Chapter 4 Mitigation Summary

This chapter summarizes FHWA and WSDOT's commitments for project construction and compensatory mitigation. Commitments for construction include specific BMPs to be used by contractors before, during and after construction to minimize environmental impacts. BMPs are tools or actions designed to achieve a desired result by establishing factors such as the timing of construction, construction methods, or methods to protect specific resources. Commitments for compensatory mitigation include the actions the lead agencies will take to replace or substitute for unavoidable environmental impacts.

Commitments listed in this chapter do not include the many actions that the project has taken to avoid and minimize environmental impacts. These are important elements of environmental mitigation, and they have been incorporated into the project design. They are not included in this chapter because avoidance and minimization measures do not require subsequent commitments from WSDOT other than to build the project as designed.

Mitigation commitments are based on legal requirements and performance standards, which establish specific thresholds for project actions. To meet these commitments, the lead agencies will implement BMPs during construction and carry out specific compensatory mitigation.

4.1 Commitments Related to Best Management Practices

As WSDOT completes the project design and construction plans, it will include and use BMPs designed to meet the project commitments and performance standards for each resource. Some example BMPs are found in each section of Chapter 3. The effectiveness of the BMPs will be monitored as part of WSDOT's construction compliance program. This will allow WSDOT to adjust

or replace BMPs in order to assure compliance with performance standards and meet project commitments.

Geology and Soils

BMPs for geology and soils will be designed to meet applicable commitments and performance standards, including:

- NPDES General Permit for Construction Activities
- NPDES General Permit for Sand and Gravel Operations
- Temporary Erosion and Sediment Control Plans
- Erosion and sediment control requirements of the WSDOT *Design Manual* (WSDOT 2007c) and *Standard Specifications for Road, Bridge, and Municipal Construction* (WSDOT 2008b)
- Spill Prevention, Control and Countermeasure Plans
- Applicable permit requirements
- Conditions imposed by the USFS related to use of federal land for additional easement
- Applicable conservation measures included in the NOAA Fisheries' ESA Consultation Concurrence Letter (NOAA Fisheries 2008)
- Applicable parts of the *Implementing Agreement between the Washington State Department of Ecology and the Washington State Department of Transportation* (Ecology and WSDOT 1998), or as revised
- Objectives of the USFS ACS
- Construction safety requirements and maintaining operation of the highway during construction, including Occupational Safety

WSDOT may use plastic covering as an erosion control measure.

WSDOT may use rock netting at high risk locations throughout the project area.

and Health Administration requirements and highway safety standards

Air Quality

Water wagon wetting down field for dust control.

BMPs for air quality will be designed to meet applicable commitments and performance standards, including:

- Permit conditions from Ecology's Central Regional Office for temporary exhaust emissions sources and suspended particulates
- The NAAQS
- Air quality BMPs included as permit requirements or as conditions imposed by the USFS related to use of federal land for additional highway easement

Water Resources

BMPs for water resources will be designed to meet applicable commitments and performance standards, including:

Straw matting and hydroseeding are effective erosion control measures.

- Clean Water Act Section 404 Permit(s)
- Clean Water Act Section 401 Water Quality Certification
- NPDES General Permit for Construction Activities
- NPDES General Permit for Sand and Gravel Operations
- Temporary Erosion and Sediment Control Plans
- Spill Prevention, Control and Countermeasures Plans
- Erosion and sediment control requirements of the WSDOT *Design Manual* (WSDOT 2007c) and *Standard Specifications for Road, Bridge, and Municipal Construction* (WSDOT 2008b)

- WSDOT *Highway Runoff Manual* (WSDOT 2006b)
- Applicable measures specified in the USFWS Biological Opinion
- Applicable conservation measures included in the NOAA Fisheries' ESA Consultation Concurrence Letter (NOAA Fisheries 2008)
- Applicable parts of the *Implementing Agreement between the Washington State Department of Ecology and the Washington State Department of Transportation* (Ecology and WSDOT 1998), or as revised
- Objectives of the USFS ACS
- MDT design objectives and performance standards
- Applicable permit conditions
- Applicable conditions and stipulations related to the transfer of federal land for highway easement

WSDOT would conduct work around Keechelus Lake during low pool elevations when the shoreline is exposed.

