

MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN



SR 542 from Glacier to Austin Pass: MP 33.54 to MP 57.26

June 2009



Executive Summary

An easement adopted in 2004 sets requirements for WSDOT's maintenance and improvement of SR 542 within the National Forest System lands. A key condition of the easement is the requirement that WSDOT complete a scenic byway management plan before proceeding with construction on the highway. In developing the plan, we have scrutinized the interagency coordination processes currently used for transportation project implementation and evaluated lessons learned so we can develop new methods that will work better in the future.

Background

Purpose of the plan

The Mt. Baker Scenic Byway Management Plan is a cooperative effort between WSDOT and the USFS, and is required for maintenance and capital improvements on National Forest System lands. It implements the 2004 easement and will address the interagency review process. The plan defines how coordination, communication and consultation between WSDOT and USFS will proceed on a wide range of issues stemming from transportation activities along SR 542. We want to clarify the roles of both agencies, capitalize on agency expertise and streamlined procedures, and set realistic expectations.

The Management Plan clarifies easement requirements in order to: 1) provide a framework for partnership opportunities between the agencies during program and project development; 2) expedite USFS approvals, particularly for maintenance and urgently needed repairs; and 3) manage expectations for how scenic byway-related treatments desired by USFS will be incorporated into needed capital improvements.

Plan objectives and anticipated benefits

- Fulfill the requirements of the 2004 easement.
- Facilitate realistic and predictable transportation projects, schedules and budgets.
- Allow better utilization of agency resources.
- Provide for early involvement of resource and regulatory agencies in the WSDOT project scoping and development process.
- Provide for joint-agency evaluation and early resolution of problems/issues.
- Provide for early identification and resolution of environmentally sensitive issues.
- Reduce duplication of efforts.



- Provide program continuity and a consistent approach for developing projects.
- Avoid revisiting decisions affecting routine maintenance activities that have been resolved early in this process.
- Encourage early and substantial participation on projects that require USFS expertise when concurrence is needed.
- Identify a process for when information is needed and what is adequate for each stage of the review process. Show that each agency's concurrence is consistent with its statutes and resolutions.
- Maximize the probability of projects receiving the appropriate permits and approvals from the participating agencies in a timely manner.
- Maximize the quality of the NEPA documentation process.

Key outcomes

- Clarify maintenance activities so they can proceed on a predictable timeline.
- Clarify interagency role in the transportation project development process.
- Identify opportunities to streamline and enhance environmental review.
- Identify guidelines and financing partnerships for aesthetic treatments along the corridor.

Organization of the report

Introduction

This section provides descriptive information about the roadway and easement objectives, and outlines the philosophy that will guide maintenance, operation and redevelopment of the roadway. It includes the identification of intrinsic values that make the corridor unique as well as discussions about easement-identified design features from the *Guidelines for the Mather Memorial Parkway*.

Management plans

This section includes four management plans intended to streamline routine actions and facilitate partnerships: 1) Maintenance operations management plan; 2) Capital project development plan; 3) Traffic and operations plan; 4) Integrated vegetation management plan.

Ongoing coordination

This section provides information that will guide future interagency coordination. It describes annual coordination meeting objectives and discussion points, prioritization of scenic byway corridor enhancements and the identification of appropriate funding opportunities to provide outside capital financing.



Appendix

Includes agreements, memorandums of understanding (MOU), and standards discussed throughout the plan.



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United States
Department of
Agriculture

Forest
Service

Mt. Baker-Snoqualmie
National Forest
Mt. Baker Ranger District

810 Highway 20
Sedro-Woolley, WA 98284
(360) 856-5700

File Code: 2750, 2300

Date: 6/12/09

Route To:

Subject: Mt Baker Scenic Byway Management Plan

To: Robert Iwamoto, Forest Supervisor

Enclosed is the Mt Baker Scenic Byway Management Plan for your review and signature. This plan fulfills a requirement of the 2004 easement for the Mt Baker Highway, State Route 542. It represents a collaborative effort between Washington State Department of Transportation and the Forest Service over the last several years.

I have reviewed this document and recommend it for your signature.

If you have any questions regarding this Plan, please contact Ann Dunphy at 360-856-5700 ext 352.



JON VANDERHEYDEN
Mt Baker District Ranger

Enclosure: Mt Baker Scenic Byway Management Plan



It's Cool to Be Safe

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Cover Sheet

Mt. Baker Highway Scenic Byway Management Plan

SR 542 within the National Forest from Glacier to Austin Pass:

MP 33.54 to MP 57.26

Submitted By:

WSDOT, NW Region, Mt. Baker Area Headquarters
Planning Office & in partnership with
Mt Baker- Snoqualmie National Forest Service

Abstract:

An easement adopted in 2004 provided guidance for the development of the Mt. Baker Highway Scenic Byway Management Plan. This Plan implements the terms of this agreement and clarifies and streamlines interagency processes.

Approval:

June 1, 2009

USFS

WSDOT

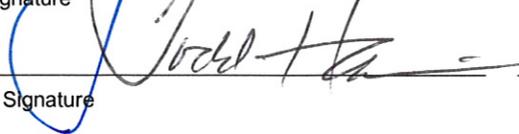
USFS Signature



Date

06/16/09

WSDOT Signature



Date

6/11/09



Washington State
Department of Transportation
Paula J. Hammond, P.E.
Secretary of Transportation

Northwest Region / Mount Baker Area
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Burlington, WA 98233-3415
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June 1, 2009

Rob Iwamoto
Forest Supervisor
VIA- Ann Dunphy / John Vanderheyden
USDA Forest Service
Mt. Baker Ranger District
810 State Route 20
Sedro-Woolley, WA 98284

RE: Mt. Baker Scenic Byway Management Plan

Dear Mr. Iwamoto:

I am pleased to attach the *Mt. Baker Scenic Byway Management Plan* for your approval and signature.

