# Long Range Transportation Plan for Fish and Wildlife Service Lands in Region 1

*Final Version*

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# Abbreviations and Acronyms

| | |
|---|---|
| **AADT** | Annual Average Daily Traffic |
| **ATS** | Alternative Transportation System |
| **API** | Asset Priority Index |
| **BLM** | Bureau of Land Management |
| **BMP** | Best Management Practices |
| **CCA** | Comprehensive Conditions Assessment |
| **CCP** | Comprehensive Conservation Plan |
| **CFR** | Code of Federal Regulations |
| **CHMP** | Comprehensive Hatchery Management Plan |
| **DOT** | Department of Transportation |
| **ERFO** | Emergency Relief for Federally Owned (Roads) |
| **FCI** | Facility Condition Index |
| **FHWA** | Federal Highway Administration |
| **FLH** | Federal Lands Highway Division |
| **FLMA** | Federal Land Management Agency |
| **HPP** | High Priority Projects |
| **IPaC** | Information, Planning, and Consultation |
| **ITS** | Intelligent Transportation System |
| **LRTP** | Long Range Transportation Plan |
| **MPO** | Metropolitan Planning Organization |
| **RIP** | Road Inventory Program |
| **RRP** | Refuge Roads Program |
| **RSA** | Road Safety Audit |
| **RTCA** | Rivers, Trails, and Conservation Assistance |
| **RTP** | Regional Trails Program |
| **SAFETEA-LU** | Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users |
| **SAMMS** | Service Asset Maintenance Management System |
| **STIP** | Statewide Transportation Improvement Program |
| **TIP** | Transportation Improvement Program |
| **USC** | United States Code |
| **U.S.** | United States |
| **USGS** | United States Geological Survey |

# Executive Summary

**Transportation infrastructure provides critical links and resources in connecting people with nature on all U.S. Fish and Wildlife Service (Service) lands, specifically, at national wildlife refuges and national fish hatcheries. To this end the Service seeks to optimize transportation funding decisions and leverage its transportation dollars wisely, for the next 20 years and beyond.**

## Why was the Long Range Transportation Plan for U.S. Fish and Wildlife Service Lands initiated?

This long range transportation plan (LRTP) was initiated within the Service to achieve the following:

- Establish a defensible structure for sound transportation planning and decision-making.
- Establish a mission, goals, and objectives for transportation planning in Region 1.
- Implement coordinated and cooperative transportation partnerships in an effort to improve the Service's transportation infrastructure.
- Bring the Service into compliance with the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) that requires all Federal land management agencies (FLMA) to conduct long range transportation planning in a manner that is consistent with metropolitan planning organization (MPO) and State department of transportation (DOT) planning.
- Integrate transportation planning and funding for wildlife refuges and fish hatcheries into existing and future Service management plans and strategies (e.g., comprehensive conservation plans [CCPs] and comprehensive hatchery management plans [CHMPs]).
- Increase awareness of Alternative Transportation Systems (ATS) and associated benefits
- Develop best management practices (BMP) for transportation improvements on Service lands.
- Serve as a pilot project for the implementation of a region-level transportation planning process within the Service.

## Changes made to the Long Range Transportation Plan based on received comments

Comments were received from the public and within the Service on the public draft of the LRTP. Based on comments received, changes to the LRTP made between the public draft and this final version were editorial in nature and did not result in significant changes.

## What are the Goals for this Long Range Transportation Plan?

As defined by the Region 1 core planning team, the primary goals of this LRTP are to:

- Ensure that the transportation program helps to conserve and enhance fish, wildlife, and plant resources and their habitats.
- Provide a safe and reliable transportation network to and within Service lands.
- Develop and maintain a transportation network that welcomes and orients visitors.
- Integrate transportation planning into Service plans and processes.
- Develop partnerships to leverage resources and develop integrated transportation solutions.
- Adopt and promote sustainable transportation practices.

## Region 1 at a Glance

Within Region 1 there are:

**270 million acres** managed or co-managed by the Service (throughout five states and outlying Pacific Islands)

**421 road miles**

**342 parking lots**

**160 trail miles**

**63 National Wildlife Refuges**

**15 National Fish Hatcheries**

**23 other fish facilities**

FHWA

## Who is Leading This Effort?

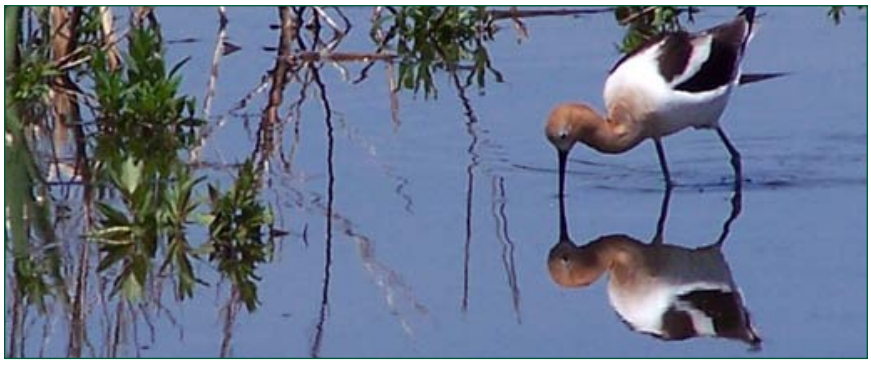
Region 1 of the Service is leading the development of this LRTP. The region's refuge and fisheries programs have been the principle leads in this effort, supported by the Division of Planning and Visitor Services.

Federal Lands Highway Division (FLH) of the Federal Highway Administration (FHWA) has also played an important role in this LRTP. In addition to helping establish the framework for the Service's transportation planning process, FLH has assisted in identifying potential partner agencies at the Federal, State, and local levels that may provide leveraging opportunities to advance future transportation projects.

## Why is Transportation Planning Important to the Service?

Although often overlooked, transportation infrastructure supports U.S. Department of Interior initiatives by connecting people with nature, improving the condition of parking areas, public and service roads, and trails assets all while meeting the mission of the Service. Understanding the connection between transportation and conservation, the Service has established a transportation-related mission statement, goals, and objectives to serve as benchmarks for evaluating improvements to the transportation system within Region 1 as part of this LRTP. Together with an understanding of existing transportation infrastructure deficiencies in the region, this plan enables the region to make better decisions regarding its most critical transportation needs.

At a time when resource and infrastructure funding is scarce, this LRTP provides leaders with a toolkit to use in working with gateway communities, counties, MPOs, other FMLAs, and stakeholder agencies outside Service boundaries, many of whom could potentially contribute funding or in kind services to advance priority projects.



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## What Value Does This Plan Provide for the Service?

The LRTP brings multiple benefits to the Service, such as:

- Provides a platform for individual units to communicate needs and opportunities to regional and national decision makers.
- Enables leaders to make informed decisions based on long-term transportation mission, goals, and objectives.
- Provides the Service with a better picture of future transportation needs and information for discussion regarding transportation reauthorization.
- Provides a long-term view of transportation in relation to core operations and Service priorities.
- Enables leaders to direct funding to the most beneficial and highest priority transportation projects.
- Enables leaders to find alternative funding from Federal sources that are administered by States (DOTs) or MPOs.
- Enables leaders to synchronize transportation planning with other refuge and hatchery planning efforts such as refuge CCPs, CHMPs, and other regional planning efforts outside Service boundaries.
- Provides current data on multimodal transportation issues and needs across the region.
- Provides an opportunity for Region 1 and individual refuges and hatcheries to partner and discuss areas of mutual interest with the public and regional entities such as minimizing carbon footprint, the potential for alternative transportation systems, and improved transportation systems linkages.

## How Will This Plan Be Implemented?

This plan outlines how to quantify and communicate needs and opportunities in the areas that best align with Service goals and objectives, and thereby is more likely to receive funds. The plan provides a project selection framework that improves the defensibility of transportation funding decisions. The framework improves confidence in funding decisions by allowing decision makers to view transportation system needs throughout the region, and compare how these needs rank against predefined evaluation criteria and benchmarks that represent the long-term interests of the Service, as established in the mission, goals, and objectives. This decision-making framework allows projects to be compared and ranked according to their merits.

## What are the Key Findings of This Plan?

Since the inception of the Refuge Roads Program in 1998, Region 1 has completed over 100 projects improving public roads, trails, and parking lots. These improvements have improved the experience for millions of visitors to National Wildlife Refuges in Region 1.

The fisheries program has also demonstrated mission critical need for transportation improvements that currently can only be met through deferred maintenance. Because deferred maintenance funds are used to address deficiencies in all real property assets, transportation projects must compete with other mission critical projects such as water delivery systems and fish rearing infrastructure. This LRTP demonstrates the fisheries program mission critical need to allocate transportation funding specifically for fisheries.

Funding for the Service's transportation program (including refuges and fisheries) does not meet current or anticipated future needs. A well-defined funding and investment strategy is critical to maintain Service transportation assets. The Service must also seek opportunities outside the traditional funding sources in order to keep up with its aging infrastructure. Forming partnerships with local and State agencies will become increasingly critical to address these needs.

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# Chapter 1: Introduction

Region 1 of the U.S. Fish and Wildlife Service (Service), with the assistance of the Federal Highway Administration (FHWA), Federal Lands Highway Division (FLH), has developed this long range transportation plan (LRTP). This plan is the first of its kind for the Service, and serves as a pilot for future LRTP planning endeavors. The LRTP outlines a strategy for improving and maintaining transportation assets that provide access to Service-managed lands over the next 20 years. The plan ensures that the Service's fundamental mission of "working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people" is furthered by providing access to a sound transportation system on lands managed by the Service. Region 1 boundaries are shown in Figure 1.

This LRTP is intended to help the Service make investment decisions for planning, preservation, and construction on its roads, parking lots, and trails. Because funds are limited, it is essential to assess needs, set priorities, and efficiently manage the expenditure of transportation funds to meet documented transportation needs.

FLH has played an important role in the development of this LRTP by providing technical and planning assistance for the Service. In addition to helping establish the framework for the Service's transportation planning process, FLH has assisted in identifying potential federal, state, and local partner agencies that may provide leveraging opportunities to advance future transportation projects.

*Figure 1*
*U.S. Fish and Wildlife Region 1 Boundaries*

## 1.1 Purpose and Need

The purpose of this LRTP is to achieve the following goals:

- Establish a defensible structure for sound transportation planning and decision making.
- Establish a mission, goals, and objectives for transportation planning in Region 1.
- Implement coordinated and cooperative transportation partnerships in an effort to improve the Service's transportation infrastructure.
- Bring the Service into compliance with Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) that requires all federal land management agencies (FLMA) to conduct long-range transportation planning in a manner that is consistent with metropolitan planning organizations (MPOs) and State departments of transportation (DOTs) planning.
- Integrate transportation planning and funding for wildlife refuges and fish hatcheries into existing and future Service management plans and strategies.
- Increase awareness of Alternative Transportation Systems (ATS) and associated benefits.
- Develop best management practices (BMP) for transportation improvements on Service lands.
- Serve as a pilot project for the implementation of a region-level transportation planning process within the Service.

Transportation infrastructure provides critical links and resources in connecting people with nature on all Service lands, which include national wildlife refuges and national fish hatcheries. To this end, the Service seeks to systematically approach transportation funding decisions and leverage its transportation dollars wisely.

Long-range transportation planning is necessary for the Service to define the vision and goals for the transportation system that will serve the public for years to come. It also provides a mechanism to objectively set priorities for implementing projects while working toward achieving the Service's vision for its transportation system. To accomplish these tasks, planners and decision makers must collaborate effectively to consider the complex balance between transportation efficiency, human safety, and environmental stewardship.

In an effort to reinforce sustainable transportation practices, the Service is actively pursuing ATS strategies, specifically in Region 1, in areas where such systems can provide better linkages between the local communities and the individual units. ATS strategies promote the Service's effort to reduce its carbon footprint, reduce impacts to natural resources, and act as a critical visitor management tool for units facing increasing visitor demands with limited resources and capacity.

The Service desires a planning process that involves partner agencies (Federal, State, and local), that is consistent with state and local transportation planning processes, and that clearly defines and offers opportunities for public input. The key objective of such a planning process is to develop and maintain a coordinated, "seamless" transportation system for public use, ranging from auto tour routes to parking lots, transit access, and trails. Coordinated planning will also help ensure that the most critical projects receive funding.

Another critical aspect of this LRTP is facilitating partnerships with the Service and fostering opportunities to leverage funds to accomplish transportation improvements of common interest and mutual benefit. The intention is to increase the utility of transportation investments by pooling resources into efforts that satisfy the goals of multiple agencies and organizations. The LRTP serves as a tool in working with gateway communities, counties, MPOs, other FLMAs, and stakeholder agencies.

## 1.2 Mission, Goals, and Objectives

Through a collaborative effort, the Refuge and Fisheries Programs, in cooperation with the planning and visitor services programs within Region 1, have contributed to the definition of the mission, goals, and objectives presented in this document. The resulting mission, goals, and objectives are intended to provide a systematic approach to guide the process for evaluating and selecting transportation improvement for the Service lands in Region 1. These guiding principles have shaped the development, conclusions, and recommendations of this LRTP.

## Mission

**To support the Service's mission by connecting people to fish, wildlife, and their habitats through strategic implementation of transportation programs.**

## Goals and Objectives

**The goals of this transportation plan in Region 1 represent six categories. Each goal includes distinct objectives that explain how the Service will accomplish each goal. The LRTP goals and objectives are:**

**Natural Resource Protection:** Ensure that the transportation program helps to conserve and enhance fish, wildlife, and plant resources and their habitats.

- **Objective 1:** Identify, research, and adopt BMPs for planning, design, construction, and maintenance that mitigate or avoid negative impacts of transportation activities and facilities.
- **Objective 2:** Reduce transportation related conflicts within fish and wildlife corridors and habitat on or adjacent to Service lands.

**Conditions and Safety:** Provide a safe and reliable transportation network to and within Service lands.

- **Objective 1:** Identify and reduce safety problems and modal conflicts to and within Services lands.
- **Objective 2:** Ensure that mission critical transportation assets are maintained at "good" or better condition.

**Welcome and Orient Visitors:** Develop and maintain a transportation network that welcomes and orients visitors.

- **Objective 1:** Provide public information to enable visitors to easily get to refuges and hatcheries and to use its sites.
- **Objective 2:** Engage the visitor with compelling information so they better understand the National Wildlife Refuge System and Fisheries Program purpose of wildlife conservation and to enjoy natural resources.
- **Objective 3:** Create a consistent and recognizable identity throughout all Service units through the use of standard materials for readily observed physical elements associated with the transportation system.

**Planning:** Integrate transportation planning into Service plans and processes.

- **Objective 1:** Ensure consistency and coordination between the project, unit, regional, and national levels of planning.
- **Objective 2:** Define need for transportation improvements and prioritize projects using a scientific and objective process.

**Partnerships:** Develop partnerships to leverage resources and develop integrated transportation solutions.

- **Objective 1:** To the extent authorized by law, pursue opportunities for both transportation funding and resources.
- **Objective 2:** Cooperate with public and private sector partners to address shared transportation issues that impact Service goals.

**Sustainability:** Adopt and promote sustainable transportation practices.

- **Objective 1:** Address climate change and other environmental factors at all levels of transportation planning, design, project delivery, operations, and maintenance.
- **Objective 2:** To reduce the Service's carbon footprint, improve access to and within Service lands by transit and non-motorized transportation modes, and provide improved visitor information systems.
- **Objective 3:** Reduce fossil fuel energy consumption by refuge staff and visiting public.

## 1.3 Region 1 Background

The lands managed by the Service in Region 1 are widely diverse in geography and character. They receive different levels of funding and vary in terms of existing transportation infrastructure.

### 1.3.1 National Wildlife Refuges and National Fish Hatcheries

Region 1 manages or co-manages nearly 270 million acres of land, water, coral reefs and ocean floor in the States of Idaho, Oregon, Washington, a portion of northern Nevada, Hawaii, and the Pacific Islands, as shown in Figure 2. The region is home to diverse ecologies ranging from tropical forests to coral reefs, old-growth rainforests, glacial lakes and streams, and arid shrub-steppe. These habitats support over 390 endangered and threatened species; unique and endemic plant and animal communities; and some of the most productive anadromous fish runs in the world.

Region-wide the Service manages 63 national wildlife refuges composed of wetlands, estuaries, grasslands, nesting seabird colonies, forests, remote atolls, and high mountain deserts. The Region 1 Fisheries Program provides a network of 46 field stations. These facilities include 15 fish hatcheries, 23 associated fish facilities, 3 fish health centers, 1 fish technology center, and 4 fish and wildlife conservation offices. All Service units in Region 1 are listed by state in Appendix B.

### 1.3.2 Region 1 Transportation System

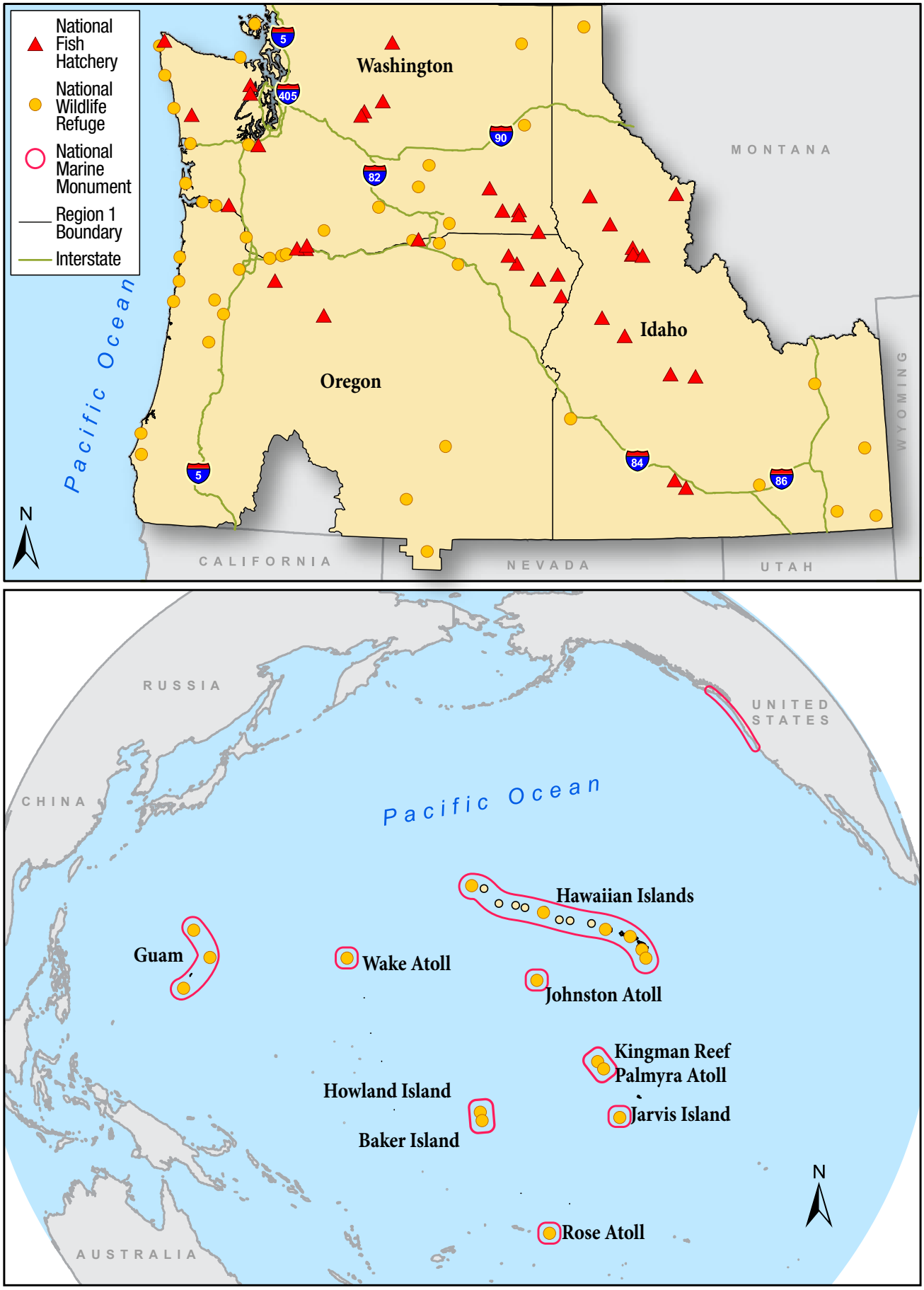
The Service-maintained transportation facilities in Region 1 consist of paved, gravel, and native surface roads, trails, bridges, boardwalks, boat docks, airstrips, and parking lots. While a large portion of roads are open for public use, due to the conservation-based orientation of the Service, many roads, especially within the fish hatcheries, are for administrative use only.

Within Region 1 there are 421 miles of roads, 342 parking lots, and 547 miles of paved and unpaved trails for bicycle, pedestrian, and off-highway vehicle use. Nationally, the Service is responsible for approximately 7,224 miles of roads, 4,578 parking lots, and 1,409 miles of trails. Based on 2007 conditions assessments, 17 percent of the Region 1 roads and 32 percent of parking lots were listed in poor or failing condition. This compares to 22 percent of roads nationally listed in poor or failing condition.

Transportation projects are funded primarily through the Refuge Roads Program (RRP), refuge deferred maintenance funds, fisheries deferred maintenance funds, and visitor facility enhancement funds. Each of these funding sources has specific project requirements. The RRP is the most widely used for transportation projects and can be used for planning, programming, construction, reconstruction, and improvement of public roads in the National Wildlife Refuge System (refuge roads), including bridges and appurtenances in connection with the administration of the National Wildlife Refuge System. In addition, up to five percent of these funds can be used for public use trails within refuges. Through the RRP, the Service is working to improve public access to refuges and provide a better overall visitor experience. Additional information about project funding and leveraging opportunities is in Chapter 3, Funding and Project Selection.

Walter Siegmund

*Figure 2*
*National Wildlife Refuges and Fish Hatcheries within Region 1*



## 1.4 Primary Audience

This LRTP is written for project leaders from wildlife refuges and fish hatcheries; regional internal and external leaders from the Service; national level decision makers; and potential local and regional partners from governmental agencies or non-governmental organizations, particularly refuge and hatchery friends groups. Information provided in the LRTP is intended to support these groups in several ways.

### 1.4.1 Project Leaders

Project leaders will use the LRTP as a guide for the best tools to use in identifying projects. Guidance found in this plan can assist project leaders in using readily available data and resources to justify a project's need, which will ultimately lead to better positioning for funding, which affects project prioritization at the regional level. Project leaders can also use this plan as a process-based tool to partner with outside agencies and discuss project needs of mutual interest, such as safety concerns, alternative transportation systems, and addressing climate change with public and regional entities.

### 1.4.2 Regional Level

At the regional level, this LRTP will provide the information necessary for leaders to make transportation decisions based on long-term Service vision, mission, and goals. The plan also enables regional transportation coordinators to direct funding to the most beneficial and highest priority transportation projects. Furthermore, the LRTP enables regional leaders to find where alternative funding from Federal sources that are administered by the States or MPOs might be available. At the regional level, the LRTP is used to synchronize transportation planning with refuge and hatchery efforts such as refuge comprehensive conservation plans (CCP), comprehensive hatchery management plans (CHMP), and other regional and statewide plans outside Service boundaries, such as MPO regional transportation plans and state transportation plans.

### 1.4.3 National Level

This LRTP will align with the *National U.S. Fish and Wildlife LRTP* and other regional LRTPs to provide additional information to congressional leaders as to the unmet mission critical transportation need. It will also help illustrate the Service's foresight, need, and commitment to certain mission critical goals—especially when projects are being pursued jointly with other agencies or organizations, and additional Federal dollars are requested. This regional plan will be adjusted in the future as necessary to be in alignment with the ultimately adopted national LRTP for the Service.

### 1.4.4 Potential Partners

Potential partners may use this LRTP to understand the Service transportation program, its needs, goals, and objectives for the future. It will also serve as a tool to identify projects of mutual interest between the Service and external groups or agencies. The Service recognizes the value of cooperative transportation partnerships, and seeks to leverage funds with other agencies, organizations, and Congress. Potential partner agencies could include other FLMAs, State DOTs, MPOs, county governments, and Friends groups.

