction in over-water coverage associated with bulkhead/wharf along the southern edge of the Whatcom Waterway and restoration to a sloped shoreline, removal of creosote-treated piles and extensive riparian and aquatic habitat restoration/enhancement.**

    - Intertidal and shallow subtidal over-water coverage in Whatcom Waterway would be reduced by 1.53 acres, thus increasing aquatic habitat in the more productive intertidal and shallow subtidal areas.

    - Approximately 560 existing creosote piles would be removed

- **Construction of a marina in the ASB (under either Marina Concept A or Concept B under the No Action Alternative) would include the opening of the ASB to Bellingham Bay by breaching the existing berm and creating approximately 28 acres of new aquatic habitat. However, the configuration and aquatic habitat features of the two marina configurations would differ in that fewer slips would be provided under Concept A (up to 460 slips compared to up to 600 under Concept B), and more in-water habitat would be placed waterward of the breakwater under Marina Concept A than under Concept B (200,000 cubic yards of fill for new habitat would be required versus 20,000 cubic yards under Concept B).**

Plants and Animals (continued)

- Approximately 4.7 acres of new intertidal and shallow subtidal habitat and approximately 20.5 acres of unshaded subtidal habitat would be provided in association with Marina Concept A.

- Increases in over-water coverage for the marina would occur in the less productive subtidal habitat, where resultant shading would not result in significant adverse impacts to aquatic habitat.

- **Potential impacts to aquatic resources associated with removal of bulkhead/wharf features and construction of the marina/moorage floats would include noise from pile/bulkhead removal or pile driving and operation of construction machinery, temporary turbidity from pile removal or pile driving, and the potential for spills of materials from construction machinery.**

  - With implementation of the proposed mitigation measures to minimize the potential for water quality and noise impacts during construction, significant impacts to aquatic resources would not be anticipated under Alternatives 1 through 3.

- **The use of the marina and new transient moorage floats under Alternatives 1 through 3 would result in the potential for operational impacts associated with small recreational boat traffic, including potential for spills of harmful materials in Bellingham Bay and the Whatcom Waterway, and potential for disturbance of Southern Resident orca whale populations in Puget Sound.**

  - The marina would be operated consistent with the guidelines found in the Ecology *Resources Manual for Pollution Prevention in Marinas*. These guidelines focus on reducing pollution such as discharge of oil or oil-based products, establishing spill prevention/response plans, and minimizing the potential for the introduction of exotic species. With implementation of proposed mitigation measures, significant impacts from spills and other water pollutants associated with recreational boats would not be anticipated.

  - The increase in small recreational boats would be offset by a decrease in large vessels associated with prior industrial uses, and a significant increased risk or disturbance to Southern Resident orca whale populations would not be expected.

- **Stormwater runoff generated on pollutant-generating surfaces (i.e. roadways and parking areas) would be treated prior to discharge via water quality facilities. New stormwater facilities would improve the overall quality of water discharged into the Waterway and Bay, compared to existing conditions. New stormwater outfalls would be sited to maximize the provision of treated freshwater to the Bay to provide additional support to saltmarsh vegetation.**

- **Recreational boats utilizing the marina and transient moorage facilities would produce wakes as they enter and exit the Whatcom Waterway. Boat wakes could create the potential to disturb sediments in intertidal and shallow subtidal areas, and create the potential for shoreline erosion; these wakes could potentially affect**

Plants and Animals (continued)

the restored sloped shoreline along the southern edge of the Whatcom Waterway.

- Because the increase in small recreational boat traffic within the Whatcom Waterway would be offset by a decrease in large vessels associated with prior industrial operations, and wakes produced by recreational boats are typically substantially smaller than natural wave fluctuations, significant impacts to subtidal and shoreline areas from boat wakes would not be anticipated.

- **The No Action Alterative assumes future redevelopment consistent with existing industrial zoning, with no new upland park/open space or restored shoreline habitat provided. Marina Concept B would provide up to 600 slips compared to up to 460 slips under Marina Concept A, less in-water intertidal/shallow subtidal habitat (3.7 acres compared to 4.7 acres under Concept A), and no park or open space along the top of the breakwater berm. More new unshaded subtidal habitat would be created (21.1 acres compared to 20.5 acres under Marina Concept A).**

  - The aquatic benefits under Alternatives 1 through 3 associated with removal of existing over-water bulkhead/wharf features along the southern edge of the Whatcom Waterway and restoration of the natural shoreline, and creation of new in-water habitat in the Whatcom Waterway would not be provided under the No Action Alternative. Transient moorage floats within the Waterway would not be provided. The potential for temporary impacts to aquatic resources associated with removal of bulkhead/wharf and construction of moorage floats would not occur.

- **The No Action Alternative assumes minor improvements at the Bellingham Shipping Terminal (BST) including replacement of bulkhead, installation of H-pile supports, placement of backfill waterward of the MHHW, and replacement of main pier fender system (including the removal of creosote piles and replacement with steel piles).**

  - Potential impacts to aquatic resources from improvements at the BST would include the potential for temporary turbidity from pile and bulkhead removal, potential release of debris and pollution into the water, and noise from machinery. With implementation of identified mitigation measures, impacts associated with construction would not be anticipated to result in significant impacts to aquatic resources.

Refer to Section 6.2.4 later in this Chapter for a summary of mitigation measures related to Plants and Animals and DEIS Section 3.4 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.5 ENVIRONMENTAL HEALTH ENVIRONMENTAL IMPACTS

- **Cleanup activities at seven different sites within the site area are being implemented under the State Model Toxics Control Act (MTCA) and the Sediment Management**

Environmental Health (continued)

Standards (SMS), under the direction of Ecology. Future land uses at the New Whatcom site will be considered as part of the Cleanup Action Plan for each area to be remediated (cleanup levels will be established based on future land uses at the site). Cleanup actions will provide adequate mitigation for most of the environmental health and hazardous materials concerns at the site.

- Cleanup actions will be performed in phases, with the construction phase of all cleanups expected to be complete by 2016 (potentially including soil removal, soil and groundwater treatment, capping, installation of containment structures, etc.).

- Subsequent to the construction phase, institutional control plans will be implemented at each cleanup site defining specific requirements for how final remedial actions will be implemented in coordination with redevelopment (potentially including use limitations, worker protection standards and other requirements).

- The design, permitting and construction of cleanup actions within the Whatcom Waterway site will be implemented along with proposed waterfront redevelopment (i.e. the marina, transient moorage, shoreline and habitat enhancements). Following construction activities, an institutional controls plan will be implemented at the Whatcom Waterway site.

- **During New Whatcom redevelopment construction, exposure to and/or disturbance of contaminated soils, exposure to soil vapors or other hazardous substances, or disturbance of containment structures and capped sediment could result. This includes construction associated with building demolition, grading and soil management, dredging and subsurface construction. Mitigation would be addressed by compliance with site-specific institutional control plans, worker safety protocols and other applicable regulations, during all construction activities. Further, final cleanup plans may specify restrictions on excavations in certain areas or restrictions on ground-floor residential uses in limited areas of the site.**

  - It is possible that previously-undocumented contamination could exist at portions of the site, separate from the active cleanup sites. Should such contamination be discovered, compliance with applicable MTCA regulations would mitigate potential significant impacts. Certain businesses could use, store or process hazardous materials at the site. Compliance with applicable local, state or federal regulations would serve as mitigation for risks to the environment due to these materials.

  - **Subsequent to completion of construction activities at the site, certain operational activities (i.e. boat disturbance, utility maintenance, storage, use or disposal of hazardous materials) could result in disturbance to and/or reexposure of contaminated soils or sediment. Mitigation would include compliance with institutional controls, worker safety provisions and other applicable regulations.**

  - **The extent of cleanup required under the Redevelopment Alternatives (Alternatives 1 through 3) would be generally more stringent than the level of cleanup required to support ongoing industrial use of the site under the No Action**

Environmental Health (continued)

Alternative. This more stringent cleanup, to meet standards applicable to mixed uses, would result in reductions in residual environmental risks and overall improvement in environmental protection of the site.

- **Under the No Action Alternative, institutional controls for each of the cleanup actions at the site will specify, as appropriate, the requirements for future, industrial redevelopment to ensure coordination. In general, the scope of these requirements would be less extensive for industrial land uses as compared to mixed uses, given the difference in cleanup standards for these categories of land use.**

  - Given the assumed level of industrial redevelopment under the No Action Alternative, businesses could use, store or process hazardous materials at the site, increasing risks to the environment, as compared to Alternatives 1 through 3.

  - The benefits of a more stringent cleanup to support mixed-use redevelopment would not occur under the No Action Alternative.

Refer to Section 6.2.5 later in this Chapter for a summary of mitigation measures related to Environmental Health and DEIS Section 3.5 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.6 NOISE ENVIRONMENTAL IMPACTS

- **Construction activities associated with redevelopment of the site would result in the generation of temporary, intermittent noise in the site vicinity over the phased construction buildout. Each of the Redevelopment Alternatives (Alternatives 1 through 3) would include similar construction activities such as clearing, grading, excavating, demolition, material supply delivery, and heavy equipment use; therefore, construction activities and related noise levels would be similar among the Redevelopment Alternatives.**

  - Noise resulting from onsite construction activity would have a limited ability to significantly impact offsite sensitive receivers (i.e. residential uses) that are generally located more than 500 feet from most potential construction activity noise sources. Construction noise would fall to levels within 55 to 75 dBA at 500 feet from roadway or general building construction and would not, therefore, result in significant impacts. Receivers located less than 500 feet from a construction activity could experience substantial noise levels.

  - The most prevalent noise sources during construction would be pile-driving and various engines that power equipment. Pile-driving would be expected to affect the largest number of receivers on and surrounding the site. Pile-driving activities would be intermittently intrusive throughout the phased construction period at distances less than 500 feet from a particular pile-driving area. Noise from impact-related construction

activities, such as pile-driving, would also likely be heard by receivers at a greater distance from the site and would be expected to be a nuisance for onsite and offsite receivers in the surrounding area.

- It is assumed that construction of new roadway connections to the existing City street network at the perimeter of the site would pose the greatest potential for short-term construction noise impacts to existing offsite sensitive receivers. However, because construction of roadway and infrastructure improvements, as well as building and parking structure construction, would be phased over time and would be temporary in nature, construction impacts would not be expected to be significant.

- **Operational activities associated with the Redevelopment Alternatives assume a variety of onsite noise-generating uses, such as light and marine industrial businesses, a new marina and ongoing activities at the Bellingham Shipping Terminal, in proximity to areas that would also support office, institutional, recreational, and residential uses. Operational activity noise levels would be generally similar under all of the Redevelopment Alternatives.**

  - Given the potential proximity of new onsite receivers to the above noise sources, certain noise issues could arise. Future site planning, design, building orientation and building techniques could be considered during the Master Development Plan and future permitting process to ensure that future onsite noise levels would be consistent with Ecology's Environmental Noise Regulations. Typical design and construction methods could be implemented to promote a noise-compatible environment onsite.

  - Noise from future industrial, office, institutional, residential and recreational facilities assumed for the New Whatcom site, would be typical of such uses in an urban environment and would not be expected to significantly impact offsite sensitive receivers.

  - All EIS Alternatives assume new marina uses at the existing ASB and an increase in small recreational vessel traffic could occur. Large marine vessel traffic, which contributes to the existing background noise in the area, would be expected to decrease. This shift in vessel use would not be expected to result in a net perceptible increase in noise levels.

- **Existing exterior noise levels within the area surrounding the site are currently and will be dominated by traffic on the immediately adjacent roadways.**

  - None of the offsite sensitive receivers within the study area would be expected to experience substantial increases or significant impacts from New Whatcom traffic, due to background traffic noise levels. For most sensitive uses within the study area, traffic-related noise increases would not be expected to be audible (only a 1 to 2 dBA increase).

  - The highest exterior traffic noise level increases would result during the PM peak hour at existing residential uses located in proximity to Areas 5 and 7. These uses would be in closest proximity to certain new roadway connection improvements (i.e. the Laurel Street

Noise (continued)

bridge) and associated traffic on these new roadways would generate noise increases. However, increases would be expected to be audible (increases of 3 to 6 dBA during the PM peak hour), but would not be considered a significant impact.

