Chapter 1 Purpose and Need

Interstate 90 (I-90) spans 300 miles in Washington State from the Port of Seattle to the Idaho state line, and then continues east across the United States to Boston, Massachusetts. I-90 is the major east-west transportation corridor across Washington and is vital to the state's economy. The Federal Highway Administration (FHWA) and the Washington State Department of Transportation (WSDOT) propose to improve a 15-mile portion of I-90. The project area begins on the eastern side of Snoqualmie Pass near the Hyak Interchange at milepost (MP) 55.1, and ends at the West Easton Interchange at MP 70.3 near the unincorporated community of Easton. Exhibit 1-1 shows the project area.

Exhibit 1-1
Project Area

Chapter 1 presents an overview of the proposed project, including the project's environmental setting. This chapter also summarizes the environmental review process and the permits and other approvals needed to carry out the proposed project.

1.1 What is the project purpose and need?

The purpose of the project is to meet projected traffic demands, improve public safety, and meet the identified project needs for a 15-mile stretch of I-90 between the communities of Hyak and Easton, in Kittitas County, Washington.

Avalanches in the project area close I-90.

Avalanches

I-90 is frequently closed due to avalanches and associated control work. These closures strand motorists and freight on Snoqualmie Pass, resulting in substantial safety hazards to the traveling public, travel delays, and impacts to the state's economy. The traveling public and movement of goods remain at risk as long as the avalanche problem is not resolved. The risk will increase with growth in traffic volumes.

Slope Instability

I-90 has several unstable slopes, which results in rock and debris falling onto the roadway, causing damage to property and loss of life. These slopes will continue to pose a threat to property and safety if they are not stabilized or if the highway is not realigned to avoid areas of slope instability.

Unstable slopes in the project area regularly lead to rock fall.

Structural Deficiencies

The pavement on I-90 is beyond its design life and the roadway is rapidly deteriorating. If it is not repaired or replaced, continued deterioration of the roadway will result in unsafe driving conditions, increased vehicle damage, travel delay, and eventual failure of the roadway.

Pavement in the project area has outlived its intended lifespan and is deteriorating rapidly.

Traffic Volumes

Traffic volumes on I-90 are increasing at an estimated rate of 2.1 percent per year and are expected to increase at a similar rate well into the future. Traffic volumes already exceed the highway's design capacity during peak travel periods. The worsening traffic situation may lead to higher numbers of accidents, adverse economic impacts, and increased travel times.

Traffic volumes over Snoqualmie Pass often exceed the design capacity of the highway.

Ecological Connectivity

Federal land management plans have documented that I-90 forms a barrier to wildlife movement, and have identified the need to increase ecological connectivity across the highway. Improving ecological connectivity will advance federal land management goals by reducing fish and wildlife population isolation. It also will reduce the risks to wildlife and the public from collisions between vehicles and wildlife.

Elk killed in collision with vehicle near proposed wildlife overcrossing structure

1.2 Where does the project begin and end?

The project area begins just east of the Hyak Interchange at MP 55.1, and ends at the West Easton Interchange at MP 70.3 (Exhibit 1-2). These beginning and end points of a transportation project are referred to as its logical termini. They are chosen to ensure that transportation projects are appropriately matched to infrastructure, traffic movements, and topography. They also are chosen so that the project will have "independent utility," meaning that the project would be usable even if no additional transportation projects are planned in the same or adjacent areas.

What are "logical termini"?

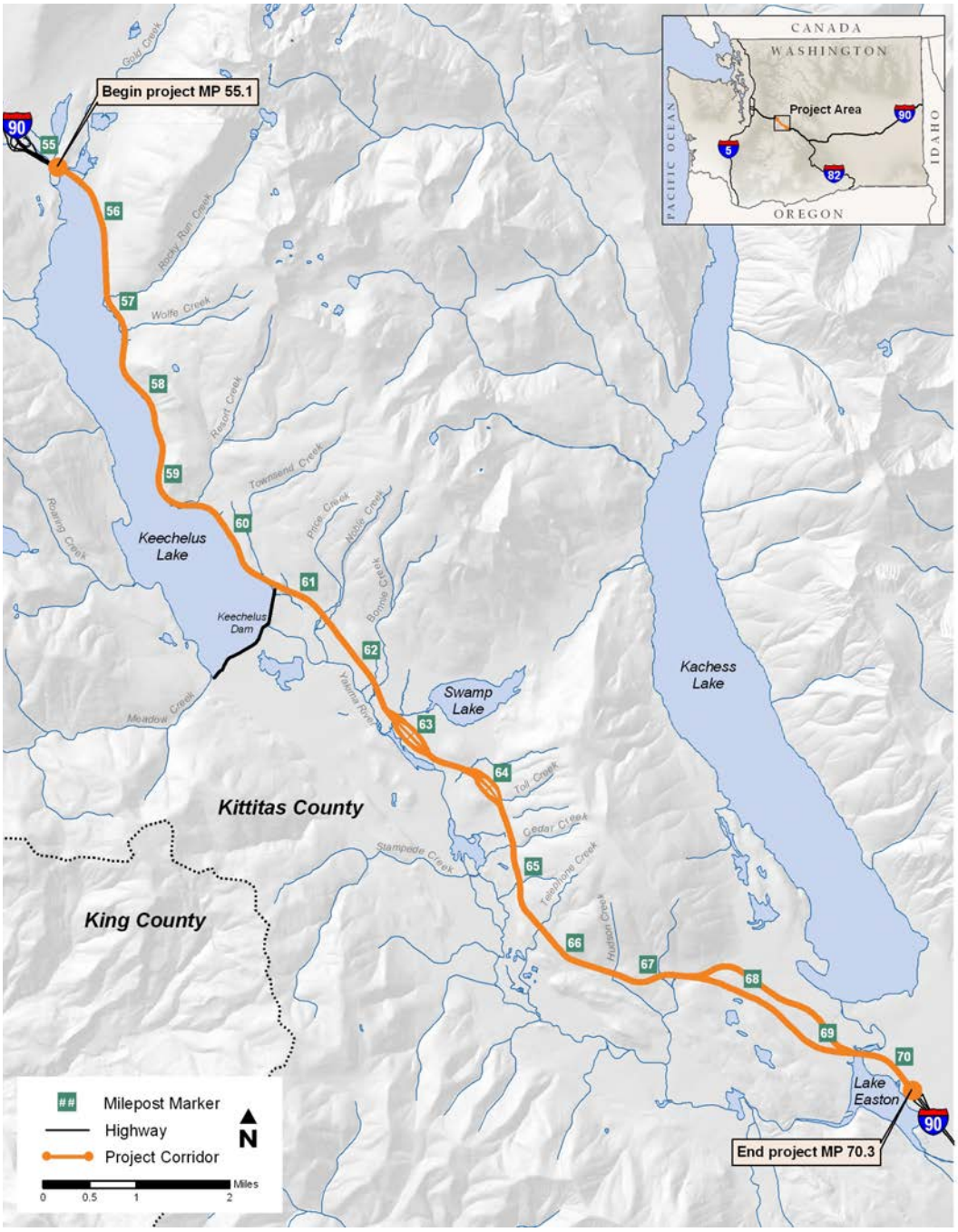
The FHWA defines logical termini as (1) rational beginning and end points for a transportation project, and (2) rational beginning and end points for review of environmental impacts.