Wetlands and Other Jurisdictional Waters

BMPs for wetlands will be designed to meet applicable commitments and performance standards listed in Section 3.3, *Water Resources*, as well as:

- The Final Wetland & Aquatic Resources Mitigation Plan
- The project-specific roadside master plan, which will guide re-vegetation adjacent to the highway

High visibility fencing is used to reduce accidental impacts to habitat.

Fish, Aquatic Species, and Habitats

BMPs for fish and aquatic habitat and species will be designed to meet applicable commitments and performance standards listed in Section 3.3, *Water Resources*, as well as:

Fish removal from construction zone.

- The *Design of Road Culverts for Fish Passage* manual (WDFW 2003)
- WSDOT's *Fish Exclusion Protocols and Standards* (WSDOT 2006c), which requires isolating the work area during construction and conducting fish removal and release of fish only by qualified biologists
- The Washington State Hydraulic Code (WAC 220-110), which governs culvert and bridge removal and replacement
- Applicable measures specified in the USFWS Biological Opinion
- WDFW guidelines for stream crossing structures

Terrestrial Species

BMPs for terrestrial species will be designed to meet applicable commitments and performance standards, including:

V-shaped fence ends direct wildlife away from roadways.

- NPDES General Permit for Construction Activities
- NPDES General Permit for Sand and Gravel Operations
- Temporary Erosion and Sediment Control Plans
- Spill Prevention, Control and Countermeasure Plans
- Erosion and sediment control requirements of the WSDOT *Design Manual* (WSDOT 2007c) and *Standard Specifications for Road, Bridge, and Municipal Construction* (WSDOT 2008b)

- Applicable measures specified in the USFWS Biological Opinion

- Applicable parts of the *Implementing Agreement between the Washington State Department of Ecology and the Washington State Department of Transportation* (Ecology and WSDOT 1998), or as revised

- Applicable permit conditions

- Applicable conditions related to the transfer of federal land for highway easement

Highway Advisory Radio and variable message signs are an effective way to inform the public of driving conditions and other important information during construction.

Transportation

BMPs for transportation will be designed to meet commitments and performance standards that apply to temporary traffic control during construction, as well as the *Standard Specifications for Road, Bridge, and Municipal Construction* (WSDOT 2008b) and all other applicable WSDOT design manuals and standards.

Noise

BMPs for noise will be designed to meet applicable commitments and noise standards, including Washington State and Kittitas County noise requirements.

Historic, Cultural, and Archaeological Resources

The major temporary impact to historic, cultural, and archaeological resources would be inadvertent disturbance of previously unknown objects or sites. WSDOT will develop and implement a project-specific unanticipated discovery plan, which will establish procedures to deal with the discovery of cultural resources before and during construction, and cultural resource monitoring for each phase of the project.

Recreation Resources

BMPs for recreation will be designed to meet applicable commitments and performance standards, including:

- The agreement between WSDOT and State Parks to use the Crystal Springs Sno-Park for materials staging and stockpiling
- Permit conditions, which may include the Special Use Permits from the USFS for the temporary use of and improvements to the Cabin Creek Sno-Park, and FSR 4832 and FSR 54 if they are used as haul roads
- Applicable conditions related to the transfer of or use authorization for federal land from the USFS and USBR for highway easement

Land Use

No BMP-related commitments have been made. Construction BMPs will avoid and minimize impacts to adjacent private property.

Visual Quality

BMPs for visual resources will be designed to meet applicable commitments and performance standards, including:

- WSDOT's Integrated Vegetation Management Program
- *Roadside Classification Plan* (WSDOT 1996), which specifies the restoration of native forest communities using small plant material, as well as soil restoration, hydroseeding, fertilizing, and mulching

Social and Economic Resources

No BMP-related commitments have been made.

Hazardous Materials and Waste

BMPs for hazardous materials will be designed to meet applicable commitments and performance standards, including:

- Spill Prevention, Control and Countermeasure Plan
- Applicable parts of the *Implementing Agreement between the Washington State Department of Ecology and the Washington State Department of Transportation* (Ecology and WSDOT 1998), or as revised
- The project health and safety plan and Occupational Health and Safety Administration regulations

Energy

No BMP-related commitments have been made.