- The traffic noise environment for onsite new receivers was also considered in this Draft EIS. Because specific building locations and design features which could affect traffic noise attenuation have not been determined, onsite receivers were assumed to be located at a distance of 50 feet from the busiest onsite roadways. With the exception of Area 1, onsite exterior noise levels would be generally expected to meet applicable noise criteria. The traffic noise analysis for Area 1 indicates a future noise level potentially exceeding criteria for residential uses located in direct proximity to a busy onsite roadway during the PM peak hours (during worst-case conditions). Future site planning, design, building orientation and building techniques could be considered during the Master Development Plan and future permitting process to ensure that future onsite noise traffic levels would adhere to applicable noise criteria.

- **Alternatives 1 and 2 assume that a portion of the current railroad corridor on the site would be relocated adjacent to the bluff at the eastern and southern border of the site by 2016; Alternative 2A assumes relocation by 2026. As the noise from railway operations has been contributing to the background noise environment for all receivers in the study area, moving the railroad corridor to the eastern and southern portion of the site would not be anticipated to result in new significant impacts. The potential relocation would be subject to a specific permitting and environmental review process in the future.**

  - Relocating the railroad corridor would serve to decrease noise to future onsite sensitive uses (such as residential) by moving this noise source to a greater distance from new onsite uses.

  - Because only a portion of the rail corridor would be relocated, it is expected that any perception of an increase in train noise would likely be limited to residences located on top of the bluff, in direct proximity to Areas 5 and 7. Relocating the rail corridor adjacent to the bluff would be expected to increase the noise for the first row of sensitive receivers positioned closest to the top of the bluff. Due to natural sound attenuation against steep terrain, the repositioning of the railroad next to the bluff could reduce the train noise levels at receivers beyond the first row of residences, farther to the east, northeast and southeast.

  - Under Alternative 3, the railroad corridor would remain in its current configuration. Therefore, there would be no increase in background noise associated with relocating the railway operations for offsite receivers in proximity to Areas 5 and 7, but could increase anticipated noise levels for some future onsite uses.

- **The No Action Alternative assumes the New Whatcom site would be redeveloped with new industrial uses and a marina. Relative to the Redevelopment Alternatives, the No Action Alternative would have the least construction-related noise impacts. The assumed development of new industrial uses under the No Action Alternative has the**

Noise (continued)

potential to include additional stationary industrial noise sources on the site; however, it is assumed that each of the industrial operations would obtain and comply with all applicable environmental noise regulations. Therefore, no significant noise impacts to onsite or offsite receivers would be expected.

- The No Action Alternative also assumes construction of a marina at the existing ASB. Similar to the Redevelopment Alternatives, large marine vessel traffic would be expected to decrease while small recreational vessel traffic would be expected to increase. This shift in vessel use would not be expected to result in a net perceptible increase in noise levels.

Refer to Section 6.2.6 later in this Chapter for a summary of mitigation measures related to Noise and DEIS Section 3.6 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.7 LAND USE ENVIRONMENTAL IMPACTS

- **Approval of the Proposed Actions (i.e. Master Development Plan, Development Agreement, Development Regulations and Planned Action Ordinance) would allow for the transformation of the primarily vacant and underutilized industrial site to a new neighborhood with a mix of uses and public open spaces that are connected to and integrated with the surrounding community.**

- **The types of direct land use impacts that could potentially occur from site redevelopment generally relate to construction impacts, displacement of existing uses, conversion of land uses, changes in activity levels, and compatibility of new land uses on the site with existing land uses.**

  - Construction associated with assumed redevelopment would result in periodic impacts to adjacent land uses over the 20-year buildout period. Construction activities would occur incrementally and could result in temporary impacts to adjacent uses that are in direct proximity to construction areas.

  - Construction-related impacts could include dust and emissions from construction equipment and vehicles; increased noise levels and vibration from construction activity; and, increased traffic associated with construction workers and vehicles.

- **Redevelopment under Alternatives 1 through 3 would result in similar types of land use-related impacts; however, the degree and intensity of those impacts would differ among each alternative.**

  - Alternative 1 assumes the highest amount of redevelopment (building density, building height, roadway network, parks, trails and open space) among the alternatives and would, therefore, result in the greatest amount of land-use related impacts. Alternative

Land Use (continued)

2/2A assumes a middle level of redevelopment, while Alternative 3 assumes the lowest level of redevelopment and thus would incur the lowest amount of land-use related impacts.

- **Redevelopment Alternatives could result in the displacement of some or all existing uses on the site over the long-term. GP operations are planned to be terminated at the end of 2007. Decisions related to potential displacement of other industrial businesses would ultimately be made by the Port, the City and/or individual businesses.**

  - Certain industrial uses in Area 1, uses associated with the Bellingham Shipping Terminal in Area 9 and the BNSF railroad corridor are assumed to remain on the site through 2026. However, the railroad corridor would be relocated to the southern portion of the site, against the bluff, under Alternatives 1, 2 and 2A.

- **Redevelopment Alternatives would convert the site from its current vacant and underutilized industrial condition to a new urban mixed-use neighborhood that would create the opportunity for the establishment of a live-work-play environment.**

  - Under Alternatives 1 through 3, between approximately 7.5 million and 4 million square feet of new mixed-use building space would be constructed at full buildout (2026). The types of uses assumed for the site would include office, institutional, light/marine industrial, marina, recreation, low-rise residential, mid-rise residential, high-rise residential, retail, and restaurant.

  - Infill redevelopment at the New Whatcom site could alleviate pressure for growth in outlying areas or at the fringe of the Urban Growth Area. Infill redevelopment would consume less land than would lower density development and could be viewed as being more efficient from a land use perspective.

  - The overall mixed-use character of redevelopment under Alternatives 1 through 3 would be generally consistent with the existing uses in the vicinity of the site, including uses within the Central Business District (CBD). The land use character of the site would transition to a mixed-use neighborhood over time.

  - Activity levels on the site would increase as a result of new employment and housing opportunities, new recreational uses and new public gathering areas. This increase in activity levels could result in increased levels of traffic, noise and air pollution onsite. Although redevelopment would occur throughout the site, increased activity levels associated with redevelopment along the site perimeter would have the greatest potential to affect adjacent land uses. However, based on the compatibility of new onsite uses with existing offsite uses, existing topographic and land use buffers in some adjacent areas, and the effective extension of the CBD to the waterfront, significant land use impacts are not anticipated.

  - New pedestrian/bicycle and vehicular connections between the site and the CBD would promote an extension of the CBD. New onsite residents, employees and visitors would

Land Use (continued)

likely increase patronage of existing businesses in the surrounding area. Certain existing businesses would benefit from New Whatcom redevelopment; other businesses that compete directly with New Whatcom businesses may not benefit. Ultimately this would depend on the specific type of businesses that locate on the site and other economic and market factors.

- **Redevelopment Alternatives would result in increased building heights and building density on the New Whatcom site.**

  - Under Alternatives 1 through 3 maximum building heights could range from 200 feet to 100 feet. The maximum building height (200 feet in Area 2 under Alternative 1) would be generally greater than a majority of the existing buildings in the site vicinity but would be comparable to some existing and new buildings in the CBD. Existing topographic and land use buffers (the bluff and waterways) would limit the potential for significant impacts to adjacent uses from increased building density and height onsite.

- **New parks, trails, habitat areas and a marina would be assumed to be constructed as part of redevelopment of the site and would provide a range of new recreational opportunities for the community.**

  - Under Alternatives 1 through 3 between approximately 33 and 15 acres of public parks, trails and habitat areas would be constructed onsite at full buildout. A marina (Marina Concept A) with up 460 moorage slips, boat launch, temporary moorage, associated parking and support facilities would also be included under Alternatives 1 through 3.

  - New trails assumed under Alternatives 1 through 3 would provide increased pedestrian and bicycle connections between the site and surrounding areas. These new trails would also provide a link to existing trails in the City of Bellingham trail network, including the Whatcom Creek Trail and the South Bay Trail.

- **A majority of the shoreline area onsite under Alternatives 1 through 3, which is currently inaccessible to the public, would be transformed into public parks, trails and habitat restoration areas that would allow for increased public access to the waterfront.**

  - Building redevelopment could occur in shoreline areas where park, trail and habitat areas are not provided. Redevelopment within the shoreline area would be consistent with applicable City of Bellingham Shoreline Master Program standards and would be consistent with other mixed uses on the site. Significant impacts to offsite uses from redevelopment in the shoreline area would not result.

- **Redevelopment Alternatives could locate new uses in proximity to existing and ongoing industrial and transportation uses in Area 1, the Bellingham Shipping Terminal in Area 9 and the BNSF railroad corridor. Extensions of the existing roadway system to the site and development of new onsite roads would also result in increased activity and noise levels in proximity to these roads.**

Land Use (continued)

- New land uses assumed as part of redevelopment of the site could experience impacts related to noise, emissions and vibrations as result of their proximity to ongoing industrial and railroad uses; however these impacts are not anticipated to be significant.

- **Redevelopment of the New Whatcom site under the No Action Alternative would not be anticipated to substantially change the overall character or pattern of land use on the site and would result in fewer public amenities and public street connections to the site when compared to the Redevelopment Alternatives.**

  - Under the No Action Alternative approximately 1.04 million square feet of new light/marine industrial building space would be constructed at full buildout, along with the retention and reuse of approximately 1.15 million square feet of existing building space for industrial uses.

  - It is assumed that the No Action Alternative would not include any new parks, trails or habitat areas onsite. A new marina (Marina Concept B) would be developed onsite and would include up to 600 moorage slips, boat launch, associated parking and facilities. Public access to the waterfront would be primarily limited to the marina; the park and trail features associated with Marina Concept A would not be provided.

  - Under the No Action Alternative, the shoreline areas of the site would be assumed to remain in their existing industrial conditions (bulkheads/wharf) and no new parks, trails or habitat areas would be provided within the shoreline area.

  - No new roadway or pedestrian/bicycle connections to the CBD would be provided under the No Action Alternative. This would limit public access opportunities to the site and would not create an extension of the CBD to the site and waterfront.

Refer to Section 6.2.7 later in this Chapter for a summary of mitigation measures related to Land Use and DEIS Section 3.7 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.8 RELATIONSHIP TO PLANS AND POLICIES ENVIRONMENTAL IMPACTS

Redevelopment of the New Whatcom site under the Proposed Actions would occur in the context of local and state plans and regulations. Thus, the Proposed Actions were evaluated for consistency with relevant plans, policies and regulations. Key plans that are summarized and evaluated include the State Growth Management Act, State Shoreline Management Act, the Bellingham Bay Demonstration Pilot Project, Port of Bellingham Comprehensive Scheme of Harbor Improvements, Port and City Joint Planning Efforts, City of Bellingham Comprehensive Plan, the City of Bellingham Shoreline Master Program and the City of Bellingham Municipal Code.

Relationship to Plans and Policies (continued)

In general, Alternatives 1 through 3 would be consistent with applicable state and local plans, policies and regulations. The No Action Alternative, given its assumption of redevelopment with industrial uses, would be considered less consistent with many of the policies identified through the City/Port Joint Planning Efforts and the City's Comprehensive Plan, which call for redevelopment of the New Whatcom site with a mix of uses and public access features.

Refer to DEIS Section 3.8 of Chapter 3 for the detailed evaluation of the relationship of the Proposed Actions to identified plans and policies.

6.1.9 POPULATION, EMPLOYMENT AND HOUSING ENVIRONMENTAL IMPACTS

- **New Whatcom redevelopment would increase the population onsite and assist the City in reaching its projected population targets. This increase in population would occur in an area that is targeted for additional growth in the City's Comprehensive Plan.**

  - Under the Redevelopment Alternatives, it is assumed that the population increase onsite would range from approximately 2,500 people (Alternative 3) to 5,900 people (Alternative 1) by buildout in 2026. Population increases would occur incrementally through the buildout period.

- **The mix of uses assumed under the Redevelopment Alternatives would include multifamily housing and a range of low, medium and high-rise units. This new housing would assist the City in reaching its projected housing targets over the long-term.**

  - Under the Redevelopment Alternatives, it is assumed that approximately 1,325 (Alternative 3) to 3,075 (Alternative 1) housing units would be constructed onsite by 2026. New housing units would be constructed incrementally through full buildout.