The *Mt. Baker Scenic Byway Management Plan* translates the terms of the 2004 easement into operating procedures that will guide transportation activities along State Route 542 within the National Forest Service Boundary. With focus on the safety of the traveling public, the plan provides for continued coordination in maintenance and project development. It includes strategies that reflect the special needs of this highway and incorporate Best Management Practices employed in our state. I am satisfied that it clarifies the easement requirements, provides a framework for future collaboration, and establishes realistic expectations where funding challenges exist.

This plan has had many starts and stops since the 2004 easement agreement was formalized, and this final edition represents a great deal of coordination between our two agencies. We look forward to finalizing this plan and continuing the productive partnership we have established through this planning effort.

Sincerely,

Todd Harrison
Assistant Northwest Regional Administrator
WSDOT Mt. Baker Area Headquarters

Enclosure: Mount Baker Scenic Byway Management Plan

Fact Sheet

Project Name:

Mount Baker Highway Scenic Byway Management Plan

Project Description:

The Mount Baker Scenic Byway Management Plan is a cooperative effort between WSDOT and the USFS, and is required for maintenance and capital improvements on Forest Service land. It implements the 2004 easement and clarifies the interagency review process. The plan defines how coordination, communication, and consultation between WSDOT and USFS will proceed on a wide range of issues stemming from transportation activities along SR 542. The intent is to provide clarity on the roles of both agencies, streamlined procedures, formulate realistic expectations, and capitalize on agency expertise.

The plan clarifies easement requirements in order to: 1) provide a framework for partnership opportunities between the agencies during program and project development; 2) expedite USFS approvals, particularly for maintenance and urgently needed repairs; and 3) manage expectations for how scenic byway-related treatments will be incorporated into needed capital improvements.

Project Proponents:

WSDOT & USFS

Date Document Issued:

June 2009

Comments and Contact Information:

Elizabeth Sjostrom
Highway System Planner
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MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

INTRODUCTION

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Introduction



Scenic Byway Logo

The **Mt. Baker Highway Scenic Byway Management Plan** has been created to identify the roles and responsibilities of the USDA Forest Service (USFS) and Washington State Department of Transportation (WSDOT) in the coordination of transportation activities along State Route 542 (SR 542) within the National Forest boundary. The scope of work has been specified by a November 22, 2004, easement that established the expectations of this plan, the roles of the partners and protocols that need to be established.

The Mt. Baker Scenic Byway, SR 542 provides access to the Mt. Baker-Snoqualmie National Forest in Whatcom County. This is a joint effort undertaken by USFS, the National Park Service, the Federal Highways Administration and WSDOT to plan the maintenance, preservation and operation of the 24-mile portion of this corridor (Milepost (MP) 33.54 to 57.26) located within the National Forest. This plan will provide the guidelines to promote safe road access and visual enrichment for travelers along SR 542 from Glacier to Austin Pass.

Easement Objectives and Philosophy

The guiding philosophy along the scenic Mt. Baker Highway is to communicate and preserve the aesthetic, recreational, and natural resource values of the National Forest. Modifications to accommodate visitor use and needs along the corridor should be consistent and contiguous with the existing landscape and meet National Forest visual, aesthetic and resource protection standards. These objectives and strategies will provide guidance for the maintenance, operation and redevelopment of the roadway along this corridor.

WSDOT is responsible for the reconstruction, operation and maintenance of SR 542 within the National Forest boundary. USFS retains ownership of the underlying land and is responsible for ensuring that National Forest lands and resources within and adjacent to the road corridor are managed and protected consistent with current direction and policies. It is of mutual interest, as well as the responsibility of both parties, to provide the public safe access on this highway.

This document provides a foundation for the management of the Mt. Baker Highway. It primarily provides guidance on how to carry out the preservation needs for this highway to enhance traveler safety and protect the unique visual and aesthetic attributes along this corridor. It provides a unified approach on how to address standard practices that are required yearly for maintenance, as well as establishing parameters for preservation and environmental retrofit projects. Although safety and design standards will change over time, every effort should be made to ensure that the partners adhere to the spirit of the concepts agreed to in this document so as to streamline the processes needed to keep this roadway safe and enjoyable.

Interagency Coordination

Interagency review of highway projects takes place in a very complex administrative arena defined by many federal, state, and local laws, ordinances and regulations.¹ This has resulted in overlapping jurisdictional responsibilities and some duplication of efforts that increase costs and time delays for transportation projects.

WSDOT and USFS both have an interest in the stewardship of SR 542 / Mount Baker Highway and surrounding environment, and therefore must work together on the development, review and construction of transportation improvements. The challenge for this interagency partnership is to clarify roles and responsibilities to avoid unnecessary delays and duplication of effort. Below is a summary taken from the 2004 easement agreement that clarifies roles and responsibilities along this corridor. This summary shows the easement provision the responsibility of the action described, and locates areas in the plan that provide further details for easy reference.

Summary of roles and responsibilities per 2004 easement			
Easement Provision	Activity identified	Responsibility or Lead	
2	Signage-National Forest information signs outside road clearing limits	USFS to WSDOT Standards	
4	Aquatic Conservation Strategy Objectives (ACS) Protection and preservation	WSDOT w/ USFS concurrence	
4	Annual coordination meeting	WSDOT and USFS	
5	Sites for temporary and permanent storage, disposal areas, pits, quarries and other O&M facilities within the ROW	WSDOT lead USFS approval	
6	Archeological and cultural resource compliance. Creation of Mt. Baker Highway Scenic Byway Management Plan. Corridor inventory and guidelines established, and agency procedures clarified.	WSDOT lead w/ USFS concurrence	
7a,b & c	Project review and final design and specification approval	WSDOT lead w/ USFS approval	

¹ *Nothing in this document is intended to conflict with current directives of any of these agencies. If the terms of this plan are found to be inconsistent with current directives, then those portions of this agreement that are determined to be inconsistent shall be invalid, but the remaining terms and conditions not affected by the inconsistency shall remain in full force and effect. At the first opportunity for review of the plan, all necessary changes will be accomplished by either an amendment to this plan or by entering into a new plan, whichever is deemed expedient to the interest of all parties.*