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## 1.5 Public Involvement

The Service recognizes the public involvement requirements associated with LRTPs developed by State DOTs and MPOs. At the outset of this pilot effort for the Service, a structured communication plan was developed with a list of potential stakeholders and actions identified at key milestones in the plan's development to inform the decision-making processes. The approach for stakeholder outreach, including agency and public involvement, proposed the following strategies:

- Solicit input from Service staff that will inform the transportation planning effort
- Inform and educate external stakeholders about decision-making in Region 1 relative to transportation planning
- Provide opportunities for stakeholders to identify their concerns, values, ideas, and interests of the Region 1 transportation system
- Provide Service staff and external stakeholders the opportunity to review and comment on the LRTP at key decision points
- Build support from internal and external stakeholders for the processes and projects adopted under the LRTP
- Strengthen existing partnerships while forging new ones
- Identify opportunities for coordination with priority MPOs and states for short- and medium-term project development

Given the experimental effort of developing this LRTP, and the sensitivity of Service leadership to external distribution of draft-level information, it was decided that the external outreach component (input from agencies and public external to the Service) of this plan would not be fully executed. In addition, given the geographic and demographic diversity of the Service lands within Region 1, it is not expected that all or even most of the potential stakeholders would be able to participate, or have interest in directly influencing the outcomes of this plan. One initial newsletter was developed and distributed within the Service and to other FMLAs interested in this pilot project to provide contextual information about the plan. A second newsletter was distributed to mark the completion of the LRTP and to announce its public availability.

A Federal Register notice was filed to advertise the release of the final draft document and invite comments to be considered in the final LRTP. Based on the comments received, changes made between the public draft and the final plan were editorial in nature and did not result in significant changes. The original communication plan and stakeholder list is provided in Appendix F to serve as a guide for future public involvement activities when this plan is updated.

## 1.6 Plan Overview

This LRTP is structured in four chapters, including this introduction, such that each chapter builds upon the information and conclusions derived in the previous chapter(s). The document examines baseline conditions, funding and project selection, and recommendations for future action.

**Chapter 2, Baseline Conditions.** This chapter presents baseline conditions as they relate to the six goals of this plan. Using existing asset management systems and road inventory data maintained by the Service and FLH, Chapter 2 presents a data-informed view of the transportation system. It also provides a "road map" for identifying unit level transportation improvement needs. Data such as road service life, visitation statistics and trends, population growth, alternative transportation systems opportunities, and other spatially significant issues are used to establish a baseline from which LRTP decisions can be made.

**Chapter 3, Funding and Project Selection.** This chapter illustrates the funding gap for the Service transportation system. It also describes a variety of funding categories that may be used for transportation projects in Region 1. Using the available funding, this chapter also describes how projects are selected for implementation in the context of the LRTP goals and objectives. This chapter highlights funding available from traditional Federal sources and identifies opportunities for partnering with outside agencies, State DOTs, and local governments to leverage funding.

**Chapter 4, Recommendations for Future Plan Activities.** This chapter includes recommended actions for future development. Recommendations include improving data informed analysis through better data management from internal and external sources, specifically related to accident data and fish and wildlife resources and developing a long-range list of project needs from the call for projects.

# Chapter 2: Goals and Baseline Conditions

Understanding the current state of the transportation system in Region 1 is a prerequisite for planning future transportation projects. As such, this Region 1 LRTP documents existing condition, safety, and visitor use with regard to the transportation system. This LRTP also considers changes that are likely to occur in the future, such as increased traffic and visitation due to population increases. The intent is to identify future transportation needs and plan for them proactively in alignment with goals and objectives identified during the planning process. The baseline data (i.e., existing conditions and trends) in this chapter are intended to inform the project identification and selection process described in *Chapter 3, Funding and Project Selection*, allowing projects to be selected based on an objective process, not existing conditions alone.

This chapter offers a summary of the current state of Region 1 transportation infrastructure as it relates to the goals and objectives described in *Chapter 1, Introduction*. The six goal areas are natural resource protection, conditions and safety, welcome and orient visitors, planning, partnerships, and sustainability. The following sections in this chapter define the intent of each goal and provide supportive data and an analysis summary supporting each goal. The chapter provides a road-map for identifying improvement needs (i.e., potential projects) at the unit level using readily available data to analyze deficiencies or hot spots that may be occurring at individual units. By applying the approach demonstrated in the following sections for each goal area, Service leadership can identify potential project opportunities that are most likely to receive funds. This chapter outlines the data sources, data relationships, and extra steps that are necessary to identify needs and opportunities that correspond to the LRTP goals and objectives, as outlined in Chapter 1. Figure 3 illustrates the structure of this chapter and how improvement needs can be identified.

## 2.1 Natural Resource Protection

The LRTP natural resource protection goal is to **"ensure that the transportation program helps to conserve and enhance fish, wildlife, and plant resources and their habitats."** The following objectives and strategies serve to further the sentiment expressed by the goal.

### Objective 1

Identify, research, and adopt BMPs for planning, design, construction, and maintenance that mitigate or avoid the impacts of transportation activities and facilities.

### Objective 2

Reduce transportation related conflicts within fish and wildlife corridors and habitat on or adjacent to Service lands. Strategies to achieve this objective are:

- Conduct needs assessments for wildlife crossings on and adjacent to Service lands.
- Consider aquatic organism passage during the planning and design phases of transportation project development on Service units.

### 2.1.1 Resource Protection Data

Resource protection data are needed to evaluate both the BMP and wildlife conflict objectives. Information used to establish a baseline for the BMP-focused objective includes existing Service BMP guidance and systems. The wildlife conflict objective is informed by data that helps identify places where animal and vehicle conflicts have occurred in the past and are likely to occur in the future.

Caroline Peterschmidt/USFWS

*Figure 3*
*How to use Chapter Two*

**2.# Goal Topic**
Presents the long range transportation goals for the region, and how circumstances at the unit level can demonstrate needs and opportunities to further these goals. The chapter should be read as a unit level roadmap illustrating how to identify projects that stand the best chance of receiving funds and how to use existing data to demonstrate the need for your project.

**Sidebars**
Case studies show the practice of identifying need and opportunity.

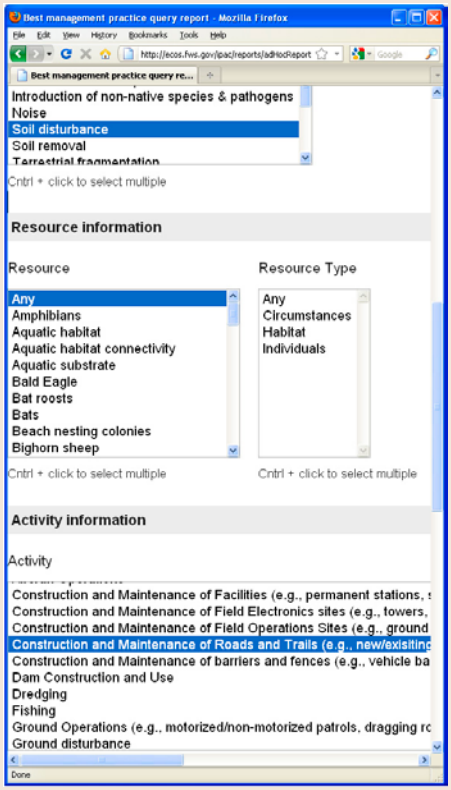
**2.#.1 Data**
These sections identify the datasets used to identify need and opportunity for a particular goal area.

**2.#.2 Identifying Improvement Areas**
These sections explain how the data identified in 2.#.1 should be used to **demonstrate need and opportunity**.

**2.#.3 Recommendations for Future Analysis**
These sections identify information that would improve future efforts to identify need and opportunity.

## BMP Searches

Among many other functionalities, the IPaC system allows users to conduct a "BMP search," where stressors, resources, project activities can be selected from a list. The system then generates a report of relevant BMPs, as illustrated below.




### Best Management Practices

The Service has a library of BMPs that promotes guidelines for planning, design, construction and maintenance pertaining to transportation projects. Transportation related BMPs are included in the Service's *Roadway Design Guidelines* provided in Appendix D. A BMP library is also available as a searchable database on the Service's website along with the Information, Planning, and Consultation system (IPaC), which allows users to preview how proposed activities may impact sensitive natural resources and which BMPs are appropriate to help mitigate negative impacts. The IPaC tool is available online at http://ecos.fws.gov/ipac.

### Resource Conflicts

Wildlife conflict data helps to identify places where animal and vehicle conflicts have occurred in the past and are likely to occur in the future. Ideally, this data would consist of sensitive wildlife habitat locations, wildlife corridors, and historic locations of vehicle-animal collisions. At this time, not all of this information is available; however, data on wildlife conflicts that resulted in fatalities is available from the National Highway Traffic Safety Administration. While this data is informative and provides some indication of historic conflict locations, by itself, the data is insufficient as a basis for decision making. There are too many other factors that are yet to be quantified that must be considered in resource conflict decisions.

### 2.1.2 Identifying Resource Protection Improvement Areas

Resource protection improvement areas are identified in both the BMP objective and the wildlife conflict objective. The BMP objective can be addressed through the use of appropriate BMPs for a proposed action. Appropriate BMPs can be found several ways, such as using the Service Region 1 *Roadway Design Guidelines* (available in Appendix D) and using IPaC. IPaC allows users to preview how proposed activities may impact sensitive natural resources and which BMPs are appropriate to help mitigate negative impacts.

To identify areas of resource protection relevant to wildlife conflicts, one must consider multiple factors including wildlife corridors, wildlife habitat, and records of historic animal-vehicle collisions. At this time, only a measure of historic fatal animal-vehicle collisions is available. The data indicate that over a period of 8 years, one fatal accident involving an animal-vehicle collision occurred in the region on Service lands. The accident occurred in 2008 at the Hanford Reach National Monument at the intersection of SR-240 and SR-225 (Reservation Road). The accident is a single indicator of wildlife conflict and suggests that further study is needed to determine if this or other refuges are a resource protection improvement area. Additional documentation regarding the presence of wildlife corridors, wildlife habitat, and other non-fatal collisions would determine the appropriate need for resource protection improvements at refuges and hatcheries.

### 2.1.3 Recommendations for Future Analysis

Additional information is necessary to better evaluate resource protection needs. The following datasets are required to better understand where transportation related resource protection improvements should occur:

- Use a systematic method to quantify the significance of the conflict between fish and wildlife and transportation facilities to better demonstrate a need for improvements.

- Obtain wildlife habitat locations and fish passage corridors to help identify potential animal-transportation conflict areas as well as the type of potentially impacted wildlife.
- Identify the locations of access conflicts between resources (fish and wildlife habitat) and transportation facilities to help decision makers develop appropriate solutions.
- Obtain fish passage data to help identify potential fish-transportation conflict areas and potentially impacted species.
- Obtain non-fatal vehicle-animal collision data to provide a more complete understanding of historic vehicle-animal conflict hot-spots.

## 2.2 Conditions and Safety

The LRTP condition and safety goal is to **"provide a safe and reliable transportation network to and within Service lands."** The following objectives and strategies serve to further the sentiment expressed by the goal.

### Objective 1

Identify and reduce safety problems and modal conflicts to and within Services lands. Strategies to achieve this objective are:

- Conduct road safety audits (RSAs) and/or safety need assessments.
- Increase the number of projects that address access/egress safety problems or conflicts between private motor vehicles, transit, and bicyclists and/or pedestrians.
- Identify and implement operational improvements through intelligent transportation systems applications.

### Objective 2

Ensure that mission critical transportation assets are maintained to "good" or better condition. Strategies to achieve this objective are:

- Use comprehensive condition assessment and Road Inventory Program (RIP) to establish a baseline condition.
- Determine what is needed to extend service life of mission critical assets.

### 2.2.1 Condition and Safety Data

Data used to identify appropriate opportunities for improving transportation system conditions include physical characteristics like surface condition and asset type as well as external factors such as an asset's importance and relationship to safety. Data used to make these determinations are obtained from regularly updated data sources like the Service's service asset maintenance management system (SAMMS) and RIP. SAMMS provides information on facility and equipment deficiencies, justifies budget requests for maintenance needs, and provides a sound basis for management decision making. RIP data is collected by the FLH, on behalf of the Service, to provide ongoing condition monitoring of all public use roads, trails, and parking lots. The inventory is updated continuously and resulting datasets are compiled and released every 5 years.

Supplemental information from outside sources is used to help identify problem areas and opportunities for improvements. Sources of supplemental information include the U.S. Census, FHWA, and State DOTs. These data help inform decision makers about issues that extend beyond condition and typically relates to transportation system issues regarding access to and through units.

#### Overview of Condition Data

The majority of the Service's transportation system consists of asphalt, gravel, and native surface roads. In Region 1, the Service owns and maintains 421 miles of public use roads, 22 miles of which are asphalt, 289 miles are gravel, and 110 miles are native surface. These numbers exclude roads that are used for Service administrative purposes as well as public use roads that are double-track and unpaved. The States of Nevada (Sheldon National Wildlife Refuge only) and Oregon have the most roads (by length) with 31.7 percent (133.5 miles) and 31.5 percent (132.6 miles) of total Region 1 miles, respectively. The State of Washington is the third highest with 123.5 miles (29.3 percent), followed by Idaho with 31.2 miles (7.4 percent), and Hawaii with 0.7 miles (0.2 percent). Based on RIP inventory data, 26.4 percent of asphalt roads have at least 7 years of use remaining and 88.6 percent of gravel roads and 63.0 percent of native roads have at least 3 years of use remaining, as expressed by remaining service life and as summarized in Table 1. The need for road improvements are also determined by a road's asset priority, facility condition index, and condition, as summarized in Appendix C, Table 2.

Conversely, 15.4 percent of asphalt roads, 11.4 percent of gravel roads, and 37.0 percent of native roads have 3 years or fewer of use remaining and are in need of immediate rehabilitation or reconstruction.

Supporting the Service's road network are 342 parking lots spanning a total of 70 acres. Table 2 summarizes parking lot conditions for the region. RIP data indicate that 35 percent of parking lots are asphalt, 57 percent are gravel, 8 percent are native surface, and less than 1 percent are concrete. A rating of "good" or better is attributed to 77 percent of asphalt parking lots, 52 percent of gravel, 100 percent of concrete, and 32 percent of native surface parking lots. The need for parking lot improvements can be determined by asset condition, as summarized in Appendix C, Table 3.

*Table 1*
*Service Road Conditions*

| Road Surface | Remaining Service Life (years) | Miles | Percentage of Total | Percentage of Surface Type | Cumulative Percentage |
|---|---|---|---|---|---|
| Asphalt | 15 to 16 | 0.25 | 0.1 | 1.1 | 1.1 |
| | 11 to 14 | 3.4 | 0.8 | 15.6 | 16.7 |
| | 7 to 10 | 2.1 | 0.5 | 9.7 | 26.4 |
| | 4 to 6 | 12.65 | 3.0 | 58.2 | 84.6 |
| | 0 to 3 | 3.34 | 0.8 | 15.4 | 100.0 |
| Gravel | 8 to 10 | 2.05 | 0.5 | 0.7 | 0.7 |
| | 5 to 7 | 209.93 | 49.8 | 72.5 | 73.2 |
| | 3 to 4 | 44.48 | 10.6 | 15.4 | 88.6 |
| | 1 to 2 | 11.87 | 2.8 | 4.1 | 92.7 |
| | 0 | 21.14 | 5.0 | 7.3 | 100.0 |
| Native | 8 to 10 | 0 | 0.0 | 0.0 | 0.0 |
| | 5 to 7 | 32.22 | 7.6 | 29.2 | 29.2 |
| | 3 to 4 | 37.22 | 8.8 | 33.8 | 63.0 |
| | 1 to 2 | 7.52 | 1.8 | 6.8 | 69.8 |
| | 0 | 33.28 | 7.9 | 30.2 | 100.00 |

*Source: FHWA, Road Inventory Program; Cycle 4 (2007)*

*Table 2*
*Service Parking Lot Conditions*

| Surface | Condition | Acres | Percentage of Surface Type | Percentage of Total |
|---|---|---|---|---|
| Asphalt | Excellent | 3.7 | 15.0 | 5.0 |
| | Good | 14.7 | 61.0 | 21.0 |
| | Fair | 2.4 | 10.0 | 4.0 |
| | Poor | 3.1 | 13.0 | 5.0 |
| | Failed | 0.0 | 0.0 | 0.0 |
| Concrete | Excellent | 0.1 | 31.0 | 0.0 |
| | Good | 0.1 | 73.0 | 0.0 |
| | Fair | 0.0 | 0.0 | 0.0 |
| | Poor | 0.0 | 0.0 | 0.0 |
| | Failed | 0.0 | 0.0 | 0.0 |
| Gravel | Excellent | 2.3 | 6.0 | 3.0 |
| | Good | 17.9 | 46.0 | 26.0 |
| | Fair | 14.3 | 36.0 | 21.0 |
| | Poor | 4.4 | 11.0 | 6.0 |
| | Failed | 0.2 | 1.0 | 0.0 |
| Native | Excellent | 0.0 | 0.0 | 0.0 |
| | Good | 1.8 | 32.0 | 3.0 |
| | Fair | 1.4 | 25.0 | 2.0 |
| | Poor | 0.7 | 12.0 | 1.0 |
| | Failed | 1.7 | 31.0 | 2.0 |

*Source: FHWA, Road Inventory Program, Cycle 4 (2007)*

The Service also owns and maintains 547 miles of trails in Region 1. The majority of trails are located in Washington with 99 miles (62 percent), followed by Oregon with 44 miles (28 percent), Idaho with 13 miles (8 percent), the Sheldon National Wildlife Refuge portion of Nevada with nearly 2 miles (1 percent) and Hawaii with less than 1 mile (less than one percent). The reported conditions of these trails are generally in good condition or better, as summarized in Table 3. Sixty-four percent of trails have a rating of "good" or better. Only 2 percent of trails receive a rating of "very poor;" however, 33 percent of trails are unrated. Need for trail improvement is also determined by a trail's asset priority, facility condition index, and condition, as summarized in Appendix C, Table 4. Some trails contain specific areas that are deemed deficient due to drainage, erosion, structure, or location. Region 1 has 48 such locations, with the majority being drainage-related issues in Willapa National Wildlife Refuge with 23 locations and William L. Finley National Wildlife Refuge with nine locations. These locations are summarized in Appendix C, Table 5.

*Table 3*
*Trail Conditions by Type*

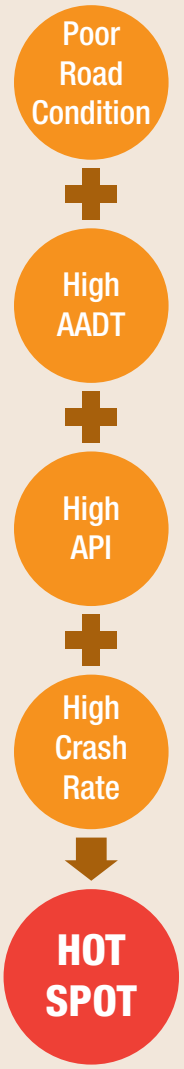
| Condition | Surface Type | Miles | Percentage of Condition | Percentage of Surface Type | Percentage of Total |
|---|---|---|---|---|---|
| Excellent | Trail on Admin Road | 30.1 | 58 | 32.6 | 18.9 |
| | Asphalt | 2.6 | | 2.8 | 1.6 |
| | Boardwalk | 3.5 | | 3.8 | 2.2 |
| | Concrete | 0.4 | | 0.4 | 0.2 |
| | Gravel | 8.7 | | 9.4 | 5.5 |
| | Mowed | 7.2 | | 7.8 | 4.5 |
| | Native | 38.4 | | 41.5 | 24.1 |
| | Wood Chip | 1.5 | | 1.6 | 0.9 |
| | **Total** | **92.4** | | | **57.9** |
| Good | Trail on Admin Road | 2.3 | 6 | 22.9 | 1.4 |
| | Asphalt | 0.2 | | 1.9 | 0.1 |
| | Concrete | 0.1 | | 1.1 | 0.1 |
| | Gravel | 0.2 | | 2.0 | 0.1 |
| | Native | 7.2 | | 72.2 | 4.5 |
| **Total** | | 10.0 | | | 6.3 |
| Fair | Concrete | 0.1 | 1 | 4.9 | 0.0 |
| | Native | 1.4 | | 95.1 | 0.8 |
| | **Total** | **1.5** | | | **0.9** |
| Very Poor | Trail on Admin Road | 0.6 | 2 | 23.8 | 0.4 |
| | Mowed | 0.7 | | 29.0 | 0.5 |
| | Native | 1.2 | | 47.2 | 0.7 |
| | **Total** | **2.5** | | | **1.6** |
| Not Rated | Trail on Admin Road | 53.3 | 33 | 100.0 | 33.4 |
| | **Grand Total** | **159.6** | | | |

*Source: FHWA, Road Inventory Program, Cycle 3 (2004)*

## Safety Hot Spots

Baseline data analysis is intended to help decision makers identify condition and safety hot spots to and within refuges and hatcheries. The following example shows that there is a possible deficiency in the transportation system condition and safety within, and possibly to, Kealia Pond National Wildlife Refuge in Maui.

Deficiencies are shown in Table 4, illustrating that the non-Service routes accessing the refuge are generally in "poor" or "very poor" condition and have comparatively high AADT (above 20,000 vehicles). System deficiencies are present within the refuge; the Service route called Entrance Road is rated as "fair," yet has very high API of 100, as summarized in Appendix C, Table 2.




### Overview of Safety Data

The Service supports safe and reliable access to and through its lands. As such, safety indicators including road pavement condition, annual average daily traffic (AADT), and crash history were collected when available and analyzed to help identify potential safety problem areas on non-Service owned roads near refuges and hatcheries.

### 2.2.2 Identifying Conditions and Safety Improvement Areas

Baseline condition data helps identify areas that are in need of transportation improvements for safety, modal connections, and/or condition. Service-owned assets that could potentially benefit from condition improvements are identified by several variables including asset priority index (API), facility condition index (FCI), and observed condition. API describes the mission critical priority of an asset as determined by the Service for roads and trails. Ideally, assets with a value of 80 or greater are mission critical and should have a condition rating of "good" or better. FCI is the ratio of the deferred maintenance costs to replacement value and is used as an indicator of infrastructure condition.

The need for safety improvements can be illustrated by RSAs and/or crash data. Reducing conflicts between cars and bicyclists and/or pedestrians travelling to and within Service lands transportation asset can be achieved by investing in improvements where crash history or RSAs have demonstrated safety problems with the current transportation system.

In addition to improving Service transportation assets that are of high value and show deficiencies, the condition and safety goal may be advanced by joint projects with partners to address transportation safety needs of mutual interest with other government agencies. To identify such opportunities, non-Service condition and safety information is also examined when there is a shared geography with Service assets. Opportunities may exist if both Service and non-Service entities have system condition deficiencies in shared locations.