- **The assumed new housing would provide "live-work" opportunities for potential employees onsite, as well as employees of surrounding businesses in the downtown Bellingham area.**

- **As part of the assumed redevelopment, affordable housing would be provided onsite. Specific provisions for affordable housing would be determined as part of the adoption of Development Regulations for the site. The Port would work with the City of Bellingham, Whatcom Housing Authority and other public and private organizations to provide affordable housing.**

- **The New Whatcom redevelopment could potentially result in indirect impacts (i.e. displacement) to a limited number of existing low income housing units in the vicinity of the site. No units would be directly displaced as a result of New Whatcom**

construction or redevelopment, however. Any potential displacement would likely occur gradually over the buildout period, and independent of New Whatcom redevelopment (as real estate values in the area increase and buildings reach the end of their life cycles). The provision of affordable housing onsite would help offset any offsite low income housing units that could potentially be indirectly displaced by long-term New Whatcom redevelopment.

- **Employment levels on the New Whatcom site would substantially increase as a result of redevelopment. New employment on the New Whatcom site would assist the City in reaching their projected employment targets over the long-term.**

  – Under the Redevelopment Alternatives, assumed redevelopment would generate between approximately 5,400 (Alternative 3) and 8,700 (Alternative 1) new jobs on the New Whatcom site by 2026. Employment levels would increase incrementally as redevelopment occurs through buildout.

- **New employment associated with assumed redevelopment would provide a broad mix of new jobs and would introduce additional economic diversity to the site and the Central Business District. In addition, construction jobs would be provided as the site develops over time.**

  – Alternatives 1, 2 and 3 would provide a mix of employment including: office, light/marine industrial, institutional, marina, retail and restaurant jobs. A range of job types and wage scales would likely result onsite.

- **As part of redevelopment, some or all of the existing onsite jobs could be displaced. GP operations are planned to be terminated by the end of 2007. Some of the other existing onsite businesses and associated jobs could remain onsite or could relocate to other parts of the City or County. Ultimately, decisions related to displacement or retention of existing businesses would be made by the Port, the City and/or individual businesses based on lease provisions, economic/market factors and other considerations.**

  – The majority of existing small businesses offsite in the site vicinity would experience very little negative impact from the New Whatcom redevelopment, and could benefit from increased activity and population growth in the area. No offsite small businesses would be directly displaced by the redevelopment; any indirect displacement of small businesses could be reasonably expected to occur independent of New Whatcom redevelopment over the long-term.

- **The No Action Alternative assumes that some level of redevelopment would occur onsite over the 20-year buildout, including new industrial and marina uses consistent with existing zoning. No residential uses would be constructed and there would continue to be no resident population onsite.**

  - The No Action Alternative would not help the City reach its projected population and housing targets. This alternative also would not provide affordable housing nor would it provide live-work opportunities.

Population, Employment and Housing (continued)

- It is assumed that retained industrial uses would retain/provide approximately 415 jobs and the redeveloped industrial uses would provide approximately 1,600 new jobs onsite (additional new employment would likely be associated with reuse of existing industrial space), substantially fewer jobs than under the Redevelopment Alternatives.

- The mix of employment under the No Action Alternative would be similar to the pattern currently found onsite. Redevelopment would not provide as broad a mix of jobs and associated economic diversity as under the Redevelopment Alternatives.

- Construction jobs would be provided as the site redevelops over time; however, there would be fewer construction jobs than under the Redevelopment Alternatives.

Refer to Section 6.2.8 later in this Chapter for a summary of mitigation measures related to Population, Employment and Housing and DEIS Section 3.9 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.10 AESTHETICS/LIGHT AND GLARE ENVIRONMENTAL IMPACTS

- **Redevelopment under Alternatives 1 through 3 would transform the aesthetic character of the New Whatcom site from a vacant and underutilized industrial site to a new urban neighborhood with a mix of uses and open space. Redevelopment is assumed to occur over an approximately 20-year period, therefore, changes in the visual character of the site would occur gradually over the long-term.**

  – The types of aesthetic impacts that could potentially occur from site redevelopment generally relate to changes in visual character on the site, changes to existing views in the surrounding vicinity and increases in light and glare levels.

- **Redevelopment on the New Whatcom site would express a visual character reflecting increased building density and building height when compared to the existing, underutilized industrial condition of the site.**

  – Between approximately 7.5 million to 4 million square feet of mixed-use building space would be constructed under Alternatives 1 through 3 at buildout in 2026. Because of the assumed higher building density and building height under Alternative 1, the visual character of the site would change to a greater degree under Alternative 1 than under Alternatives 2 and 3.

  – Maximum building heights under Alternatives 1 through 3 could range from 200 feet to 100 feet. The maximum building height (200 feet in Area 2 of the site under Alternative 1) would be generally greater than a majority of the existing buildings in the site vicinity but would be comparable to some existing buildings in the Central Business District. In general, buildings over approximately 100 feet in height would be greater in height than the majority of existing buildings in the site vicinity.

Aesthetics (continued)

- **The aesthetic and visual character of the majority of the shoreline areas of the site would change from industrial wharf and bulkhead areas to public open space containing parks, trails and habitat areas.**

  - The extent of park and open space area along the shoreline would be greatest under Alternative 1, with buildings potentially located closer to the shoreline in certain areas under Alternatives 2 and 3 (due to lesser assumed amounts of parks and trails within the shoreline).

  - The most visible shoreline areas on the site include areas along the I&J Waterway, along the Whatcom Waterway and along Area 10. In general, the views of the majority of the shoreline areas of the site would change from industrial wharf and bulkhead to new public open space areas containing parks, trails and restored natural shoreline areas.

- **Redevelopment on the site could result in the alteration of views of the New Whatcom site and areas beyond the site from surrounding area viewpoints.**

  - The potential for obstruction of existing views would generally be greatest under Alternative 1 due to the greatest assumed amount of density and building heights; the potential for view obstruction under Alternatives 2 and 3 would be similar to or less than under Alternative 1.

  - As part of the visual analysis for this Draft EIS, 14 viewpoint locations were selected as representative views of the site. Based on these viewpoints, visual simulations of redevelopment under each EIS Alternative were prepared to illustrate the potential visual impacts on the surrounding area.

  - The effect of the change in site character to the viewer is generally a function of the locational relationship between the viewer and the site. Close proximity viewpoints would have the greatest potential for view obstruction, while areas at a higher elevation or greater distance from the site would experience moderate to limited change in the visual character of the view. For example, viewpoints on streets and properties located directly adjacent to the site could experience substantial changes in visual character due to increased building scale on the site. Viewpoints located at higher elevations or at a greater distance from the site (i.e. South Hill, Lettered Streets and the CBD Neighborhoods) have views that extend beyond the site to Bellingham Bay and more distant vistas which would not generally be impacted substantially by redevelopment.

  - Visual character impacts could depend on the subjective reaction of the individual viewer (i.e. whether visual changes are positive or negative) and would likely be defined by the overall quality of building design, the public spaces that are created and the pedestrian-friendliness of the site over the long-term.

- **Redevelopment would result in new light and glare sources on the site, indicative of an urban mixed-use neighborhood. New light sources would include: interior and exterior building illumination, parking area lighting, street lighting, walkway lighting, parks and trail lighting, marina lighting and vehicular traffic. New glare sources would include building facades and windows and reflections from vehicle traffic.**

Aesthetics (continued)

- New light sources would be generally similar to those found in the surrounding areas. Onsite lighting levels would be similar to the levels found in the CBD and adjacent commercial areas, and higher than in surrounding residential areas.

- Specific glare impacts would depend upon the degree of reflective surfaces (glass windows) used during building construction. The amount of glare generated would be typical of urban development.

- New light and glare sources would be typical of urban development and significant impacts would not be anticipated. Implementation of proposed mitigation measures would further minimize the potential for significant impacts associated with new lighting.

- **Redevelopment under the No Action Alternative would change the visual character of the site from its current underutilized industrial state to a more densely developed industrial area over the long-term.**

  - Approximately 1 million square feet of new industrial uses would be constructed on the site, along with reuse of approximately 1.1 million square feet of retained industrial space.

  - It is assumed that building heights would reflect typical light/marine industrial development and would be constructed to approximately 50 feet in height, compared to buildings up to a maximum of 200 feet in height under Alternative 1.

  - The shoreline areas of the site would remain in their current industrial condition including wharves and bulkheads. Views of the shoreline areas of the site would be reflective of the existing industrial character. It is assumed that no parks, trails or habitat areas would be constructed in the shoreline areas and public access to the waterfront would be limited to the new marina.

  - Views across the site towards surrounding adjacent areas would remain similar in character to existing conditions, although some new view obstructions would likely result. The potential for view obstruction would generally be less than under Alternatives 1 through 3.

  - New light sources would be indicative of an industrial area and would generally include: interior and exterior building illumination, parking area lighting, street lighting, marina lighting and vehicular lighting. Lighting levels would be generally lower than those anticipated to occur under Alternatives 1 through 3. However, to the extent that industrial uses on the site include outdoor storage yards (requiring security lighting) or include nighttime activities, light levels associated with these types of uses could be higher than those under Alternatives 1 through 3.

  - New sources of glare would include: building facades and windows and reflections from vehicle traffic; the level of glare would be generally lower than under the Redevelopment Alternatives due to the lower level of redevelopment and less use of glass facades in industrial buildings.

Aesthetics (continued)

Refer to Section 6.2.9 later in this Chapter for a summary of mitigation measures related to Aesthetics/Light and Glare and DEIS Section 3.10 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.11 HISTORIC AND CULTURAL RESOURCES ENVIRONMENTAL IMPACTS

- **Redevelopment under Alternatives 1 through 3 is assumed to result in the removal of some buildings and structures that are over 40-years of age and are potentially eligible for listing on federal, state and/or local historic registers. These potentially eligible resources include the primarily brick-clad buildings reflective of previous mill operations, and the bulkhead/wharf defining the Whatcom Waterway, which is reflective of historic maritime use.**

  - To provide a conservative worst-case EIS analysis, it is assumed that a total of 11 potentially eligible buildings could be removed as part of the redevelopment under Alternatives 1 through 3.

  - It is possible that some of the buildings assumed to be removed could be retained, resulting in adaptive reuse and rehabilitation of some buildings. Final decisions on the removal or retention of buildings would be made in the future by the Port and City, in conjunction with site developers.

  - The planned restoration of a natural shoreline along the southern waterfront of the Whatcom Waterway (also a potentially eligible resource) would modify its character-defining features (such as bulkheads and wharfs) and dismantle sections of its delineating edges, which would diminish the historic configuration and industrial character of the Waterway.

- **Listed historic resources in the New Whatcom site vicinity could potentially experience indirect impacts from construction activities during redevelopment of the site.**

  - Construction-related impacts could include dust from construction equipment and vehicles; vibration from vehicle movement and construction activity; and, increased traffic associated with construction vehicles and construction workers. These impacts would occur incrementally over the buildout period and are not expected to be significant.

- **Existing views from certain offsite historic resources in the surrounding area could be altered with redevelopment under Alternatives 1 through 3.**

  - A majority of the views from these historic resources are currently affected by existing buildings and structures. The historic value of these resources is not dependent upon views to and beyond the New Whatcom site, and no significant impacts would be expected.

Historic and Cultural Resources (continued)

- **To the extent that buildings, utilities or roadway construction would require below grade excavation, such below-grade excavation could impact potential archaeological resources located beneath the New Whatcom site.**

  - Areas of the site that contain the highest potential for archaeological resources include the portions of Redevelopment Areas 2, 5 and 7 located adjacent to the bluff; former beach and shoreline areas of the site also have the potential of containing archaeological resources.

  - Because roadways on the site are anticipated to be raised 3 to 6 feet above existing grades via imported fill, the amount of below-grade excavation and potential to encounter archaeological resources would be limited. However, to establish procedures for addressing potential effects to archaeological resources, a management plan would be drafted and implemented in consultation with applicable state, tribal and local agencies.

- **Redevelopment under the No Action Alternative assumes the retention of all existing buildings (post GP demolition) and no onsite historic resources would be impacted. Onsite archaeological resources could be impacted as a result of any below-grade excavations during construction activities.**

  - During construction activities, listed historic resources in the site vicinity could experience indirect impacts such as increases in dust, vibration and traffic levels.

  - Redevelopment could affect views from offsite historic resources; however, a majority of these resources are currently affected by existing buildings and structures. The historic value of these resources is not dependent on views toward the New Whatcom site and beyond, and no significant impacts would result.

  - To the extent that infrastructure improvements and industrial redevelopment results in excavation into existing soils, archaeological resources could be uncovered. Similar to under the Redevelopment Alternatives, a management plan would be implemented.