Easement Provision	Activity identified	Responsibility or Lead
7d	Prevention and control of soil erosion. Vegetate and keep re-vegetated, with suitable species, areas affected by construction and other disturbed areas.	WSDOT- Maintenance & Construction
8a	Vegetation management- Preserve soil, vegetative cover, scenic and aesthetic values on the right of way (ROW).	WSDOT- Construction & Maintenance
8b	Revegetate, protect and maintain failed slopes, ditches or other drainage management works after reconstruction.	WSDOT Construction & Maintenance
8d	Maintenance of vegetation within ROW: clearing by means of chemicals in conformance with Integrated Vegetative Management Plan.	WSDOT Maintenance USFS Consultation
8e	Noxious weed prevention and control planning within the easement areas in substantial accordance with the Best Management Practices listed in Exhibit B of easement.	WSDOT Maintenance when within easement
8f	Roadside hazard tree identification and removal	WSDOT lead. USFS consultation
8g	Maintain highway roadway, drainage, signing, pavement marking and safety appurtenances to a standard consistent with WSDOT standard and specifications for state highways approval by FHWA.	WSDOT – Maintenance
8h	Highway maintenance during winter road sanding season shall be conducted in a manner that limits and reduces road sand and sediments from entering streams and rivers, consistent with the 4(d) Rule.	WSDOT- Maintenance

Easement Provision	Activity identified	Responsibility or Lead
8i	Jointly agree on plan to regulate vehicle parking, pavement marking, highway signing, end-of-road seasonal gating, and closures and snow plowing activity within the Heather Meadows areas, addressing all Forest Service permittees and including the Firs and Mountaineers adjacent parking areas. WSDOT responsible for conduct of snow and ice removal from the highway traveled lanes.	WSDOT- Maintenance lead and USFS Consultation
8j	Access issues per latest MOU between WSDOT and USDA Forest Service Pacific Northwest region.	WSDOT Development Services
9	These stipulations shall be reviewed at intervals not to exceed five years	WSDOT and USFS

Plan Summary

This plan has four sections formulated to share the information needed to maintain and enhance SR 542 per the easement agreement.

- 1) Easement objectives and philosophy
 - a. Background
 - b. Identification of natural and scenic values and aesthetic treatment suggested in the development guidelines for the Mather Memorial Parkway,
 - c. Places of social, cultural, historic, recreational and scenic importance along the corridor.
 - d. Natural forces that influence the corridor
- 2) Management plans
 - a. Background
 - b. Maintenance operations plan
 - c. Capital project development and funding options,
 - d. Traffic operations criteria, and
 - e. Integrated vegetative management plan
- 3) Schedule and responsibilities for discussion at annual coordination meeting
- 4) Appendix that includes agreements, MOU, and standards discussed throughout the plan.

Mount Baker Highway Background

Official designations

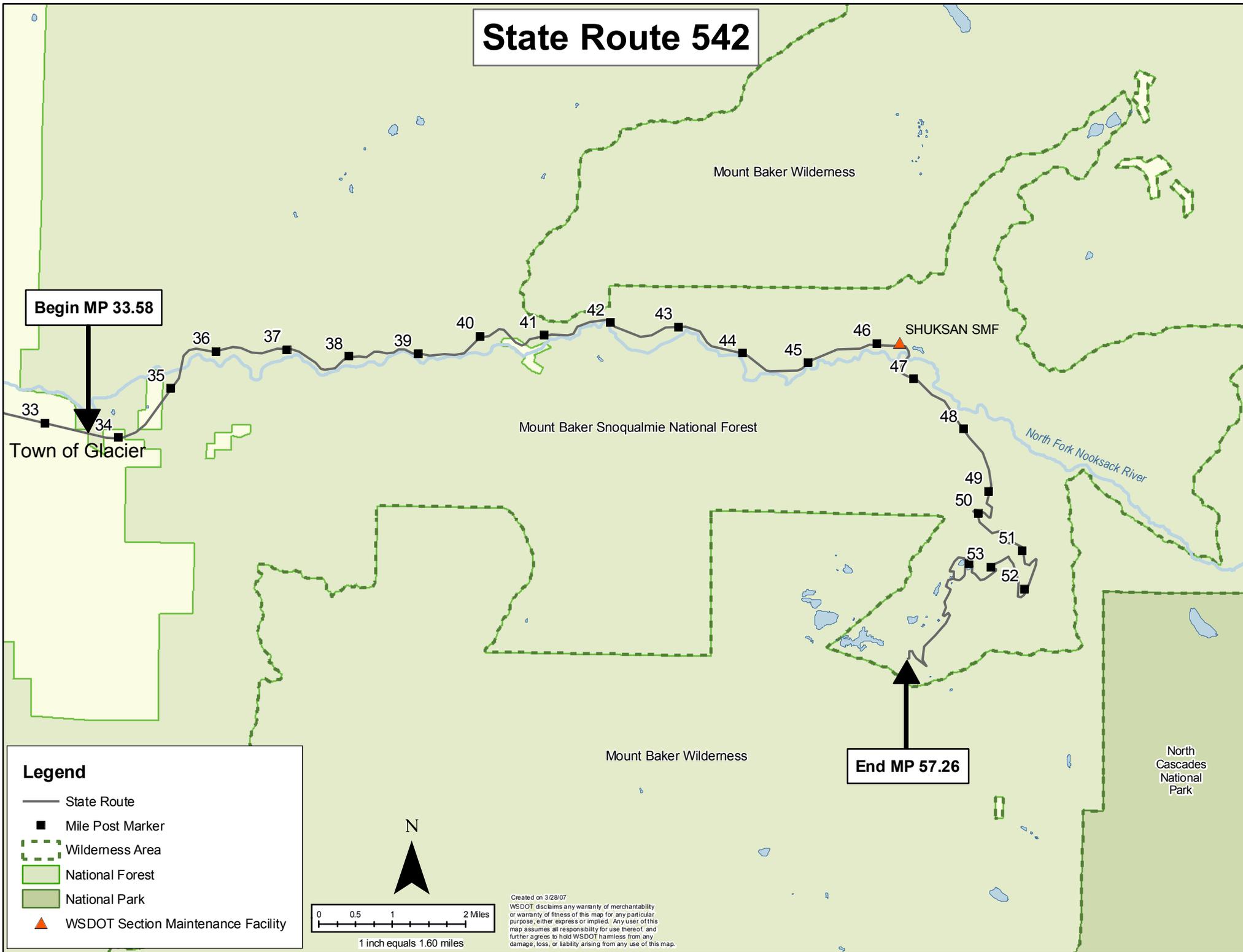
Scenic Byway programs recognize highways that are outstanding examples of natural beauty, history, culture, and recreational experience by designating them as a “Scenic Byway.” The segment of SR 542 from Deming east to Artist Point was designated a Washington State Scenic and Recreation Highway in 1967. In 1987, SR 542 was also designated a Washington State Scenic Byway. Then in 1989, the upper 24 miles of SR 542 east of the town of Glacier to Artist Point was designated a National Forest Scenic Byway. National Scenic Byway status has not been obtained for this corridor, but is being considered for nomination by the Washington State Scenic Byway Coordinator.