The Service supports safe and reliable access to its lands, regardless of facility ownership. As such, safety indicators including condition, AADT, and crash history were collected and analyzed to help identify potential safety problem areas on non-Service owned roads near refuges and hatcheries. Places where these factors are pronounced and within one mile of a Service unit are areas of potential opportunity to partner with non-Service agencies to resolve safety issues of mutual interest. These hot spot locations are identified in Table 4 and illustrated in Figure 4 through Figure 7. Hot spots are identified as non-Service routes that satisfy at least one of the following criteria:

- An AADT of 20,000 or more
- Five or more crashes have occurred within the most recent 3-year period on a route within 1 mile of a unit
- Current road conditions are considered "poor" or "very poor"

*Table 4*
*Non-Service Road Condition, Use, and Safety Hotspots*

| State | Name | Route | Condition | AADT | Crashes |
|---|---|---|---|---|---|
| Hawaii | Hanalei NWR | Weke Rd | Very Poor | 2,032 | Not Available (N/A) |
| | Huleia NWR | Puhi Rd | Very Poor | 5,337 | N/A |
| | Kealia Pond NWR | Honoapiilani Hwy | Fair | 28,610 | N/A |
| | | Piilani Hwy | Fair | 28,113 | N/A |
| | | Mokulele Hwy | Poor | 28,413 | N/A |
| | | Ohukai Rd | Very Poor | 7,702 | N/A |
| | | South Kihei Rd | Very Poor | 21,342 | N/A |
| | Pearl Harbor NWR | Fort Weaver Rd | Fair | 65,698 | N/A |
| | | H-2 | Fair | 100,371 | N/A |
| | | Kamehameha Hwy | Poor | 54,814 | N/A |
| | | Acacia Rd | Very Poor | 29,425 | N/A |
| | | Farrington Hwy | Very Poor | 65,394 | N/A |
| | | H-1 | Very Poor | 217,006 | N/A |
| | | Hoolaulea St | Very Poor | 5,252 | N/A |
| | | Kuala St | Very Poor | 16,955 | N/A |
| | | Lehua St | Very Poor | 12,688 | N/A |
| | | Paiwa St | Very Poor | 26,502 | N/A |
| | | Renton Rd | Very Poor | 11,079 | N/A |
| | | Waimano Home Rd | Very Poor | 19,593 | N/A |
| | | Waipahu St | Very Poor | 9,589 | N/A |
| | | Waipio Point Access Rd | Very Poor | 2,011 | N/A |
| Idaho | Camas NWR | I-15 | N/A | 4,100 | 17 |
| | Clearwater FH | US 12 | N/A | 6,200 | 19 |
| | Deer Flat NWR | SH 55 | N/A | 12,000 | 130 |
| | | 12th Ave | N/A | 11,000 | 11 |
| | | I-84 | N/A | 16,500 | 20 |
| | | Idaho Ave | N/A | 5,600 | 18 |
| | | Karcher Rd | N/A | 12,000 | 23 |
| | | SH-19 | N/A | 2,500 | 5 |
| | | SH-45 | N/A | 11,000 | 45 |
| | | US-95 | N/A | 5,600 | 14 |
| | | SH-78 | N/A | 1,500 | 41 |
| | Dworshak NFH | US 12 | N/A | 6,200 | 19 |
| | Grays Lake NWR | SH 34 | N/A | 500 | 6 |
| | Hagerman NFH | US 30 | N/A | 1,600 | 5 |
| | Kooskia NFH | US 12 | N/A | 1,000 | 6 |
| | McCall FH | Lake St | N/A | 7,300 | 14 |
| | Minidoka NWR | I-86 | N/A | 6,600 | 41 |
| | Sawtooth FH | SH 75 | N/A | 860 | 5 |

*Table 4*
*Non-Service Road Condition, Use, and Safety Hotspots*

| State | Name | Route | Condition | AADT | Crashes |
|---|---|---|---|---|---|
| Oregon | Ankeny NWR | I-5 | N/A | 59,300 | 10 |
| | Baskett Slough NWR | SR-22 | Poor | N/A | 6 |
| | | SR-99W | Poor | N/A | N/A |
| | Deer Flat NWR | SR-453 | Very Poor | N/A | N/A |
| | | SR-454 | Very Poor | N/A | N/A |
| | | I-84 | Poor | N/A | N/A |
| | | SR-201 | Poor | N/A | N/A |
| | | SR-201 | Very Poor | N/A | N/A |
| | Lewis And Clark NWR | US 30 | Poor | N/A | 7 |
| | McKay Creek NWR | US 395 | N/A | N/A | 5 |
| | Oregon Islands NWR | US 101 | Poor | N/A | 7 |
| | Siletz Bay NWR | US 101 | N/A | N/A | 8 |
| | Tualatin River NWR | SR-99W | N/A | 42,200 | 6 |
| | Umatilla NWR | US 730 | N/A | | 5 |
| Washington | Columbia NWR | SR-26 | N/A | 2,566 | 9 |
| | Dungeness NWR | US 101 | N/A | 12,091 | 10 |
| | Franz Lake NWR | SR-14 | N/A | 4,032 | 8 |
| | Grays Harbor NWR | SR-109 | N/A | N/A | 32 |
| | Julia Butler Hansen Refuge | SR-4 | N/A | 4,369 | 24 |
| | Little Pend Oreille NWR | SR-20 | N/A | N/A | 10 |
| | McNary NWR | US 12 | N/A | 10,147 | 34 |
| | | SR-124 | N/A | N/A | 5 |
| | | US 730 | N/A | N/A | 9 |
| | Nisqually NWR | I-5 | N/A | 110,850 | 82 |
| | Quilcene NFH | US 101 | N/A | 2,858 | 9 |
| | Hanford Reach National Monument | SR-24 | N/A | N/A | 18 |
| | | SR-240 | N/A | N/A | 16 |
| | Steigerwald Lake NWR | SR-14 | N/A | 6,758 | 12 |
| | Toppenish NWR | US 97 | N/A | 4,034 | 9 |
| | Turnbull NWR | SR-904 | N/A | N/A | 7 |
| | Umatilla NWR | SR-14 | N/A | N/A | 13 |
| | Willapa NWR | US 101 | N/A | N/A | 13 |
| | Winthrop NFH | SR-20 | N/A | N/A | 6 |

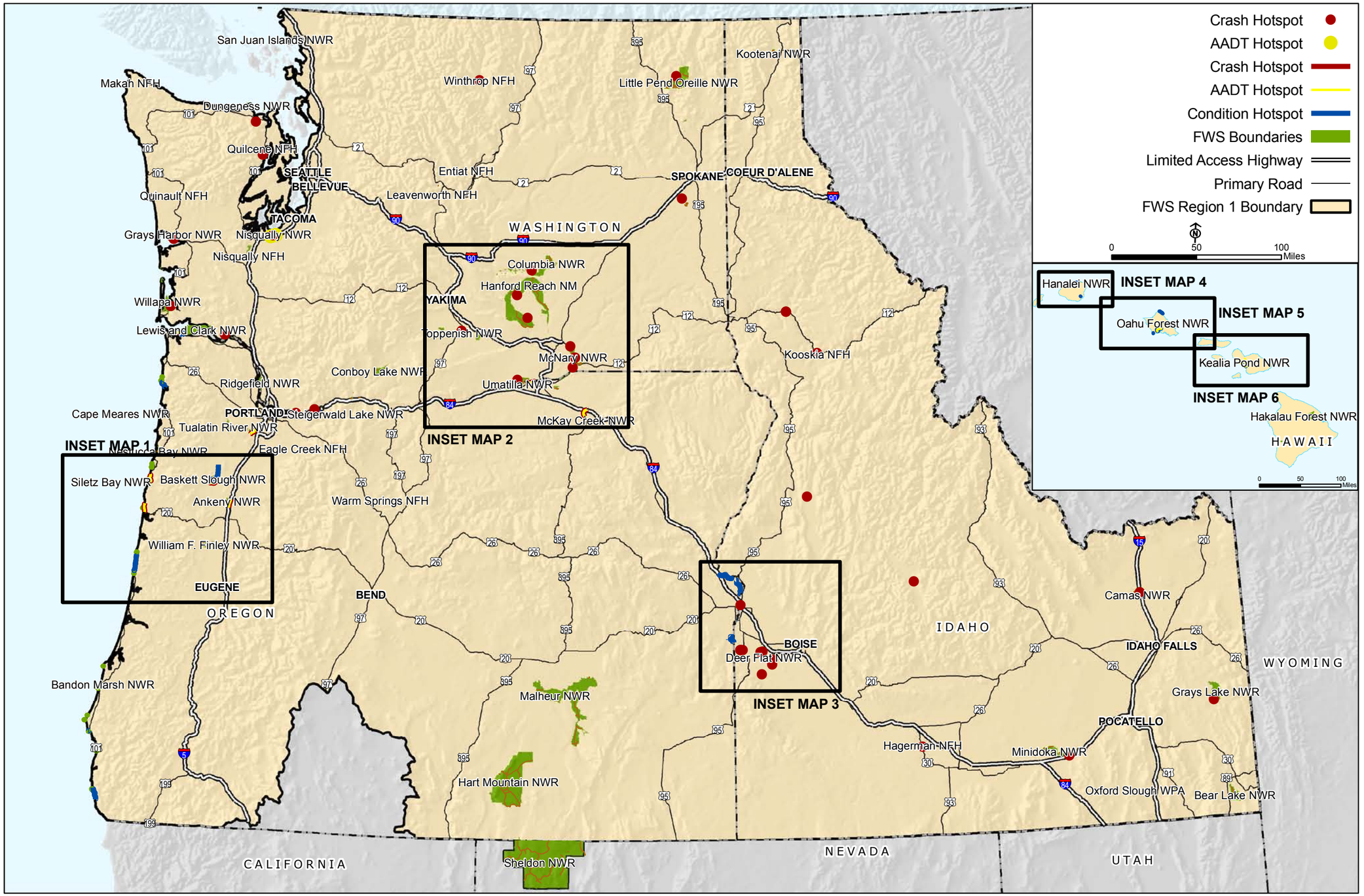
*Cited in sidebar on page 25*

*Note: Green highlight means meets hotspot criteria of AADT 20,000 or higher, five or more crashes in the past three years, or road conditions of poor or worse*

*Routes: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; Condition: Hawaii DOT (2003/2004), Oregon DOT (2008); Idaho DOT (N/A); Washington DOT (N/A) AADT: Hawaii DOT (2008), Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Crashes: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008); Hawaii (N/A)*

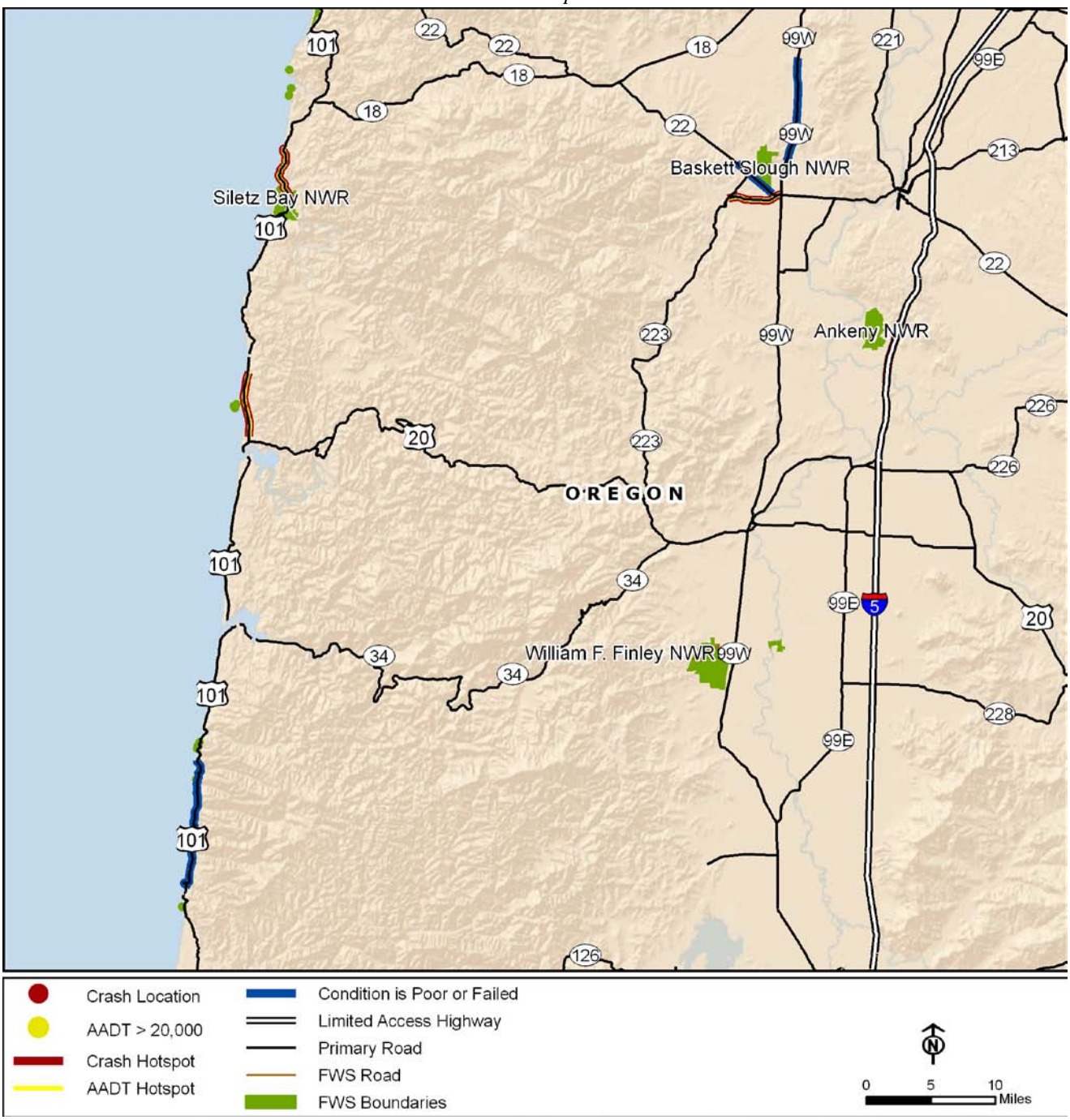
*NWR = National Wildlife Refuge; NFH = National Fish Hatchery; FH = Fish Hatchery*

*Figure 4*
*Service Units and Non-Service Road Hotspots*



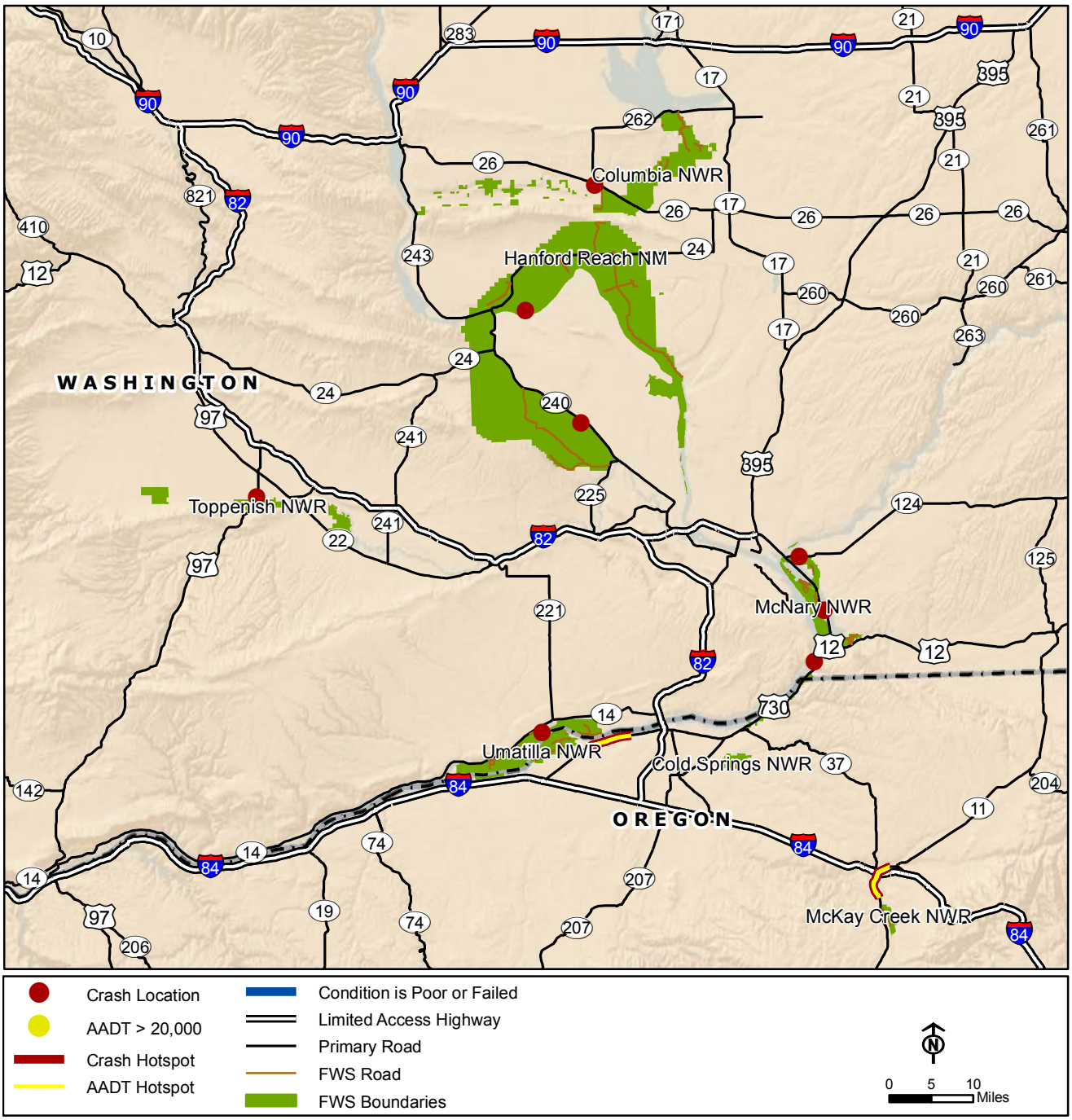

*Routes: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; Condition: Oregon DOT (2008) AADT: Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Crashes: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008)*

*Figure 5*
*Inset Map 1*



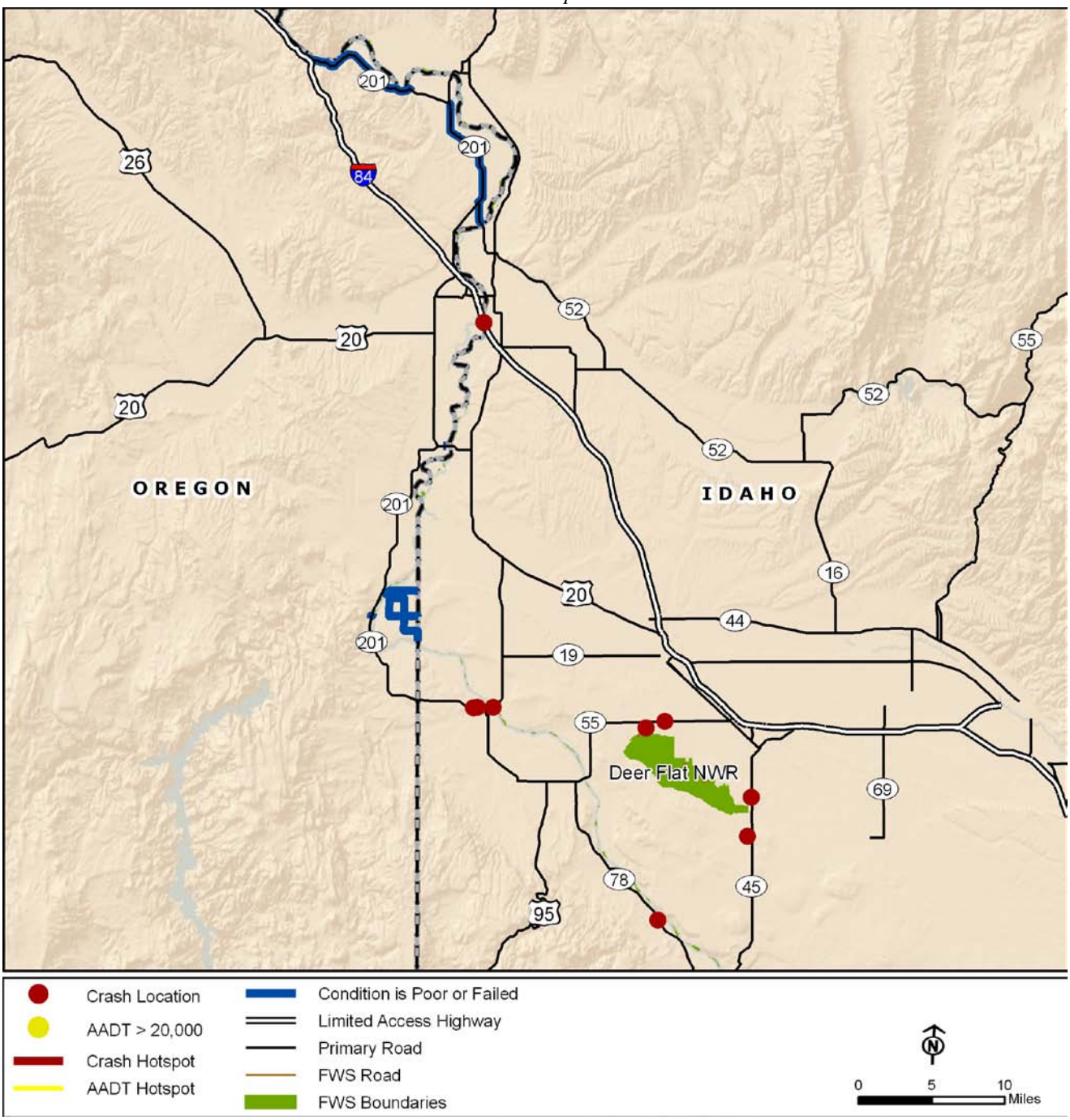

***Routes**: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; **Condition:** Oregon DOT (2008); Washington DOT (N/A); Idaho DOT (N/A); Hawaii DOT (N/A) AADT: Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Hawaii DOT (N/A)*
***Crashes**: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008); Idaho DOT (N/A); Hawaii DOT (N/A)*

*Figure 6*
*Inset Map 2*



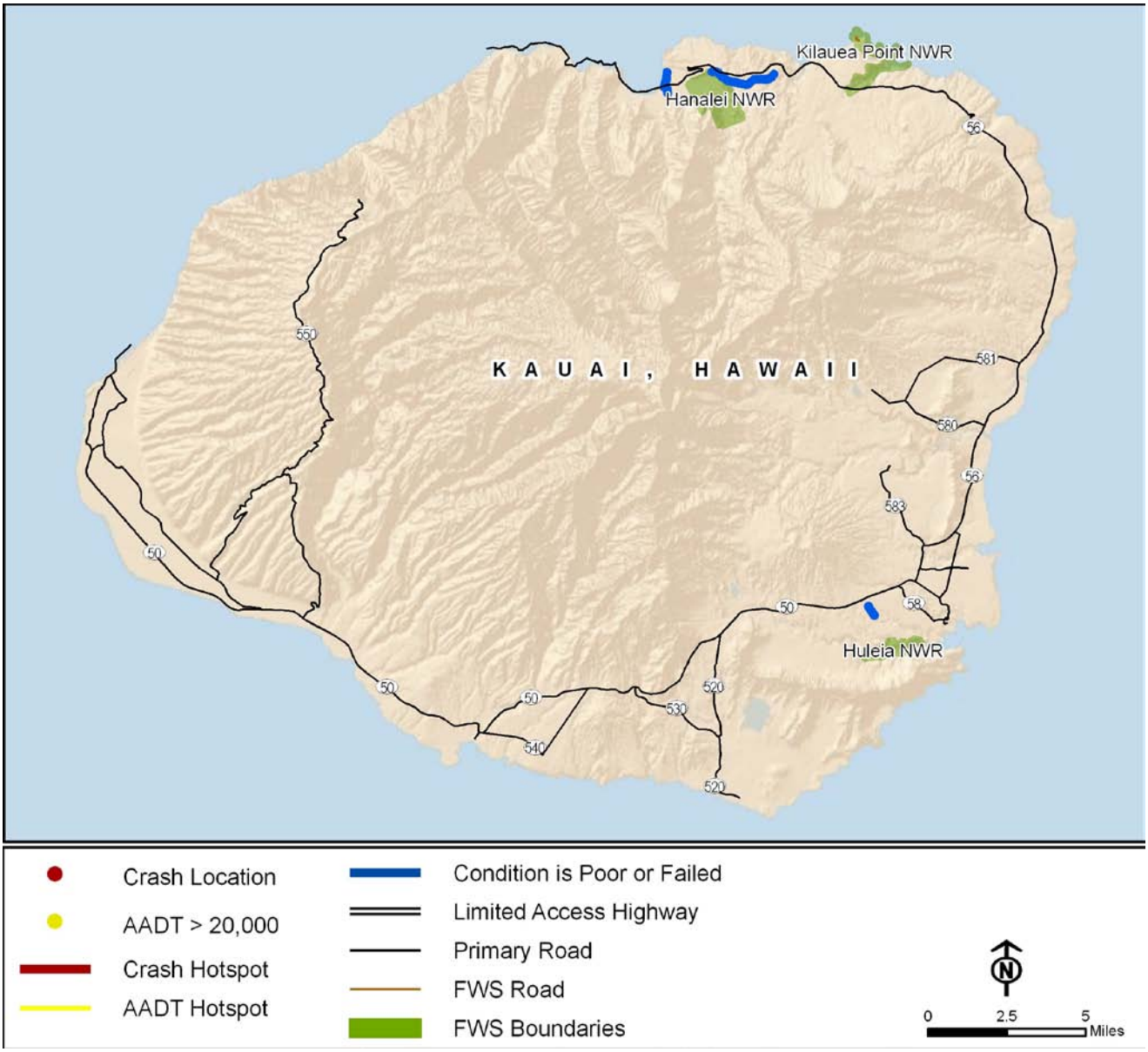

***Routes**: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; **Condition**: Oregon DOT (2008); Washington DOT (N/A); Idaho DOT (N/A); Hawaii DOT (N/A) **AADT**: Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Hawaii DOT (N/A) **Crashes**: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008); Hawaii DOT (N/A)*