FHWA and WSDOT chose the logical termini of the I-90 project because they define a distinct major highway segment, with unique operational characteristics and a high concentration of problem areas, and they form logical project boundaries. As required under the FHWA National Environmental Policy Act (NEPA) rules (23 Code of Federal Regulations [CFR] § 771.11[f]), constructing the I-90 Snoqualmie Pass East project does not require or preclude future adjacent highway projects.

The project beginning point at Hyak is located where the existing highway narrows from six lanes to four lanes. The end point at Easton occurs just outside the Okanogan-Wenatchee National Forest boundary, where the terrain becomes flatter and the highway is straighter.

Near the project's eastern end, I-90 becomes flatter and straighter and there are no avalanche or rock fall problems.

Exhibit 1-2
Project Location



1.3 What is the project's environmental setting?

The project area is located in a vitally important corridor for wildlife movement, an area recognized as a critical connective link in the north-south movement of species in the Cascade Range. The largest contiguous areas of relatively undeveloped public land in the state are located north and south of the project area, and contain large and important wildlife populations and habitat areas. This project setting led FHWA and WSDOT to include ecological connectivity as part of the project's purpose and need.

Potential connections between these areas of public land are limited to an area approximately 25 miles wide, which includes the project area (Exhibit 1-3). East and west of the project area, land is largely in private ownership, and development is occurring rapidly. These areas of private land have potential value as wildlife corridors, although the cost and other difficulties in acquiring a sufficient amount of land to set aside as wildlife corridors would be high. Because the 15-mile project corridor already contains a large amount of public land, it is a more appropriate area to invest public funds.

I-90 crosses the entire width of this potential wildlife corridor. The highway's presence severely limits the north-south movement of wildlife. Traffic volumes are high enough to create a substantial barrier to animals attempting to cross the highway. Wildlife mortality along the highway is high, creating a traffic safety hazard in addition to the impact to wildlife.

Important wildlife habitat areas

North of I-90:

- Alpine Lakes Wilderness
- North Cascades National Park
- Glacier Peak Wilderness
- Henry M. Jackson Wilderness

South of I-90:

- Goat Rocks Wilderness
- Mt. Rainier National Park
- Norse Peak Wilderness
- William O. Douglas Wilderness

Ecological connectivity:

The movement of organisms and the occurrence of ecological processes across an ecosystem over time.

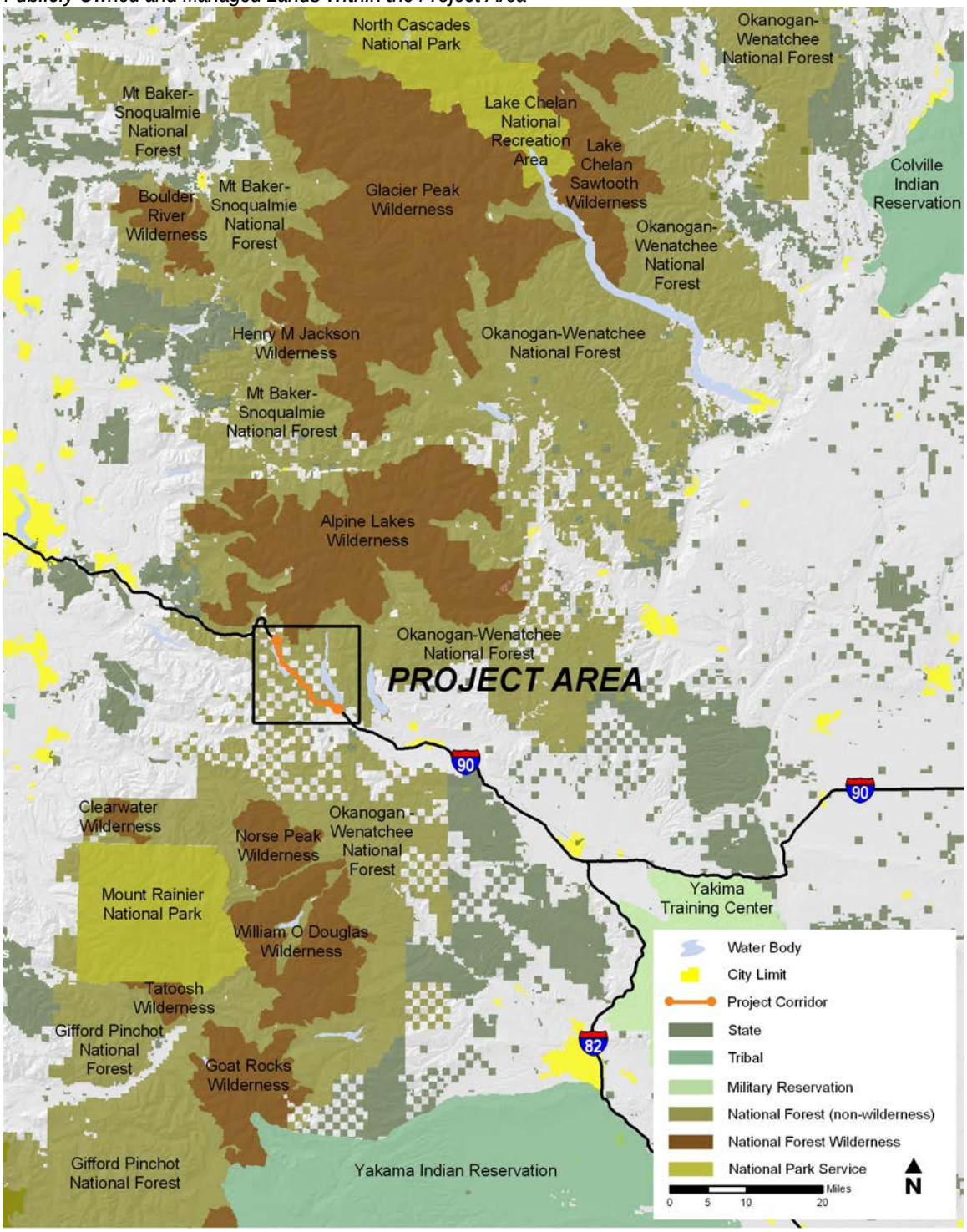
Hydrologic connectivity:

Maintaining natural flow paths that transmit water, sediment, and nutrients to and through watersheds, aquifers, and streams.

Landscape permeability:

Ability of organisms to move freely across the landscape for the purposes of accessing food resources, migrating to avoid severe weather, and dispersing young animals to unoccupied territories.