Refer to Section 6.2.10 later in this Chapter for a summary of mitigation measures related to Historic and Cultural Resources and DEIS Section 3.11 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.12 TRANSPORTATION ENVIRONMENTAL IMPACTS

- **Vehicular traffic during construction would increase and would consist of trucks bringing and removing soil, equipment and materials, as well as construction employees commuting to and from the site. Construction traffic could be intermittently heavy, particularly during grading operations, but overall would be less than operational traffic. The use of barges to bring and remove soil, equipment, and materials would reduce construction traffic on the surrounding street system.**

Transportation (continued)

- **The potential for conflicts between truck traffic and other modes of traffic would temporarily increase during the construction period, but would subside when construction ends.**

  - Under all of the EIS Alternatives, truck traffic would likely use the City's existing truck routes which would help reduce conflicts with other modes of traffic.

- **It is assumed that Alternatives 1 through 3 would include a range of improvements to the transportation system to provide added capacity for their expected trip generation. This would include an onsite roadway network, as well as at-grade and elevated bridge connections to the surrounding road network. Some of these improvements would likely be constructed in the initial stages of site redevelopment, and others would be phased over time as redevelopment occurs over the 20-year buildout period. An extensive park and trail system would also be provided.**

- **With or without redevelopment of the New Whatcom site, added transportation demands and congestion on the surrounding street system will occur due to forecasted growth in Bellingham. Improvements to the street system will be required with or without mixed-use redevelopment on the site.**

- **The EIS Alternatives would feature long-term redevelopment of the site that would contribute to increases in travel demands and congestion along the on and offsite system. In order to accommodate traffic from redevelopment, additional improvements (beyond those assumed under the Redevelopment Alternatives) would be required. These improvements include roadway and intersection improvements, eliminating gaps in the pedestrian and bicycle network, provision of transit and non-motorized facilities, and implementation of strategies to reduce the number of vehicles traveling to and from the site. Certain improvements may present challenges in terms of construction due to the location of the railroad tracks, the need for right-of-way acquisition, cost and other factors.**

- **Additional vehicular trips would be added to the site and area street system with operation of the assumed redevelopment under all EIS Alternatives. The greatest number of vehicular trips would occur during the PM peak hour.**

  - The EIS Alternatives would generate between approximately 850 (No Action Alternative) and 2,200 (Alternative 1) net new PM peak hour vehicle trips by 2016 and between approximately 1,850 (No Action Alternative) and 5,700 (Alternative 1) net new PM peak hour trips by 2026.

- **Vehicular traffic from the assumed redevelopment would add to congestion of the onsite transportation network and would affect the operations of certain onsite roadways and intersections without implementation of mitigation measures.**

  - Under all EIS Alternatives, all onsite roadway segments would operate better than the City's LOS E standard in 2016. Some roadway segments would improve slightly under Alternatives 1 – 3, as compared to the No Action Alternative, due to proposed roadway improvements included as part of the Redevelopment Alternatives.

Transportation (continued)

- Under Alternatives 1 and 2/2A during the PM peak hour by 2026, three segments of Roeder Avenue would operate at LOS F (below the City's standard); under Alternative 3 two segments of Roeder Avenue and one segment of Cornwall Avenue would operate at LOS F. Under the No Action Alternative, two segments of Roeder Avenue and two segments of Cornwall Avenue would operate at LOS F by 2026. All other onsite roadways would operate at acceptable levels (see **Table 3.12-5** in Chapter 3 for details).

- Under Alternatives 1 – 3 and the No Action Alternative during the PM peak hour by 2016, four of the onsite intersections with Roeder Avenue would operate at LOS F. The same intersections with Roeder Avenue would operate at LOS F under the No Action Alternative. All other onsite intersections would operate at LOS E or better (see **Table 3.12-6** in Chapter 3).

- Under Alternatives 1, 2A and 3 and the No Action Alternative during the PM peak hour by 2026, the same four onsite intersections with Roeder Avenue identified for 2016 plus two additional intersections with Chestnut Street would operate at LOS F. Under Alternative 2, four onsite intersections with Roeder Avenue and one intersection with Chestnut Street would operate at LOS F by 2026. Operations at several onsite locations would improve under the Redevelopment Alternatives by 2026 with the additional access improvements that would be provided. All other onsite intersections would operate at acceptable levels (see **Table 3.12-6**).

- **Vehicular traffic from the assumed redevelopment would also add to congestion of the offsite roadway system and would affect the operation of certain offsite roadways and intersections without implementation of mitigation measures.**

  - Under all EIS Alternatives, all offsite roadway segments would operate better than the City's LOS E standard in 2016. Some roadway segments would improve slightly under Alternatives 1 – 3, as compared to the No Action Alternative, due to access improvements included as part of the Redevelopment Alternatives, which would slightly change travel patterns.

  - Under Alternatives 1 and 3 and the No Action Alternative during the PM peak hour by 2026, four roadway segments, primarily of Holly Street, would operate at LOS F. Under Alternative 2, three segments of Holly Street would operate at LOS F. Under Alternative 2A, two segments of Holly Street would operate at LOS F. Operations on Cornwall Avenue would improve to LOS A under Alternatives 1 – 3 by 2026 with the additional access that would be provided. All other offsite roadways would operate at acceptable levels (see **Table 3.12-5** in Chapter 3 for details).

  - Under Alternatives 1 and 2/2A during the PM peak hour by 2016, five offsite intersections (including two with North State Street) would operate at LOS F. Under Alternative 3 and the No Action Alternative, three offsite intersections would operate at LOS F by 2016. All other offsite roadways and intersections would operate at LOS E or better (see **Table 3.12-6** in Chapter 3).

Transportation (continued)

- Under Alternative 1 during the PM peak hour by 2026, nine offsite intersections (including several with North State Street and Lakeway Drive) would operate at LOS F. Under Alternative 2 and 2A, ten offsite intersections would operate at LOS F. Under Alternative 3 and the No Action Alternative, eight offsite intersections would operate at LOS F. Operations at the North Forest Street/North State Street/Boulevard Street intersection would improve to LOS B with the installation of a roundabout assumed under Alternative 1. All other offsite intersections would operate at LOS E or better (see **Table 3.12-6**).

- **A new sidewalk and pedestrian/bicycle trail system and new road connections between the site and downtown Bellingham, Western Washington University, the offsite local and regional trail network and other surrounding neighborhoods would be provided under the EIS Alternatives. Public access to the waterfront would also be substantially increased.**

  - The most extensive sidewalk/trail systems would be provided under Alternatives 1 and 2. Bicycle/pedestrian facilities would be more limited under Alternative 3 and substantially less under the No Action Alternative.

- **Additional pedestrian/bicycle traffic together with additional vehicular traffic from the assumed redevelopment could increase conflicts with pedestrians/bicyclists. However, with assumed on and offsite safety enhancements and non-motorized improvements, these potential impacts would not be expected to be significant.**

  - Alternatives 1 through 3 would generate between about 3,500 and 6,800 daily pedestrian/bicycle trips by 2016 and between about 9,500 and 17,500 daily trips by 2026. The industrial uses assumed under the No Action Alternative would generate substantially less pedestrian/bicycle activity than the mixed uses assumed under the Redevelopment Alternatives.

- **Transit ridership would increase under the EIS Alternatives. An increase in Whatcom Transit Authority transit service in the vicinity of the site, as well as service and stops onsite, would be required to support future growth in ridership and transit demand due to redevelopment by both 2016 and 2026.**

  - Alternatives 1 through 3 would generate between approximately 1,000 and 1,900 new daily transit trips by 2016 (No Action Alternative transit trips were assumed to be incorporated into the Whatcom Transit Authority's future ridership and seating capacity projections, and would be less than under Alternatives 1 - 3).

  - Alternatives 1 through 3 would generate between approximately 2,900 and 5,200 new daily transit trips by 2026. Increases in transit service would be required to support future growth in ridership from redevelopment.

- **The increase in vehicular and non-motorized trips under the EIS Alternatives would increase the potential for conflicts and safety issues with trains at at-grade rail crossings. Vehicular traffic delays could also result, primarily during off-peak hours,**

given expected railroad operations. Relocation of the BNSF railway under Alternatives 1 and 2/2A would reduce these conflicts/safety issues relative to Alternative 3 and the No Action Alternative.

- Under Alternative 1 and 2 by 2016, the BNSF railway would be relocated; two at-grade crossings would be eliminated and four at-grade crossings would remain. Under Alternatives 2A, 3 and the No Action Alternative by 2016 the railroad would not be relocated; six at-grade crossings would remain under these alternatives.

- Under Alternatives 1, 2, 3 and the No Action Alternative by 2026, the number and location of rail crossings would be the same as identified above for 2016. Under Alternative 2A, the BNSF railway would be relocated by 2026; two at-grade crossings would be eliminated and three at-grade crossings would remain.

- **Under Alternatives 1, 2 and 2A, construction of bridges over the railroad would provide direct emergency access to Redevelopment Areas 2 – 10, as certain intersections would not be blocked by rail operations. Within Area 1, all at grade crossings would remain, potentially delaying emergency access to the site when trains pass through the access intersections in this area.**

  - Under the No Action Alternative and Alternative 3 by 2016, emergency access to/from the site would potentially be delayed during passage of trains, since site access intersections would have at-grade crossings (construction of bridges over the railroad would occur under Alternative 3 by 2026 and blockage by rail operations would improve in Areas 2 - 10, similar to under Alternatives 1 and 2).

- **Assumed redevelopment would generate the need for parking. Some users (employees, residents, visitors) of the site could park offsite; however, given the assumed onsite parking supply, the majority of users would park onsite and there would be minimal impacts to offsite parking conditions.**

  - It is assumed that approximately 1,420 to 6,670 onsite parking spaces would be provided under the EIS Alternatives by 2016, and 2,500 to 15,560 onsite spaces by 2026. The maximum parking demand under all of the EIS Alternatives could be accommodated by the assumed parking supply provided onsite. Some users of the site could park offsite; there are available offsite parking spaces located within ¼ mile of the site which could accommodate offsite demand, and impacts to the offsite supply would be minimal.

- **Under all of the EIS Alternatives, a marina would be developed within the remediated ASB area and temporary moorage facilities would be constructed in the Whatcom Waterway (under Alternatives 1 through 3). As a result, navigation opportunities and shoreline access in the Inner Whatcom Waterway for smaller recreational, tribal and fishing vessels would be improved and use by larger industrial vessels would likely decrease. Navigation uses in other nearby areas (i.e. the I&J Waterway and adjacent to the Bellingham Shipping Terminal) would generally continue consistent with existing conditions; however, use by small boats could increase. Such an increase would not be expected to severely impact public/tribal access or navigation uses.**

Transportation (continued)

- Alternatives 1, 2/2A and 3 would include development of a marina with up to 460 slips, as well as public access and associated facilities (boat launch, parking, gatehouse, etc.) and park/trail and habitat amenities. Temporary moorage facilities would be provided in the Whatcom Waterway. The No Action Alternative would include development of a marina with up to 600 slips; limited public access would be provided and no park/trail features would be assumed. Temporary moorage facilities in the Whatcom Waterway would not be provided under the No Action Alternative.

- Industrial vessel use of the area offshore of the marina and the area offshore of Area 10 would likely be discontinued under all of the EIS Alternatives to avoid potential navigation conflicts.

Refer to 6.2.11 later in this Chapter for a summary of mitigation measures related to Transportation and DEIS Section 3.12 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.13 PUBLIC SERVICES ENVIRONMENTAL IMPACTS

- **For the purposes of this Draft EIS, portions of the impact analyses for public services are projected based on an economic model developed by the City of Bellingham. Pursuant to direction from the City, impacts from redevelopment on City public services, including police and fire services, and parks and street maintenance were evaluated using the City's economic model. Impacts to public schools were determined based on information from the Bellingham School District's 2004-2009 Capital Facilities Plan and other factors.**

- **During construction, there could be a short-term increase in demand for fire and police services to respond to potential construction-related accidents and injuries, and construction site theft and vandalism, respectively. Under the Redevelopment Alternatives, potential impacts to future onsite parks and trails associated with construction activity onsite could also occur, including temporary increases in dust, emissions and noise.**

- **Operation of the assumed redevelopment would result in added demand for fire/emergency and police services from the City of Bellingham Fire and Police Departments. Fire and police service needs would be generated incrementally over the buildout period. Redevelopment would contribute to the City's tax base; a portion of the tax revenues generated by redevelopment could help offset incremental increases in demand for public services (fire, police, parks, streets, etc), as could other revenue sources such as fees, licenses, and utility taxes. It is assumed that long-term capital and operating needs for City services would be addressed through the City's capital facilities planning during the 20-year buildout period.**

  – Under Redevelopment Alternatives 1, 2 and 3, a maximum of nine new firefighters, nine medics and three fire department captains would be required to serve assumed

Public Services (continued)

redevelopment by 2026 based on the City's model. One new fire engine and one new medic vehicle would also be needed (under Alternative 3 a new medic vehicle would not be needed).