Corridor description

SR 542 is located in Whatcom County, in the northwest corner of Washington state. It originates near sea level at Interstate 5 in the city of Bellingham and travels east to its terminus at Artist Point, elevation 5,200 feet. The portion of the roadway within the National Forest starts at MP 33.54 east of the town of Glacier. The next 24 miles climbs in elevation as it leaves the north fork of the Nooksack River valley and ascends the mountain ending at Artist Point. The tree-lined corridor leads travelers to historic Heather Meadows, home of the Mt. Baker Ski Area. Forest roads lead off the main highway into the heart of the National Forest and trails accessing the Mt. Baker Wilderness and the backcountry of North Cascades National Park.

State Route 542



Begin MP 33.58

Town of Glacier

Mount Baker Wilderness

SHUKSAN SMF

Mount Baker Snoqualmie National Forest

North Fork Nooksack River

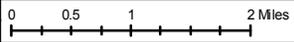
Mount Baker Wilderness

End MP 57.26

North Cascades National Park

Legend

- State Route
- Mile Post Marker
- - - Wilderness Area
- National Forest
- National Park
- ▲ WSDOT Section Maintenance Facility



1 inch equals 1.60 miles

Created on 3/28/07
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Map 1: SR 542 located within the Mt. Baker -Snoqualmie National Forest



History of area

The Mt. Baker Highway had its inception in 1879 with the idea that the road would run from Bellingham Bay to the mines near Ruby Creek at the southern slope of Mount Baker. At that time, the road from Bellingham ended at the Nooksack River, west of Everson. In 1886, a surveyor named Banning Austin and his party tried to map out a northern route for the proposed road. Fourteen years later it had reached Maple Falls, which was a thriving community, with several sawmills, a shingle mill, three hotels, seven saloons, several stores, a newspaper office and two doctors' offices.

The Milwaukee Railroad had reached there in 1901, opening up logging in the area and this provided the way to get the finished products to market. There were ten mills in the vicinity, and around each was a settlement, with its own schools. Eleven schools were consolidated into the Maple Falls School District around 1914. There was a limestone quarry, a clay mine and several mineral mines on up the mountains. The final stretch of the corridor from Excelsior to Mt. Baker, the extension of the road to Austin Pass was constructed in 1921. These nine additional miles were built to the Mt. Baker Lodge that was built at Heather Meadows in 1927. (The Lodge burned down in 1931.)

Starting in 1933, the Civilian Conservation Corps (CCC) established by President Roosevelt during the Great Depression built numerous roads, campgrounds trails, cabins, and fire lookouts in the Mt. Baker region. The legacy of these projects continues at several key locations along this route. (Mt. Baker Foothills Chamber of Commerce Historical Accounting, 2006)

Areas served by SR 542:

Located in the U.S., just south of the Canadian border, the 524,719-acre Mt. Baker Ranger District shares its eastern boundary with the North Cascades National Park, managed by the National Park Service. The Forest Service and National Park Service jointly operate the Glacier Public Service Center on SR 542, during the summer and a fall. The Forest Service also provides visitor information services at the Heather Meadows Visitor Center during the summer season. Located in the north end of the Ranger District, SR 542 provides the only road access to the Whatcom County portion of the following exceptional scenic and well visited areas:

Mt. Baker-Snoqualmie National Forest

The Mt. Baker-Snoqualmie National Forest extends more than 140 miles along the western slopes of the Cascade Mountains from the Canadian border to the northern boundary of Mount Rainier National Park. The forest covers portions of Whatcom, Skagit, Snohomish, King and Pierce Counties. Together with other central Puget Sound counties, 62 percent (3.563 million people) of the state's population lives within a 70-mile drive of the forest. Another 1.5 million people in Vancouver, British Columbia, metro area are also within easy reach of the northern part of the Forest. The large population factor, coupled with easy road access, makes the Mt. Baker Snoqualmie National Forest one of the most visited National Forests in the country. (Taken from USDA Mt. Baker National Forest <http://www.fs.fed.us/r6/mbs/>)



Mt. Baker Ranger District

Encompassing Mt. Baker itself, the Mt. Baker Ranger District is one of four ranger districts on the Mt. Baker-Snoqualmie National Forest. The heaviest recreational use of the lands within the district is within the Heather Meadows Area near the end of SR 542 and the Baker Lake Basin located north of the North Cascades Highway (SR 20). The Mount Baker Wilderness, Noisy-Diobsud Wilderness and a small segment of the Glacier Peak Wilderness are also located within the district boundaries. Both day hikes and backpacking trails are popular during the summer season. Winter recreation includes the Mt. Baker Ski Area, cross country skiing and snowmobile use in designated areas.