*Figure 7*
*Inset Map 3*



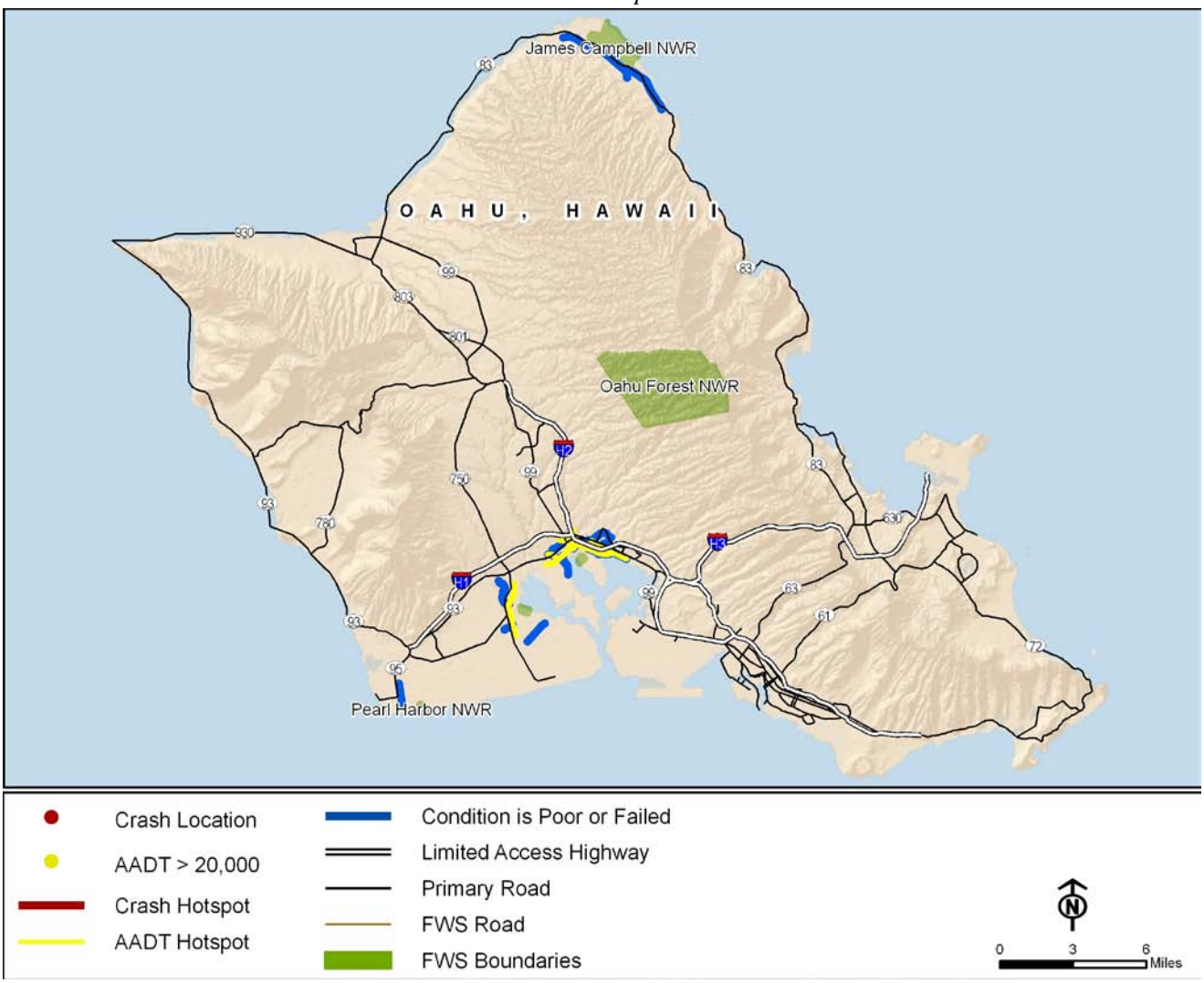

***Routes**: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; **Condition**: Oregon DOT (2008); Washington DOT (N/A); Idaho DOT (N/A); Hawaii DOT (N/A) **AADT**: Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Hawaii DOT (N/A) **Crashes**: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008); Hawaii DOT (N/A)*

*Figure 8*
*Inset Map 4*



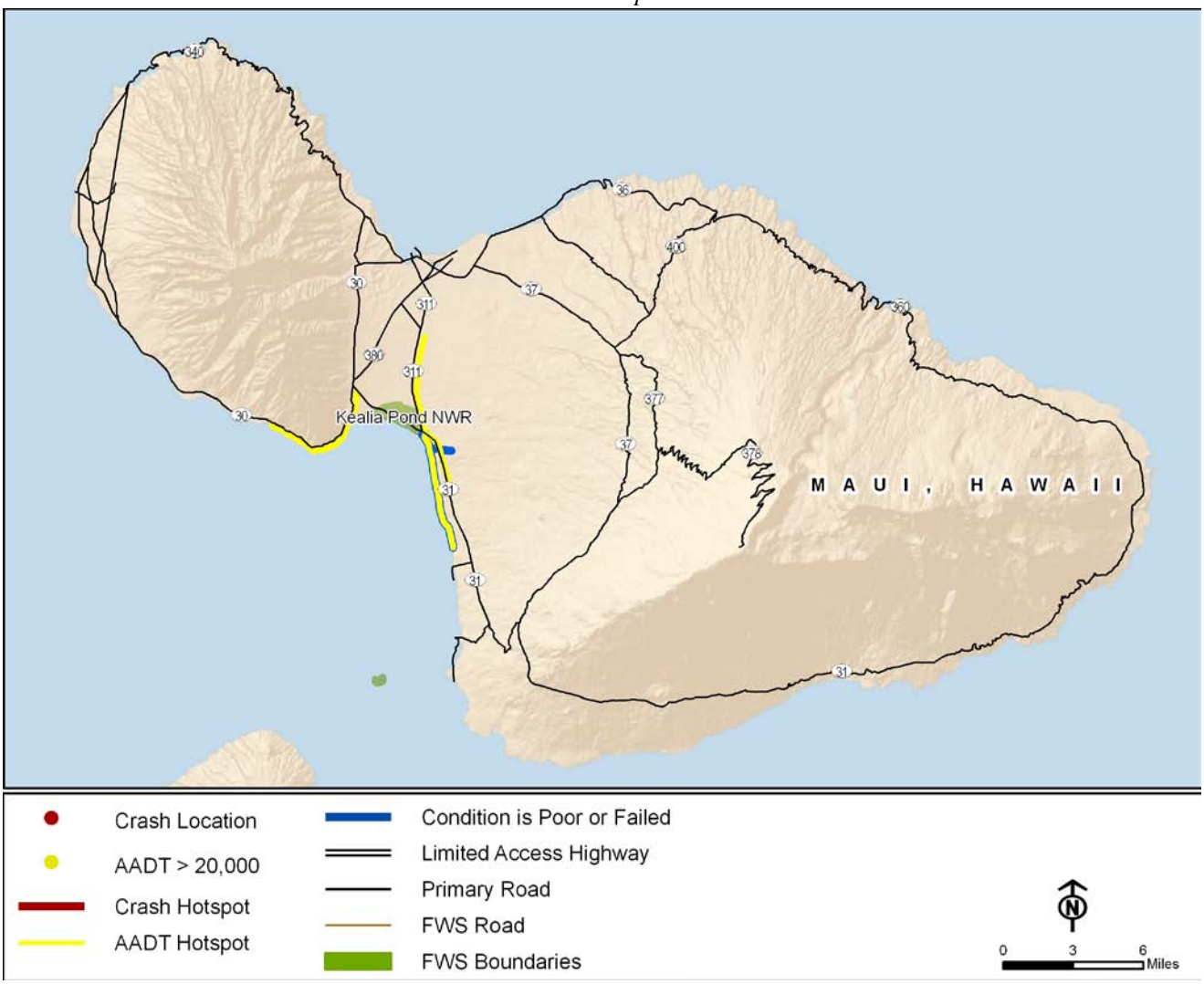

***Routes**: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; **Condition**: Oregon DOT (2008); Washington DOT (N/A); Idaho DOT (N/A); Hawaii DOT (N/A) **AADT**: Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Hawaii DOT (N/A) **Crashes**: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008); Hawaii DOT (N/A)*

*Figure 9*
*Inset Map 5*




***Routes**: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; **Condition**: Oregon DOT (2008); Washington DOT (N/A); Idaho DOT (N/A); Hawaii DOT (N/A) **AADT**: Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Hawaii DOT (N/A) **Crashes**: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008); Hawaii DOT (N/A)*

*Figure 10*
*Inset Map 6*




***Routes**: Hawaii DOT, Idaho DOT, Oregon DOT, Washington DOT; **Condition**: Oregon DOT (2008); Washington DOT (N/A); Idaho DOT (N/A); Hawaii DOT (N/A) **AADT**: Idaho DOT (2007), Oregon DOT (2007), NHPN (2008); Hawaii DOT (N/A) **Crashes**: Idaho DOT (2006 to 2008), Oregon DOT (2005 to 2007, $1,500 or more in damage), Washington DOT (2006 to 2008); Hawaii DOT (N/A)*

Baseline data suggest that McNary National Wildlife Refuge, in the state of Washington, is a reasonable candidate for road improvements. The first table below indicates that 84 percent of the refuge's roads are rated "fair" or worse. The second table below indicates that there are 12 routes with an API of 80 or greater, the threshold for being considered mission critical. Eleven of these twelve mission critical routes have a condition of "fair" or "failed." Table 4 shows that the segment of US 12 that intersects the refuge had 34 crashes within a 2-year timeframe.

**Excerpt from Appendix C, Table 6**

| Service Unit | Surface | Condition | Miles | % in Unit |
|---|---|---|---|---|
| McNary NWR | Asphalt | Fair | 0.60 | 4% |
| | | Poor | 1.05 | 7% |
| | Gravel | Failed | 1.31 | 9% |
| | | Fair | 7.15 | 50% |
| | | Good | 2.11 | 15% |
| | Native | Failed | 0.56 | 4% |
| | | Fair | 1.38 | 10% |

*FHWA, Road Inventory Program, Cycle 4*

**Excerpt from Appendix C, Table 2**

| Route Name | Route ID | Surface | Asset Priority Index | Condition |
|---|---|---|---|---|
| East Millet Pond Road | FWS-MCNA-118 | Gravel | 80 | Failed |
| Game Dept. Road | FWS-MCNA-014 | Gravel | 100 | Good |
| Johnson Pond Road | FWS-MCNA-120 | Asphalt | 80 | Fair |
| Old Bridge Road | FWS-MCNA-123 | Gravel | 80 | Fair |
| Peninsula Unit Entrance Road | FWS-MCNA-010 | Gravel | 100 | Fair |
| Quarry Pond Road | FWS-MCNA-109 | Gravel | 80 | Fair |
| Twin River Access Main Road | FWS-MCNA-015 | Asphalt | 100 | Fair |
| Two Rivers Entrance Road | FWS-MCNA-012 | Gravel | 100 | Fair |
| Two Rivers Entrance Road | FWS-MCNA-012 | Gravel | 100 | Failed |
| Wallula Unit Road | FWS-MCNA-013 | Gravel | 100 | Fair |
| Winery Road | FWS-MCNA-100 | Gravel | 80 | Fair |
| Winery Road | FWS-MCNA-100 | Native | 80 | Fair |

*FHWA, Road Inventory Program, Cycle 4*

### 2.2.3 Recommendations for Future Analysis

Several actions are necessary to better evaluate the need for conditions and safety improvements. The following actions are recommended:

- Obtain AADT for all Service roads to help quantify use and add to the meaningfulness of need determinations.
- Collect crash data for all Service roads to help identify areas in need of safety improvements.
- Obtain complete current replacement value, API, FCI, and deferred maintenance for all refuge and hatchery roads, parking lots, and trails to eliminate data gaps and improve the reliability of need determinations.
- Develop a better cross-compatibility between SAMMS and RIP for roads, parking lots, and trails to eliminate data gaps and increase the reliability and usefulness of need and hotspot analyses.
- Use a complete dataset of non-Service road use, condition, and crashes to eliminate data gaps in the determinations of improvement need and partnership opportunity.

## 2.3 Welcome and Orient Visitors

The LRTP welcome and orient visitors goal is, **"Develop and maintain a transportation network that welcomes and orients visitors."** The following objectives and strategies serve to further the sentiment expressed by the goal.

#### Objective 1

Provide public information to enable visitors to easily get to refuges and hatcheries and to use its sites. Strategies for this objective are:

- Identify appropriate locations in the transportation system to place entrance, directional, and boundary signs to improve visitor way-finding to and within refuges and hatcheries.
- Increase use of traveler information systems, such as 511 and variable message signs, to transmit safety, interpretive and special events management information.

#### Objective 2

Engage the visitor with compelling information so they better understand the National Wildlife Refuge System and Fisheries Program purpose of wildlife conservation and to enjoy natural resources. The strategy for this objective is:

- Develop signage with positively worded regulations and information to create a relaxed and welcoming atmosphere.

#### Objective 3

Create a consistent and recognizable identity throughout all Service units through the use of standard materials for readily observed physical elements associated with the transportation system. Strategies for this objective are:

- Replace substandard entrance, regulatory, and interpretive signs to adhere to Service-wide standards when located adjacent to a transportation improvement project
- Develop and apply standards for landscape treatments to create a recognizable appearance to Service-owned parking lots and pull-offs to trailheads.

### 2.3.1 Welcome and Orient Visitors Data

Welcome and orient visitors data is analyzed with the assumption that opportunities for enhancing this goal are greatest in places that receive the highest number of visitors. Visitation and population data is used to identify appropriate opportunities. Population estimates and forecasts are derived from the U.S. Census, while visitation data is reported by the Service.

Visitation to refuges and hatcheries in Region 1 varies greatly, from less than 100 average annual visits at several small remote refuges and fish hatcheries, to 1.9 million average annual visits at Oregon Islands National Wildlife Refuge. Units that experience higher levels of visitation are generally located near populous locations, as shown in Figure 11 through 13. The figures also show visitation data by unit and U.S. Census county-level population estimates for 2008. Table 5 summarizes visitation trends to Region 1 Service lands. Change in visitation is generally positive throughout the region. Data indicate that the number of visits to Service lands had an average annual increase in visitation of 16 percent, from 2005 to 2009[1].

[1] *Based on units that have data for all five years. Sixty-four percent of units have visitation data for all years.*

*Table 5*
*2009 Visitation by Unit*

| State/ Territory | Units | Visitation 2009 | Relative Change (2005 – 2009) |
|---|---|---|---|
| Guam | Guam NWR | 85,000 | + |
| Hawaii | Kilauea Point NWR | 500,000 | + |
| | Hanalei NWR | 402,000 | - |
| | Kealia Pond NWR | 5,727 | + |
| | Pearl Harbor NWR | 3,230 | - |
| | Hakalau Forest NWR | 1,502 | - |
| | James Campbell NWR | 1,376 | - |
| | Midway Atoll NWR | 291 | + |
| | Kakahaia NWR | 53 | + |
| Pacific Outlying Islands | Palmyra Atoll NWR | | + |
| Idaho | Deer Flat NWR | 167,884 | + |
| | Dworshak NFH | 20,800 | NA |
| | Bear Lake NWR | 11,674 | + |
| | Hagerman NFH | 8,139 | NA |
| | Kooskia NFH | 7886 | NA |
| | Kootenai NWR | 42,000 | - |
| | Minidoka NWR | 65,000 | + |
| | Camas NWR | 7,512 | + |
| Idaho | Idaho Fish Health Center | 60 | NA |
| Nevada | Sheldon NWR | 17,000 | - |
| Oregon | Oregon Islands NWR | 2,556,440 | + |
| | Cape Meares NWR | 489,564 | + |
| | Three Arch Rocks NWR | 347,728 | + |
| | Baskett Slough NWR | 168,336 | + |
| | William L. Finley NWR | 119,602 | - |
| | Tualatin River NWR | 86,896 | + |
| | Malheur NWR | 65,000 | - |
| | Ankeny NWR | 61,185 | + |
| | Cold Springs NWR | 30,000 | - |
| | McKay Creek NWR | 30,000 | - |
| | Hart Mountain National Antelope Refuge | 20,786 | - |
| | Nestucca Bay NWR | 9,888 | + |
| | Bandon Marsh NWR | 4,718 | + |
| | Grays Lake NWR | 2,560 | - |
| | Warm Springs NFH | 930 | NA |
| | Eagle Creek NFH | 350 | NA |
| | Siletz Bay NWR* | 180 | + |
| | Oxford Slough WPA | 150 | - |

| State/ Territory | Units | Visitation 2009 | Relative Change (2005 – 2009) |
|---|---|---|---|
| Washington | Leavenworth NFH | 155,000 | NA |
| | Nisqually NWR | 150,756 | - |
| | Ridgefield NWR | 117,345 | + |
| | Umatilla NWR | 76,000 | + |
| | Columbia NWR | 73,000 | + |
| | Dungeness NWR | 66,642 | - |
| | McNary NWR | 65,000 | - |
| | Little Pend Oreille NWR | 60,000 | + |
| | Turnbull NWR | 43,930 | + |
| | Hanford Reach National Monument | 43,000 | - |
| | Julia Butler Hansen Refuge | 25,000 | - |
| | Willapa NWR | 25,000 | + |
| | San Juan Islands NWR | 17,405 | - |
| | Spring Creek NFH | 10,000 | NA |
| | Lewis and Clark NWR | 16,000 | - |
| | Grays Harbor NWR | 13,000 | - |
| | Toppenish NWR | 9,750 | + |
| | Little White Salmon NFH | 7,600 | NA |
| | Quinault NFH | 7,456 | NA |
| | Steigerwald Lake NWR | 7,267 | + |
| | Conboy Lake NWR | 6,500 | + |
| | Winthrop NFH | 3,300 | NA |
| | Entiat NFH | 3,170 | NA |
| | Carson NFH | 2,179 | NA |
| | Franz Lake NWR* | 2,000 | - |
| | Quilcene NFH | 1,400 | NA |
| | Mid-Columbia River Fisheries Resource Office | 1,048 | NA |
| | Makah NFH | 800 | NA |
| | Columbia River Fisheries Program Office | 654 | NA |
| | Willard NFH | 265 | NA |
| | Pierce NWR* | 197 | + |
| | Abernathy Fish Tech Center | 190 | NA |
| | Lower Columbia River Fish Health Center | 46 | NA |
| | Protection Island NWR | 25 | + |

*Source: U.S. Fish and Wildlife Service, 2009*

** This refuge is closed to the public*

*NWR = National Wildlife Refuge; NFH = National Fish Hatchery; WPA = Waterfowl Production Area*

Population has also increased in the areas near Service units. Counties overlapping Service units experienced an average population increase of 11 percent from 2000 to 2008. According to U.S. Census forecasts, population is expected to increase an average of 24 percent by 2030 in counties overlapping Service lands in Region 1. By this measure, visitation is also expected to continue its upward trend and increase into 2030. Table 7 in Appendix C summarizes population increase from 2000 to 2008 as well as U.S. Census 2030 population forecasts in counties overlapping Service units. Besides serving as a contextual tool, population projections serve as a cross check when considering visitor facility enhancement projects. The assumptions discussed below for identifying visitor facility improvement areas assume that relative differences in visitation levels between Region 1 units will remain the same for future years. Population forecasts are used to confirm that population change is similar for Region 1 units. That is, no dramatic declines are expected in places that could potentially receive transportation improvements. According to Appendix C, Table 7, only two counties with Service units are anticipated to experience negative growth population into the future.

Transportation hubs are defined as populous areas serving as the nearest major metropolitan area to refuges and hatcheries. These hubs likely generate the majority of visitor traffic to a refuge or hatchery. Gateway communities are identified as the small towns or communities near a refuge or hatchery that channel most traffic into a refuge or hatchery. When visitation to a unit is high, these gateway communities experience higher traffic volumes and may reap the economic benefits of increased visitation. High visitation units (more than 100,000 average annual visits) are highlighted in red in Table 5. These units are most likely to benefit the greatest number of visitors through improvements. Transportation hubs and gateway communities are summarized in Table 6. Distance and population variables are weighed against each other so that communities identified are not always the closest or the most populated, but are rather a combination of the two. Gateway communities of the greatest interest are those associated with units receiving high levels of visitation.