Exhibit 1-3
Publicly Owned and Managed Lands Within the Project Area



I-90 also forms a physical barrier between upstream and downstream aquatic habitats, and adversely affects important hydrologic processes. Existing culverts and narrow bridges limit aquatic species movement. In many cases, the highway embankment has filled habitat that once made up channels, floodplains, and associated wetlands. Highway fill and drainage systems have altered the hydrology of wetlands above and below the highway.

The USFS is the primary land manager within the I-90 project area.

The US Forest Service (USFS) manages the majority of the lands north and south of the project area (Exhibit 1-3). The USFS recognizes the importance of the project area for wildlife movement. The USFS has identified reducing the highway's barrier effect on wildlife as a priority in forest management plans for the Okanogan-Wenatchee National Forest, and in numerous additional planning and land management documents.

Adaptive Management Areas are areas designed to encourage the development and testing of technical and social approaches to achieving desired ecological, economic, and social objectives. Each area is meant to pilot adaptive management, which promotes learning about how to manage for multiple objectives and their success over time.

In 1994, the Northwest Forest Plan established the 212,700-acre Snoqualmie Pass Adaptive Management Area (SPAMA), which includes the entire project area, as one of ten adaptive management areas in the western United States. The SPAMA's goals are to emphasize providing mature forests and connective habitat for species moving north and south (USFS and USFWS 1997).

The purpose of the **Northwest Forest Plan** is to adopt coordinated management direction for the lands administered by the US Forest Service, and to adopt complimentary approaches by other federal agencies within the range of the northern spotted owl. The management of these public lands must meet dual needs: the need for forest habitat and the need for forest products.

In support of the goal of connecting habitat, the USFS has made substantial efforts to acquire private lands in the "checkerboard" land ownership areas of the Central Cascades. The USFS was the principle sponsor of a major land exchange between the USFS and Plum Creek Timber Company in 1999. The USFS also has supported the efforts of the Mountains to Sound Greenway Trust and the Cascades Conservation Partnership. This association of conservation groups has raised millions of dollars in an unprecedented effort to buy private lands that have been placed in public ownership for conservation purposes. Together, these public and private efforts have placed many thousands of acres of land within the SPAMA into public ownership for conservation purposes, and the program is still underway. Section 3.11, *Land Use*, contains additional information on conservation land purchases.

In addition to its location as a wildlife corridor, the I-90 project area is located in a high mountain pass with extreme temperatures and heavy snowfall during the winter months. This location limits the construction season to approximately seven months a year, from early April to the end of October, when the area is mostly free of snow. For approximately the first six miles of the project area, I-90 runs along the shore of Keechelus Lake in a narrow corridor between the lake and steep rock walls. Loose, unstable rock, debris, and snow fall directly onto the highway. The narrow highway corridor also limits WSDOT's ability to install facilities to treat stormwater runoff. As a result, construction in this part of the project area would be extremely challenging.

Along Keechelus Lake, I-90 is confined to a narrow corridor between the lake and steep rock slopes.

1.4 How have FHWA and WSDOT responded to the project's environmental setting?

FHWA and WSDOT are required to consider the environmental setting when designing highway improvements. State and federal law and regulations require the lead agencies to engage in a collaborative, interdisciplinary approach to transportation projects that considers the total context within which a project would exist.

This process, which is sometimes called Context Sensitive Solutions or Context Sensitive Design, engages stakeholders throughout the duration of the project, which includes helping to develop the project's purpose and need, and serving on multi-disciplinary advisory teams. The aim of Context Sensitive Solutions is to develop a transportation facility that fits within its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. The federal government adopted Context Sensitive Solutions principles in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (known as SAFETEA-LU) in August 2005. Washington State has adopted these principles in its policy and guidance documents.

In the case of the I-90 project, the context of the project includes the use of Snoqualmie Pass as Washington's largest east-west freight corridor, the location of the project corridor in a high mountain pass with severe terrain restrictions, and the USFS management goals for the surrounding land, which emphasize ecological restoration and the importance of the area as a major wildlife corridor.

FHWA and WSDOT responded to the environmental setting in two primary ways: by using a collaborative, interdisciplinary approach and by including ecological connectivity as one of the project needs.

Collaborative, Interdisciplinary Approach

Throughout the project, the lead agencies have engaged in a continuous process of consultation, collaboration, and partnership with the public, interest groups, the project's cooperating agencies, and other stakeholders. These relationships allowed the lead agencies to gain valuable insight into each group's needs, which then could be incorporated into the project design.

Consultation and collaboration efforts have included:

- WSDOT formed relationships with transportation-based organizations, associations, and businesses. These relationships include Port of Seattle, Port of Tacoma, Washington State Good Roads & Transportation Association, Washington Trucking Association, Freight Mobility Strategic Investment Board, and local importing and exporting freight business such as Anderson Hay & Grain.

- During project scoping, FHWA and WSDOT's public involvement activities went beyond those required for NEPA and the State Environmental Policy Act (SEPA), including open houses, public meetings, and a project web site.

- FHWA and WSDOT created a multi-agency project Interdisciplinary Team (IDT) as an advisory body to incorporate relevant science and the concerns of agency stakeholders, and to

recommend a Preferred Alternative. The lead agencies went beyond their normal practice and invited technical experts from other agencies to participate on the IDT. After the Preferred Alternative had been identified, FHWA and WSDOT extended the charter of the IDT, and expanded its membership to include additional member agencies.

- WSDOT created the Mitigation Development Team (MDT) as a multi-agency advisory group to the IDT on ecological connectivity. The MDT developed a comprehensive list of connectivity objectives, and used these objectives to evaluate design options at each connectivity emphasis area (CEA). The MDT also developed a series of performance standards that WSDOT could incorporate in its design at each CEA.

- WSDOT formed three additional advisory committees to the project team to provide technical expertise in the area of wetlands, stormwater management, and wildlife monitoring.

- WSDOT created innovative partnerships with university researchers and conservation groups to design a wildlife monitoring program for the project.

- FHWA and WSDOT participated in the Signatory Agency Committee (SAC) Agreement to Integrate Aquatic Resources Permit Requirements into the National Environmental Policy Act and the State Environmental Policy Act Processes in the State of Washington (SAC Agreement) (WSDOT et al. 2002), which established an interagency committee to consider potential impacts to fish and aquatic resources. The SAC Agreement includes a mechanism for formal concurrence on the project's purpose and need, the range of alternatives, and the Preferred Alternative. Member agencies have concurred at each of these formal concurrence points.

- The lead agencies have consulted continuously with the USFS as a cooperating agency. This has included early review of project documents and ongoing exchange of information.

Who is on the Interdisciplinary Team and what are their roles?

The project's original IDT included the Federal Highway Administration, Washington State Department of Transportation, US Forest Service, US Fish and Wildlife Service, and Washington Department of Fish and Wildlife.

Advisory members included Washington State Department of Ecology, Washington State Parks and Recreation Commission, US Environmental Protection Agency, and US Army Corps of Engineers.

The IDT was used as an advisory body to incorporate both relevant science and the concerns of agency stakeholders, and to recommend a Preferred Alternative.