4.2 Commitments Related to Compensatory Mitigation

This section describes compensatory mitigation commitments for each element of the environment.

Geology and Soils

Since there will be no permanent adverse impacts to geology and soils, no compensatory mitigation will be required.

Air Quality

Since there will be no permanent adverse impacts to air quality, no compensatory mitigation will be required.

Water Resources

WSDOT will provide stormwater treatment for the equivalent of all impervious surfaces. To compensate for areas where the terrain makes treatment impracticable, WSDOT will provide additional

treatment in other off-site locations in or near the project corridor. WSDOT will use the *Highway Runoff Manual* (WSDOT 2006b) Appendix 2A procedure or the "equivalent area" approach to mitigate for constrained areas in which stormwater treatment is physically impossible. This approach allows WSDOT to retrofit stormwater treatment onto existing off-site impervious surface with pollution loading characteristics similar to the constrained areas.

Wetlands and Other Jurisdictional Waters

WSDOT has completed a *Conceptual Wetland & Aquatic Resources Mitigation Plan* (Appendix J). This plan is subject to regulatory review and will be finalized as part of the project's Clean Water Act Section 404 permit and other applicable permits. WSDOT commits to implementing the measures contained in the final plan.

Restoration of Wetlands and Other Aquatic Habitats

WSDOT will restore wetland areas, stream channels, and riparian areas at each CEA where new bridges and culverts are installed. Wetlands and riparian areas probably existed prior to the original highway construction at these locations, and the project has been designed to reestablish connections between wetlands and other high quality habitats, as well as restore channel migration and floodplain functions.

Mitigation measures proposed at locations within and adjacent to CEAs include:

- Restoring and creating wetland, stream, and riparian zone area and function
- Restoring connections between wetlands and other important wildlife habitats
- Restoring channel migration and surface and subsurface flow paths

Hydrologic connections are an important component of the I-90 project.

- Restoring connections between streams, floodplains, and riparian zones

- Restoring passage for fish and aquatic organisms at stream crossings

Impacts from these restoration activities would be limited to soil disturbance during construction. Mitigation sites temporarily affected by construction will be restored once construction is complete. Restoration activities may include:

- Restoring pre-construction contours

- Replacing or amending surface soils

- Planting or seeding with native herbaceous and/or woody vegetation

WSDOT will maintain and monitor all planted areas, based on the commitments made in the final Wetlands & Aquatic Resources Mitigation Plan, which will be completed by WSDOT as part of project permitting.

Habitat Preservation

Preservation is an important component of reestablishing and maintaining ecological connectivity and protecting large connectivity investments made in the region associated with this and other projects. Although preservation does not replace wetland area or function affected by the project, it has the benefit of providing larger mitigation areas, protecting high-quality, high-functioning wetlands that might otherwise be affected adversely by future development, and removing the uncertainty of success associated with creation or restoration projects.

Preserving habitat is an important component of the I-90 project.

WSDOT is acquiring a 265-acre property for habitat preservation in the Gold Creek Valley. This property contains wetlands, riparian areas, and mature forest, including potential habitat for northern spotted owls, marbled murrelets, and bull trout. This property has potential for high-density development, which would be avoided through this acquisition. WSDOT has committed to preserve this property in perpetuity.

Wetlands, mature forest, and stream channels will be protected at the Gold Creek mitigation site.

Proposed Wetland Mitigation Ratio

WSDOT will compensate for unavoidable impacts to wetland area and function at a minimum 1:1 mitigation ratio, in accordance with Federal Executive Order 11990, Governor's Executive Order 89-10 (Protection of Wetlands: "No Net Loss") and WSDOT Directive 31-12 (Protection of Wetlands Action Plan). A Clean Water Act Section 404 permit will be obtained.

Highway Reclamation

As phases of the project are completed, WSDOT will perform extensive restoration activities that include areas of additional forested habitat, highway reclamation, buffer improvements, and highway slope vegetation with native species.