The district is a popular sight-seeing, camping, hiking and backpacking destination with a total of 412 trail miles, twelve campgrounds and two separate picnic areas. Recreation opportunities can be accessed either through Sedro-Woolley via SR 20, or Glacier, via SR 542. The Ranger District's Glacier Public Service Center is located in Glacier, the Heather Meadows Visitor Center at MP 56 on SR 542, and the Mount Baker Ranger District office is located in Sedro-Woolley at 810 SR 20, Sedro-Woolley, WA 98284, (360) 856-5700 ext 515.

Mount Baker Wilderness

The Mt. Baker Wilderness was created by the 1984 Washington Wilderness Act and contains 117,500 acres. Its eastern border is shared with the boundary of the North Cascades National Park for a distance of 40 miles. The Wilderness extends from SR 20 north to the Canadian border.

This entire wilderness lies on the western slopes of the Cascade Mountains. Two drainages emanate from this area, the Nooksack River and the Skagit River. The Nooksack River drains directly into Puget Sound. Terrain is extremely rugged, with steep slopes, numerous ridges dissected by small intermittent or permanent drainages. Mt. Baker is the most northern of Washington's volcanoes and is one of the area's most unique features. The mountain periodically exhibits thermal activity.

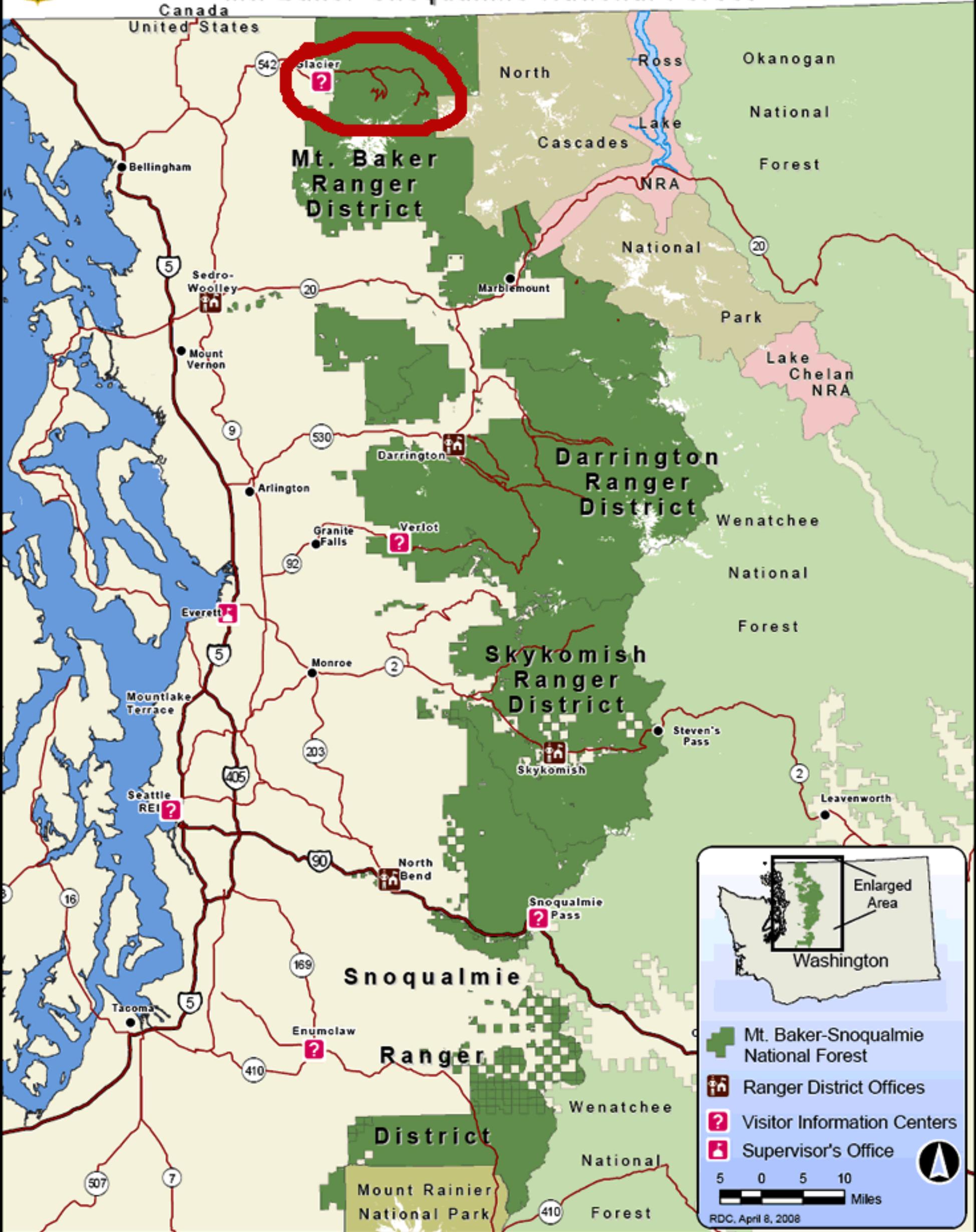
Mount Baker, a 10,778 ft. glacier-covered volcano, is the second most active volcanic formation in the Cascade Range (nearby Mount Saint Helens is the first) and a world-record setter for the most annual snowfall.





Vicinity Map

Mt. Baker-Snoqualmie National Forest



Legend

- Mt. Baker-Snoqualmie National Forest
- Ranger District Offices
- Visitor Information Centers
- Supervisor's Office

5 0 5 10 Miles

RDC, April 8, 2008

Recreation

Recreation opportunities along the SR 542 corridor are varied and extensive, depending on the season. In the spring and summer, visitors can camp, hike, climb, hunt, fish and enjoy water recreation. In the winter months Mt. Baker slopes accommodate downhill and cross-country skiing, snowboarding, and other winter sports. WSDOT's role is to maximize safe access to these amenities via SR 542.