After the Preferred Alternative was identified, the advisory agencies, US Bureau of Reclamation, National Marine Fisheries Service, and Kittitas County joined the IDT.

The following groups provide technical advice:

- Mitigation Development Team
- Stormwater Technical Committee
- Wetland Mitigation Technical Committee
- Wildlife Monitoring Technical Committee

- FHWA and WSDOT have developed partnerships with a variety of agencies, landowners, and citizen groups to reduce conflicts that could affect the project, particularly land use and recreation conflicts that could affect the use of connectivity structures.

The lead agencies' collaborative approach substantially influenced the direction of the project. FHWA and WSDOT, along with all of the interagency partners, recognized the importance of correcting problems with avalanches, slope instability, deteriorating pavement, increasing traffic volumes, and ecological connectivity, and included all of these as part of the project's purpose and need.

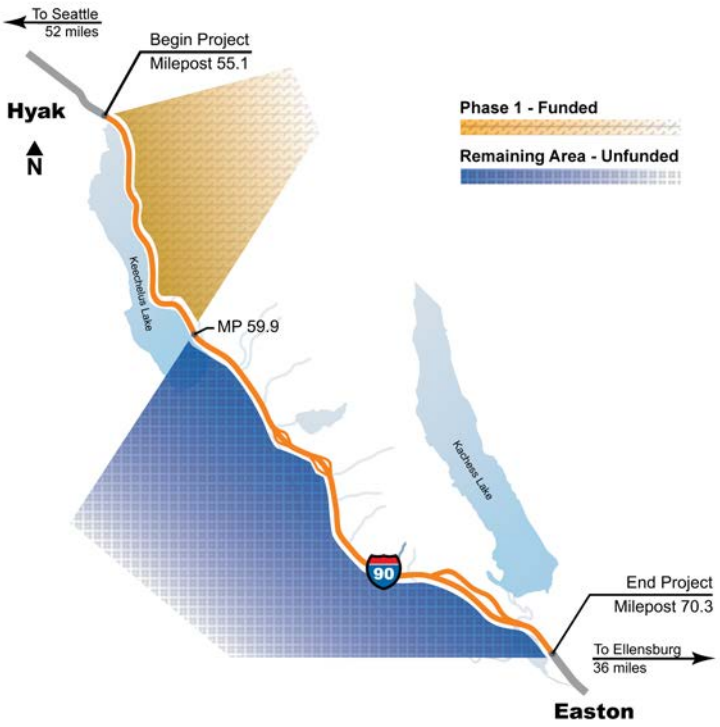
FHWA recognized the project's collaborative approach in 2006 with an Exemplary Ecosystem Initiative award for exceptional environmental stewardship.

1.5 What parts of the project have been funded?

The Washington State Legislature has allocated $545 million to fund the first phase (Phase 1) of the project. Phase 1 includes the first five miles between Hyak (MP 55.1) and Keechelus Dam (MP 59.9). Exhibit 1-4 shows the funded and unfunded portions of the project. The project is included in the State budget, and the funded portion appears in the *Statewide Transportation Improvement Program 2008-2011* (WSDOT 2008a) and the *2007-2026 Highway System Plan* (WSDOT 2007a), including funding for design, right-of-way, and construction for three or more contracts within Phase 1.

The unfunded portion of the project appears in the *2007-2026 Highway System Plan* (WSDOT 2007a), and there is a reasonable anticipation that funding will be available to complete future phases of the project.

Exhibit 1-4
Project Phases



1.6 How long will it take to build the project?

WSDOT estimates that constructing Phase 1 of the project would require approximately six years. The remaining project area would require between seven and 15 years to construct, depending on funding availability, construction staging, environmental permitting, and weather conditions.

Because of funding constraints and the long duration of the project, construction would occur in phases. WSDOT expects construction to occur mainly during snow-free months, typically April through October. Phase 1 construction is scheduled to begin in early 2010, with completion anticipated in 2015. WSDOT would continue planning for future phases and anticipates that work on the remaining project area would be completed by 2025, if funding is available.

In 2006, WSDOT began pre-construction activities, such as design, geotechnical drilling, groundwater monitoring, surveying, determining real estate needs, and permitting. Pre-construction wildlife monitoring began in 2008. WSDOT expects to continue these activities through the start of project construction, and will prepare construction schedules as part of the permitting process.

See Section 3.7, *Transportation,* and Appendix P, *Transportation Discipline Report*, for additional information on construction staging.

1.7 Why have FHWA and WSDOT prepared this environmental impact statement?

Environmental review is required under NEPA, which was signed in January 1970 as the "national charter for protection of the environment." Washington's SEPA, adopted in 1971, directs state and local decision makers to consider the environmental consequences of their actions.

NEPA and SEPA both require preparation of an environmental impact statement (EIS) when a project could have a significant effect on the environment. Both allow review of possible project alternatives or mitigation measures that will reduce a project's environmental impact.

The I-90 Snoqualmie Pass East Project must comply with both NEPA and SEPA. Review under NEPA is required since the project will require federal permits and approvals, use of federal lands, and possibly federal funding. Review under SEPA is required since the project is an action by a state agency, and will require permits from both state and local agencies. This document is a combined NEPA and SEPA EIS.

1.8 Who are the project proponent and lead agencies?

Under both NEPA and SEPA, the project proponent is the person or agency that proposes to carry out the project. WSDOT is the project proponent.

NEPA and SEPA require that one or more "lead agencies" take responsibility for the environmental review process. This Final EIS fulfills both NEPA and SEPA requirements. FHWA is the federal lead agency under NEPA, and WSDOT is the state lead agency under SEPA. The Final EIS refers to both agencies or "the lead agencies" where the two agencies make decisions jointly, and to FHWA or WSDOT when the agencies act separately.

FHWA and WSDOT are the lead agencies.

1.9 Who are the cooperating agencies?

Under NEPA, a cooperating agency is an agency that has a vested interest in a proposed project for which environmental documents will be prepared. The agency might own property required for easement, issue permits, or have special expertise in an affected element of the environment. Under NEPA regulations, any federal agency with permitting authority must be asked to become a cooperating agency. State resource agencies, tribes, and local agencies may be asked to be cooperating agencies if the lead agency decides they have special expertise or legal jurisdiction.