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*Table 6*
*Transportation Hubs and Gateway Communities*

| State/ Territory | Service Unit | 2009 Visitation | Transportation Hub | | | Gateway Community | | |
|---|---|---|---|---|---|---|---|---|
| | | | Location | Distance From Unit (miles) | Population | Location | Distance From Unit (miles) | Population |
| Guam | Guam NWR | 85,000 | Dededo, GU | 15 | 154,805 | Dededo, GU | 15 | 154,805 |
| Hawaii | Hakalau Forest NWR | 1,500 | Honolulu, HI | 120 | 353,106 | Hilo, HI | 23 | 48,104 |
| | Hanalei NWR | 402,000 | Lihue, HI | 130 | 371,657 | Princeville, HI | 4 | 1,698 |
| | Kilauea Point NWR | 500,000 | Lihue, HI | 130 | 371,657 | Kilauea, HI | 2 | 2,092 |
| | Maui NWR Complex | 5,727 | Honolulu, HI | 60 | 353,106 | Kihei, HI | 2 | 19,703 |
| Idaho | Bear Lake, NWR | 11,674 | Boise, ID | 336 | 185,787 | Montpelier, ID | 12 | 2,785 |
| | Camas NWR | 7,512 | Boise, ID | 317 | 185,787 | Hamer, ID | 5 | 12 |
| | Deer Flat NWR | 167,884 | Boise, ID | 20 | 185,787 | Nampa, ID | 6 | 81,349 |
| | Kootenai NWR | 42,000* | Spokane, WA | 114 | 200,428 | Bonners Ferry, ID | 6 | 2,515 |
| | Minidoka, NWR | 65,000 | Boise, ID | 183 | 185,787 | Rupert, ID | 11 | 5,645 |
| Oregon | Ankeny NWR | 61185 | Portland, OR | 60 | 529,121 | Salem, OR | 15 | 152,634 |
| | Baskett Slough NWR | 168,336 | Portland, OR | 50 | 529,121 | Salem, OR | 20 | 152,634 |
| | Cape Meares NWR | 489,564 | Portland, OR | 83 | 529,121 | Tillamook, OR | 9 | 24,949 |
| | Cold Springs NWR | 73,000 | Portland, OR | 194 | 529,121 | Hermiston, OR | 8 | 13,154 |
| | Malheur NWR | 65,000 | Boise, ID | 120 | 185,787 | Burns, OR | 32 | 3,064 |
| | Oregon Islands NWR | 2,556,440 | Portland, OR | 250 | 529,121 | Newport, OR | 34 | 9,532 |
| | Sheldon-Hart NWR Complex | 37,786 | Portland, OR | 336 | 529,121 | Lakeview, OR | 0 | 2,474 |
| | Three Arch Rocks NWR | 347,728 | Portland, OR | 60 | 529,121 | Oceanside, OR | 1 | 326 |
| | Tualatin River NWR | 86,896 | Portland, OR | 10 | 529,121 | Sherwood, OR | 3 | 11,791 |
| | William L. Finley NWR | 119,602 | Portland, OR | 80 | 529,121 | Corvallis, OR | 15 | 52,102 |

*Table 6*
*Transportation Hubs and Gateway Communities*

| State/ Territory | Service Unit | 2009 Visitation | Transportation Hub | | | Gateway Community | | |
|---|---|---|---|---|---|---|---|---|
| | | | Location | Distance From Unit (miles) | Population | Location | Distance From Unit (miles) | Population |
| Washington | Columbia NWR | 73,000 | Spokane, WA | 126 | 200,428 | Othello, WA | 15 | 5,847 |
| | Conboy Lake NWR | 6,500 | Portland, OR | 90 | 529,121 | Glenwood, WA | 5 | 650 |
| | Dungeness NWR | 66,642 | Seattle, WA | 15 | 547,997 | Sequim, WA | 7 | 4,334 |
| | Grays Harbor NWR | 13,000 | Seattle, WA | 116 | 547,997 | Hoquiam, WA | 3 | 9,097 |
| | Hanford Reach NM | 43,000 | Pasco, WA | 42 | 51,456 | Richland, WA | 30 | 45,460 |
| | Julia Butler Hansen Refuge | 25,000 | Portland, OR | 74 | 529,121 | Cathlamet, WA | 1 | 565 |
| | Leavenworth NFH | 155,000 | Seattle, WA | 70 | 547,997 | Leavenworth, WA | 3 | 2,074 |
| | Little Pend Oreille NWR | 60,000 | Spokane, WA | 75 | 200,428 | Colville, WA | 14 | 4,988 |
| | McNary NWR | 65,000 | Pasco, WA | 10 | 51,456 | Burbank, WA | 3 | 3,303 |
| | Nisqually NWR | 150,756 | Seattle, WA | 40 | 547,997 | Olympia, WA | 14 | 46,529 |
| | Ridgefield NWR | 120,000 | Portland, OR | 15 | 529,121 | Ridgefield, WA | 2 | 2,147 |
| | Steigerwald Lake NWR | 7,267 | Portland, OR | 15 | 529,121 | Washougal, WA | 3 | 8,595 |
| | Turnbull NWR | 43,930 | Spokane, WA | 17 | 200,428 | Cheney, WA | 2 | 8,832 |
| | Umatilla NWR | 76,000 | Pasco, WA | 63 | 51,456 | Umatilla, OR | 34 | 73,252 |
| | Willapa NWR | 25,000 | Portland, OR | 86 | 529,121 | Long Beach, WA | 43 | 1,283 |

*Source: U.S. Fish and Wildlife Service; U.S. Census (2008 estimate)*

** For year 2008*

*NWR = National Wildlife Refuge; NFH = National Fish Hatchery*

*Figure 11*
*Population and Visitation - Washington and Oregon*

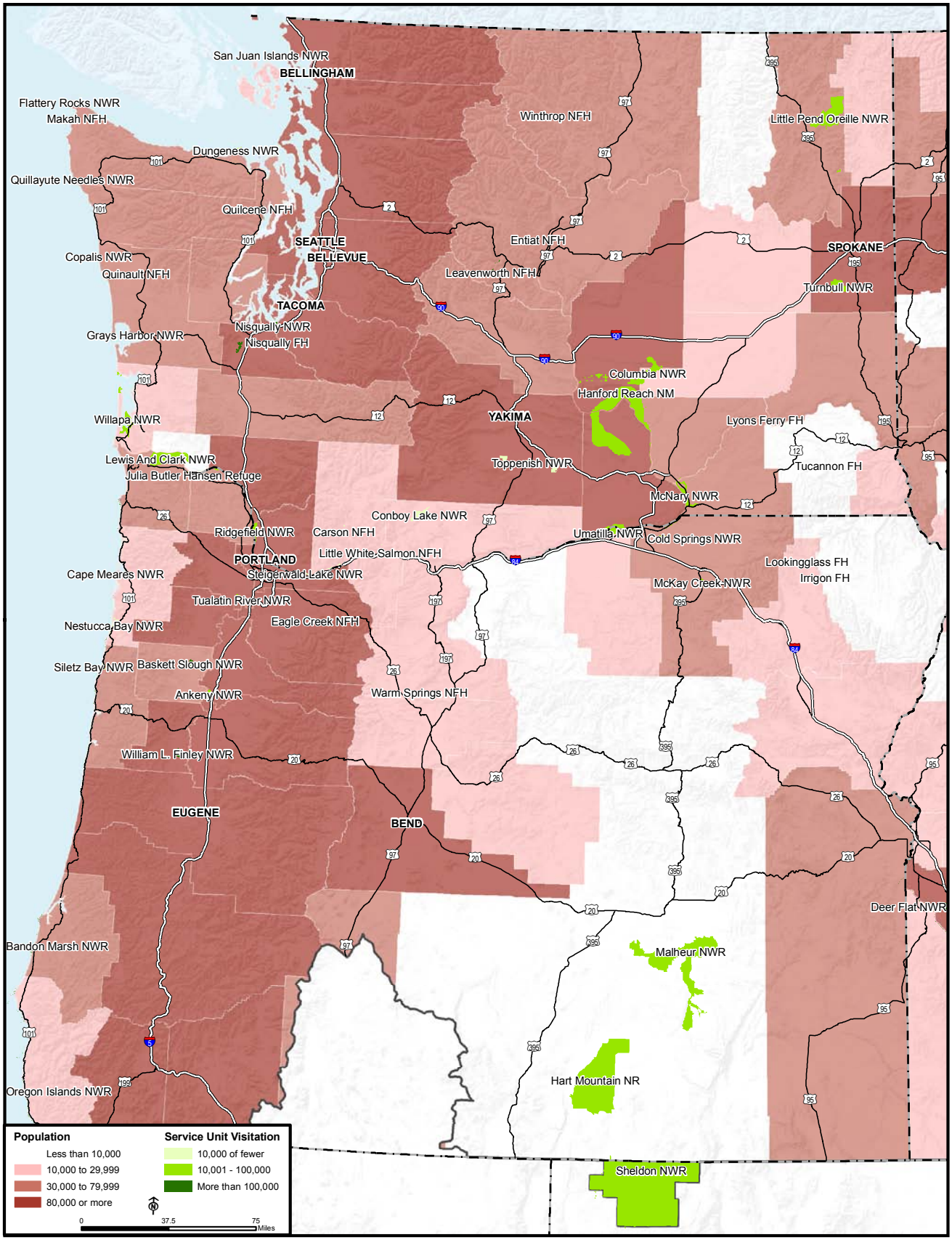


*Figure 12*
*Population and Visitation - Idaho*

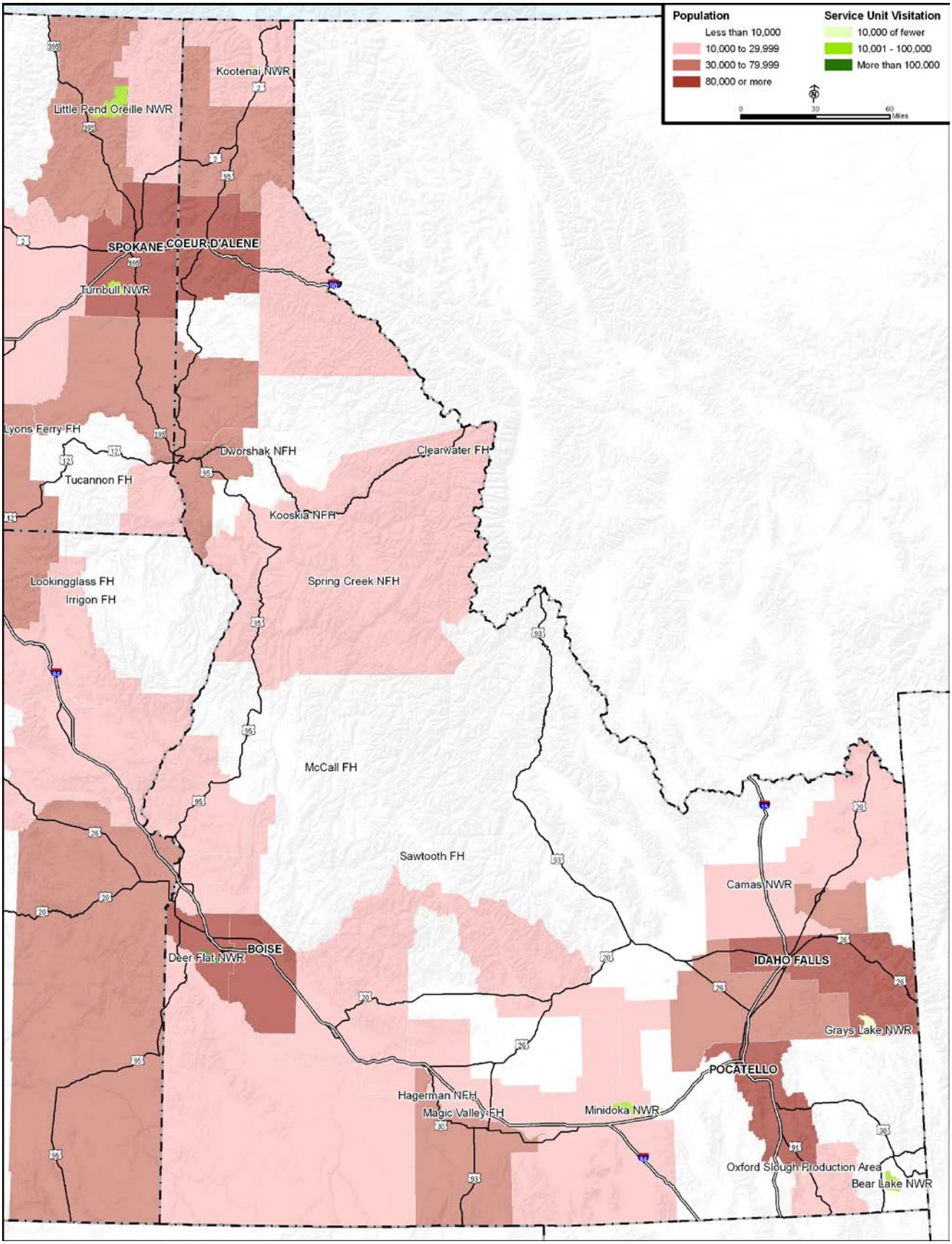
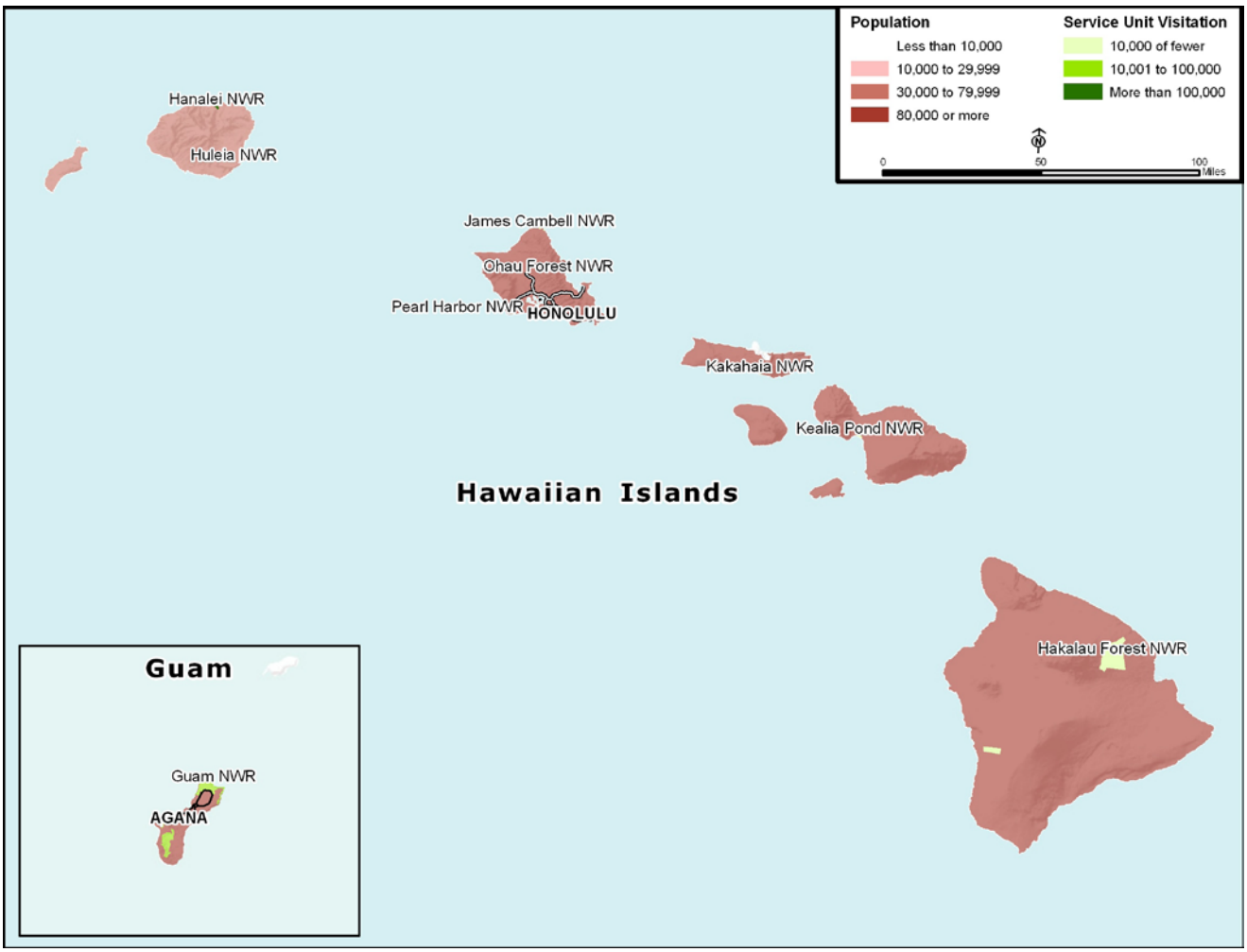


*Figure 13*
*Population and Visitation - Hawaii and Guam*



### 2.3.2 Identifying Visitor Enhancement Improvement Areas

Generally, visitor enhancement related improvements such as signage, way-finding, and interpretation are most appropriate for units that have, and will continue to have, consistently high levels of visitation—where the greatest number of visitors possible can benefit from the improvements. Gateway communities are also potential locations for visitor enhancements, particularly as they relate to way-finding, thereby directing people to the refuge or hatchery. These enhancements can improve ease of travel to and through units, thus improving visitor experience. To ensure the greatest enhancement value for Region 1, potential improvements decisions should be focused on high visitation units (identified as units having over 100,000 average annual visits). Within this subset, larger gateway communities have the added benefit of potentially tying into existing non-Service traveler information systems (such as 511 services and variable message signs). Gateway communities that serve multiple Service lands may also offer added value and opportunities to address multiple needs through one improvement.

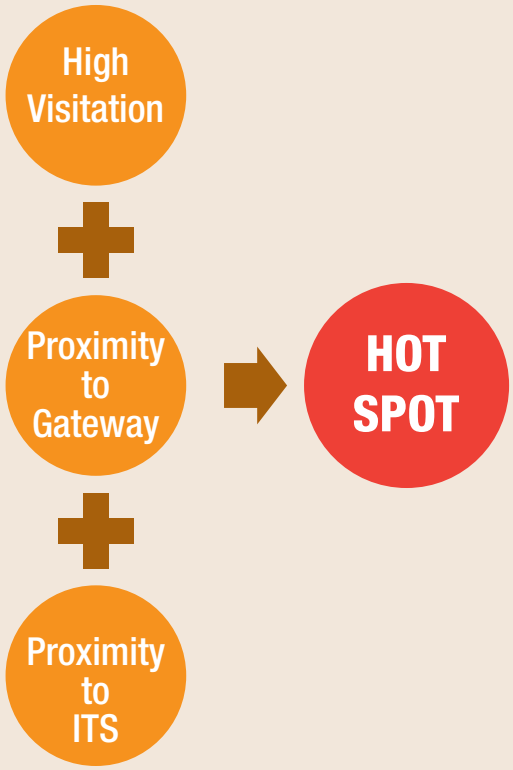
### 2.3.3 Recommendations for Future Analysis

Several datasets are necessary to better evaluate opportunities for visitor experience related transportation improvements, such as:

- Identify where state way-finding and variable message signs are located to assist in identifying areas of possible partnership.
- Develop and implement a regional or national sign inventory that includes sign location, condition, and adherence to Service sign standards and FHWA the Manual on Uniform Traffic Control Devices to help identify where additional or improved signage is needed.

## Hot Spot for Visitor Enhancement Improvements

Baseline condition analysis helps identify areas, or hot-spots, that could potentially benefit the most from visitor enhancement improvements. As discussed in the previous section, these improvement hot-spots are tied primarily to visitation, as well as proximity of populated places. Hot-spots are places that have high values for all of these variables. In the baseline condition summary, these are assumed to be places with over 100,000 annual visits in Table 5 and the communities identified in Table 6. An example of a hot spot for visitor enhancement improvements is William L. Finley National Wildlife Refuge. The Refuge receives a high level of visitation (119,314 average annual visits) and is located in an area expecting future population growth (19 percent). The Refuge is also located in close proximity to the gateway community of Corvallis, Oregon (15 miles away, with a population of 52,102). These indicators suggests that visitor enhancement improvements would reach a large number of people, and that improvements at gateway communities may potentially tie into existing traveler information systems.



## 2.4 Planning

The LRTP planning goal is **"integrate transportation planning into Service plans and processes."** The following objectives and strategies serve to further the sentiment expressed by the goal.

### Objective 1

Ensure consistency and coordination between the project, unit, regional, and national levels of planning. The strategy for this objective is:

- Develop and apply transportation planning templates for CCPs and CHMPs or station development plans.

### Objective 2

Define need for infrastructure improvements and prioritize projects using a scientific and objective process. Strategies for this objective are:

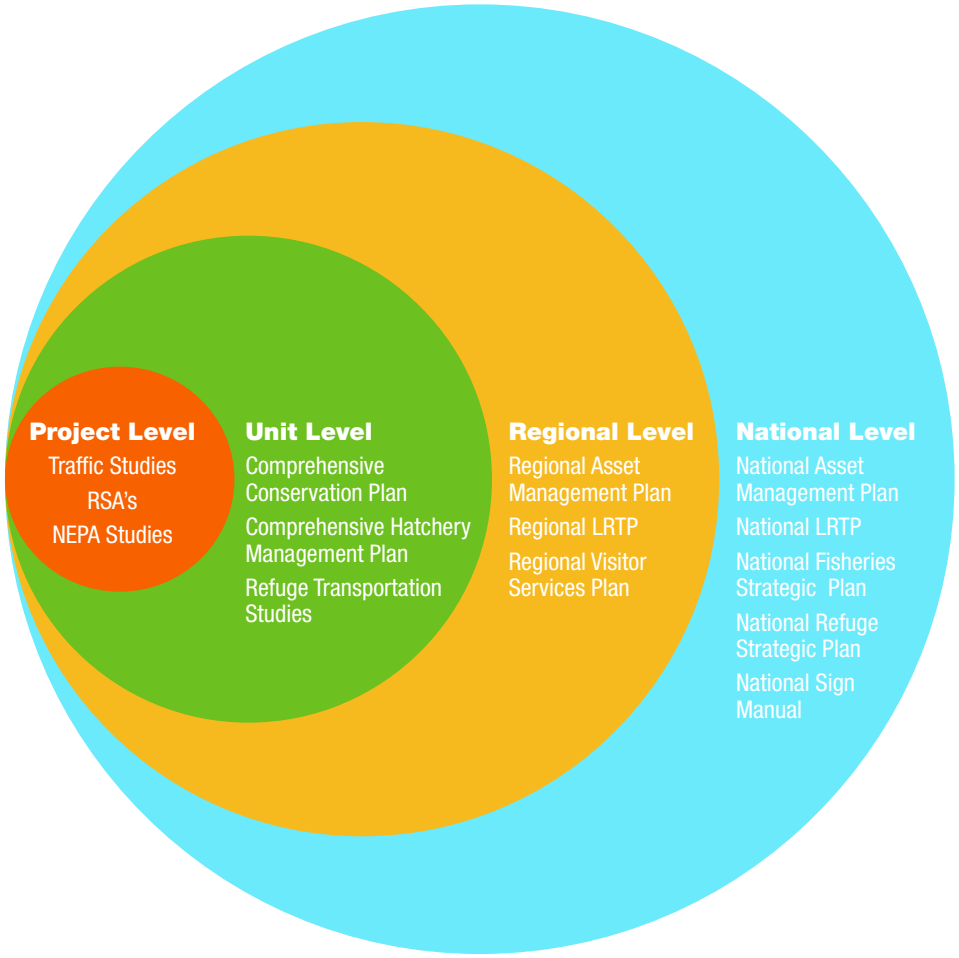
- Use condition assessments and/or road safety audits to identify road system deficiencies.
- Use established goals and objectives in the project selection process.

### 2.4.1 Planning Data

The Service uses plans at all levels within the organization, from the project and unit levels to national level. Plans are used to express guiding principles and/or specific deficiencies or needs from the project to the policy level. A wide range of planning tools is therefore available for all Service levels. Figure 14 illustrates examples of the types of plans that are used at different levels within the Service. For example, project level operations use RSAs to document safety issues. The outcome of the studies is used to help resolve documented safety issues by identifying need, possible solutions, and serving as leverage for future project funding.

Data used to establish a baseline for the planning goal includes the current state of the Service's resource management planning and the planning activities of potential partners.

*Figure 14*
*Service Plans*



Service resource management plans include CCPs and CHMPs. CCPs are planning documents developed for individual refuges to provide a description of the desired future conditions and long-range guidance with regard to resource management at the refuge unit level. CCPs establish management direction to achieve refuge goals. CHMPs are operational management plans specific to fish hatcheries. The plans outline policies and objectives relevant to the overall management of a specific fish hatchery. CHMPs are used as planning reference tools, to help integrate Service objectives and priorities with those of other agencies; fulfill obligations under the Endangered Species Act and other management programs; identify and define specific hatchery reforms to implement; and provide a foundation for future program and budget development.

Currently, 29 CCPs have been completed, 23 are in progress, and 9 are scheduled to begin in 2011 within Region 1. Fifteen CHMPs have been adopted for National Fish Hatcheries. In addition, two RSAs, four traffic studies, and eight transportation studies have been completed or are in-progress as of January 2011. Several units are also located within non-Service transportation planning districts. Nine units are within the boundary of a state MPO, and 34 units are located in a State regional planning organization. Table 8 summarizes the completeness of Service planning and identifies non-Service transportation planning occurring in the same area.

Additionally, project leaders have identified units that demonstrate need for additional transportation planning studies based on their knowledge of issues facing individual refuges and hatcheries. Additional plans fall into three categories: large scale and comprehensive plans, issue driven plans, and small scale plans and studies. These categories are used to describe the different types of plans and studies, as shown in Table 7. Table 8 summarizes progress of transportation planning efforts and anticipated needs for Region 1 stations.