Snow sports

This area has exceptional snowboarding opportunities and extensive usage throughout the season. Mt. Baker is consistently rated by national publications as one of the best snowboarding, skiing and snowshoeing havens in the nation.

As an interesting aside, Mount Baker set a world record in 1999 for having the most snowfall in one year with 1,140 inches. This tops the previous record of 1,122 inches set at Mount Rainier during the winter of 1971-72 (National Climatic Data Center, August 1999). Also, Mt. Baker has the longest ski season in Washington state (Nov.-April).



Campgrounds and Dispersed Campsites

There are three developed campgrounds accessed via SR 542: Douglas Fir and Silver Fir campgrounds and Excelsior Group Camp. There are numerous additional primitive dispersed campsites accessed by the SR 542 and the adjacent forest roads.

Trails

One of the most prominent recreational activities along SR 542 is hiking. There are approximately 412 miles of trails in the region. Many lead into the surrounding Mt. Baker Wilderness. Direct access points to trails include Horseshoe Bend, Excelsior Pass, Picture Lake, Bagley Lakes, Fire and Ice, Lake Ann, Table Mountain, Chain Lakes and Artist Ridge trails. In addition to those trails accessed directly from the highway, at least 17 designated trails can be accessed from forest roads off of SR 542 providing a wide variety of hiking opportunities. Dedicated hikers travel from other regions to take advantage of the diverse hiking opportunities offered along this corridor. Designated hiking trails in this category include those below:

Off highway hiking trails

Damfino, High Divide, Church Mountain, Heliotrope Ridge, Skyline Divide, Boundary Way, Canyon Ridge, Ptarmigan Ridge, Silesia Creek, Goat Mt., High Pass, Hannigan Pass, Winchester Mt., Yellow Aster Butte, Tomyhoi Lake, Welcome Pass.

These unique areas are accessed via SR 542. It is important to realize that these destinations are the reason most travelers visit this area. Safe and efficient access



needs to be accommodated while also taking into account the preservation of the natural and scenic values of the area.

Visitor demographics and use patterns

This corridor has year-round usage and an especially intense recreational demand associated with Mount Baker and its large ski area. In the winter several side roads are groomed, turning them into a winter, playland for snowmobiles and cross-country skiers. During summer months, this roadway provides access to the National Forest where visitors can enjoy the rustic natural settings. The fall months bring cooler temperatures and lowered snow levels.

Due to the diversity of this area, SR 542 is a well-used corridor providing year-round access to places of solitude and beauty, recreation and relaxation. This system supports a full range of transportation users including pedestrians, bicyclists, motorcyclists, automobiles, pickup trucks, recreational vehicles, buses, and commercial trucks. Our goal is to safely accommodate these multiple users. While the intent of the typical corridor visitor varies with the seasons, the experience gained from each trip is similar. The “sense of place” is well defined. The varied aspects of the SR 542 experience offer tourists views of the North Fork Nooksack River as well as magnificent panoramic vistas of Mount Baker, Mount Shuksan, and surrounding Cascade peaks. The dynamic river setting and groupings of rocky peaks and glaciers form a strong attraction and welcome break from urban life.

MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

IDENTIFICATION OF NATURAL AND SCENIC VALUES

1. Distinctive features and landscapes
2. Forest Service policy and plan direction
3. Wild and scenic rivers
4. Cascadian style
5. Intrinsic qualities
6. Strategy to enhance visual experience
 - Scenic
 - Natural site detailing
 - Recreational
 - Historical
 - Archeological/cultural
 - Built site detailing
7. Aesthetics
8. Development guidelines for SR 542
9. Corridor recommendations from the Mather Memorial Parkway Guidelines
 - Bridges
 - Retaining walls
 - Artificial stone
 - Barriers
 - Guardrails
10. Design considerations

Identification of natural and scenic values



Eastbound view on SR 542

The Mt. Baker–Snoqualmie National Forest has dramatic landscapes and climate. The roadway vistas are distinctive and unique and remain untamed. Our goal is to preserve and augment these features along SR 542. The existing ecosystem has provided the environmental context for a natural landscape. When possible, we will create natural-appearing landscapes that blend into to the surroundings.

Distinctive features and landscape

Along SR 542, travelers can view spectacular scenery ranging from dense forests to the rugged peaks of the North Cascades. Much of the road follows the north fork of the Nooksack River, which runs in a gorge 400 feet deep in places. Pullouts along the way allow visitors to stop and admire the view and take pictures. Just before the steep elevation gain up the mountain, watch for a forest of 500-year-old western red cedar. Most of the elevation gain (3,200 feet) occurs in the last 10 miles as the road climbs steeply past the Mt. Baker Ski Area to 5,140-foot Artist Point and grand views of Mount Shuksan.

The Mt. Baker Ranger District has a variety of landscapes from forested slopes that rise to rocky crags and sub-alpine meadows. Heather Meadows offers views of Mt. Shuksan and Mt. Baker, a 10,778-foot active volcano which occasionally emits steam and sulfurous fumes and has active glaciers down to 4,000 feet. Self-guided interpretive trails and a staffed visitor center in a historical setting welcome summer visitors. During the winter months, the Mt. Baker Ski Area offers alpine skiing and snowboarding. The approach to Artist Point is not accessible in the winter and spring months, and requires substantial snow removal to provide access. The area usually opens in July and stays open until the first heavy snowfall in September or early October.

Forest service policy and plan direction

The Mt Baker Scenic Byway is listed as a visual sensitivity level 1, primary viewshed corridor for its high scenic value in the Mt. Baker-Snoqualmie National Forest Land Management Plan (USDA Forest Service 1990). The forest plan states that the scenic quality will be maintained and gradually improved within scenic viewsheds. A goal or “Standard & Guideline” for scenic viewsheds is to: Provide an attractive forest setting, emphasizing the natural appearance of areas as seen from major roads and recreation sites.