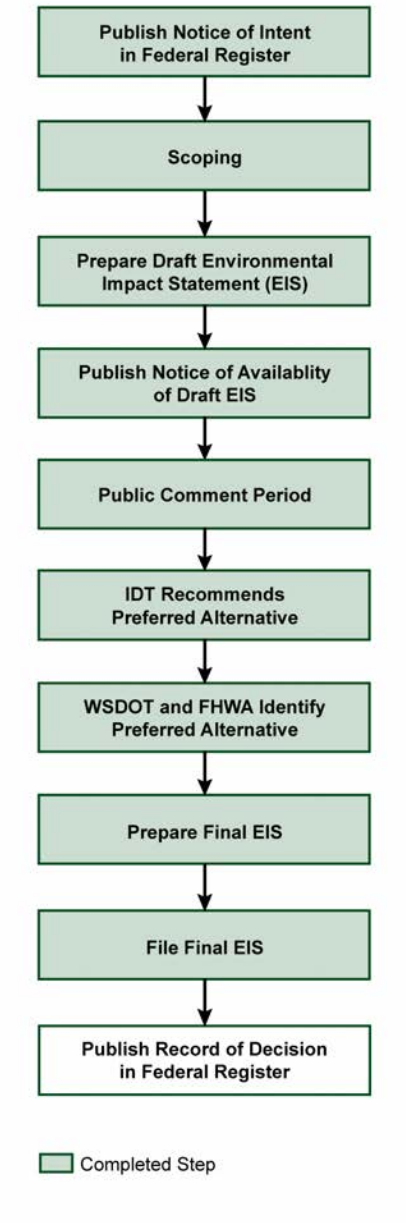
FHWA and WSDOT invited the USFS, US Bureau of Reclamation (USBR), and the US Army Corps of Engineers (USACE) to be cooperating agencies for the project. The USFS and USBR agreed to be cooperating agencies; the USACE declined to be a cooperating agency.

The USFS and USBR are cooperating agencies.

1.10 What are the steps in the environmental review process?

The goal of both NEPA and SEPA review is to ensure that responsible officials make decisions that are fully informed, based on a comprehensive, multi-disciplinary analysis of environmental consequences that includes opportunity for public comment. Exhibit 1-5 shows the steps in the EIS process, which are described below.

Exhibit 1-5
The EIS Process



Publish Notice of Intent in Federal Register

FHWA published the Notice of Intent for this project in the Federal Register on December 28, 1999.

Scoping

Scoping is the first major step in identifying environmental issues that should be analyzed in depth, and eliminating those issues that are not relevant to the project.

Scoping is intended to ensure that problems and environmental issues are identified early and properly studied, that the draft EIS is thorough and balanced, and that delays caused by an inadequate draft EIS are avoided.

The scoping process should identify the public and agency concerns, address regulatory requirements, clearly define the alternatives to be examined in the EIS, and eliminate non-substantial issues. The process also should identify related issues that originate from separate legislation, regulation, or Executive Order (for example, historic preservation or endangered species concerns).

Scoping for the I-90 project's EIS ran from January 2000 through March 2000. During that period, the lead agencies actively solicited comments from the public, local governments, state and federal agencies, Tribes, and local environmental and recreation organizations, and ensured that their comments were included in the environmental analyses.

In addition to receiving verbal and written comments at scoping meetings and on a 1-800 telephone message line, the lead agencies also received written comments by mail and e-mail from the public and agencies. The *I-90 Snoqualmie Pass East Draft EIS* (WSDOT 2005a) summarizes issues and concerns received during the scoping process.

Prepare Draft EIS

The Draft EIS presented existing environmental conditions along the I-90 project corridor, along with a range of possible alternatives that would potentially meet the project's purpose and need. WSDOT developed alternatives based on comments received during the scoping process. The Draft EIS analyzed the environmental consequences of each alternative, based on technical reports or memoranda prepared for key environmental disciplines. FHWA and WSDOT distributed copies of the Draft EIS to tribes, agencies, libraries, and members of the public who requested copies.

Publish Notice of Availability of Draft EIS

FHWA published the Notice of Availability for the Draft EIS in the Federal Register on June 10, 2005.

45-Day Public Comment Period

The lead agencies solicited written and oral comments from the public, agencies and organizations on the Draft EIS during the 45-day comment period, which began with publication of the Notice of Availability. Public hearings held in Ellensburg, Hyak, and Seattle in June and July 2005 gave citizens and agencies the opportunity to

comment on the Draft EIS as well as meet project staff. Approximately 276 people attended these hearings. The lead agencies also maintained a project web site that provided the public with the opportunity to provide comments via e-mail. FHWA and WSDOT received comments from over 3,300 individuals, groups, and agencies. See Chapter 6, *Consultation and Coordination*, for more details.

FHWA and WSDOT Identify the Preferred Alternative

FHWA and WSDOT identified the Preferred Alternative following a collaborative process that involved resource agencies, technical investigation, and engineering review. This process included:

1. Reviewing the Draft EIS comments

2. Considering the MDT's recommendations related to ecological connectivity

3. Developing IDT recommendations for the Preferred Alternative

4. Identifying the Preferred Alternative based on the lead agencies' concurrence with the IDT's recommendations

5. Performing additional technical studies and cost estimates to refine the Preferred Alternative before issuing the Final EIS

Prepare Final EIS

The Final EIS revises the Draft EIS and responds to comments made during the public comment period or presented at public hearings. The Final EIS provides decision makers with a comprehensive review of the environmental consequences of the build alternatives and the baseline No-Build Alternative. Between the Draft and Final EIS, the lead agencies considered and prepared responses to comments on the Draft EIS.

As required under NEPA and SEPA, the Final EIS:

- Identifies and describes the Preferred Alternative
- Describes changes to the alternatives from those described in the Draft EIS
- Demonstrates compliance to the extent possible with all applicable environmental laws and Executive Orders
- Provides reasonable assurance that the requirements can be met
- Includes copies of comments received and responses
- Notes where the Final EIS was changed in response to comments
- Identifies other changes or corrections

For further information on the NEPA process, please refer to FHWA's on-line guidance at www.fhwa.dot.gov/environment/doc_eis.htm.

Publish Notice of Availability

Following review for legal sufficiency, FHWA published the Notice of Availability for the Final EIS on August 29, 2008. After publishing the Notice of Availability, a 30-day review period begins for the public, agencies, and other relevant reviewers.

Publish Record of Decision

The Record of Decision (ROD) will identify which alternative the decision makers have selected and what management actions or other measures would be carried out as mitigation to reduce, where possible, adverse impacts to the environment. FHWA will publish the ROD in the Federal Register, following the 30-day review period for the Final EIS.

1.11 How did the lead agencies respond to comments on the Draft EIS?

Over 3,300 agencies and individuals submitted comments on the Draft EIS. Over 3,000 of the comments submitted were in the form of pre-printed post cards. Approximately 147 individuals wrote letters and e-mails. Five federal agencies, three state agencies, one tribe, and 29 organizations submitted comments. There were approximately 700 unique comments.

Almost without exception, commenters favored making the proposed improvements to I-90, and favored making the largest possible improvements to ecological connectivity. No more than two commenters recommended against construction of the project. Most commenters urged FHWA and WSDOT to use the work of the MDT as the basis for the design of wildlife crossing structures. Exhibit 1-6 summarizes the ten most frequent comments submitted and responses from FHWA and WSDOT. Appendix A contains the complete text of all comments and responses. Readers who cannot use the attached DVD may refer to paper copies filed with the public libraries listed in the Fact Sheet at the beginning of this document.