- Under Redevelopment Alternatives 1, 2 and 3, between five and eight new police patrol units (one officer and one vehicle each), and approximately 1 Full Time Equivalent (FTE) detective and 1 FTE records clerk would be required to serve assumed redevelopment by 2026.

- **Assumed multifamily residential development under the Redevelopment Alternatives would generate additional student enrollment at Bellingham School District schools serving the New Whatcom site. New students would be generated incrementally as the site redevelops over time.**

  - It is estimated that Alternatives 1, 2 and 3 would generate between approximately 200 (Alternative 3) and 500 (Alternative 1) total new students by 2026. It is anticipated that student enrollment increases would represent modest increases over future enrollment and would be adequately planned for by the School District through ongoing capital facilities planning efforts and other measures to ensure adequate capacity to meet future growth needs.

- **New site residents and employees would generate the need for additional parks and recreational facilities. It is assumed that the Redevelopment Alternatives would include new onsite parks, trails, habitat areas and a marina which would provide new recreation opportunities for site residents and employees, as well as the surrounding community. New parks, trails and habitat areas would require operations and maintenance support from the City of Bellingham Parks and Recreation Department.**

  - It is assumed that Alternatives 1, 2 and 3 would provide between 15 (Alternative 3) and 33 (Alternative 1) acres of public parks, trails and habitat areas throughout the site and a new marina with up to 460 moorage slips by 2026.

  - Between approximately 3 FTE and 7 FTE additional Parks and Recreation Department staff would be required to provide operations and maintenance support for the new onsite parks, trails and habitat areas by 2026, based on the City's model.

- **New parks, trails and habitat areas assumed under the Redevelopment Alternatives would provide new opportunities for public access to the waterfront and could serve as a recreational focal point and potential gathering place for community events in downtown Bellingham.**

- **New trails assumed under the Redevelopment Alternatives would complete links to area parks and trails, thereby connecting the Fairhaven neighborhood with the Downtown CBD and other areas to the north and east. Increases in residents and employees at the site would increase demands on local and regional parks and recreation facilities, including both passive and active areas. Increases in use of such facilities from New Whatcom residents/employees would likely be distributed**

Public Services (continued)

among numerous parks, trails and facilities and would not be expected to be significant. Onsite park and trail amenities would help to offset this demand.

- **Assumed redevelopment would include new public streets that would require operations and maintenance support by the City of Bellingham Public Works Department.**

  - Alternatives 1, 2 and 3 would provide between approximately 25 (Alternative 3) and 30 (Alternative 1) acres of new public streets by 2026.

  - Between approximately 0.2 FTE and 0.8 FTE additional Public Works Department staff would be required to provide operations and maintenance support for the new public streets by 2026, based on the City's model.

- **Construction impacts to fire and police services under the No Action Alternative would be similar in nature, but less than those under the Redevelopment Alternatives. It is assumed that there would be no new onsite parks/trails under this alternative; therefore, no impacts on park facilities would result during construction.**

- **Operation impacts on public services under the No Action Alternative would be similar in nature, but generally less than those under the Redevelopment Alternatives.**

  - Based on the City's model, the No Action Alternative would not require any additional Fire Department staff or vehicles by 2026 due to the excess engine company and medic unit capacity that the Department currently envisions for this area of the City.

  - Under the No Action Alternative it is assumed that a maximum of one new police patrol unit, 0.1 FTE detectives and 0.2 FTE records clerk would be required by 2026.

  - No additional students and their associated impacts on schools would be generated, because there would be no residential development under this alternative.

  - Demand for parks and recreational facilities would be substantially less than under Alternatives 1, 2 and 3 due to the type and amount of employment and the lack of an onsite residential population. It is assumed that the No Action Alternative would not include any new parks, trails or habitat area, other than a new marina with up to 600 moorage slips. Demand for parks and recreational facilities would need to be met by existing facilities in the surrounding area. Public access to the site and waterfront would be limited under this alternative.

  - The No Action Alternative would provide approximately 6 acres of new public streets by 2026. Approximately 0.2 FTE additional Public Works Department staff would be required to provide operations and maintenance support for the new public streets.

Refer to Section 6.2.12 later in this Chapter for a summary of mitigation measures related to Public Services and DEIS Section 3.13 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.1.14 UTILITIES ENVIRONMENTAL IMPACTS

- **Utility impacts during construction activities would be assumed to be similar under all Redevelopment Alternatives and would include removal, replacement, or abandonment in place of most existing onsite utilities, including water, sanitary sewer, electrical, and natural gas lines. It is assumed that the existing utilities would continue to serve the site until required to be removed/replaced for redevelopment activities. No substantial interruption of utility services to existing users would be anticipated during the ongoing construction activities.**

  - Due to the limited size and capacity of the existing sewer infrastructure, maintenance and/or upgrades to portions of the existing system could be required should contractors wish to utilize and/or connect to the City sewer system during construction.

  - Based on the soil remediation requirements for certain areas of the site, abandoned-in-place pipes may be required to be filled with clean material and capped. New utility corridors would be assumed to be pre-excavated and backfilled with clean materials, consistent with anticipated institutional control requirements for cleanup in certain onsite areas requiring remediation.

- **Redevelopment under Alternatives 1 through 3 would result in increased demands on all utility systems. The overall water, sewer, electrical, and natural gas system improvements needed to serve the New Whatcom redevelopment would be similar among all Alternatives. The level of demand and consumption would vary by alternative.**

  - Under Redevelopment Alternatives 1 through 3, it is assumed that water distribution throughout the site would be comprised of a network of new water mains placed within the right-of-way (ROW) of the new roadway network, with the exception of Area 1. The existing water mains in Area 1 would likely continue to serve the redeveloped site with some upgrades to pipes and fire hydrants.

  - Redevelopment under Alternatives 1 through 3 would result in added water utility demands ranging from 1.06 MGD (million gallons per day) on average under Alternative 1 to 0.537 MGD on average under Alternative 3 at buildout in 2026. During summer months, irrigation of parks and landscaping features would increase the average daily water demand to 1.74 MGD under Alternative 1 and 0.666 MGD under Alternative 3 in 2026.

  - The City of Bellingham would have adequate water system capacity to serve the site under all EIS Alternatives, based on the total water demand projections. The City water system has fire flow capacity of 3,000 gallons per minute to buildings up to ten stories in the site area. Buildings above this height would need additional booster pumps to provide adequate fire protection and pressures. No significant impacts to the City of Bellingham's Public Works Department water system would be anticipated.

Utilities (continued)

- Under Redevelopment Alternatives 1 through 3, it is assumed that the majority of the site's existing gravity sewer system would be reconstructed and relocated within the site's new roadway network. The new system would likely gravity flow to an onsite new pump station which would likely discharge directly into the Oak Street Pump Station.

- Redevelopment under Alternatives 1 through 3 would result in added sewer utility demands ranging from 1.10 MGD on average under Alternative 1 to 0.514 MGD on average under Alternative 3 at buildout in 2026.

- The City of Bellingham's Oak Street pump station and Post Point Pollution Control Plant would have adequate capacity to handle the sewer demands from long-term New Whatcom redevelopment.

- With construction of a new substation onsite, PSE would have adequate capacity to serve the electrical demand under all EIS Alternatives in the long-term. No significant impacts to the PSE electrical system would be anticipated.

- Redevelopment under Alternatives 1 through 3 would result in added peak annual electrical utility demands ranging from 39.2 mega watts (MW) under Alternative 1 to 22.3 MW under Alternative 3 at buildout in 2026.

- Currently, PSE planning for the Encogen facility is to maintain onsite operations, and to use the facility as a "peaking" station during times of high energy use. However, for purposes of this EIS analysis, it is assumed that the Encogen plant would not be located at the site in 2026 under Alternatives 1 through 3.

- As part of the Port's participation in the LEED Neighborhood Development Pilot Program, the Master Development Plan for New Whatcom could incorporate "green" building principles related to future energy features which could reduce the demands for energy.

- The existing Cascade Natural Gas high pressure gas lines that run along Cornwall Avenue, Roeder Avenue and Hilton Street would continue to serve the site under the Redevelopment Alternatives. Adequate capacity would exist to serve future redevelopment under all of the EIS Alternatives. No significant impacts to Cascade Natural Gas infrastructure would be anticipated.

- Redevelopment under Alternatives 1 through 3 would result in added peak annual demands for natural gas ranging from 203,550 MMBTU (Millions British Thermal Units) under Alternative 1 to 116,010 MMBTU under Alternative 3 at buildout in 2026.

- **Under the No Action Alternative, it is assumed that the required utility construction activities and future utility infrastructure would be less than the requirements to serve the Redevelopment Alternatives. Demand for utilities would be considerably less than under the Redevelopment Alternatives and would be assumed at buildout in 2026 to be:**

  - Average daily water demand would be 0.08 MGD

Utilities (continued)

- Average daily sewer demand would be 0.04 MGD
- Peak annual electricity demand would be 6.03 MW per day
- Peak annual natural gas demand would be 5,079 MMBTU

No significant impacts to utility providers would be anticipated under the No Action Alternative.

Refer to Section 6.2.13 later in this Chapter for a summary of mitigation measures related to Utilities and DEIS Section 3.14 in Chapter 3 for the detailed evaluation of impacts and mitigation measures.

6.2 SUMMARY OF DEIS MITIGATION MEASURES

6.2.1 EARTH MITIGATION MEASURES

Specific foundation support systems to be used for onsite improvements would be determined as part of the specific design and permit process for infrastructure and individual buildings associated with future site redevelopment. Site-specific studies and evaluations would be conducted in accordance with City of Bellingham Municipal Code requirements and the provisions of the most recent version of the International Building Code, at the building and construction permit stage. Typical design and construction methods are available to ensure that buildout of the New Whatcom site under any of the EIS Alternatives would not result in significant impacts.

Construction

- For multi-storied structures, total and differential settlements could be accommodated by founding the structures on deep foundations and/or by implementing ground improvement techniques.

- Preloading could be used to reduce total and differential settlements to within tolerable levels for utilities and lower-story structures. Alternatively, lightly loaded structures could be founded on a mat foundation with flexible utility connections that would limit the potential adverse effect of differential settlement.

- Mechanically stabilized earth walls or lightweight fill materials could be used for construction of approach embankments for the bridge connections at the site.

- If any redevelopment adjacent to the bluff near the perimeter of the site is proposed in the future, site-specific slope stability analyses prior to construction would be completed during the permit process (i.e. railroad relocation). Catchment areas or retaining walls could be constructed near the base of the bluff to temporarily retain surficial soil and debris that may slide down the slopes, until that material is removed.

Earth Mitigation (continued)

- During construction, contractors would employ temporary erosion and sedimentation control measures and Best Management Practices to control erosion (refer to **Water Resources** below, for more information on erosion and sedimentation control BMPs).

- Ground improvement techniques or deep foundations could mitigate potential liquefaction impacts and could include stone columns, vibro-compaction, vibro-replacement, deep soil mixing, compaction grouting, installing wick drains, and others. The specific method of ground improvement and foundation support would be determined as part of the building/construction design and permit process for future onsite redevelopment.

- Site-specific analysis of redevelopment proposed within about 300 feet of an unsupported slope (e.g., along the shorelines in Areas 2-4, 8 and 10 at the site) would be conducted during the building/infrastructure design and permit process to determine the appropriate mitigation and construction method to reduce the potential for lateral spreading. Mitigation measures could include stabilizing the unsupported slope by using ground improvement techniques, installing retaining structures at appropriate depths and locations, and potentially designing foundation systems to resist the lateral loads due to lateral spreading.

- A coal mine hazards evaluation would be conducted at the building design and permit stage to address the potential for ground subsidence due to possible underground void spaces from past coal mining activities. This measure would only pertain to proposed redevelopment in the southeastern portion of Areas 5 and 7. Site-specific ground improvement and foundation modifications would be implemented, as appropriate.