To meet the forest plan standards and guidelines, the visual quality objective (VQO) in the foreground-viewing zone (foreground = 0 to ¼ mile from the viewer) along the scenic byway is a “retention” VQO. The Retention VQO requires that projects and management activities are not visually evident by blending in thoroughly with the environment. To meet retention, views are “characterized by a predominately natural or naturally appearing environment generally free from evidence of sights and sounds of human activities” and that “human activities are not evident to the casual forest visitor.” Under Retention, activities may only repeat the form, line, color and texture, found in the characteristic landscape.

Middle-ground viewing zones (middle ground = ¼ mile to 5 miles from the viewer) seen from the highway shall meet a VQO of “Partial Retention”. To meet partial retention, “human activities may be evident but must remain subordinate to the characteristic landscape.”

When assessing visual impacts, the Forest Service considers a bare-ground scenario where topographic features are considered permanent screening for facilities. Vegetative cover may contribute to screening but should not be considered permanent effective cover because it can be removed by human or natural events.

The Roadside Classification Plan (WSDOT 1996), classifies the roadside here as “forest” in character. The forest landscape is predominantly natural or naturalized forest. A roadside classified as forest is characterized by natural-appearing landforms and native trees and/or understory vegetation.

Wild and scenic river

SR 542 is adjacent to and crosses the Nooksack River in several locations. This river system is not restrained in these areas and therefore challenges the integrity of the roadway when high-water events occur. Permits issued in these locations require special consideration so that habitat is not adversely altered.

The north fork of the Nooksack River, from its headwaters in North Cascades National Park downstream to the confluence with the south fork of the Nooksack River (43.3 miles) was recommended for inclusion in the National Wild and Scenic River System in the Mt. Baker-Snoqualmie National Forest Land and Resource Management Plan (ROD p24-25 USDA FS 1990). The recommended classification includes one wild segment, and two segments each of scenic and recreation for a total of five segments.

1. scenic— Mount Baker Wilderness to Nooksack Falls diversion dam
2. recreation— Nooksack falls diversion dam to Nooksack falls power plant
3. scenic— Nooksack Falls power plant to fish hatchery near Kendall
4. recreation— Fish hatchery to confluence S. Fork Nooksack River

In the forest plan, the goal for recommended rivers would be to protect from degradation the outstandingly remarkable values and the wild, scenic and recreation characteristics of recommended rivers and their environments pending a decision on inclusion into the National Wild and Scenic River System.

The forest plan, as amended, stipulates these rivers shall be managed to protect those characteristics that contribute to the eligibility of these rivers at their highest potential classification (Chapter 4, p.4-95 USDA FS 1990). The Forest Plan, as amended, identified the North Fork Nooksack River as having the following outstandingly remarkable values: scenic, recreation, fisheries, wildlife, historical/cultural. (Appendix E, p.E-23, USDA FS 1990).

The desired future condition for recommended recreation rivers is that evidence of a full range of management activities may exist. In addition, the river is readily accessible by roads or railroad and bridge crossings. High water quality is maintained.

The desired future condition for recommended scenic rivers is of lands that appear natural when viewed from riverbanks. The river is accessible by roads which may occasionally bridge the river area. Short stretches of conspicuous or longer stretches of inconspicuous and well-screened roads or railroads paralleling the river area may be permitted.

The desired future condition for recommended wild rivers is that they are generally inaccessible by road, but can be reached by trail or water. The opportunity to interact within a natural environment away from the sights and sounds of man is available. A high degree of challenge is offered to those rafting these areas.

The Forest Plan designates VQOs for the viewsheds of proposed wild and scenic rivers as seen into and from within the river corridor.

River Classification	VQO Classified Corridor (1/4 mile foreground)	VQO Beyond Foreground Sensitivity Level 1
Scenic	Retention Partial retention may be used for necessary structural facilities	Partial Retention – Middle ground Partial Retention - Background
Recreation	Partial Retention Modification may be used for necessary structural facilities	Partial Retention – Middle ground Partial Retention - Background

Cascadian style

Under the Mt. Baker-Snoqualmie Forest Plan, all new facility construction in the forest should employ the Cascadian architectural style. The Cascadian style employs a variety of rustic architectural techniques including heavy timbers, native stone, natural colors and structural forms that respond to the mountainous conditions. To meet the Cascadian architectural style, proposed structures should have a textural pattern and earth-tone colors which match the natural stone and soil colors within the byway. A simulated stone pattern and color will be selected to be used as the standard style for patterned concrete structures in the corridor to provide a consistent look to byway projects over time.

Intrinsic qualities

The features, places and activities that make a scenic highway unique are intrinsic qualities. The Federal Highway Administration (FHWA) ¹ lists each intrinsic quality as follows:

- Scenic
- Natural site detailing
- Recreational
- Historical
- Cultural and Archeological

The definitions provided by FHWA are included below with the goals, objective and strategies for the SR 542 corridor.

Unique qualities and significant resources surround SR 542. It is fortunate to possess intrinsic qualities within all of the five FHWA categories. We are entrusted with the goal to visually elevate the visitor's experience, and through interpretation, broaden awareness and educate. This plan will identify and set goals to protect and enhance the intrinsic qualities along this corridor so these experiences will be improved.

Strategy to enhance visual experience



SR 542 corridor view of Mt. Baker

The visual experience marks every traveler's adventure along this corridor. This section of the plan follows the FHWA standards and provides guidance for how to maintain the scenic character along the roadway. The purpose is to furnish guidelines and prescribe policies that will assist in future highway construction and maintenance.

Cost is always a factor when maintaining this roadway because maintenance and capital construction costs keep rising and funding keeps diminishing. Therefore, cost and visibility need to be included in the final decision when looking at aesthetics along the corridor. Partnerships need to be established to fund projects that add features which go beyond functional reconstruction. Limited funds and safety needs along the corridor will require outside assistance to fund upgrades. In the capital project development section is a list of potential grant sources that could be pursued to help fund future work including the

¹ Adapted from: "National Scenic Byways Program." Federal Register. Vol. 60, No. 96. May 18, 1995.



desired architectural and aesthetic features. WSDOT looks forward to partnering with the Forest Service, Whatcom County and other regional entities to secure the funds to promote these goals.