Exhibit 1-6
Top 10 Comments on the Draft EIS

Comment	WSDOT Response
1. I support this project.	Thank you for your comments and your support of the I-90 project.
2. WSDOT should choose Keechelus Lake Alignment Alternative 1.	FHWA and WSDOT identified Keechelus Lake Alignment Alternative 4 as the Preferred Alternative based on the IDT's recommendations. FHWA and WSDOT did not recommend any of the tunnel alternatives, including Alternative 1. Tunnels were all found to have severe operational problems and high construction and maintenance costs. The high cost of tunnel construction would have forced WSDOT to reduce its investments in ecological connectivity improvements or to seek additional funding from the Washington State Legislature. The identified Preferred Alternative makes maximum use of the existing alignment, allows funding for the maximum number of connectivity structures, and most effectively satisfies the project's purpose and need.
3. WSDOT should choose Improvement Package A at all CEAs where this choice exists.	FHWA and WSDOT identified the Preferred Alternative based on the recommendations of the project's IDT and MDT. In general, the IDT and MDT recommended the CEA options included in Improvement Package A. When Option A did not represent the best connectivity option, the IDT identified an alternate or modified an option. At Swamp Creek, WSDOT recommended Option B as modified to meet the MDT's recommended bridge height. The IDT created a new option (Option D) for the Price/Noble Creeks CEA and the Kachess River CEA. FHWA and WSDOT adopted the IDT's Preferred Alternative recommendations in June 2006. The IDT and WSDOT also made minor design modifications at Resort Creek, Townsend Creek, Cedar Creek, and Telephone Creek, because the original designs did not fully meet their connectivity objectives. At these locations, except Resort Creek, the IDT recommended increasing the culvert sizes beyond the minimums suggested by the MDT. At Resort Creek, WSDOT would replace the culverts with two bridges.
4. The MDT recommendations should be the primary tool for choosing a preferred alternative.	FHWA and WSDOT used the MDT recommendations as the basis for identifying the Preferred Alternative. The MDT's recommendations appear throughout the Final EIS where appropriate.
5. Wildlife crossing structures can work.	The project includes wildlife crossing structures at all major wildlife crossing areas. WSDOT designed these structures using the recommendation of the MDT, a multi-agency team of biologists and hydrologists whose work is considered the best available science for ecological connectivity in the project area. WSDOT has begun pre-construction wildlife and hydrology monitoring, which will continue during construction and after construction is complete. WSDOT will use the results of this monitoring program when designing the crossing structures for the remaining project area.
6. This project is an important investment for public safety and wildlife.	Increasing ecological connectivity and public safety are part of the project's purpose and need. WSDOT designed the build alternatives to reduce the risk to both wildlife and to the public from wildlife/vehicle collisions.

Exhibit 1-6
Top 10 Comments on the Draft EIS

Comment	WSDOT Response
7. The Draft EIS contains insufficient information regarding stormwater.	Since the Draft EIS, WSDOT conducted additional technical studies on stormwater, which appear in the Final EIS and its appendices. FHWA and WSDOT have committed to treating stormwater runoff for all new and existing impervious surfaces in the project area. In some parts of the project area, stormwater treatment is physically impossible because the highway is located between a steep rock bank and Keechelus Lake, with no additional room. WSDOT will compensate for the lack of stormwater treatment in these areas by providing additional treatment in other areas.
8. WSDOT should purchase additional mitigation area to compensate for impacts to wetlands and forests.	WSDOT designed all of the build alternatives to avoid and have benefits to forests, wetlands, and other sensitive areas. However, there would be some permanent impacts. FHWA and WSDOT will compensate for these unavoidable impacts through appropriate mitigation. Mitigation would be through restoration of wetlands, stream channels, and riparian zones at the CEAs. This approach will yield watershed- and landscape-level benefits that would not be achieved by purchasing isolated mitigation sites. WSDOT has purchased a property in the Gold Creek valley for preservation that contains wetlands and mature forest. In addition, WSDOT is working with federal and state partner agencies on several similar acquisitions. The project generally will not purchase land immediately adjacent to crossing structures because that land is almost all federal land managed by the USFS. FHWA and WSDOT anticipate that the USFS will mange land adjacent to crossing structures in a manner that is consistent with their use for wildlife.
9. Some of the design options do not meet ecological connectivity objectives.	The Preferred Alternative meets ecological connectivity objectives. Where site conditions allowed, WSDOT developed three design options for each CEA: A, B, and C. The MDT found that in some cases Option C did not meet its ecological connectivity objectives and in response created a new option, which became Option D. In general, the IDT recommended Option A as the Preferred Alternative. At the locations where Option A did not represent the best connectivity option, the IDT modified an option or recommended Option D as the Preferred Alternative. FHWA and WSDOT adopted the IDT's recommendations in June 2006. Option C was not identified as the Preferred Alternative for any of the CEAs.
10. There is insufficient detail in the Draft EIS on the design of the project and its potential impacts.	The Draft EIS was based on the design of the project alternatives at that time. Since publication of the Draft EIS, FHWA and WSDOT focused additional studies primarily on areas suggested by commenters. The Final EIS presents more detailed information on both the project design and potential impacts of all of the build alternatives.

CEA – connectivity emphasis area
EIS – environmental impact statement
FHWA – Federal Highway Administration
IDT – Interdisciplinary Team
MDT – Mitigation Development Team
USFS – US Forest Service
WSDOT – Washington State Department of Transportation

1.12 What permits and approvals are required to complete the project?

Federal, State and Local Permits

Constructing the project would require WSDOT to obtain numerous federal, state, and local permits, approvals, and agreements (see Exhibit 1-7).

Exhibit 1-7
Permits, Approvals, and Agreements

Agency	Regulation	Permit or Approval
Federal		
US Fish and Wildlife Service/National Oceanic and Atmospheric Administration Fisheries	Endangered Species Act Section 7 Consultation and concurrence (impact to listed species) Magnuson-Stevens Fishery Conservation and Management Act Migratory Bird Act	Consultation and Biological Opinion
US Army Corps of Engineers	Clean Water Act (including demonstration that WSDOT has identified the least environmentally damaging practicable alternative) Section 404(b)(1) Alternatives Analysis	Section 404 Individual permit Jurisdictional Determination for Waters of the US
US Forest Service	Memoranda of Understanding between USFS, FHWA and WSDOT	Consistency determination with the USFS Forest Plan(s)
US Forest Service	Organic Act of 1897, National Forest Management Act of 1976	Access Permit(s) and Special Use Permit(s)
US Bureau of Reclamation	Work in Keechelus Lake	Crossing Permit(s) and/or Use Authorization
State		
Washington Department of Archaeology and Historic Preservation	National Historic Preservation Act Section 106 (impact on historic or cultural properties)	Consultation, Memorandum of Agreement for adverse effects between DAHP, FHWA, and WSDOT.
Washington State Parks and Recreation Commission	Land and Water Conservation Act Section 6(f) (impact on outdoor recreation properties)	Agreement for use of Crystal Springs Sno-Park
Washington State Department of Ecology	Clean Water Act Section 401	Water Quality Certification
Washington State Department of Ecology	Clean Water Act Section 402 (RCW 90.48)	National Pollutant Discharge Elimination System Permits for Construction, Sand and Gravel, and possible aquatic spraying