- Impacts from temporary construction excavations could be mitigated through the use of properly designed and constructed excavation shoring systems.

- Potential hazards associated with the closed Roeder Avenue Landfill (located in the central portion of Area 1) and the closed Cornwall Avenue Landfill (located in the western portion of Area 10) could be mitigated by complying with applicable site cleanup actions and institutional controls for these areas (see **Environmental Health**, for more information) and developing a construction contingency plan specific for work in or near these portions of the site. The contingency plan could contain guidelines for handling and disposing of any contaminated materials that are encountered.

- Ground subsidence impacts related to placement of structural fills could be mitigated by designing the fill to control adjacent settlements. Potential impacts to existing onsite structures could be mitigated by limiting the amount of fill placed within 50 feet of these structures, or monitoring the structures during construction if it is necessary to place fill within 50 feet of these structures.

- Excavated soils could be reused onsite as fills, provided that the excavated material is properly handled and moisture-conditioned prior to placement and compaction.

- Site-specific analysis during the infrastructure design and permit process for all bridge approach fills would consider the potential for settlements, lateral movements, and

Earth Mitigation (continued)

- stability issues associated with fill placement over compressible materials, as well as their potential effect on nearby structures and utilities. Mitigation measures could include use of mechanically stabilized earth walls to retain and limit the width of the approach fills, use of lightweight fill materials to reduce the amount of settlement caused by fill placement, use of geosynthetic reinforcement to help stabilize the approach fills, relocating existing utilities below or near the approach fills if they could be damaged by fill-induced settlements and lateral loads, and incorporating ground improvement measures to protect settlement-sensitive structures.

- Site-specific analysis regarding potential impacts of preload and surcharge fills would be conducted. Mitigation measures could include constructing temporary mechanically stabilized earth walls at the edge of the preload fill, as needed, to limit the lateral extent and influence of the fill, conducting pre- and post-construction surveys of nearby structures, and monitoring of ground movements.

- To limit the potential for adverse vibration impacts of pile-driving on nearby structures, vibration monitoring could be conducted during installation of test piles and selected production piles.

- A site-specific vibration analysis could be conducted during the construction permit process to more precisely determine the extent of potential vibration impacts due to pile-driving.

- Pre- and post-construction inspections, ground elevation surveys, and photographic surveys of structures within about 100 feet of the pile-driving operation could help document site-specific conditions and the effectiveness of mitigation measures.

- If appropriate, auger-cast piles could be used to limit the vibration and ground settlement impacts associated with driven piles.

- Casings could be installed to control caving soils during drilled shaft installation for deep foundation support of bridges and certain other structures.

- To minimize the potential for vibration impacts from drilled shaft installation, vibration monitoring and ground elevation surveys could be conducted in conjunction with pre- and post-construction inspections, and photographic surveys of settlement-sensitive structures located within about 50 feet of drilled shaft construction activities could be conducted.

Operation

- As part of site redevelopment, site grades could be raised several feet above existing grades (3 to 6 feet assumed); this would provide mitigation of potential impacts of long-term sea level rise in Bellingham Bay, and would address the potential impacts of a tsunami. In addition, public notification and warnings would be used to alert the public about a tsunami.

Earth Mitigation (continued)

- Mitigation related to onsite buildings in Areas 1 and 10 would include site-specific monitoring and evaluation to determine if methane is present in these areas, in conjunction with the closed landfills. If present, the need for additional monitoring and installation of methane gas control measures would be evaluated. These measures could potentially include implementing a methane monitoring plan, installing subsurface gas migration barriers, or including foundation ventilation systems into the design of certain structures to mitigate against methane build-up beneath the onsite structures or within confined spaces.

6.2.2 AIR QUALITY MITIGATION MEASURES

Construction

Mitigation measures to reduce the potential for air quality impacts during construction include measures for reducing both exhaust emissions and fugitive dust. The construction contractor(s) would be required to comply with all relevant federal, state, and local air quality regulations, including the preparation of a plan for minimizing dust and odors. The *Associated General Contractors of Washington's Guide to Handling Fugitive Dust from Construction Projects* provides practical examples of suggested best management practices necessary to comply with air quality regulations involved in the construction process. The following is a list of possible mitigation measures specified in the guide that could be implemented to reduce potential air quality impacts during construction of the project:

- Use only equipment and trucks that are maintained in optimal operational condition;
- Require all off-road equipment to be retrofitted with emission reduction equipment (i.e., require participation in Puget Sound Region Diesel Solutions by project sponsors and contractors);
- Use biodiesel or other lower-emission fuels for vehicles and equipment;
- Use carpooling or other trip reduction strategies for construction workers;
- Implement restrictions on construction truck idling (e.g., limit idling to a maximum of 5 minutes);
- Locate construction equipment away from conduits to sensitive receptors such as fresh air intakes to buildings, air conditioners, and sensitive populations. Locate construction staging zones where diesel emissions would not be noticeable to the public or in direct proximity to sensitive populations such as the elderly and the young;
- Spray exposed soil with water or other suppressant to reduce emissions of PM_{10} and deposition of particulate matter;
- Pave or use gravel on staging areas and roads that would be exposed for long periods.
- Cover all trucks transporting materials, wet materials in trucks, or provide adequate freeboard (space from the top of the material to the top of the truck bed), to reduce PM_{10} emissions and deposition during transport;

Air Quality Mitigation (continued)

- Provide wheel washers to remove particulate matter that would otherwise be carried offsite by vehicles to decrease deposition of particulate matter on area roadways;
- Remove particulate matter deposited on paved, public roads, sidewalks, and bicycle and pedestrian paths in the site area to reduce mud and dust; sweep and wash streets continuously to reduce emissions;
- Cover dirt, gravel, and debris piles as needed to reduce dust and wind-blown debris; and
- Route and schedule construction trucks to reduce delays to traffic during peak travel times to reduce air quality impacts caused by a reduction in traffic speeds.

Operation

Operational emissions from the increased number of vehicles traveling to and from the site are not expected to cause exceedances of established thresholds for any criteria pollutants. However, in order to promote a healthy and cleaner air environment, certain transportation management measures could be implemented including:

- Provide preferential parking spaces for employee carpools and vanpools;
- Provide on-street bus shelters and well-lit paths that are located away from intersections;
- Schedule truck deliveries and pickups for off-peak hours when feasible;
- Work with the City of Bellingham to implement or contribute to public outreach programs that promote alternative methods of transportation; and
- Require that delivery trucks turn off their engines if the anticipated duration of idling exceeds 3 minutes.

Emissions from railroad operations and marine vessels would not be expected to significantly impact air quality conditions at the site or in the site vicinity. Further, emissions from railroad and marine vessels would be required to adhere to all applicable existing or future federal and state regulations for air emissions. Additionally, future industrial uses at the site may need to apply for individual permits from the Northwest Clean Air Agency and adhere to the emission standards outlined for operations.

6.2.3 WATER RESOURCES MITIGATION MEASURES

The following features would be incorporated into New Whatcom redevelopment to reduce or offset the potential impacts of redevelopment on water resources:

Construction

- Temporary erosion and sedimentation control measures would be employed during site construction, per a National Pollution Discharge Elimination System (NPDES) permit

Water Resources Mitigation (continued)

from Ecology, the *Ecology 2005 Stormwater Management Manual*, and City of Bellingham requirements.

- A Stormwater Pollution Prevention Plan (SWPPP) would be prepared and implemented, as required by the NPDES permit. The SWPPP would contain specific best management practices (BMPs) for each construction season.

- Construction entrances would include truck wheel washes in addition to quarry spalls to dislodge sediment, if warranted by truck traffic and soil export volumes. Streets would also be routinely cleaned during construction.

- Specialized products, such as Chitosan or Electrocoagulation, and other water treatment systems could be used if warranted and approved by Ecology under the NPDES permit.

- BMPs for concrete work would include the following:

  - Cement trucks wash water would not be disposed onsite, but would be returned to the offsite batch plant for recycling as process water;
  - New concrete work would be covered and protected from rainfall until cured; and,
  - Monitoring of pH would occur in areas with active concrete work.

- In-water construction would employ measures established in federal, state, and local permits to prevent adverse impacts to water quality (see **Plants and Animals** below for more information).

- The generation of dissolved zinc and copper would be minimized through prohibitions on the use of unsealed external copper and galvanized metal, except where required by code and/or necessary for public safety and/or where no feasible alternative exists. Zinc and copper source controls would extend to rooftops, which would be constructed of inert materials so that roof runoff would bypass water quality treatment facilities.

- Measures to control any impacts of excavation dewatering on groundwater could include: site-specific design and careful control of dewatering systems, minimizing the extent and duration of dewatering, and reinfiltration of extracted groundwater.

- Monitoring could be employed to assess the quality of any dewatering discharges and treatment, if needed, to comply with applicable discharge permits.

Operation

- Stormwater would be managed per the requirements of the Ecology Manual (2005), as adopted by the City of Bellingham. All stormwater runoff from pollution-generating surfaces would be collected and treated to Basic water quality treatment standards, per the Ecology Manual (2005), as adopted by the City of Bellingham.

Water Resources Mitigation (continued)

- The Port anticipates participating in the LEED for Neighborhood Development (LEED-ND) Pilot Program, to the extent possible. The LEED-ND includes guidelines for stormwater design and low-impact development which could potentially be implemented as part of future redevelopment projects.

- Fecal coliforms in stormwater runoff could be minimized by:
  - Emphasizing pet waste removal by visitors and residents to the parks; and,
  - Discouraging feeding and roosting of gulls and waterfowl on the site.

- Fecal coliform removal could be maximized by encouraging the use of bioretention and discouraging use of biofiltration swales and filter strips in the stormwater control system, where possible.

- Marina source control and operational BMPs would be employed to reduce potential water quality impacts to Bellingham Bay per Ecology's *Resource Manual for Pollution Prevention in Marinas*.

6.2.4 PLANTS AND ANIMALS MITIGATION MEASURES

Measures included as part of New Whatcom redevelopment to create and enhance aquatic habitat are as follows:

- Within the Whatcom Waterway, New Whatcom redevelopment would result in a decrease in over-water coverage by structures in intertidal/shallow subtidal habitat of 1.53 acres, and an increase in sloped intertidal/shallow subtidal habitat of 0.88 acre, substantially improving aquatic habitat conditions in the site area.

- Up to 560 existing creosote treated piles would be removed from the aquatic environment.

- The upgraded stormwater system would improve the quality of discharge of stormwater to the Whatcom Waterway and Bellingham Bay, as compared to existing conditions. Stormwater outfalls could be sited to provide a freshwater input source to the Bay to support saltmarsh vegetation.

- Under all of the EIS Alternatives, construction of a marina in the ASB would include the opening of the ASB to Bellingham Bay by breaching the existing berm and creating approximately 28 acres of new aquatic habitat.

Construction

Construction projects in or near aquatic habitat would generate minor impacts such as turbidity, noise from machinery and pile driving, and the potential for spills of fuels and/or other toxic materials. The following measures and Best Management Practices (BMPs) could be implemented to avoid and minimize these potential impacts.

Plants and Animals Mitigation (continued)

- In-water work would occur when juvenile salmonids are absent or present in very low numbers.

- Care would be taken to prevent any petroleum products, chemicals, or other toxic or deleterious materials from entering the water. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., would be checked regularly for drips or leaks, and would be maintained and stored properly to prevent spills into waters. Proper security would also be maintained to prevent vandalism.

- The contractor would have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.

- If a spill were to occur, work would be stopped immediately, steps would be taken to contain the material, and appropriate agency notifications would be made. The contractor would be responsible for the preparation of spill response and hazardous material control plans to be used for the duration of construction.

- Spills and/or conditions resulting in distressed or dying fish would be reported immediately to Ecology's Northwest Regional Spill Response Office.

- If fish are observed in distress or a fish kill occurs, work would be stopped immediately. The Washington State Departments of Fish and Wildlife and Ecology, and other applicable agencies, would be contacted and work would not resume until further approval is given.

- A boom would be installed around the work area prior to removal of piles, piers, bulkhead, or other in-water elements to contain and collect debris. Debris would be disposed of at an approved upland location.

- Every effort would be made to minimize the release of adhering sediments when extracting piles that are pulled from the water, and piles would be placed on a receiving barge or on the adjacent wharf.