Fish, Aquatic Species, and Habitats

FHWA and WSDOT believe that by combining avoidance, mitigation, and BMPs, the impacts of the project to fish and other aquatic species and their habitats will be minimized. Potential impacts to Columbia River bull trout will be mitigated through compliance with the applicable measures specified in the USFWS Biological Opinion. The project also will implement the conservation measures in the *Biological Assessment* and the *Biological Evaluation* (Appendix M). The remaining impacts will be mitigated through beneficial effects including fish passage restoration, increase in overall habitat, improved in-stream physical processes, and improved water quality. Consequently, no additional compensatory mitigation will be required.

Terrestrial Species

FHWA and WSDOT believe that by combining avoidance, mitigation, and BMPs, the impacts of the project to terrestrial species will be minimized. Potential impacts to the marbeled murrelet and northern spotted owl will be mitigated through compliance with the applicable measures specified in the USFWS Biological Opinion. The project also will implement the conservation measures in the *Biological Assessment* and the *Biological Evaluation* (Appendix M). The project will mitigate for the remaining impacts through the beneficial effects of the build alternatives, which includes improved ecological connectivity, an increase in riparian habitat, and a decrease in wildlife mortality. Consequently, no additional compensatory mitigation will be required. However, WSDOT has acquired areas of mature forest now in private ownership as part of the preservation component of the *Conceptual Wetland & Aquatic Resources Mitigation Plan* (Appendix J).

Transportation

Since there will be no permanent adverse impacts to transportation, no compensatory mitigation will be required.

Noise

WSDOT found that a noise wall at Lake Easton State Park Campground would be both feasible and reasonable. Lake Easton State Park is not within the currently funded portion of the project. When funding becomes available for this portion of the I-90 project, WSDOT will conduct a supplemental noise analysis that addresses potential noise impacts and the feasibility of a noise barrier wall. WSDOT will continue to consult with State Parks to determine whether a noise wall or other suitable noise mitigation measure is required at Lake Easton State Park.

Walls help reduce traffic noise on adjacent properties.

Historic, Cultural, and Archaeological Resources

FHWA, WSDOT, and the SHPO agreed on mitigation measures for removing the snowshed. WSDOT has agreed to perform the

following measures, all located at Travelers' Rest, a potentially historic WSDOT-owned building located at the Snoqualmie Pass summit:

- Historic structures report for the Travelers' Rest building
- Site assessment of current and potential uses of Travelers' Rest, including mitigation options and needs
- Phase 1 environmental site assessment for hazardous materials
- Interpretive signs at Travelers' Rest depicting historic travel, including Native Americans, over Snoqualmie Pass, history of the Travelers' Rest building and site, and history and engineering facts of the snowshed

Recreation Resources

FHWA and WSDOT will work with the USFS and State Parks to mitigate for the temporary occupancy of the Crystal Springs and Cabin Creek Sno-Parks, and for the loss of the Price Creek Sno-Park (Westbound).

WSDOT will work with USFS and State Parks to mitigate for the loss of the Price Creek Sno-Park (Westbound).

WSDOT will develop an agreement with State Parks for the Crystal Springs Sno-Park to identify temporary and long-term commitments for the site. WSDOT will lease the sno-park for use as a materials and staging area. After project completion, WSDOT will re-grade the area to meet State Parks' long-term plans. WSDOT will work with the USFS to develop a Special Use Permit that will specify details for WSDOT's temporary occupancy of the Cabin Creek Sno-Park and long-term reclamation for the site.

WSDOT will improve the Crystal Springs Sno-Park to mitigate for temporary occupancy.

WSDOT will improve FSR 4832 or FSR 54 to accommodate their use as haul roads. WSDOT will replace the parking afforded by the Price Creek Sno-Park (Westbound) at a location to be determined in consultation with the USFS and State Parks, and the current parking lot will be restored to forested conditions. The new sno-park

location will not conflict with resources managed by State Parks or the USFS.

WSDOT has studied potential replacement parking areas for the Price Creek Sno-Park (Westbound) in consultation with the USFS and State Parks. The *I-90 Corridor Winter Recreation Strategy* (State Parks 2007) identifies and describes sites in or near the project area that could help provide more sno-park capacity. After reviewing the State Parks report and recommendations, WSDOT prioritized the State Parks-recommended sites based on WSDOT's criteria and identified priority mitigation sites. WSDOT will not close the Price Creek Sno-Park (Westbound) until funding has been received for the remainder of the project and a replacement site has been identified, designed, and constructed.