Exhibit 1-7
Permits, Approvals, and Agreements

Agency	Regulation	Permit or Approval
Washington State Department of Ecology	Shoreline Management Act (RCW 90.58)	Consider administrative appeals
Washington State Department of Ecology	Oil Pollution Prevention Program (40 CFR 112)	Spill Prevention, Control and Countermeasure Plan
Washington Department of Fish and Wildlife	Construction Projects in State Waters (RCW 77.55)	Hydraulic Project Approval
Washington Department of Natural Resources	Forest Practices Act (RCW 76.09)	Forest Practices Permit (if project would remove trees on state or private land)
Local		
Kittitas County	County Code Shoreline Management Act (RCW 90.58)	Substantial Development Permit(s) and/or exemption(s)
Kittitas County	County Code	Detour and Haul Road Agreements on county roads
Kittitas County	County Code Title 18.08	Floodplain permit
Kittitas County	County Code Title 18.20 Growth Management Act: RCW 36.70A, Critical Areas: WAC 365-190-080(5)	Growth Management Act Critical Areas Ordinance permit
Kittitas County	County Code Title 17.44.150	Noise regulations
Kittitas County	County Code Title 17	Limited Zoning review

CFR – Code of Federal Regulations
DAHP – Department of Archaeology and Historic Preservation
FHWA – Federal Highway Administration
RCW – Revised Code of Washington
USFS – US Forest Service
WAC – Washington Administrative Code
WSDOT – Washington State Department of Transportation

1.13 What other actions are necessary to complete the project?

The project area occurs largely within the Okanogan-Wenatchee National Forest. When I-90 was built, the USFS granted FHWA an easement to use National Forest land for highway purposes. Constructing the project would require an additional easement from the USFS for the use of additional federal land. This easement would be granted in response to a request from FHWA and WSDOT, and in order grant this request, the USFS must first find that the

project is consistent with its land management direction for the surrounding area. The USFS has indicated that this consistency determination will be made after the project ROD is adopted as part of the USFS plan review and approval process.

Consistency Review Objectives and Requirements

The USFS will base the consistency determination on whether the project meets its purpose and need, as well as the requirements of other standards and guidelines.

The project must meet its stated purpose and need, including ecological connectivity. One component of this determination will be the extent to which the project meets the MDT's recommended performance standards. WSDOT analyzed all of the MDT's design objectives and performance standards for each CEA, and incorporated them into the project design where they were applicable and reasonable. The USFS reviewed and commented on WSDOT's analysis. The USFS also analyzed how and to what extent the MDT's design objectives and performance standards met the USFS Aquatic Conservation Strategy (ACS) objectives. WSDOT's analysis and the USFS analysis are included in Appendix W, *US Forest Service Consistency Determination Support Information*.

WSDOT has incorporated the ACS standards and guidelines into the project's design, in the form of Connectivity and Mitigation Performance Standards and Restoration Measures. These are specified in the MDT report and detailed by CEA in Attachment D to Appendix W.

The project also must meet the requirements of the *Memorandum of Understanding Between United States Department of Agriculture Forest Service and United States Department of Transportation Federal Highway Administration Regarding the Appropriation and Transfer of National Forest System Lands for Highway Purposes* (USFS and FHWA 1998), as well as the relevant standards and guidelines of the relevant land management plans and programs:

- The 1990 *Land and Resource Management Plan, Wenatchee National Forest* (USFS 1990)

- The 1994 Northwest Forest Plan (USFS and BLM 1994), which states *"The intent is to ensure that a decision maker must find that a proposed management activity is consistent with the Aquatic Conservation Strategy objectives…In order to make the finding that a project or management action 'meets' or 'does not prevent attainment' of the Aquatic Conservation Strategy objectives, the analysis must include a description of the existing condition, a description of the range of natural variability of the important physical and biological components of a given watershed, and how the proposed project or management action maintains the existing condition or moves it within the range of natural viability." (Attachment B, p. B-10)*

- The 1997 *Snoqualmie Pass Adaptive Management Area Plan* (USFS and USFWS 1997)

- USFS Watershed Analysis and Watershed Restoration requirements

- Amendments to the Northwest Forest Plan from 2004 and 2005 covering Survey and Manage Species and invasive plants

- USFS ACS objectives

- USFS Riparian Reserves requirements

- National standards for transfers of federal land to FHWA and WSDOT for highway easements (see Appendix W, *US Forest Service Consistency Determination Support Information*)

Aquatic Conservation Strategy

The purpose of the ACS is to restore and maintain the ecological health of watersheds and aquatic ecosystems on public lands. The USFS determines consistency with the ACS by assessing the project and its actions against the nine ACS objectives. The USFS provided an assessment comparing the I-90 project to the ACS objectives. This assessment, with the nine ACS objectives, is found in Appendix W, *US Forest Service Consistency Determination Support Information.*

USFS Riparian Reserves Requirements

Under the ACS, Riparian Reserves are the portions of the watershed where the ACS objectives receive primary emphasis. These are areas critical to maintaining hydrological, geomorphic, and ecological processes. Riparian Reserves are administrative buffer areas established around springs, streams, wetlands, ponds, lakes, and potentially unstable areas. Widths of these buffer areas range from 100 to 300 feet in width, extending along both sides of streams. Within the Riparian Reserves, the USFS regulates or prohibits activities that may prevent attainment of the ACS objectives. The process for reaching a consistency determination will hinge largely on project design and mitigation within these Riparian Reserves.

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

- WSDOT will 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 meeting these objectives within 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.

Easement Approval Procedure and Conditions

Two Memoranda of Understanding between the USFS, FHWA, and WSDOT govern the procedure for the lead agencies' application for additional easement and the USFS's subsequent consideration of this application (USFS and FHWA 1998 and USFS and WSDOT 2001).

The USFS procedure for processing a land transfer for the project consists of the following:

- WSDOT submits the proposed easement plat or map, including a description of the needed land, to the USFS

- USFS approves the easement plat or map and description

- WSDOT submits an application to FHWA for an easement to cross federal land

- FHWA requests a Letter of Consent from the USFS Regional Office to issue an easement to WSDOT

- USFS and WSDOT agree on stipulations for easement
- USFS submits a Letter of Consent to the USFS Regional Office (which includes signed stipulations, approval of plat or map, and unpublished decision notice or memo) for final action
- USFS Regional Office releases a Decision Notice or Memo (signed by the Regional Director of Lands), citing the "decision to issue a Letter of Consent to FHWA concurring in the project." This allows for any appeal of the USFS decision to occur before the construction is advertised

Easements granted by the USFS are subject to specified conditions, in order to assure that the project is consistent with USFS requirements. Easement conditions will include both national conditions applicable to all easements, and specific conditions applicable to the I-90 project. (National conditions are included in Appendix W.) Easement conditions also will allow for USFS plan review prior to construction contract advertisement.