- The receiving barge or wharf site on which the extracted pilings are placed would be fitted for control of drainage, such that any sediment or creosote treated wood fragments present on the extracted piling would be contained. The containment basin would be sufficiently durable to function as a continuous confinement mechanism.

- A bubble curtain would be used to minimize noise impacts to aquatic species when steel piles are driven with an impact hammer.

6.2.5 ENVIRONMENTAL HEALTH MITIGATION MEASURES

Construction

Measures appropriate to mitigate potential construction impacts associated with environmental health and hazardous materials include the following:

Environmental Health Mitigation (continued)

- **Demolition Activities:** Completion of pre-demolition surveys and applicable asbestos and/or lead abatement activities where required by local, state and federal air quality or worker safety regulations.

- **Soil Management:** Compliance with the soil management provisions of cleanup site institutional controls, and ensuring compliance of all future site construction activities with these control measures.

- **Worker Health & Safety:** Compliance with construction worker safety protocols defined as part of cleanup site institutional controls, and ensuring compliance of all future site construction activities with these control measures.

- **Stormwater Quality Impacts:** Maintenance of cover soil over contaminated soils where practicable and/or implementation of stormwater treatment and monitoring during construction activities that could disturb contaminated soils.

- **Groundwater Quality:** Ensuring compliance with the site-specific institutional controls during site cleanup and redevelopment construction activities.

- **Sediment Disturbance During Construction:** Integrating the design, permitting and construction of in-water cleanup and redevelopment activities (to the extent possible), and requiring compliance with site institutional controls for subsequent construction and redevelopment activities.

- **Facility/Land Use Siting:** Incorporating a review of use restrictions associated with institutional control plans as part of future building permit reviews, and either 1) ensuring that all proposed uses comply with these use restrictions, or 2) conducting additional removals of the contained hazardous materials in coordination with Ecology, as necessary, to remove the use restrictions.

- **Vapor Mitigation for Building Foundations:** Incorporating vapor mitigation measures as part of building construction where necessary to comply with site cleanup plans and institutional controls.

- **Discovery of New Cleanup Issues:** Complying with release reporting, investigation and applicable cleanup provisions of the MTCA and SMS regulations.

Operation

Mitigation measures to address potential environmental impacts after completion of construction include the following:

- **Navigation Disturbance to Capped Sediment Areas:** Ensuring future navigation uses (shipping and boating) are consistent with designed uses and site institutional controls defined as part of the cleanup plans, and conducting additional actions required by Ecology as necessary, if alternative uses are proposed.

Environmental Health Mitigation (continued)

- **Soil Management and Worker Safety:** Initial development of utility corridors in clean backfill material where practicable; where this is not practicable, the same soil management and worker safety provisions applicable to construction activities (e.g., compliance with worker training, monitoring and work practice requirements defined in site institutional control plans) would apply to utility maintenance or other subsurface maintenance activities.

- **Future Hazardous Materials Use:** Compliance with local (e.g., fire department hazardous materials regulations), state (e.g., Washington underground storage tank regulations) and federal regulations (e.g., federal spill prevention control and counter-measures requirements) relating to the use, storage or processing of hazardous materials.

6.2.6 NOISE MITIGATION MEASURES

Construction

Construction under the Redevelopment Alternatives is assumed to be phased over the buildout period. Phased construction would provide for intermittent construction activities that would result in short-term noise increases. Although construction efforts would be considered short-term and are exempt from specific noise regulations and requirements, certain best management practices could be implemented to reduce the potential for impacts to onsite and nearby sensitive receivers.

The following construction industry best management practices related to noise mitigation could be incorporated into future construction plans and contractor specifications as feasible:

- Limit construction activities during weekends to comply with the City of Bellingham noise regulations (BMC 10.24.120) and restrict construction noise to the hours between 7:00 AM and 10:00 PM.

- Explore the feasibility of using less noisy construction options to pile-driving. For example, predrilling a pile hole using an auger to place the pile at or near its design depth (drilled piles) would reduce noise levels by 5 to 10 dBA. In addition, limits on specific construction times could be designated for pile-driving activities.

- Equip the engines of construction equipment with adequate mufflers, intake silencers, or engine enclosures that would reduce their noise by 5 to 10 dBA (EPA, 1971).

- Turn off construction equipment when not in use for long periods.

- Require contractors to maintain equipment and train equipment operators to reduce noise levels.

- Locate stationary equipment away from receiving properties to decrease noise, when feasible.

Noise Mitigation (continued)

Operation

Design and construction methods to achieve noise attenuation could be considered as part of the future permit process for redevelopment in portions of the site. Such methods could reduce the potential for onsite noise levels that could be above the applicable criteria at certain locations for new onsite residential receivers. These design and construction methods could include any or all of the following:

- Specific acoustical site planning that considers the arrangement of buildings to minimize the potential for noise impacts. This could include siting residential units at some distance from busy roadways or other noise-generating sources, or closer to quieter and less traveled onsite roadways, planned parks and greenspaces.

- Acoustical noise-reducing concepts could be incorporated in the architectural design of individual buildings. These concepts could include room arrangement, window placement, and balcony and courtyard design. For example, placing bedrooms and living rooms in the part of the residential building farthest from the noise source, while placing kitchens and bathrooms closer to the noise source.

- Acoustical construction treatments could be used for various parts of residential buildings to reduce interior noise impacts. Treatments could include the use of walls, windows, doors, ceilings, and floors that have been treated to reduce sound transmission into a building (the use of dense materials and the use of airspaces within materials are the principal noise-reduction techniques of acoustical construction).

- Non-living portions of residential buildings (such as garages, commercial spaces, and recreational facilities) could be placed between the residences and roadways or other noise-generating sources, such as industrial operations or the railroad, to reduce noise levels to residential receivers.

6.2.7 LAND USE MITIGATION MEASURES

The guidelines and development standards of the Master Development Plan (to be adopted through the Port's *Comprehensive Scheme of Harbor Improvements* and the City's Sub-area plan approval process), the Development Agreement between the Port and City (and other applicable zoning and development regulations) and the Planned Action Ordinance would guide redevelopment of the New Whatcom site over the long-term. These plans, regulations and standards, along with individual project review by the City of Bellingham, would serve as mitigation to preclude any potential significant land use impacts from future redevelopment and ensure compatibility among site uses and uses in the site vicinity.

The following mitigation measures would further address potential land use compatibility issues, particularly related to adjacent uses and uses within the site itself.

- Principles of the New Whatcom master planning process, and other standards and guidelines defined through the public planning process to date, are intended to minimize

Land Use Mitigation (continued)

the potential for land use impacts to surrounding areas. Features incorporated into the planning process (and featured in Alternatives 1 through 3) that address the relationship of new uses on the site to surrounding uses include:

- Incorporation of land uses that are compatible with and complement surrounding uses, densities and patterns, and provide a range of opportunities for existing and new tenants.

- Provision of a mix of uses that create opportunity for the establishment of a live-work-play environment.

- Provision of a substantial amount of public parks, trails and open space area that can serve as a local and regional resource.

- Dedication of the majority of the site's waterfront to public access.

- Incorporation of a marina concept that is intended to be complementary with a mixed-use urban village on the site.

- Provision of vehicular and pedestrian connections linking the surrounding community (particularly the CBD) with the site and the waterfront.

- Specific development regulations and design guidelines could be established as part of the Master Development Plan and/or Development Agreement to ensure that new land uses are compatible with existing retained uses onsite.

- For potential residential uses in direct proximity to the BNSF railway corridor, BST and ongoing industrial operations, building orientation, design and materials to reduce interior sound levels could be considered as part of the future permit process.

- Redevelopment would be phased over time, consistent with market demands, as well as the Master Development Plan, Development Agreement and applicable regulations and standards.

6.2.8 POPULATION, EMPLOYMENT AND HOUSING MITIGATION MEASURES

- Under the Redevelopment Alternatives, onsite housing would be generated that could provide "live-work" housing opportunities for employees at the New Whatcom site. The extent that such opportunities would be realized would depend upon a number of factors, such as: specific wage levels of employees, housing costs, and a range of social, demographic and market issues.

Population, Employment and Housing Mitigation (continued)

- A broad mix of construction and permanent employment opportunities would be provided onsite as part of the Redevelopment Alternatives, adding economic diversity to the site and site area.

- Specific provisions for affordable housing as part of redevelopment would be contained in the Development Regulations for the New Whatcom site. The Port would work with the City of Bellingham, the Bellingham/Whatcom Housing Authority and other public and private organizations to provide affordable housing opportunities at the New Whatcom site.

6.2.9 AESTHETICS/LIGHT AND GLARE MITIGATION MEASURES

- Development standards and design guidelines could be established to include standards for building heights, setbacks, modulation, building materials and provisions for implementation of consistent design guidelines over the long-term redevelopment period.

- Provisions for the establishment of a view corridor(s) through the site could be established as part of the Master Development Plan and/or Development Agreement.

- A substantial portion of the site would be retained in public parks, open space, shoreline vegetation and landscaping to soften the aesthetic character of overall site redevelopment.

- Lighting standards could be developed as part of the Master Development Plan's design guidelines and could include the following:

  - Development standards could place limits on hours of interior and exterior construction lighting.

  - All streets could be well lit for safety and security purposes, meeting standards equal to or greater than those typically required by the City of Bellingham.

  - Lighting for building exteriors, parking lots and circulation routes at the perimeter of the site could be designed with sensitivity to surrounding neighborhoods. Fixtures could be sited in a manner to avoid glare into the surrounding neighborhoods.

  - Informal path and trail lighting could be required to not exceed a maximum height of 15 feet. Use of bollard and ground lighting could be encouraged as an alternative to pole lighting. No uplighting of landscape features or building facades could be allowed.

  - Exterior lighting features at the perimeter of the site could utilize appropriate shields to reduce light spillage and security lighting could be directed away from adjacent neighborhoods.

Aesthetics/Light and Glare Mitigation (continued)

- Encouraging the use of low-reflectivity building glazing and building materials could be incorporated into the Master Development Plan's design guidelines.

- Landscape features and street trees to diffuse or obscure direct light and glare could be provided.

- Timers and other lighting controls to minimize spillover illumination and generally reduce ambient light levels could be considered.

- Lighting adjacent to the shoreline and within the marina could be located close to the ground (2 to 4 feet tall) with light directed downward to illuminate walking surfaces without casting light to the water.

6.2.10 HISTORIC AND CULTURAL RESOURCES MITIGATION MEASURES

The following measures have been identified to mitigate potential impacts to potentially eligible historic resources within the site and listed resources in the immediate vicinity of the New Whatcom site:

- The Port would explore opportunities for adaptive reuse of existing onsite industrial buildings with consideration of structural, economic, market, and land use factors.

- Historic American Building Survey (HABS) and Historic American Engineering Record (HAER) documentation for potentially eligible buildings and structures onsite that are scheduled for demolition could be prepared during the future permit process.

- An interpretation plan for the Whatcom Waterway area and potentially eligible buildings and structures onsite that are scheduled for demolition or major modifications could be formulated during the future permit process.

- Building materials salvage and reuse strategies could be developed for potentially eligible buildings and structures onsite that are scheduled for removal and demolition. Salvaged materials could include heavy timbers, brick, steel, and stone from onsite buildings.

- The terra cotta clad high pressure tanks, located on the site and associated with the former mill operation could be retained (either onsite or at another location). In addition, the high pressure globe and steel log remover could also be retained as a representation of the historically industrial use of the site.

- Any planned onsite construction in the immediate vicinity of buildings and structures listed on federal, state, and/or local historic registers could be monitored so that such

Historic and Cultural Resources Mitigation (continued)

listed resources would not be adversely affected by ground settlement, vibration or other geotechnical factors.

Potential mitigation measures that could be considered during the construction permit process related to cultural/archaeological resources include:

- A management plan could be developed by the Port for the construction life of the New Whatcom redevelopment, drafted in consultation with and agreed upon by applicable state, tribal and local agencies. The management plan could:

  - Establish procedures and appropriate responses for addressing potential effects to archaeological resources, including review by a qualified archaeologist of specific construction components (review could be limited to construction components located in or adjacent to high probability areas on the site);

  - Consider levels of contractor awareness training and specific areas where onsite archaeological monitoring during construction could be conducted;

  - List onsite chains of authorities and contacts for decision-making regarding inadvertent archaeological discoveries during construction activities;

  - Describe prescriptive actions that would result in minimal additional disturbances to potentially significant resources if any are discovered, including specific treatment plans for inadvertent discovery of human remains; and,

  - Identify expectations of participating groups involved in addressing the site's potential for discovery of archaeological resources.