WSDOT will study these sites further as design proceeds and funding to construct the remainder of the project is secured. Refer to the *Recreation Impacts/Preliminary Mitigation Site Analysis* (Appendix S) for details.

Land Use

In the event that residents or businesses are relocated, WSDOT will comply with the terms of the federal Uniform Relocation Act of 1970, as amended.

Visual Quality

WSDOT will meet the terms of the project *Architectural Design Guidelines* (Appendix X) and project roadside master plan.

Social and Economic Resources

Since there will be no permanent adverse impacts to social and economic resources, no compensatory mitigation will be required.

Hazardous Materials and Waste

Since there will be no permanent adverse impacts to hazardous materials and waste, no compensatory mitigation will be required.

Energy

Since there will be no permanent adverse impacts to energy, no compensatory mitigation will be required.

Cumulative Effects

Since there will be no permanent adverse cumulative effects, no compensatory mitigation will be required.

4.3 Commitments Related to CEA Design

WSDOT performed a detailed analysis of the MDT's recommended performance objectives and standards for connectivity structures. Based on this analysis, WSDOT made a series of commitments related to the design at each CEA. These commitments are designed to be adaptable, preserving WSDOT's commitment to the MDT goals and objectives, but allowing modification of the specific means employed as new field information is developed. WSDOT will continue to consult with resource agencies throughout final design. The objectives and standards are found in Appendix W, *US Forest Service Consistency Determination Support Information*.

4.4 Other Project Commitments

The lead agencies have made the following additional commitments:

- During consultation, WSDOT agreed to coordinate revegetation and mitigation plant lists with interested tribes to include plants traditionally used by Native Americans.

- WSDOT will continue to collaborate with state and federal land managers, land conservancies, and private landowners in order to ensure that public investments continue to have value for both travelers and the natural environment.

- WSDOT will extend Phase 1C past MP 59.9 if funding allows.

- As design for subsequent phases is completed, WSDOT will conduct further environmental investigations, which will determine the precise extent and location of environmental impacts and whether supplemental review is needed. WSDOT commits to performing any supplemental review that is required by NEPA and SEPA if:

  - Changes to the proposed project would result in significant environmental impacts

  - There are any significant design changes to the project

  - Environmental impacts not discussed in the Final EIS are discovered

- WSDOT will implement a monitoring plan for wildlife crossing structures during Phase 1 of construction and will use the results of this monitoring program in an adaptive management approach when designing fish and wildlife crossing structures for the remaining project area.

- In finalizing the design of the project, WSDOT will take the following steps to comply with the USFS Riparian Reserves requirements:

  - WSDOT will work with the USFS to delineate Riparian Reserves based on USFS administrative guidance when the project design is between 30 and 60 percent complete.

  - WSDOT and the USFS will identify the activities that currently exist, activities that are planned, activities that would be allowed under USFS guidance, and the applicable ACS objectives and reasonable expectations for each Riparian Reserve area

  - WSDOT, in collaboration with the USFS, will compare the ACS objectives to the MDT's recommendations for each Riparian Reserve area and will determine whether the

Preferred Alternative complies with the ACS objectives or whether additional action is needed

- WSDOT, with USFS collaboration, will determine whether an engineering solution or some other response or mitigation is needed to achieve MDT objectives.

- USFS requirements may change during the project's long design and construction period. WSDOT will continue to consult with the USFS during project design to assure that the most current guidance is used.

- WSDOT will design wildlife structures that would not be conducive to human use.

- WSDOT will monitor the performance of the connectivity structures and will use the results in the design of later phases of the project, and to support management decisions by public agencies.

- WSDOT will keep two lanes open in each direction during construction during peak driving times except for rare exceptions. Construction would sometimes require WSDOT to reduce traffic to a single lane; however, WSDOT will keep lane closures as short as possible and would typically limit them to Monday through Thursday during low traffic periods.

- WSDOT will address the potential impact of increased stormwater runoff to surface water in two ways: pollution source control and treating stormwater runoff.

- WSDOT will conduct further wetland impact analysis as part of permitting for sites within the currently unfunded phase(s) of the project east of Keechelus Dam.

- WSDOT will add culverts at increased frequency and density in areas where habitat, topography, and engineering constraints allow.