*Table 7*
*Planning Need and Plan Types*

| Planning Need | Corresponding Plan Types |
|---|---|
| **Comprehensive/Large Scale** | CCP step-down plan<br>Complex issue analysis (e.g., Sheldon National Wildlife Refuge)<br>Regional transportation analysis (e.g., big picture look at connectivity, visitor use analysis) |
| **Issue Driven** | Engineering/traffic safety analysis<br>Access analysis |
| **Small Scale** | Traffic safety audit |

*"C" = Complete; "I" = In-progress; "S" = Scheduled; "P" = Planned*

*** MPO = Metropolitan Planning Office, RTPO = Regional Transportation Organization, RTC = Regional Transportation Council, RC = Regional Council, ACT = Area Commissions on Transportation*

*Table 8*
*Transportation Related Planning Efforts*

| State /Territory | Service Unit | Planning Studies | | | | | Planning Need | | | Non-Service Planning Jurisdictions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCP | CHMP | RSA | Traffic Studies | Trans. Studies | Comprehensive / Large Scale | Issue Driven | Small Scale or None | MPO** | Regional Planning District | DOT Regions |
| Guam | Guam National Wildlife Refuge | | C | | | | | | | | | Department of Administration |
| HI | Hakalau Forest National Wildlife Refuge | I | | | | | | | X | | | Hawaii |
| | Hanalei National Wildlife Refuge | I | | | | | | X | | | | Kauai |
| | Hawaiian Islands NWR | C | | | | | | | | | | Hawaii |
| | Huleia National Wildlife Refuge | I | | | | | | | X | | | Kauai |
| | James Campbell National Wildlife Refuge | I | | | | | X | | | Oahu MPO | | Oahu |
| | Kakahaia National Wildlife Refuge | I | | | | | | X | | | | Maui |
| | Kealia Pond National Wildlife Refuge | I | | | | | | X | | | | Maui |
| | Kilauea Point National Wildlife Refuge | I | | | | I | X | | | | | Kauai |
| | Kona Forest NWR | P | | | | | | | | | | Hawaii |
| | Midway Atoll National Wildlife Refuge | C | | | | | | | | | | |
| | Oahu Forest National Wildlife Refuge | S | | | | | | | X | Oahu MPO | | Oahu |
| | Pearl Harbor National Wildlife Refuge | I | | | | | | | | Oahu MPO | | Oahu |
| ID | Bear Lake National Wildlife Refuge | S | | | | | | | X | | | ITD 5 |
| | Camas National Wildlife Refuge | S | | | | | | | X | | | ITD 6 |
| | Clearwater Forest Highway | | P | | | | | | | | | ITD 2 |
| | Crooked River NFH | | P | | | | | | | | | ITD 3 |
| | Deer Flat National Wildlife Refuge | S | | | I | | X | | | COMPASS | | ITD 3 and Eastern Oregon |
| | Dworshak National Fish Hatchery | | C | | | | | | | | | ITD 2 |
| | Eagle Fish Health Laboratory | | P | | | | | | | COMPASS | | IDT 2 |
| | East Fork Salmon NFH | | P | | | | | | | COMPASS | | IDT 2 |

*Table 8*
*Transportation Related Planning Efforts*

| State /Territory | Service Unit | Planning Studies | | | | | Planning Need | | | Non-Service Planning Jurisdictions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCP | CHMP | RSA | Traffic Studies | Trans. Studies | Comprehensive / Large Scale | Issue Driven | Small Scale or None | MPO** | Regional Planning District | DOT Regions |
| ID | Grays Lake National Wildlife Refuge | S | | | | | | | | | | ITD 5 and 6 |
| | Hagerman National Fish Hatchery | | C | C | I | | | | | | | ITD 4 |
| | Idaho Fish Health Center | | P | | | | | | | | | ITD 2 |
| | Kooskia NFH | | C | | | | | | | | | ITD 2 |
| | Kootenai National Wildlife Refuge | S | | | | | | X | | | | ITD 1 |
| | Magic Valley Fish Hatchery | | P | | | | | | | | | ITD 4 |
| | McCall Fish Hatchery | | P | | | | | | | | | ITD 3 |
| | Minidoka National Wildlife Refuge | S | | | | | | | X | | | ITD 4 and 5 |
| | Oxford Slough Waterfowl Production Area | S | P | | | | | | | | | ITD 5 |
| | Red River NFH | | p | | | | | | | | | ITD 3 |
| | Sawtooth Fish Hatchery | | P | | | | | | | | | ITD 6 |
| | South Fork National Fish Hatchery | P | | | | | | | | | | ITD 3 |
| NV | Sheldon National Wildlife Refuge | I | | | | I | | X | | | | District 3 |
| OR | Ankeny National Wildlife Refuge | I | | | | | | | X | | Mid-Willamette Valley ACT | Willamette Valley & Coast |
| | Bandon Marsh National Wildlife Refuge | S | | | | | | X | | | South West ACT | Southwestern Oregon |
| | Baskett Slough National Wildlife Refuge | S | | S | I | | | X | | | Mid-Willamette Valley ACT | Willamette Valley & Coast |
| | Big Canyon NFH | | | | | | | | | | Northwest Oregon ACT | District 13 |
| | Cape Meares National Wildlife Refuge | C | | | | | | | X | | Northwest Oregon ACT | Willamette Valley & Coast |
| | Cold Springs National Wildlife Refuge | S | | | | | | | X | | Northwest Oregon ACT | Eastern Oregon |
| | Eagle Creek National Fish Hatchery | | C | | | | | | | | Portland Metropolitan ACT | Portland Metro |
| | Hart Mountain National Antelope Refuge | C | | | | | | X | | | South Central ACT | Central Oregon |

*Table 8*
*Transportation Related Planning Efforts*

| State /Territory | Service Unit | Planning Studies | | | | | Planning Need | | | Non-Service Planning Jurisdictions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCP | CHMP | RSA | Traffic Studies | Trans. Studies | Comprehensive / Large Scale | Issue Driven | Small Scale or None | MPO** | Regional Planning District | DOT Regions |
| OR | Imnaha NFH | | P | | | | | | | | Northwest Oregon ACT | |
| | Irrigon Fish Hatchery | | P | | | | | | | | Northeast ACT | Eastern Oregon |
| | Little Sheep Creek | | | | | | | | | | Northwest Oregon ACT | |
| | Lookingglass Fish Hatchery | | P | | | | | | | | Northeast ACT | Eastern Oregon |
| | Malheur National Wildlife Refuge | S | | | | C | X | | | | Southeast ACT | Eastern Oregon |
| | McKay Creek National Wildlife Refuge | S | | | | | | | X | | Northwest Oregon ACT | Eastern Oregon |
| | Nestucca Bay National Wildlife Refuge | S | | | | | | X | | | Northwest Oregon ACT | Willamette Valley & Coast |
| | Oregon Islands National Wildlife Refuge | C | | | | | | | X | | Northwest Oregon ACT | Willamette Valley & Coast |
| | Siletz Bay National Wildlife Refuge | S | | | | | | X | | | Cascades West ACT | Willamette Valley & Coast |
| | Three Arch Rocks National Wildlife Refuge | P | | | | | | | | | Northwest Oregon ACT | Willamette Valley and Coast |
| | Tualatin River National Wildlife Refuge | S | | | | | | X | | Metro MPO | Portland Metropolitan ACT | Portland Metro |
| | Wallowa NFH | | P | | | | | | | | Northwest Oregon | Willamette Valley and Coast |
| | Warm Springs National Fish Hatchery | | P | | | | | | | | Lower John Day ACT | Central Oregon |
| | William L. Finley National Wildlife Refuge | S | | S | | I | | X | | | Cascades West ACT | Willamette Valley & Coast |
| Pacific Outlying Islands | Baker Island NWR | C | | | | | | | | | | |
| | Howland Island NWR | C | | | | | | | | | | |
| | Jarvis Island NWR | C | | | | | | | | | | |
| | Johnston Island NWR | P | | | | | | | | | | |
| | Kingman Reef NWR | C | | | | | | | | | | |
| | Pacific Reefs National Wildlife Refuge | P | | | | | | | | | | |
| | Palmyra Atoll NWR | C | | | | | | | | | | |
| | Rose Atoll National Wildlife Refuge | I | | | | | | | | | | |
| | Wake Atoll National Wildlife Refuge | P | | | | | | | | | | |

*Table 8*
*Transportation Related Planning Efforts*

| State /Territory | Service Unit | Planning Studies | | | | | Planning Need | | | Non-Service Planning Jurisdictions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCP | CHMP | RSA | Traffic Studies | Trans. Studies | Comprehensive / Large Scale | Issue Driven | Small Scale or None | MPO** | Regional Planning District | DOT Regions |
| WA | Abernathy Fish Technology Center | | P | | | | | | | | Southwest RTPO | Southwest |
| | Captain John Rapids NFH | | | | | | | | | | Lewis-Clark Valley MPO | South Central |
| | Carson National Fish Hatchery | | C | | | | | | | | Southwest RTPO | Southwest |
| | Columbia National Wildlife Refuge | S | | | | | | X | | | Quad-County RTPO | North Central |
| | Conboy Lake National Wildlife Refuge | S | | | | | | X | | | Southwest RTPO | Southwest |
| | Copalis National Wildlife Refuge | C | | | | | | | X | | Southwest RTPO | Olympic |
| | Cottonwood Creek NFH | | P | | | | | | | | Lewis-Clark Valley MPO | South Central |
| | Curl Lake NFH | | P | | | | | | | | Palouse RTPO | South Central |
| | Dungeness National Wildlife Refuge | S | | | | | | X | | | Peninsula RTPO | Olympic |
| | Entiat National Fish Hatchery | | P | | | | | | | | North Central RTPO | North Central |
| | Flattery Rocks National Wildlife Refuge | C | | | | | | | X | | Peninsula RTPO | Olympic |
| | Franz Lake National Wildlife Refuge | C | | | | | | | X | | SW WA RTC | Southwest |
| | Grays Harbor National Wildlife Refuge | S | | | | | | | | | Southwest RTPO | Olympic |
| | Hanford Reach National Monument | P | | | | | | | | | Quad-County RTPO Benton-Franklin-Walla Walla RTPO | South Central and North Central |
| | Julia Butler Hansen Refuge | I | | | | | | X | | | Southwest RTPO | Willamette Valley & Coast |
| | Leavenworth National Fish Hatchery | | P | | | | | | | | North Central RTPO | North Central |
| | Lewis and Clark National Wildlife Refuge | S | | | | | | | X | | Southwest RTPO | Willamette Valley & Coast |
| | Little Pend Oreille National Wildlife Refuge | C | | | | | | X | | | Northeast WA RTPO | Eastern |

*Table 8*
*Transportation Related Planning Efforts*

| State /Territory | Service Unit | Planning Studies | | | | | Planning Need | | | Non-Service Planning Jurisdictions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCP | CHMP | RSA | Traffic Studies | Trans. Studies | Comprehensive / Large Scale | Issue Driven | Small Scale or None | MPO** | Regional Planning District | DOT Regions |
| WA | Little White Salmon National Fish Hatchery | | C | | | | | | | | Southwest RTPO | Southwest |
| | Lower Columbia River Fish Health Center | | P | | | | | | | | SW WA RTPO | Southwest |
| | Lyons Ferry Fish Hatchery | | P | | | | | | | | Palouse RTPO | South Central |
| | Makah National Fish Hatchery | | P | | | | | | | | Peninsula RTPO | Olympic |
| | McNary National Wildlife Refuge | C | | | | | | X | | Benton-Franklin COG | Benton-Franklin-Walla Walla RTPO | South Central and Eastern Oregon |
| | Nisqually National Wildlife Refuge | C | | | | | | X | | Thurston MPO | Puget Sound RC | Olympic |
| | Olympia Fish Health Center | | P | | | | | | | Thurston MPO | Puget Sound RC | Olympic |
| | Pierce National Wildlife Refuge | C | | | | | | | | | SW WA RTC | Southwest |
| | Protection Island NWR | C | | | | | | | | | Northwest Oregon | Portland/Metro |
| | Quilcene National Fish Hatchery | | C | | | | | | | | Peninsula RTPO | Olympic |
| | Quillayute Needles National Wildlife Refuge | C | | | | | | | | | Peninsula RTPO | Olympic |
| | Quinault National Fish Hatchery | | P | | | | | | | | Southwest RTPO | Olympic |
| | Ridgefield National Wildlife Refuge | I | | | C | C | | | | SW WA RTC | SW WA RTC | Southwest |
| | San Juan Islands National Wildlife Refuge | I | | | | | | | | | San Juan | Northwest |
| | Spring Creek National Fish Hatchery | | C | | | | | | | | SW WA RTC | Southwest |
| | Steigerwald Lake National Wildlife Refuge | C | | | | | | | X | SW WA RTC | SW WA RTC | Southwest |
| | Toppenish National Wildlife Refuge | S | | | | | | X | | Yakima Valley COG | Yakima Valley | South Central |
| | Tucannon Fish Hatchery | | P | | | | | | | | Palouse RTPO | South Central |

*Table 8*
*Transportation Related Planning Efforts*

| State /Territory | Service Unit | Planning Studies | | | | | Planning Need | | | Non-Service Planning Jurisdictions | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CCP | CHMP | RSA | Traffic Studies | Trans. Studies | Comprehensive / Large Scale | Issue Driven | Small Scale or None | MPO** | Regional Planning District | DOT Regions |
| WA | Turnbull National Wildlife Refuge | C | | | | | | X | | | Spokane RTC | Eastern |
| | Umatilla National Wildlife Refuge | C | | | | | | | X | | Benton-Franklin-Walla Walla RTPO | South Central & Eastern Oregon |
| | Willapa National Wildlife Refuge | I | | | | | X | | | | Southwest RTPO | Southwest |
| | Willard National Fish Hatchery | | C | | | | | | | | SW WA RTC | Southwest |
| | Winthrop National Fish Hatchery | | P | | | | | | | | North Central RTPO | North Central |

*"C" = Complete; "I" = In-progress; "S" = Scheduled; "P" = Planned*

*** MPO = Metropolitan Planning Office, RTPO = Regional Transportation Organization, RTC = Regional Transportation Council, RC = Regional Council, ACT = Area Commissions on Transportation*

### 2.4.2 Identifying Planning Areas

Units that have not yet adopted a CCP or CHMP should reach out to non-Service transportation planning agencies when developing a plan. Early identification of partnership opportunities improves the likelihood of successful cooperation. As such, Table 8 identifies non-Service planning organizations at the State and regional levels that should be considered when developing the transportation component of a CCP or CHMP. Contact information for non-Service planning organizations identified in Table 8 is available in Appendix H.

As stated in the planning goal, the Service strives for scientific and objective processes to guide transportation funding decisions. This LRTP is a step towards meeting this goal. Each LRTP goal area establishes a framework in which data can be used to objectively locate opportunities and need for transportation projects.

## 2.5 Partnerships

The partnership goal of the LRTP is to **"develop partnerships to leverage resources and develop integrated transportation solutions."** The following objectives and strategies serve to further the sentiment expressed by the goal.

#### Objective 1

To the extent authorized by law, pursue opportunities for both funding and resources. Strategies for this objective are:

- Participate in transportation partnering meetings in each state.
- Identify and pursue projects of mutual interest to partners.

#### Objective 2

Cooperate with partners to address shared transportation issues that impact Service goals. Strategies for this objective are:

- Ensure that all Service transportation needs and contributing resources are accounted for in local and State partner transportation plans.
- Inform appropriate Service staff and potential transportation partners about Service transportation plans.
- Work with partners to reduce wildlife-vehicle collisions.
- Improve fish passage at roads adjacent to Service lands.

### 2.5.1 Partnerships Data

To help identify potential partnerships, it is useful to know if a unit is intersected by non-Service transportation assets and/or the boundaries of a non-Service transportation planning organization. Partnership data therefore includes an inventory of non-Service agencies that routinely participate in transportation planning and intersect unit boundaries, as shown in Table 8. Non-Service transportation assets that intersect service boundaries are also included as partnership data, as summarized in Appendix C, Table 8. Non-Service routes that are Scenic Byways and intersect or are co-located with Service routes are identified for their potential for partnering, as identified in
Table 8.

### 2.5.2 Identifying Partnership Opportunities

There may be opportunities for partnership where Service mission and needs overlap with those of a non-Service organization, as they pertain to a transportation asset or project of common interest. In these situations, potential funding and resources could be leveraged with partners to accomplish mutually beneficial work. Not only does partnering offer practical benefits, but it also advances the integrated regional and planning goals of President Obama's October 2009 Executive Order 13514, Federal Leadership in Environmental Energy, and Economic Performance. Executive Order 13514 promotes, "participating in regional transportation planning and recognizing existing community transportation infrastructure."

Identifying opportunities for partnership may be complex and highly unique between units. As such, unit managers are encouraged to gain an understanding of surrounding communities and local resources and develop relationships with these entities when seeking partnerships. In addition, there are several high-level opportunities for transportation related partnerships, including State DOTs, MPOs, and regional planning organizations. Opportunities for partnership with these organizations may exist if a unit is intersected by a DOT asset and/or a transportation planning organization's boundary. Table 8 and Appendix C, Table 8 identify many of these locations.

Additional partnership opportunities may exist where non-Service assets are of special significance, such as Scenic Byways. These routes are typically high value assets and may be eligible for supplemental funding sources. Table 9 identifies Service routes that intersect or share a route designation with designated Scenic Byways.

Besides a unit having a geographic connection with non-Service transportation assets and/or planning boundaries, other factors may provide leverage for establishing partnerships. Conditions discussed in sections pertaining to other goal areas may help identify areas where joint projects could serve the goals of multiple agencies, and provide a stage or partnership. These conditions and the sections in which they are discussed are:

- Locations where there are deficiencies (such as poor road condition or high occurrence of accidents) in both Service and non-Service transportation systems within a common area. Section 2.2, Conditions and Safety, identifies areas of deficiency of Service and non-Service assets (where possible).
- Regions with documented air quality issues and/or existing transit service. These locations are identified in Section 2.6, Sustainability.
- Units that have not completed CCPs or CHMPs. These locations are identified in this section.
- Visitor enhancement hot-spots as discussed in Section 2.3, Welcome and Orient Visitors.

As partnerships require not only a shared geography, but interests as well, successful partnership hinges on finding topics of common ground. There are several paths to finding this common ground. First, units can learn about an organization's future transportation projects by reviewing documented plans such as a transportation improvement program (TIP), statewide transportation improvement program (STIP), or LRTP. Second, the transportation interests of a particular unit should be made available to relevant planning organizations through CCP or CHMP. Third, in-person collaboration is necessary. If a project is programmed in a TIP or STIP, the project may be too far along to develop a partnership that fully suits both parties. Early collaboration by both Service and non-Service agencies in their respective planning activities ensures that projects of mutual interest develop with partnership in-mind from inception. It is recommended that units involve non-Service transportation planning agencies in relevant planning activities, and proactively seek opportunities for collaboration in the planning activities of relevant non-Service agencies.

### 2.5.3 Recommendation for Future Analysis

For future analysis, identify partnership opportunities with non-Service transportation agencies by identifying route jurisdiction for the roads listed in Table 9 and Appendix C, Table 8. Additional data acquisition is needed in order to have a complete inventory of road jurisdictions.

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*Table 9*
*Service Routes and Scenic Byways*

| Service Unit | Service Route Name | Relationship to Byway | Byway Name | Byway Designation |
|---|---|---|---|---|
| Hart Mountain NWR | Blue Sky Rd | Intersects | Lakeview to Steens Mountain Back Country Byway | BLM Back Country Byway |
| | Flook Lake Rd | Intersects | | |
| | Frenchglenn Rd | Shared Route | | |
| | Main Entrance Rd | Shared Route | | |
| | Petroglyph Lake Rd | Intersects | | |
| | Poker Jim Rd | Intersects | | |
| | Warner Pond Rd | Intersects | | |
| Little White Salmon NFH | Hatchery Entrance Rd | Intersects | Lewis and Clark Trail Highway | Washington State Scenic Byway |
| | Hatchery Entrance Rd | Intersects | Columbia River Gorge Scenic Byway - Washington | |
| Malheur NWR | Center Patrol Rd North | Intersects | Diamond Loop Back Country Byway | BLM Back Country Byway |
| | | Intersects | Lakeview to Steens Mountain Back Country Byway | |
| | Hunter Access Narrows | Intersects | Diamond Loop Back Country Byway | BLM Back Country Byway |
| | Krumbo Reservoir Rd | Intersects | Lakeview to Steens Mountain Back Country Byway | BLM Back Country Byway |
| | P-Lane Rd | Intersects | Diamond Loop Back Country Byway | BLM Back Country Byway |
| | | Intersects | Steens Loop Tour Route | Oregon State Scenic Backway |
| | | Intersects | Steens Mountain Back Country Byway | BLM Back Country Byway |
| | Resort Lane | Intersects | Diamond Loop Back Country Byway | BLM Back Country Byway |
| | | Intersects | Steens Loop Tour Route | Oregon State Scenic Backway |
| | | Intersects | Steens Mountain Back Country Byway | BLM Back Country Byway |
| | Tipton Rd | Intersects | Diamond Loop Back Country Byway | BLM Back Country Byway |
| | | Intersects | Lakeview to Steens Mountain Back Country Byway | |
| | Johnson Pond Rd | Intersects | Lewis and Clark Trail Highway | Washington State Scenic Byway |
| | Overlook Loop | Intersects | Lewis and Clark Trail Highway | Washington State Scenic Byway |
| Spring Creek NFH | Entrance Road | Intersects | Lewis and Clark Trail Highway | Washington State Scenic Byway |

*Source: FHWA Byways (2010), FHWA, Road Inventory Program, Cycle 4 (2007)*

*BLM = Bureau of Land Management; NWR = National Wildlife Refuge; NFH = National Fish Hatchery*

## 2.6 Sustainability

The LRTP sustainability goal is to **"adopt and promote sustainable transportation practices."** The following objectives and strategies serve to further the sentiment expressed by the goal.

### Objective 1

Address climate change and other environmental factors at all levels of transportation planning, design, project delivery, and maintenance. Strategies for this objective are:

- Identify transportation resources that are at-risk of climate change impacts by using a comprehensive risk assessment.
- Develop adaptive management strategies, such as relocating strengthening and downgrading assets, to prepare for both short-term (25 to 40 years) and long-term (40 to 100 years) impacts on the transportation infrastructure.
- Encourage transportation practices and design that responds to climate change impacts.

### Objective 2

To reduce the Service's carbon footprint, improve access to and within Service lands by transit and non-motorized transportation and information systems. Strategies for this objective are:

- Identify the need for alternative transportation projects through the Service planning process.
- Encourage refuges and hatcheries to consider applying for partner funding for alternative transportation projects involving Service lands.
- Increase availability of information in public outreach and education programs to encourage transit, car-pooling, bicycling, and walking to and within Service lands.

### Objective 3

Reduce fossil fuel energy consumption by Refuge and Hatchery staff and visiting public. The strategy for this objective is:

- Increase number of alternatively fueled vehicles for refuge staff, on-refuge tours, and transit to and within Service lands.

### 2.6.1 Data

Sustainable transportation practices and climate change are addressed in two ways. First, the potential risks to transportation assets due to changes in climate are examined. Second, the Service supports programs and projects that would lower greenhouse gas emissions through increased use of ATS, such as transit, cycling, or walking to, within, and through Service lands.

#### Risks to Transportation Assets

Identifying specific units and related transportation assets that are at risk due to climate change requires comprehensive risk analysis. This type of risk analysis would include factors such as sea level rise (rising water levels, increased coastal and estuarine flooding), changing precipitation levels (more precipitation, higher water tables, greater flooding, higher soil moisture), temperature changes (rising maximum temperatures, lower minimum temperatures), and storm surges (larger and more frequent storm surges). Data on all of these factors are not widely available, and requires additional research, data collection, and analysis. Some factors, however, are examined in this LRTP that could be used as part of a larger scale risk analysis. Factors such as coastal vulnerability to sea level change can be analyzed for their potential to impact Service transportation assets.

Units located near coastal areas may be at risk of environmental change due to rises in sea level. Such areas include 35 units that are located along the coastlines of Hawaii, Pacific outlying islands including Guam, and the Oregon and Washington coasts. Sea level risks are supported by the United States Geological Survey (USGS) *Coastal Change Potential Index Assessment* (2001) report, which factors tides, wave height, relative sea level rise, coastal slope, geomorphology, shoreline erosion, and accretion rate into a ranking of relative potential for coastal change due to future sea level rise. Figure 15 and Figure 16 show the results of the assessment along the Pacific Coast area of Washington and Oregon.

## SLAMM-View

The Service's Sea Level Affecting Marshes Model viewer (SLAMM-View) is a web browser-based application that displays side-by-side land cover maps based on user controlled sea level rise scenarios. The tool is helpful in visualizing the range of possible sea level changes in coastal refuges and hatcheries. SLAMM-View is accessible at www.slammview.org.