6.2.11 TRANSPORTATION MITIGATION MEASURES

It is assumed that the Redevelopment Alternatives would include a range of improvements to the transportation system to provide added capacity for their expected trip generation. This would include an onsite roadway network, as well as at-grade and bridge connections to the offsite network. It is assumed that some of these improvements would be constructed in the initial stages of site redevelopment, and others would be phased in over time as redevelopment continues over the 20-year buildout period.

In addition, the Redevelopment Alternatives would provide an extensive park and trail system, as well as sidewalks, crosswalks, and accommodations for pedestrians and bicyclists within the street rights-of-way. The motorized and non-motorized systems assumed under the Redevelopment Alternatives would improve connections to the offsite road and pedestrian/bicycle system, as well as access and circulation to and through the site.

Mitigation measures to eliminate or decrease the potential for significant impacts from New Whatcom redevelopment, as well as mitigation strategies that the City of Bellingham could implement with or without the New Whatcom redevelopment to better accommodate anticipated

Transportation Mitigation (continued)

growth that is anticipated to occur throughout the downtown area over the next 20 years, are presented below. These measures are in addition to the assumed improvements described and evaluated under each EIS Alternative (see DEIS Section 2.8.2 Chapter 2 for more information on assumed improvements).

The mitigation measures are divided into the following categories:

- Onsite Access and Circulation Improvements
- Offsite Capital Improvements
- Potential Operation and Management Strategies

Funding and implementation strategies and methods for identified onsite and offsite improvements (potentially including local improvement districts, latecomers agreements or other funding or reimbursement mechanisms) could be addressed in the Development Agreement between the Port and the City.

Onsite Access and Circulation Improvements

- Widening of some onsite or adjacent roadways would be required to meet City LOS standards. Improved traffic control and additional turn lanes at some intersections would also be needed to improve access to the site. The major onsite or adjacent improvements are listed in Table 3.12-15 of DEIS Section 3.12, Transportation in Chapter 3 of the DEIS. Major improvements include widening of Roeder Avenue, from Hilton Avenue to Cornwall Avenue, to 2 lanes in each direction. Intersection improvements along Roeder Avenue would also be warranted. In addition, reconfiguration of the assumed five-legged intersection at Laurel Street/Commercial Street/Log Pond Road onsite would likely be required to improve intersection operations and reduce potential conflicts with pedestrians and bicyclists. One potential improvement strategy would be to extend Bay Street across the site, without it terminating at Laurel Street, as currently assumed.

Offsite Capital Improvements

- Widening of some offsite roadways would be required to meet City LOS standards. Improved traffic control and additional turn lanes at some offsite intersections would also be needed to improve access/circulation to/from the site. The major corridors where intersection and roadway improvements would be needed include: Holly Street, State Street and Forest Street. Improvements to pedestrian and bicycle facilities would be needed along corridors such as: Central Avenue, Bay Street, Wharf Street, Laurel Street, and Maple Street to provide effective connections to the site, and to downtown and WWU. The major offsite capital improvements are listed in Table 3.12-15 of DEIS Section 3.12, Transportation in Chapter 3. Truck access routes for construction traffic would need to be designated to minimize impacts to the surrounding street system, as well.

Transportation Mitigation (continued)

Potential Operation and Management Strategies

- A series of mitigation strategies could be implemented over the long-term as redevelopment occurs, in order to reduce impacts to the transportation system. These strategies could include measures to reduce travel demand and parking demand, management policies, transit facility provision, and non-motorized improvements. The specific possible mitigation strategies are listed in Table 3.12-16 of DEIS Section 3.12, Transportation in Chapter 3.

Transportation Impact Fees

Future developers of specific redevelopment projects may be responsible for paying the City's Transportation Impact Fee (TIF). The TIF establishes a method to share in the cost of developing system improvements or program enhancements to address the need for increased mobility within the City. The TIF may be reduced if the development decreases PM peak hour traffic volumes as a result of mitigation strategies or other incentives. In addition, credit may be given for any improvements, dedication of right-of-way, or new construction of street system improvements provided by the developer which are part of the City's Six-Year TIP. Any provisions for transportation impact fees related to future redevelopment would be determined as part of the Development Agreement between the Port and the City.

In addition to the identified mitigation measures, it should also be noted that the City is considering changes to their transportation concurrency methodology standards and management policies to better promote the urban infill land use strategies adopted in the *2006 Bellingham Comprehensive Plan.* Future updates to the City's Transportation Concurrency Management Program may consider revising the LOS methodology and standards to include an average intersection LOS by subarea of the City, to better implement adopted infill land use strategies.

6.2.12 PUBLIC SERVICES MITIGATION MEASURES

- Increases in population and employment over the 20-year buildout of the New Whatcom site would be incremental and would be accompanied by increases in demand for public services including fire, police, schools, parks and street maintenance under all of the EIS Alternatives. A portion of the tax revenues generated from redevelopment of the site - including construction sales tax, retail sales tax, business and occupation tax, property tax, utilities tax, and other fees, licenses and permits – would accrue to the City of Bellingham and the Bellingham School District to help offset demands for public services.

- The City of Bellingham has adopted impact fee requirements for new residential developments within the City, in order to mitigate potential impacts on Bellingham School District schools facilities from such developments. Payment of impact fees by future residential projects on the site related to schools would provide additional revenue to help offset redevelopment-related impacts. Further, it is anticipated that increases in

Public Services Mitigation (continued)

employment and population over the full buildout period, along with general growth in the City, would be planned for through the School District's capital facilities planning process to ensure that significant impacts on the School District would not occur.

- Potential increases in demand for parks and recreational facilities would be mitigated, in part, through the provision of a range of onsite public park and trail facilities under the Redevelopment Alternatives. These onsite parks and facilities would include a mix of parks, trails, gathering places, view opportunities, public shoreline access, and marina uses. Other types of recreational facilities would likely be provided as part of the multifamily residential uses and other redevelopment assumed. It is anticipated through this provision of onsite recreational opportunities and the availability of a variety of public park and recreational facilities in the nearby vicinity, significant impacts to public park and recreational facilities would be adequately mitigated.

- The City of Bellingham also has adopted impact fee requirements for new residential developments in order to mitigate potential impacts to City of Bellingham park facilities. Potential payment of park impact fees by future residential projects could provide additional revenue to offset redevelopment-related demands. Any provisions for park impacts fees related to future redevelopment would be determined as part of the Development Agreement between the Port and the City.

The following additional mitigation measures would be implemented under the Redevelopment Alternatives:

- All new buildings would be constructed in compliance with the 2006 International Building Code and International Fire Code (and future code revisions), as adopted by the City of Bellingham.

- Adequate fire flow would be provided for all new redevelopment in accordance with City of Bellingham code requirements.

- If Western Washington University locates facilities on the site in the future, Western Washington University campus police would likely provide additional security services in conjunction with such facilities.

- Design standards for New Whatcom redevelopment could include features to reduce potential criminal activity, such as: orienting buildings toward sidewalks, streets and/or public spaces; providing convenient pedestrian connections between buildings; and, providing adequate lighting and visibility onsite.

- As part of the Master Development Plan process and through future park planning and design, the City of Bellingham and the Port would evaluate and determine the specific features of the onsite park and trail system, including the specific amount, design, configuration and amenities to be included. The City and Port would seek to provide a range of active and passive recreational experiences. This ongoing park planning process would include opportunities for public input.

6.2.13 UTILITIES MITIGATION MEASURES

Water

- The Port would coordinate with the City of Bellingham Public Works Department regarding the redevelopment of the New Whatcom site and necessary water system infrastructure improvements to ensure consistency with the City's overall water system.

- The design and construction of all water distribution facilities would comply with applicable City of Bellingham water utility standards for extensions and improvements to the City's water system.

- Water mains would be located within the site's new roadway network, consistent with the City of Bellingham's water regulations and design standards.

- As part of the Port's participation in the LEED Neighborhood Development Pilot Program, the New Whatcom Master Development Plan could include provisions to encourage water conservation during building construction and long-term operation of the redevelopment.

Sanitary Sewer

- The Port would coordinate with the City of Bellingham Public Works Department regarding the redevelopment of the New Whatcom site and necessary sanitary sewer system infrastructure improvements to ensure consistency with the City's overall sewer system.

- The design of all sanitary sewer collection facilities would comply with applicable City of Bellingham sanitary sewer collection standards for extensions and improvements to the City's sewer system.

- Sanitary sewer collector pipes would be located within the site's new roadway network, consistent with the City of Bellingham's sanitary sewer regulations and design standards.

Electric Power

- The Port would coordinate with PSE during the design and construction stage for new electrical lines onsite in order to ensure that all electrical facilities (including a new substation) are adequately sized to meet long-term demand.

- All new buildings on the site would meet all applicable City of Bellingham and Washington State energy requirements, including the potential construction of temporary service lines to avoid any impacts to existing customers during construction.

- Most of the new on-site electrical lines would be installed underground to minimize disruption to the onsite and surrounding environment.

Utilities Mitigation (continued)

- As part of the Port's participation in the LEED Neighborhood Development Pilot Program, the New Whatcom Master Development Plan could include provisions to encourage energy efficiency and conservation during building construction and long-term operation of the redevelopment.

Natural Gas

- The Port would coordinate with Cascade Natural Gas during the design and construction stage for new gas lines onsite in order to ensure that all natural gas facilities are adequately sized to meet long-term demand.

- All new buildings on the site would meet all applicable City of Bellingham and Washington State energy requirements.

- As part of the Port's participation in the LEED Neighborhood Development Pilot Program, the New Whatcom Master Development Plan could include provisions to encourage energy efficiency and conservation during building construction and long-term operation.

6.3 DEIS SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

Under most environmental elements, significant unavoidable adverse impacts would not result from redevelopment under Alternatives 1 through 3 or the No Action Alternative, with implementation of the identified mitigation measures. This pertains to impacts under Earth, Air Quality, Water Resources, Plants and Animals, Environmental Health, Noise, Land Use, Population/Employment/Housing, Light/Glare, Historic and Cultural Resources, Public Services and Utilities.

Under two elements – Aesthetics and Transportation, significant unavoidable adverse impacts could result. Under Aesthetics, the character of the site would be substantially modified over the long-term, as would views to the site even with consideration of mitigation measures; such changes could be viewed as significant, depending upon one's perspectives and perceptions. Under Transportation, traffic congestion will increase in the site area and downtown over the next 20 years, with or without New Whatcom redevelopment. Traffic associated with redevelopment of the site would worsen such congestion levels, even with the provision of assumed improvements. Ultimately, the potential for significant unavoidable adverse impacts would be dependent upon the Port, the City and other parties to successfully plan for, fund and implement a range of transportation-related mitigation improvements to serve future growth.

The following highlights the context of significant unavoidable adverse impacts that could result under the Aesthetics and Transportation elements.

Aesthetics

The site has historically been and continues to be a developed site (it does not reflect the character of an undeveloped, natural site). Redevelopment under Alternatives 1 through 3 would change the aesthetic character of the site from a primarily paved vacant/underutilized

industrial site to a more dense urban, mixed use development with a range of building heights. Changes in character would occur incrementally over the 20-year buildout period. Under the No Action Alternative, redevelopment would reflect a change in visual character to a more densely developed industrial area.

Redevelopment under the EIS Alternatives would alter portions of certain existing views within the vicinity of the site. The aesthetic/visual changes that would result from redevelopment of the site over the buildout period could be perceived by some to be significant; however, perceptions regarding such changes would ultimately be based on the subjective opinion of the viewer.

Transportation

With or without redevelopment of the New Whatcom site, added transportation demands and congestion on the surrounding street system will occur due to forecasted growth in Bellingham over the next 20 years. The EIS Alternatives would feature long-term redevelopment of the site that would contribute to increases in travel demands and congestion along the onsite and off-site street system. Redevelopment would also increase traffic access and circulation to/from the site and through the CBD and surrounding area. This added congestion would contribute to measurably poorer performance of the transportation network in terms of overall delays along several roadways and at some intersections in both 2016 and 2026. Improvements to the transportation network would be required to support both redevelopment of the site and expected growth in the City over the long-term. The increase in traffic and higher volumes of pedestrian and bicycle traffic would result in more conflict points and increased safety hazards as well. With implementation of a range of mitigation measures, significant unavoidable adverse impacts would be prevented or substantially lessened.