Expected plan review would include:

- Highway design review at interim milestones
- Reviewing a project-specific roadside revegetation plan
- Reviewing bridge and culvert designs
- Reviewing stormwater plans
- Reviewing overpasses and associated revegetation plans
- Reviewing Cascadian Architectural infrastructure design to meet aesthetic objectives (Appendix X)
- Review of compliance with Forest Plan Standards and Guidelines identified by the USFS in 2003 (Appendix W)

1.14 What other USFS actions could affect the project?

USFS Road Improvements

The USFS manages two roads in the project area that run parallel to I-90. Forest Service Road (FSR) 4832 crosses Gold Creek, Rocky Run Creek, and Wolfe Creek directly upstream of I-90, and FSR 54 crosses Swamp Creek directly downstream of I-90. Exhibit 1-8 lists the existing structures on FSR 4832. Both of these roads have culverts and bridges that limit ecological connectivity.

Exhibit 1-8
USFS Crossing Structures

Location	Structure Type	Date	Size (feet)
Gold Creek	Bridge	1928	111
Rocky Run Creek	Bridge	1927	41
Wolfe Creek	Box Culvert	1927	52 long 10 x 10 wide

The environmental benefits of the project's ecological connectivity investments do not depend on improvements to the USFS bridges and culverts. However, improvements to these National Forest roads would complement and enhance the benefits of the I-90 project.

The USFS has indicated its commitment to improve FSR 4832, with bridge replacement at Gold Creek as a high priority. At Gold Creek, the bridge over FSR 4832 acts as a barrier to ecological connectivity in a manner somewhat similar to I-90, although the impacts on wildlife movement are smaller than I-90, since traffic volumes are much lower.

The USFS performs routine condition survey inspections on the bridges. They have no scheduled plans to replace either the Rocky Run or Wolfe Creek bridges, but will do so to complement the I-90 project when funding is available. When condition surveys indicate that repair or replacement is required, USFS will take appropriate action meeting their guidelines for bridge replacement, taking site-

USFS bridge upstream of I-90 at Rocky Run Creek.

specific conditions into consideration. The USFS also recognizes the opportunities for improving FSR 54 at Swamp Creek.

All improvements to bridges and culverts on USFS roads will be contingent on available funding. The USFS is partnering with agencies and conservation groups to locate funding for these improvements.

Replacing USFS bridges and culverts would require separate environmental analysis and review by the USFS, which could include adopting, incorporating, and updating the environmental analysis for the I-90 project as applicable. FHWA and WSDOT are partnering with the USFS on Endangered Species Act (ESA) consultation and NEPA analysis for these improvements.

USFS Recreation Management

Recent research has shown that recreational activities can seriously affect wildlife use of crossing structures. USFS currently manages the areas immediately surrounding the planned crossing structures as open public land. To meet the objectives for the wildlife crossing structures, USFS may need to restrict recreational use in some areas. In managing these potential conflicts, FHWA and WSDOT expect that:

Recreation activities can adversely affect wildlife use of crossing structures.

- USFS will manage recreation use on its lands in a manner consistent with the FHWA and WSDOT investment goals at the CEAs
- FHWA and WSDOT will mitigate for the loss of recreation opportunities at the Price Creek Sno-Park (Westbound)
- WSDOT and the Washington State Parks and Recreation Commission (State Parks) will actively cooperate with the USFS as the primary land management agency
- WSDOT and the USFS will actively cooperate with State Parksas the operator of state parks programs and properties

WSDOT and the USFS agree that managing recreational use near the wildlife crossing structures will be important to assuring their success. Both agencies will work together to eliminate conflicts between recreational use and wildlife use near the crossing structures. The approach of both agencies to eliminating conflicts between recreational use and the use of the crossing structures by wildlife will include the following measures:

- 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.

- In managing areas near the crossing structures, USFS will apply the Recreation Management Standard RM-2 framework, which states: *"Adjust dispersed and developed recreation practices that retard or prevent attainment of ACS objectives. Where adjustment measures such as education, use limitations, traffic control devises, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy"* (USFS and BLM 1994)

- USFS enforcement practices may include Area Closure Orders, as necessary, to prohibit certain uses in these areas.

1.15 Tribal Consultation

As part of the Washington State Centennial Accord Plan, which includes WSDOT's Executive Order 1025.00, WSDOT must consult with local tribes on all decisions that may affect tribal rights or interests. Consultation is a government-to-government process that should occur early in the environmental review process in which the tribes are invited to comment on the project.

FHWA and WSDOT have engaged in an extensive and ongoing program of government-to-government consultation with affected

Native American Tribes. Tribes have indicated strong support for the project's ecological connectivity goals.

Tribal consultation began in 1998 at the beginning of the project prior to the initiation of scoping, with initial discussion of cultural resources under Section 106. Consultation with the tribes will continue throughout the completion of the project. Tribes included in this consultation are the Yakama Nation, Snoqualmie Tribe, Tulalip Tribe, Muckleshoot Tribe, Confederated Tribes of the Colville Reservation, and Wanapum Tribe.

Beginning in 2003, WSDOT requested and received comments from the tribes on the draft *Archaeological and Historic Survey Report* (WSDOT 2003a) prepared for the project.

From 2005 to 2007, FHWA and WSDOT continued consultation with interested tribes, requesting comments on the Draft EIS, Preferred Alternative, and the Section 106 Memorandum of Agreement to remove the Lake Keechelus Snowshed Bridge (snowshed). (See Appendix C to Chapter 5.)

A detailed chronology of tribal consultation is found in Appendix Z, *Archaeological, Cultural and Historic Resources*. Tribes that participated in the consultation process indicated a desire to be consulted on impacts to cultural sites or objects discovered during construction, and impacts to traditional cultural practices, including hunting and fishing.

WSDOT is planning the following continuing tribal consultation activities for late summer/early fall 2008:

- Developing an unanticipated discovery plan for the project with input from the affected tribes, federal agencies, and the Washington State Department of Archaeology and Historic Preservation (DAHP).

- As part of the Section 106 mitigation for removing the snowshed, a resource listed on the National Register of Historic Places (NHRP), WSDOT will analyze the Traveler's Rest site at

Snoqualmie Pass for its potential listing on the NHRP and will develop interpretative signage related to transportation history at Snoqualmie Pass and the I-90 corridor at this location. Affected tribes and the DAHP may provide input on and help develop the interpretive language for the displays.

1.16 References

The full references for reports cited in this document that are not included as appendices can be found in Chapter 7, *References*. Reports included as appendices are indicated as such. Reports included in Chapter 7 are cited using the standard author-date method of citation, for example: (WSDOT 2005b).

Persons interested in reviewing documents listed in Chapter 7, *References*, can obtain copies by contacting:

Jason Smith, Project Environmental Manager
Washington State Department of Transportation
1710 South 24th Avenue, Suite 100
Yakima, Washington 98902
(509) 577-1921
smithjw@wsdot.wa.gov