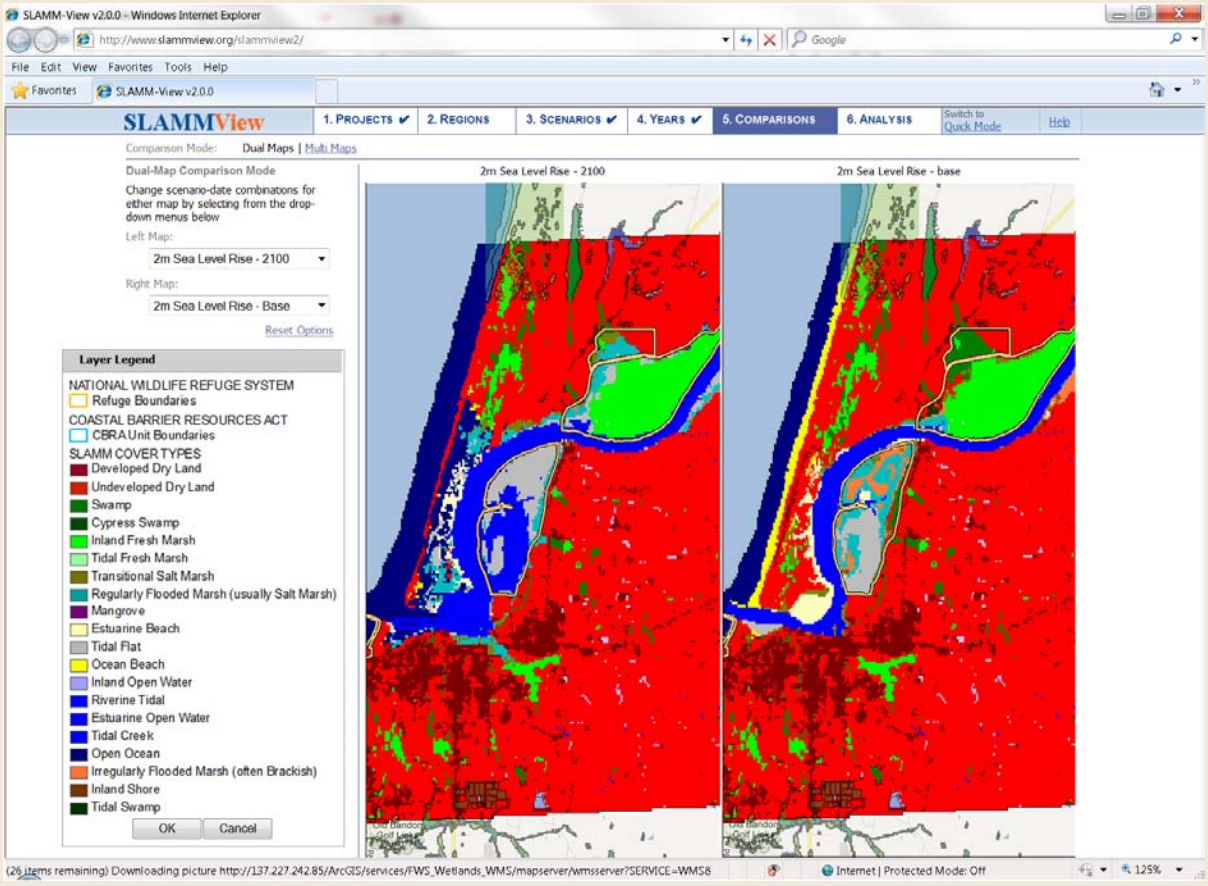
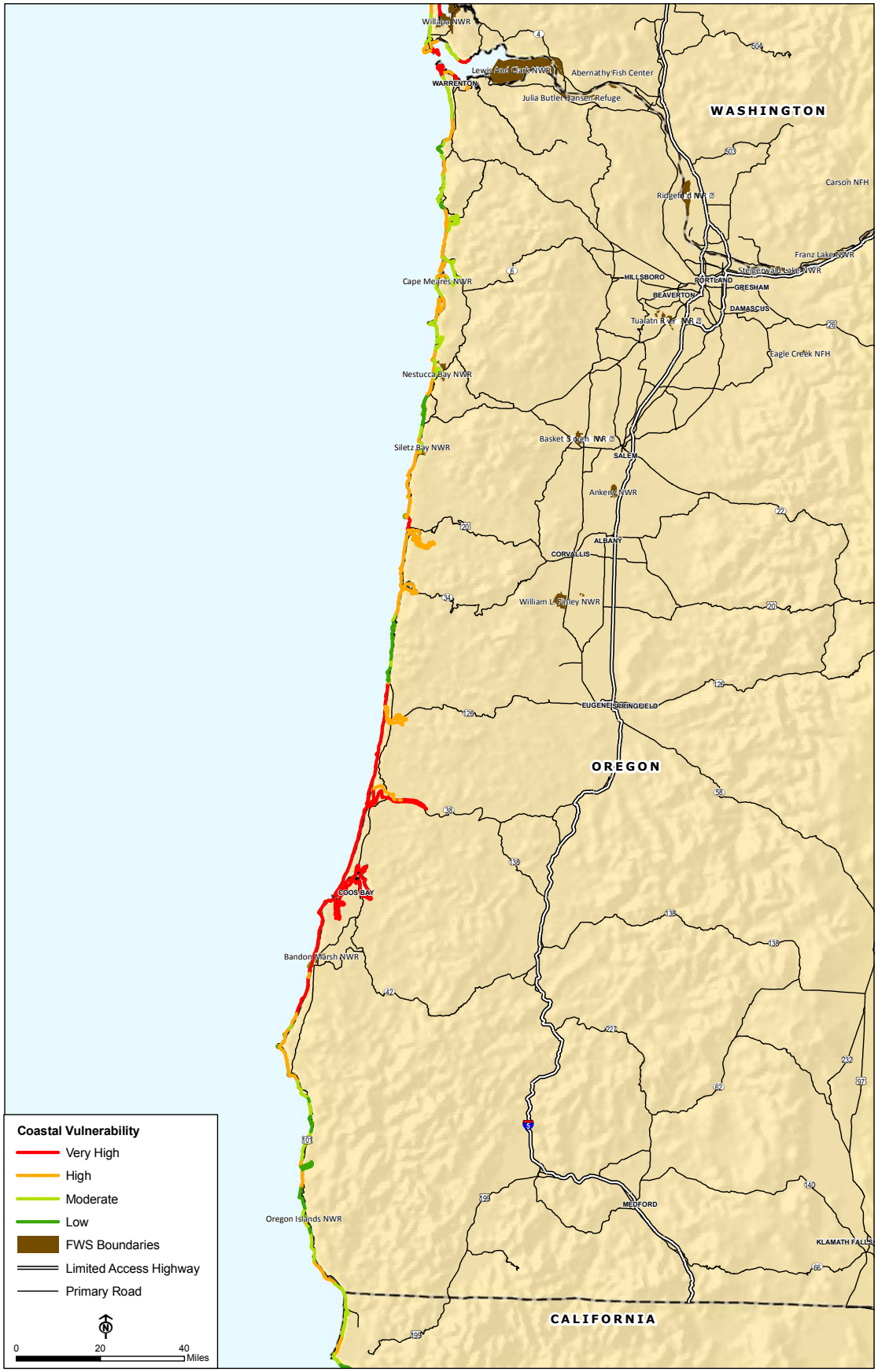
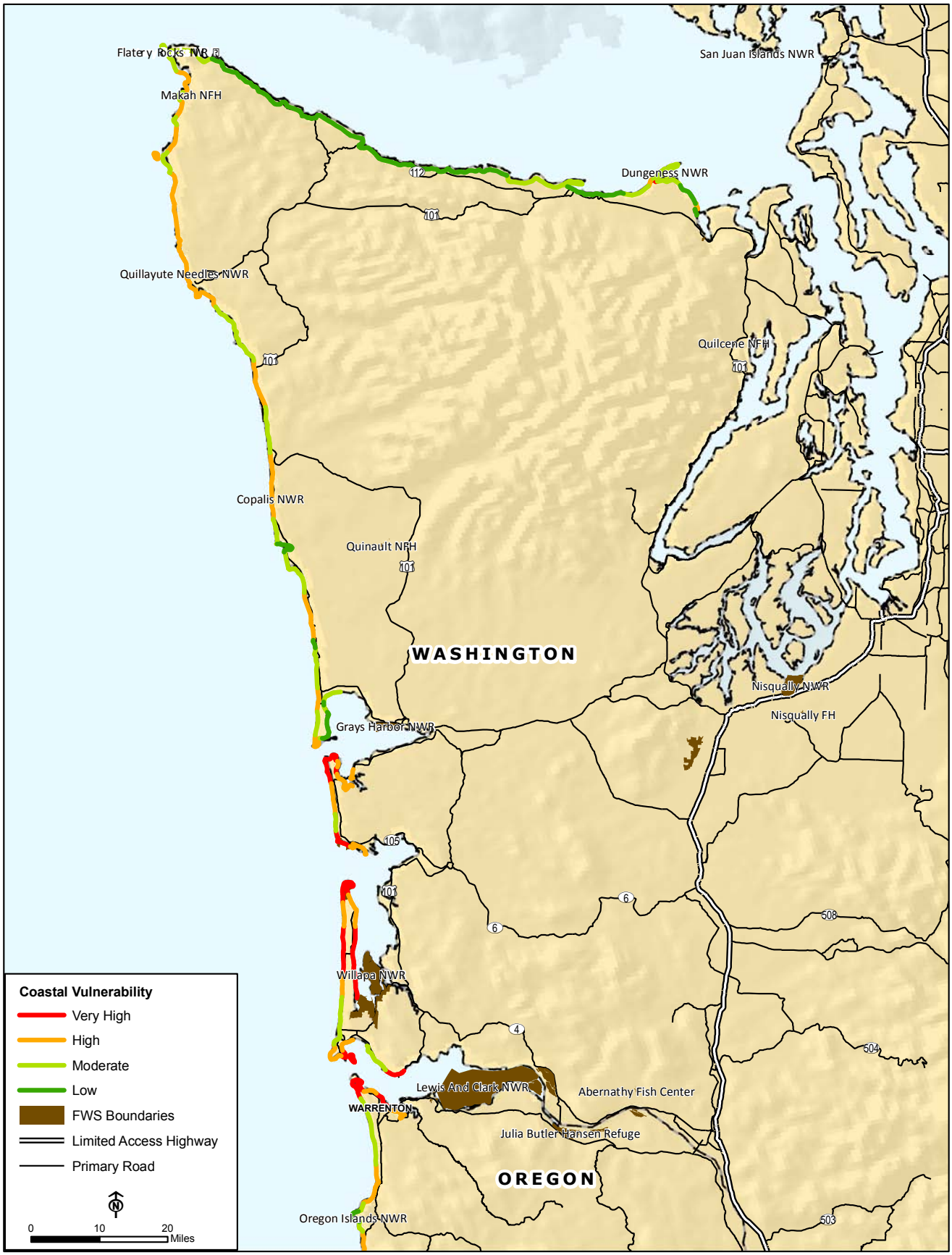


*Figure 15*
*Coastal Vulnerability to Sea Level Change - Oregon*




*Source: USGS Coastal Change Potential Index Assessment, 2001*

*Figure 16*
*Coastal Vulnerability to Sea Level Change - Washington*




*Source: USGS Coastal Change Potential Index Assessment, 2001*

### Fossil Fuel and Alternative Transportation Systems

The Service seeks opportunities to reduce greenhouse gas emissions from fossil fuels through programs that focus on transportation to and through Service lands. This desire to reduce the National Wildlife Refuge and National Fish Hatcheries greenhouse gas emissions responds to the Service-wide commitment to responsible and sustainable practices as well as President Obama's October 5, 2009 Executive Order, Federal Leadership in Environmental, Energy, and Economic Performance, which calls for a reduction of greenhouse gas emissions from direct and indirect Federal agency activities. Furthermore, Goal 4 of the Service Strategic Plan for Responding to Accelerating Climate Change in the 21st Century calls for the Service to achieve carbon neutrality by 2020 by reducing the carbon footprint of the Service's facilities, vehicles, and work force. Programs that reduce the number of vehicle miles traveled have the potential to substantially reduce green house gas emissions and the Service's carbon footprint. The Service believes that ATS are an important tool in achieving this end. To identify candidate locations for ATS, the following is considered:

- Adopted unit and national level planning documents that identify Service lands as having potential or need for ATS.
- Areas where non-Service entities may have an interest in creating or expanding ATS programs into or through Service lands. This consideration includes areas of existing mass-transit and/or poor air quality.
- ATS Questionnaire conducted in Region 1.

As expressed by the sustainability goal, the Service wishes to reduce greenhouse gas emissions through transportation systems that reduce the use of motor vehicles. In some cases, unit and national level planning have identified locations that are in need of ATS. Other opportunities may exist where non-Service entities have a vested interest in creating or expanding alternative transportation programs. These opportunities for partnership may exist in places where units are in or near transit districts, especially in locations where air quality fails to meet national standards, where there is added incentive for local municipalities to reduce emissions.

Objective 2 calls for improved access to and within Service lands by alternative transportation as a way to reduce the Service's carbon footprint. ATS include any travel by means other than personal automobile, such as shuttles and van transit connecting units with other destinations, regional transit connections, bicycle and pedestrian infrastructure, and water-based transportation. ATS can also reduce impacts to wildlife and other natural resources, enhance visitor access and assist with visitor management, improve visitor health and safety, and defer or reduce the need for additional transportation investments.

## Reducing Green House Emissions

The Service is committed to reducing green house emissions. One example of the Service's commitment to meeting this end is the Climate Change Mitigation Project currently underway. The project entails developing a beta version of a greenhouse gas management tool that would be capable of estimating emissions for energy consumption within, and visitor transportation to and within, National Wildlife Refuges. The beta version tool will be populated by data provided by Service headquarters and used by Refuge and regional staff to plan greenhouse gas mitigation and climate change education and outreach strategies. The tool will be completed in cooperation with the Service, USGS, and FLH.

The Region 1 ATS Questionnaire, as included in Appendix I, provides initial data on the needs and opportunities of units with regard to transit and non-motorized access. Several refuges and hatcheries in Region 1 are effectively using transit for access to units and for special events. They are also using non-motorized infrastructure2 to connect with existing non-motorized trail networks, gateway towns, and local and regional amenities. The ATS Questionnaire also revealed significant future opportunities for transit and trail connections: 30 percent of respondents have a bus stop or train station within 3 miles of their unit and 50 percent of respondents have a regional non-motorized trail for bicycle and pedestrian use within 3 miles of their unit. Additionally, 30 percent of respondents have a trail that directly connects to their unit.

2 *Non-motorized infrastructure includes sidewalks, trails, lanes, signage, crosswalks, and bicycle racks to support travel by bicycle and pedestrian modes. Non-motorized infrastructure does not include recreational hiking trails; this infrastructure must lead to a connection with schools, residences, businesses, recreation areas, transit stations, and other community activity centers.*

Based on the results of the ATS Questionnaire and the Regional Alternative Transportation Evaluation (also defined in Appendix I), the following actions at the unit level would be most effective for achieving Objective 2 and increasing ATS within Region 1:

- Increase non-motorized connections to units through the use of non-motorized paths, bicycle lanes, bicycle racks, and signage for non-motorized users to access existing non-motorized trail networks, gateway communities, and local and regional amenities.
- Use public or private transit for festivals and special events.
- Enhance connections to local bus routes for urban and suburban units within transit service areas.
- Partner with local governments, transportation planners, transit providers, Friends groups, and others to craft appropriate strategies for transportation and visitor management.

This LRTP also recognizes units that are identified in planning documents as being suitable locations for ATS. The *Federal Lands Transportation System Study* (2001) studied 207 candidate Service units for transit need. Based on the study, 13 sites were determined to show sufficient indications or need. One of these 13 locations is located in Region 1, Kilauea Point National Wildlife Refuge.

Although no currently adopted CCPs identify ATS initiatives, CCP planning efforts underway increasingly consider ATS. For example, drafts of the Ridgefield National Wildlife Refuge and Kauai National Wildlife Refuge Complex CCPs cite the need to build facilities that tie into existing non-Service transit operations. Planning efforts are discussed further in Section 2.4, Planning and Section 2.6, Partnerships.

## Example ATS in Region 1: Tualatin River National Wildlife Refuge

TriMet, the public transportation provider for the Portland metropolitan region, offers bus service from downtown Portland to the Refuge entrance, where visitors can walk along a short paved path to the Wildlife Center. TriMet Route 12 runs from downtown Portland west along Route 99W to Sherwood, with a stop at the Refuge along the way. The route runs 7 days a week, departing approximately every 15 to 20 minutes. Travel time from SW 5th and Morrison Streets in downtown Portland to the Refuge entrance is just under 1 hour.

Greater opportunities to work with partners on programs that reduce greenhouse gas emissions are likely in larger metropolitan areas that have existing mass-transit programs and/or where air quality is an issue. Therefore, units located within air quality non-attainment areas or existing transit districts are considered places where there may be partnership opportunities for alternative transportation programs. Table 10 identifies units within U.S. Environmental Protection Agency designated non-attainment areas. Units located within transit districts are summarized in Table 11.

*Table 10*
*Air Quality Non-Attainment Areas*

| State | City | Service Unit | Non-Attainment | Classification |
|---|---|---|---|---|
| Oregon | Portland | Tualatin River NWR | Carbon monoxide | Moderate |
| Washington | Seattle-Tacoma | Nisqually NWR | Carbon monoxide | Moderate |
| | Vancouver | Ridgefield NWR | Carbon monoxide | Moderate |
| | | Steigerwald Lake NWR | Carbon monoxide | Moderate |

*Source: Research and Innovative Technology Administration/Bureau of Transportation Statistics, 2008*

*Table 11*
*Service Units Intersected by Transit Districts*

| State | Transit District (city) | Service Unit |
|---|---|---|
| Hawaii | TheBus (Honolulu) | James Campbell NWR |
| | | Oahu Forest NWR |
| | | Pearl Harbor NWR |
| | Maui Public Transit System District | Kealia Pond NWR |
| | Kauai Bus District | Hanalei NWR |
| | | Kilauea Point NWR |
| Idaho | Valley Ride (Nampa) | Deer Flat NWR |
| Oregon | Tri-County Metropolitan Transportation District of Oregon (Portland) | Tualatin NWR |
| Washington | Jefferson Transit Authority (Port Townsend) | Quilcene NFH |
| | | Quillayute Needles NWR |
| | Valley Transit & Grapeline (Walla Walla) | McNary NWR |
| | Ben Franklin Transit (Richland) | |
| | Grant Transit District | Hanford Reach National Monument |
| | | Columbia NWR |
| | C-Tran | Ridgefield NWR |
| | | Steigerwald Lake NWR (WA) |
| | Pacific Transit | Willapa NWR |
| | Grays Harbor Transportation Authority | Copalis NWR |
| | | Quinault NFH |
| | | Grays Harbor NWR |
| | Clallam Transit District | Quillayute Needles NWR |
| | | Flattery Rocks NWR |
| | | Dungeness NWR |
| | Intercity Transit (Thurston) | Nisqually NWR |
| | Pierce Transit | Nisqually NWR |
| | Link Transit | Leavenworth NFH |
| | Columbia County Public Transportation | Tucannon FH |
| | | Lyons Ferry FH |
| | Asotin | Lyons Ferry FH |
| | Spokane Transit Authority | Tumbull NWR |
| Pacific Outlying Area | Guam Regional Transit Authority District | Guam NWR |

*Sources: the Service, Federal Railroad Administration, Washington DOT, Google*

### 2.6.2 Identifying Sustainability Improvement Areas

Baseline condition data helps identify areas that should receive special consideration for topics of sustainability. As discussed previously, sustainability considerations occur on two fronts: (1) consideration of assets that could be at risk due to climate change and (2) consideration of transportation projects that could potentially reduce greenhouse gas emissions.

Service lands that may have assets at risk due to climate change if they:

- Are located in a coastal area,
- Are likely to experience more frequent flooding events,
- Will experience greater temperature fluctuations, or
- Are likely to experience more frequent storm surges.

Service lands that are best suited to reduce greenhouse gas emissions through ATS are those that fall in one or more of the following categories:

- A unit is identified in a national-level, state, or regional planning document as having the potential or need for ATS
- A unit's CCP documents a need for alternative transportation system
- A unit is located in or adjacent to an existing mass-transit district's service area
- A unit is located in a U.S. Environmental Protection Agency air quality non-attainment area

### 2.6.3 Recommendations for Future Analysis

Several actions are necessary to better evaluate the sustainability goal, including:

- Perform a comprehensive risk analysis of climate change. Factors that should be included in a comprehensive risk analysis are:
    - Precipitation levels, including associated impacts on water tables, flooding, and soil moisture
    - Temperature changes
    - Storm surges
    - Estuarine flooding
- Coastal vulnerability due to climate change could be better quantified if data were available for Hawaii and the outlying Pacific area.
- Identify places with ATS needs or opportunities by addressing these issues at the CCP and CHMP level.
- Provide boilerplate transportation language for CCPs and CHMPs to improve the quality of transportation material in these plans.

Laura Beauregard/USFWS

# Chapter 3: Funding and Project Selection

Funding for the Service's transportation program (including refuge and fisheries programs) does not meet current needs. For purposes of establishing an overall need for the public use road system eligible to receive funding through the RRP, estimates show that approximately $130 million per year is needed to ensure that most of the public roads and bridges are in good to excellent condition. This estimate assumes an aggressive schedule for road reconstruction and bridge rehabilitation over an extended period of time. Further documenting needs, an August 2010 report, *Life Cycle Investment Needs for Assets in the Refuge System* found that the deferred maintenance cost for public roads alone is over $1 billion (41 percent of all Service assets), with a replacement value of $6.7 billion (30 percent of all Service assets). Today, approximately 45 percent of the public roads and 40 percent of the public bridges are in fair to poor/failing condition throughout the entire system. Further growth of the program's funding is needed to improve the overall condition of transportation assets.

Based on the nationwide need of $130 million per year, $12 to $15 million per year is needed in Region 1 just to maintain the road system and bridges in good to excellent condition. SAFETEA-LU, the current transportation legislation and authorization for the public transportation system, expired in September 2009. A series of extensions have been in place since. In 2011, dialogue on new transportation legislation will continue. While it is not known what if any increase in funding will be provided to the program, further documenting the needs is essential to provide the best information to decision-makers.

A well-defined funding and investment strategy and a defensible project selection process are critical to maintain Service transportation assets. The Region 1 LRTP is an important step in documenting that information. This chapter identifies reasonably expected funding through the planning horizon, illustrates the funding gap between projected funding levels and anticipated need for Service transportation improvements, identifies existing funding opportunities through partnership with State and local entities, and defines the current project selection process for transportation projects in Region 1.

## 3.1 Transportation Funding in Region 1

For fiscal year 2011, Region 1 received approximately $2.4 million through the RRP, $5.5 million in deferred maintenance funds, while the Fisheries Program received $1.97 million in deferred maintenance funding. Visitor facility enhancement funds were allocated through resource appropriations averaging $83,200 annually over the last 3 years, and construction appropriations averaging $141,400 per year over the same period. The latter of these is highly variable. The two primary sources used for transportation projects are the RRP and deferred maintenance funds for fisheries.

It is important to note that only a small portion of the total budgets for both deferred maintenance and visitor facility enhancement funds are used for transportation projects. This section provides an overview of the two primary sources currently used to fund transportation improvements on National Wildlife Refuges and National Fish Hatcheries in Region 1.

### 3.1.1 Refuge Roads Program

The Service's RRP began in 1998 with the passage of the Transportation Equity Act for the 21st Century, which authorized $20 million annually. Initially, work focused on completing initial inventories and addressing the most pressing needs for transportation improvements. Transit and trail improvements were also evaluated across the Refuge System to prepare for future needs. Now included in SAFETEA-LU, the program is authorized at $29 million per year. This represented a 45 percent increase over the previous Transportation Equity Act for the 21st Century funding levels. Nationwide, the program provides a funding source to improve public-use transportation assets at wildlife refuges that are located in urban, suburban, and rural settings within the Service's eight regions.

A majority of past funds provided to the program have gone to improve the eligible roads and bridges in the system. With a growing emphasis and need for other transportation improvements such as bicycle and pedestrian access, and alternative vehicle use where appropriate, the program needs to view all transportation modes as viable uses of program funds. With pending transportation reauthorization and looking to the future, the Service intends to continue to provide a multitude of quality transportation

options for its visitors, and to its Refuge staff and volunteers.

The current RRP allocation to Region 1 is $2.4 million per year. Up to 5 percent of the funds can be used each year for public use trails within refuges. The National Transportation Coordinator located in the headquarters/Washington office manages the allocation process to the Service regions through coordination with FHWA and the Regional Refuge chiefs. With legislative changes likely in the new transportation legislation, this allocation process may change.

Funds are allocated to the RRP from the FHWA according to Title 23 United States Code (U.S.C.), Chapter 2 Section 202(e). In keeping with its decentralized decision making structure, the Service has chosen to allocate the majority of its funds to its eight regional offices using an internally developed formula based on the National Park Service's Park Roads and Parkways Program fund allocation formula. A small percentage, which varies with the RRP actual allocation from the Highway Trust fund, is used to fund the ongoing Inventory and Assessment Program and national level research, technical assistance training, partnership development, and coordination of legislative affairs with the Service's Congressional and Legislative Affairs Division. The Service's allocation formula has three components:

1. Size of a region's combined adjusted road/bridge/parking inventory
2. Amount of a region's road/bridge/parking assets assessed as being in fair/good/excellent conditions
3. Public use of a region's refuges, wetland management districts, and hatcheries

Fifty-five percent of a region's allocation is based on the miles of roads and their type (paved, improved gravel, improved native and native surfaces); square footage of bridges; square footage of parking lots and their type (paved, improved gravel, improved native, native surfaces and mowed). This data is gathered by the ongoing Public Use Roads inventory conducted by FLH of FHWA. Thirty percent of the allocation is based on asset condition determined to be in fair/good or excellent condition. Fifteen percent of the formula is based on the amount of public visitation per region as reported in the Refuge Annual Performance Plan each year.

Through the RRP, the Service is working to improve public access to refuges and provide a better overall visitor experience. Eligible project types under this program include improvements to existing public use roads, bridges, parking lots, and trails, including those needed to correct identified safety problems at high accident locations and to protect and improve natural and cultural resources within National Wildlife Refuges. Additional information on project eligibility can be found in *Guidance on the Federal Lands Highway Refuge Roads Program* (September 2005) available in Appendix I.

The following work is not presently eligible to be funded under the RRP:

- Constructing new roads, parking areas or pullouts, or widening off existing road bench
- Realigning or relocating roads
- Constructing new pedestrian or bicycle paths
- Recurring, routine maintenance (e.g., grading roads and mowing roadsides)

Based on current and forecasted funding allocation for the RRP, the Service will continue to experience a funding gap that significantly falls short of program needs. Table 12 illustrates current and anticipated funding through 2030, with a $376 million funding gap through the horizon of this plan.

*Table 12*
*Anticipated Funding Gap through Planning Horizon Year (2030)*

| Existing funding for Region 1 (annually, in millions) | Anticipated need through 2030 (in millions) | Anticipated funding available through 2030 (in millions) | Funding gap through 2030 (in millions) |
|---|---|---|---|
| $2.4 | $446.7 | $70.3 | $376.4 |

*Note: Anticipated need is based on a current need of $15 million, with 4% annual inflation. Anticipated funding is based on 20% program increase every 6 years, starting in 2012.*

The total need through year 2030 represents raising the condition of all roads to good or excellent condition, and maintaining that condition over time. It also includes funds to address trails and other alternative transportation needs. While this type of funding level to meet this amount of need is not achievable, the Service is beginning to examine pavement management system approaches to improve efficiencies and stretch the value of available funds across the transportation network.

In Region 1, the RRP already has an informal project selection process in place. This LRTP will improve project selection by integrating defensibility and justification for why certain projects are selected for advancement and implementation. Beyond project selection, this LRTP will also make better use of refuge road funding by promoting partnerships with other agencies. Partnering will support reaching the Service's goal of facilitating cooperation and identifying opportunities to work together to conserve wildlife habitats.

### 3.1.2 Fish Hatchery Deferred Maintenance

The Region 1 Fisheries Program is largely funded by resource management and reimbursable funds to co-manage inter-jurisdictional fisheries, promote recreational fisheries, mitigate Federal agencies' actions related to hydropower projects, and meet treaty trust responsibilities. The Fisheries Program includes a network of 48 field offices including fish hatcheries to meet this challenge. Rivers in the Pacific Northwest support some of the largest populations of iconic fish such as steelhead and salmon that are declining in numbers. To counter the decline, the regional Fisheries Program works to improve aquatic habitat and to supplement existing wild populations with hatchery fish production to satisfy a variety of fishery needs.

Transportation plays a key role in mission critical activities for the Fisheries Program. Activities include transportation for fish release, fish transfer to acclimation ponds, transfer for specific research purposes, public access for recreational fishing, and providing right of way to inholders under a memorandum of understanding. Transportation activities assist in effort to promote sustainable populations in waterways in the Pacific Northwest.

Throughout the history of the program, deferred maintenance and resource management funds have been used to fund transportation activities and projects in the region. Transportation specific funding as part of the current Surface Transportation Act is not yet available for the Fisheries Program; however, this may change. Currently, the Service has proposed that the RRP be broadened to become the Fish and Wildlife Service Transportation Program, which will include fish production facilities in the region. If approved under new transportation legislation, funds will become available to improve public use transportation assets at fishery facilities including National Fish Hatcheries.

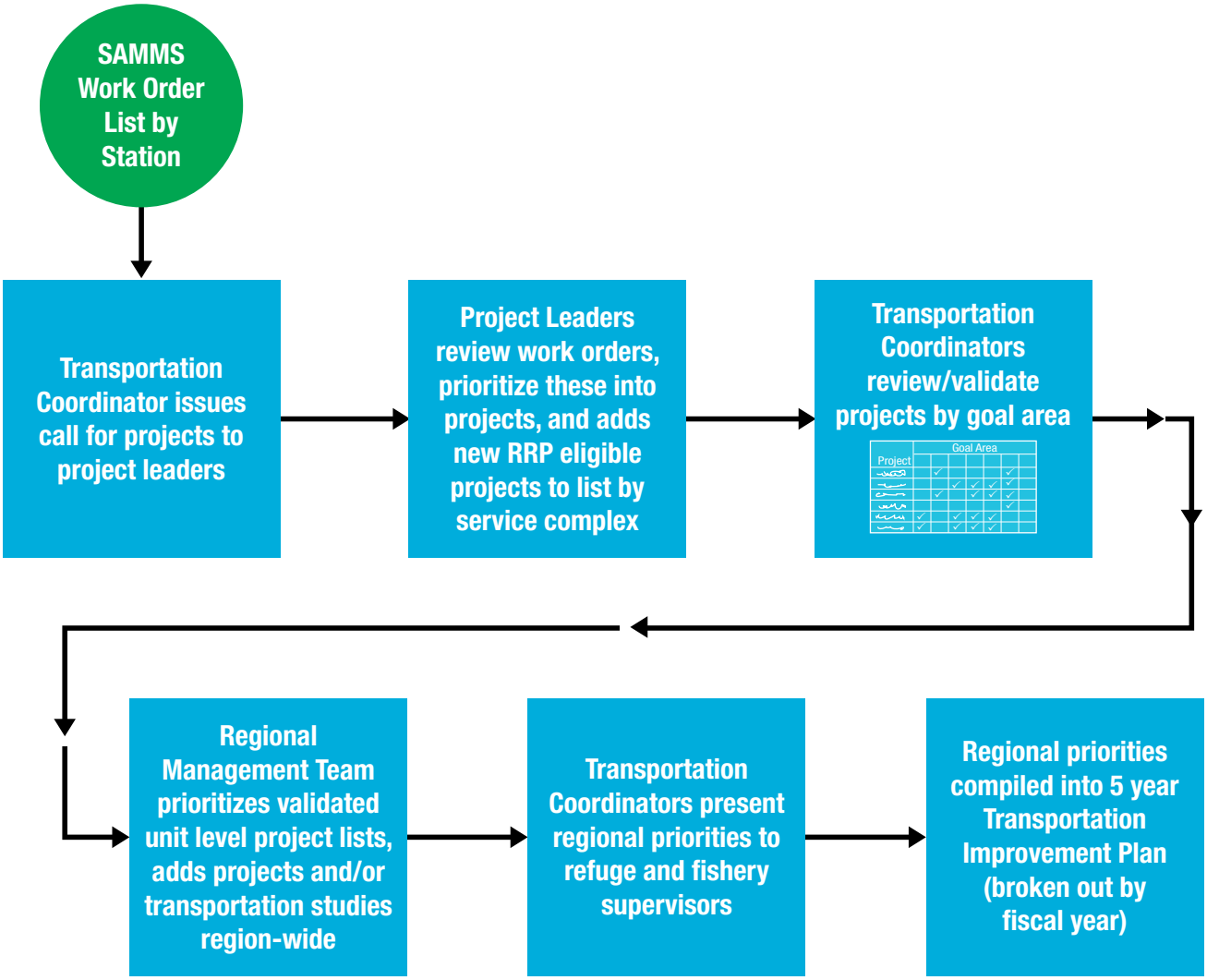
The fisheries program continues to demonstrate a strategic need for transportation infrastructure improvements by participating in the regional transportation planning process. Currently, the Region 1 fisheries program requires an estimated $1.7 million to fund outstanding mission critical transportation projects. This LRTP will help project prioritization for the program by influencing policy and planning level decisions.

## 3.2 Project Selection Process for Transportation Projects

Currently, transportation projects in Region 1 are generated through work orders developed in the SAMMS; therefore, before a project can be developed, a work order must be generated in SAMMS. The Service uses SAMMS to identify, plan, prioritize and implement capital improvements and maintenance projects under the RRP and fisheries deferred maintenance funding at both the regional and field station level. Because of differences in the funding sources between the Refuge and Fisheries Programs, the RRP relies on a 5-year TIP, while the fisheries program relies on a 5-year maintenance plan for prioritized project, both under the direction of the respective transportation coordinator. However, SAMMS work orders do not account for projects within the Fisheries Reimbursable Program; therefore, when considering regional transportation priorities as a whole, it is important to consider multiple funding sources across all Service programs.

This LRTP creates a defensible project selection process based on established goals and available funding that clearly identify the Service's priorities for transportation for both refuges and hatcheries. This process will be used as a guide to programming future projects. The region may alter the process as needed to be responsive to emergency needs, changes in the funding allocation, and other urgent programming needs. The process described below outlines the Region's decision-making process to address critical transportation needs. The process consists of six basic steps, conducted on an annual basis, as shown in Figure 16.

*Figure 17*
*Project Selection Process*




**Step 1: Call for projects.** The first step in project selection is initiated when the transportation coordinators for refuges and hatcheries issue a call for projects. This call will come in the form of a memorandum that describes the project selection process, describes the integral relationship between project selection and transportation goals and objectives, and includes a list of existing projects generated through work orders in SAMMS.

**Step 2: Project leaders review work orders and prioritize needs.** This call is an opportunity for refuge and hatchery supervisors and project leaders to review the needs of each unit and submit eligible projects to the regional transportation coordinator. Project submittals should include sufficient information to support eligibility and need for the transportation improvements based on the information provided in this regional LRTP.

**Step 3: Review and validate projects.** Upon receiving project submittals from the call process, the transportation coordinators review each potential project and validate it against the goals and objectives of this LRTP. The validation process may include site visits to confirm condition of a specific facility and/or discussions with project leaders and refuge managers to confirm or clarify a project's purpose and need and how it relates to the Region's priorities. Consistent with the goals described in *Chapter 2, Goals and Baseline Conditions*, rankings are assigned to each goal category as a function of the relative importance the Service places on achieving a particular goal relative to the mission of the agency, shown in Table 13. The rankings represent the relative priority of each of the goal areas in which a project can be scored. Projects with the highest total ranking points indicate the Region's highest priority projects, while projects with lower scores may be funded if additional funds were to become available. Regional leadership reserves the discretion to alter the priority of individual projects as needed.

*Table 13*
*Transportation Program Goals and Selection Criteria Used for Project Ranking*

| Goals/Objectives | Ranking Priority |
|---|---|
| Resource Protection | High |
| Visitor Services | Low |
| Condition and Safety | High |
| Partnering | Medium |
| Planning | Low |
| Sustainability | Medium |

**Step 4: Regional-level prioritization**. Following validation, the regional management team will meet to discuss and prioritize the validated project listing. Using the information obtained during the call for projects and validation process, the transportation coordinator presents each project to the management team. Regional priorities are aligned with project level decisions, resulting in an approved, prioritized ranking of projects.

**Step 5: Presentation of regional priorities.** The transportation coordinator then presents this prioritized list to refuge and hatchery supervisors.

**Step 6: Develop 5-year TIP.** In order to program projects, the transportation coordinator aligns the prioritized project list with available funding to identify when each project will be implemented. Once this alignment has been completed, the list serves as the Region's 5-year TIP. Because this process is conducted on an annual basis, changes in funding availability, local conditions, and unforeseen circumstances may influence how and when specific projects are programmed for implementation during the 5-year timeframe.

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## 3.3 Additional Funding Opportunities

Other funding sources are available for transportation improvements in addition to the funding provided through the RRP and the Fish Hatchery Deferred Maintenance funds. The following programs and funding sources are examples of those have been used on past Service transportation projects:

- Transportation Enhancements
- Recreational Trails Program
- Scenic Byways
- Rivers, Trails, and Conservation Assistance Program
- Public Lands Highway Discretionary Program
- High Priority Projects (Congressionally designated)
- Emergency Relief for Federally Owned Roads (ERFO)
- Paul S. Sarbanes Transit in Parks (formerly Alternative Transportation for Parks and Public Lands)

These programs and funds are available at the State and local level, which is why partnering is critical to addressing the recognized funding gap.

### 3.3.1 Transportation Enhancements

Transportation enhancement activities offer funding to help expand transportation choices and enhance the built and natural environment. To be eligible for funding, a transportation enhancement project must fit into one or more of the 12 eligible transportation enhancement activities related to surface transportation, including pedestrian and bicycle infrastructure and safety programs, scenic and historic highway programs, landscaping and scenic beautification, historic preservation, and environmental mitigation (23 U.S.C. 104). SAFETEA-LU authorized approximately $800 million annually for this program over the period of 2005 to 2009. Funds are distributed through State DOTs and each has its own process to solicit and select projects. This program is an 80 percent federal share. The Service could provide the 20 percent match with other federal funds or a combination of other federal, state, or local agency funds. Profiles for each State's transportation enhancement program can be found online at http://www.enhancements.org/Stateprofile.asp

### 3.3.2 Recreational Trails Program

The Recreational Trails Program (RTP) provides funds to the states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail use (23 USC 206). SAFETEA-LU authorized $370 million in funding nationwide, of which $85 was dispersed in 2009. Examples of trail uses include hiking, bicycling, equestrian use, all-terrain vehicle riding, and four-wheel driving. Eligible activities include trail maintenance and restoration and new trail construction. National Scenic and Historic Trails and National Recreational Trails are eligible under this funding program and should be considered in locations where these designated trails converge with refuges and hatcheries. Funds are distributed through the states, and each has its own process to solicit and select projects. This program is an 80 percent federal share. The Service could provide the 20 percent match with other federal, state, and local funds including up to five percent of the region's allocated Refuge Roads Program funds. Links to Region 1 States' RTPs are included below. Check FHWA's state administrator's website for current contact information (http://www.fhwa.dot.gov/environment/rectrails/rtpstate.htm).

The State agency contacts for each State within Region 1 with knowledge of their program are:

**Hawaii:** Trail & Access Program, Department of Land and Natural Resources, Division of Forestry and Wildlife (http://hawaiitrails.ehawaii.gov/)

**Idaho:** State of Idaho, Parks and Recreation, Recreational Trails Program (http://parksandrecreation.idaho.gov/aboutus/grants/trails.aspx)

**Nevada:** Parks and Recreation Program Manager, Nevada State Parks

**Oregon:** State of Oregon, Parks and Recreation Grants Program (http://egov.oregon.gov/OPRD/GRANTS/trails_more.shtml#awards)

**Washington:** Washington State, Recreation and Conservation Office, Recreational Trails Program (http://www.rco.wa.gov/grants/rtp.shtml)

### 3.3.3 Scenic Byways

The National Scenic Byways Program is funded through FHWA to help recognize, preserve, and enhance designated roads throughout the United States. Designation is awarded to certain roads based on one or more archeological, cultural, historic, natural, recreational, and scenic qualities (23 U.S.C. 162). SAFETEA-LU allocated $175 million in funding over 6 years for byways-related projects, with $43.5 million allocated in 2009. FHWA awards funds competitively each year covering 80 percent of project cost, with the requirement that the remaining 20 percent be matched by local, State, other Federal or in-kind means. Grant applications are submitted annually. The Service would submit an application for National Scenic Byways funding through the State DOTs, in cooperation with or through a Byway Organization. Because many of the National Wildlife Refuge and National Fish Hatcheries units in Region 1 are located along or near National Scenic Byways, partnering with the local Scenic Byway organizations is important to gain access to this funding for potential projects. Table 9 identifies refuges and hatcheries that either share a route or intersect a Scenic Byway route.

### 3.3.4 Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance (RTCA) Program provides assistance with planning, project development, and construction related to natural resource conservation and outdoor recreation. While not a funding program, this community assistance branch of the National Park Service offers valuable staff assistance for local project planning for communities, state and Federal agencies. The RTCA Program in the Pacific West Region is managed from National Park Service offices in Oakland and Seattle. The Pend d 'Oreille Bay Trail is an example of a project that received program assistance in Region 1, lead by the Friends of Pend d'Oreille Bay Trail.

### 3.3.5 Public Lands Highway – Discretionary Program

Public Lands Highway – Discretionary Program funds are available for transportation planning, research, engineering, and construction of highways, roads, parkways, and transit facilities within Federal public lands. These funds are also available for operation and maintenance of transit facilities located on Federal public lands. Funding is provided for projects designated by Congress. Certain projects not designated by Congress may also be eligible. Because only State DOTs can submit candidate projects for this program, it is critical that the Service coordinate with their respective DOTs to align common project priorities to become eligible for these funds. Eligible projects may include:

- Transportation planning for tourism and recreational travel, including National Forest Scenic Byways, Bureau of Land Management Back Country Byways, National Trail System, and similar federal programs
- Adjacent vehicle parking areas
- Interpretive signs
- Acquisition of scenic easements and scenic or historic sites
- Provision for pedestrians and bicycles

Region 1 received ERFO funds for the following projects:

- Repair/reconfigure parking lots and pedestrian trail – Kilauea Point NWR (2010)
- Entrance road improvements – Kakahaia NWR (2009)
- Parking area construction – Kealia Pond NWR (2008)
- Road improvements – Hakalau Forest NWR (2008)
- Entrance road improvements, including turn lanes, bus stop, and visitor enhancements – Tualatin River NWR (2003)

### 3.3.6 High Priority Projects Program

The High Priority Project Program provides designated funding for specific projects identified in SAFETEA-LU. This program is an 80 percent Federal share. The 20 percent match may come from FLH Program or Service appropriated funds. All eligible projects must be listed in section 1702 of SAFETEA-LU.

### 3.3.7 Emergency Relief for Federally Owned Roads

The ERFO program provides assistance for the repair and reconstruction of Federal roads that have been damaged by a natural disaster over a wide area or by a catastrophic failure from any external cause. This program is meant to supplement the commitment of resources from other federal sources to help pay unusually high expenses resulting from extreme conditions. Funds are provided from the Highway Trust Fund. No match is required; the federal share of the project cost is 100 percent.

### 3.3.8 Paul S. Sarbanes Transit in Parks Program

The Paul S. Sarbanes Transit in Parks program is administered by the Federal Transit Administration in conjunction with the U.S. Department of the Interior and U.S. Forest Service. It is a competitive grant program open to the Service, the National Park Service, Bureau of Land Management, Bureau of Reclamation, and the U.S. Forest Service. The program funds capital and planning expenses for alternative transportation systems such as shuttle buses and bicycle trails. The goals of the program are to conserve natural, historical, and cultural resources; reduce congestion and pollution; improve visitor mobility and accessibility; enhance visitor experience; and ensure access to all, including persons with disabilities. In addition, 10 percent of the annual allocation is available for the provision of technical assistance in alternative transportation planning where project proposals are not already well-developed. The total allocation for this program has been $22 to $27 million each year, nationally since 2006.

## 3.4 Getting Station Projects into the Transportation Improvement Program

Because the Region's project selection process is designed to be a defensible mechanism to select projects, the key to advancing projects is ensuring consistency with the Region's transportation priorities (i.e., the six goals and corresponding objectives and strategies).

In addition to creating a work order in SAMMS (this applies to both RRP projects for refuges and deferred maintenance projects for hatcheries), the project proponent must strategize how the project supports a specific goal area or objective, as described in Chapter 2, Goals and Baseline Conditions. It is also critical to communicate the validity of the project and how it supports regional transportation goals/objectives with the respective project leader, as these individuals play an important role early in the selection process during the initial review of work orders and identification of eligible projects.

One of the most important ways to inform regional decision makers about the validity of a project is to submit appropriate documentation supporting the projects' need. Examples of supporting documentation include road or bridge condition data, safety assessment, traffic volumes, visitation statistics, site photos, and potential funding partnerships. Recognizing the limited funding for transportation projects within the region, the Service is placing greater importance on the need to coordinate outside refuge and hatchery units, and seek partnerships for projects that receive RRP funds.

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# Chapter 4:
# Recommendations for Future Plan Activities

Several action items have been identified during the development of the Service Region 1 LRTP. These items are summarized in Table 14.

*Table 14*
*Long Range Transportation Plan Action Items*

| Action Item | | Description |
|---|---|---|
| 1 | Revise LRTP within 5 years of this document | Based on the need for additional analysis described in the following action items, this plan should be revised to provide the Service with the necessary analysis to reflect the current transportation needs of the region. |
| 2 | Improve resource protection analysis | Use a systematic method to quantify the significance of the conflict between fish and wildlife and transportation facilities to better demonstrate a need for improvements.<br><br>Obtain wildlife habitat locations and fish passage corridors to help identify potential animal-transportation conflict areas as well as the type of potentially impacted wildlife.<br><br>Identify the locations of access conflicts between resources (fish and wildlife habitat) and transportation facilities to help decision makers develop appropriate solutions.<br><br>Obtain fish passage data to help identify potential fish-transportation conflict areas and potentially impacted species.<br><br>Obtain non-fatal vehicle-animal collision data to provide a more complete understanding of historic vehicle-animal conflict hot-spots. |
| 3 | Improve safety and condition analysis | Obtain AADT for all Service roads to help quantify use and add to the meaningfulness of need determinations.<br><br>Collect crash data for all Service roads to help identify areas in need of safety improvements.<br><br>Obtain complete current replacement value, asset priority index, facility condition index, and deferred maintenance for all refuge and hatchery roads, parking lots, and trails to eliminate data gaps and improve the reliability of need determinations.<br><br>Develop a better cross-compatibility between SAMMS and RIP for roads, parking lots, and trails to eliminate data gaps and increase the reliability and usefulness of need and hotspot analyses.<br><br>Use a complete dataset of non-Service road use, condition, and crashes to eliminate data gaps in the determinations of improvement need and partnership opportunity. |

*Table 14*
*Long Range Transportation Plan Action Items*

| Action Item | | Description |
|---|---|---|
| 4 | Improve welcome and orient visitors analysis | Identify where State way-finding and variable message sign are located to assist in identifying areas of possible partnership.<br><br>Use a Service sign inventory that includes sign location, condition, and adherence to Service sign standards (those specifically related to way-finding and interpretation) to help identify locations of need. |
| 5 | Improve partnership analysis | Identify partnership opportunities with non-Service transportation agencies by identifying route jurisdiction for the roads listed in Table 8 and Appendix C, Table 8. Additional data acquisition is needed in order to have a complete inventory of road jurisdictions. |
| 6 | Improve sustainability analysis | Perform comprehensive risk analysis to determine risks to transportation resources from climate change. Factors that should be included in a comprehensive risk analysis are:<br><br>Precipitation levels, including associated impacts on water tables, flooding, and soil moisture<br><br>Temperature changes<br><br>Storm surges<br><br>Estuarine flooding<br><br>Analyze the coastal vulnerability due to climate change could be better quantified if data were available for Hawaii and the outlying Pacific area.<br><br>Identify places with ATS needs or opportunities by addressing these issues at the CCP and CHMP level.<br><br>Provide boilerplate transportation language for CCPs and CHMPs to improve the quality of transportation material in these plans. |

# Long Range Transportation Plan for Fish and Wildlife Service Lands in Region 1

U.S. Fish & Wildlife Service - Region 1