Below is a list of FHWA's definitions for intrinsic qualities along this corridor, as well as the goals objectives and strategies for enhancing these qualities along SR 542.

Scenic

Scenic quality is the heightened visual experience derived from viewing natural and man-made elements in the visible environment. The characteristics of landscape are strikingly distinct and offer a pleasing and most memorable experience. All elements of landscape: landforms, water, vegetation and man-made development, contribute to the quality of the corridor's visual environment. Everything provides distinctive and memorable views from the roadway or from sites accessed from the road.

SR 542 scenic byway goals and strategies:

Goal: Enhance or improve opportunities to experience the views from the highway and within the public lands by providing safe access to viewing locations. (Participating agencies will be the lead for enhancements or improvements on lands they manage).

Strategy: Identify areas that provide exceptional viewing, plan access to meet anticipated need and pursue funding strategies to accommodate construction.

Goal: Encourage partnerships that manage and enhance right-of-way vegetation for safety, noxious weed control and aesthetic reasons by providing appropriate right-of-way vegetation management to optimize native plant propagation and natural surrounding.

Strategies:

- Promote WSDOT's "Adopt a Highway" partnership for weed and litter control
- Follow the WSDOT Area 1 Vegetative Management Plan which supports
 - Vegetation management at key sites, including managing hazard trees
 - Use of vegetation and planting methods that reduce the need for weed control
 - Management of the noxious weeds along the corridor using prescriptive measures along guardrails to facilitate eradication.

Natural site detailing

Natural features such as geologic formations, fossils, landforms, water bodies, vegetation and wildlife are considered natural site detailing. Along SR 542, these features are in a relatively undisturbed state.

Natural site detailing should be the preferred approach in all locations where native site materials can be used to meet design needs and blend with the site. We have identified important corridor characteristics that we strive to protect and enhance. This road corridor goes through areas of dense forest with a turbulent river, and steep and sometimes unstable rocky outcroppings and slopes that have been



altered to accommodate the roadway. These create both maintenance and safety challenges.

SR 542 at MP 33.54 begins in the densely forested foothills at Mount Baker's base. The forests rise out of deep valleys cut by glaciers and further deepened by the Nooksack River and its tributaries. The dense forests are crowded with evergreen and deciduous trees and thickets of hillside shrubs, and ferns. This vegetation is important to maintain along this section of the corridor. The challenge has been to preserve healthy trees and eliminate hazards as well as revegetate the roadside with appropriate native species.



Segments along SR 542- Fall – Winter – Summer- Natural vegetation changes seasonally

As SR 542 winds up Mount Baker, great views of the adjacent ridges, mountains and eventually Mount Shuksan, Mount Baker and the surrounding subalpine forest can be seen from the roadway. The upper Nooksack areas consist of ancient uplifted and deeply dissected and eroded surfaces. To create the roadway, cuts were made into a complex series of granite metamorphic rocks. These areas are also overlaid with early tertiary sandstones, shales and coal beds which occupy the central portion of the Nooksack River basin. These rocky surfaces are challenging when it comes to roadway configuration and maintenance. This segment of the corridor remains narrow, with many steep slopes that limit the ability to change roadway configurations, and falling rock hazards. While these are a challenge to roadway safety, they are also important to preserve as natural and unique site detailing of the area. The USFS and WSDOT continue to work to preserve these features and maintain a safe corridor.

SR 542 natural site detailing goals & strategies:

Goal: Preservation of valuable adjacent scenic lands and roadside detailing in the forest and steep rocky slopes is a priority. The ambiance of the natural settings of the corridor should be maintained when undertaking roadside maintenance.

Strategies: Follow the WSDOT Area 1 Vegetative Management Plan that calls for the

- Revegetation of areas that are disturbed by roadside activity with native species.
- Placement of roadside safety features that blend with the surroundings such as weathering corrugated steel guardrails and wood and “stone” site details.
- Maintain rocky slopes and drainage systems in a manner that safely accommodates the traveling public, and promotes natural detailing.
- Provide roadside eradication of noxious weeds with herbicides that preserve native foliage and respect natural habits of fish and wildlife.



Recreational

Outdoor activities directly associated with and dependant upon the natural and cultural elements of the corridor's landscape are considered recreational. Recreational activities provide opportunities for active and passive experiences, including but not limited to bird and wildlife watching, hiking, camping, snowboarding, snowmobiling, skiing, rafting, horseback riding, hunting and rock-climbing. Recreational experiences may be seasonal, but the quality and importance of the experience is well recognized. Recreation is one of the major draws of this area, and safe access from SR 542 is essential.

SR 542 scenic byway recreational goals and strategies:

Goal: Enhance or maintain recreational opportunities. Encourage construction or improvement of access points to recreational opportunities at safe locations.

Strategy: Support funding applications that encourage construction of safe sites that accommodate the traveling public's access to recreational opportunities throughout the corridor. Support the inclusion of interpretive facilities that enhance the visitors' understanding of the corridor and its resources.

Historical

This encompasses legacies of the past that are distinctly associated with physical elements of the landscape, whether natural or man-made, and that are of such historic significance that they educate the viewer and stir an appreciation of the past. The historic elements reflect the actions of people and may include buildings, settlement patterns and other examples of human activity. Historic features can be inventoried, mapped and interpreted. They possess integrity of location, design, setting, material, workmanship, feeling and association.

The development of travel information is encouraged as an effective method of providing necessary information to the traveling public.

SR 542 scenic byway historical goals and strategies:

Goal: Enhance opportunities for the traveling public to understand the history along the corridor.

Strategy: Support funding applications that maintain and refurbish CCC and other historically relevant sites. Support the inclusion of interpretive facilities that include historic content.



Archeological/ cultural

These include the evidence and expressions of the customs or traditions of a distinct group of people. Cultural features include but are not limited to artifacts, ruins, or historic trade routes of extinct human groups.

SR 542 scenic byway archeological/ cultural goals and strategies:

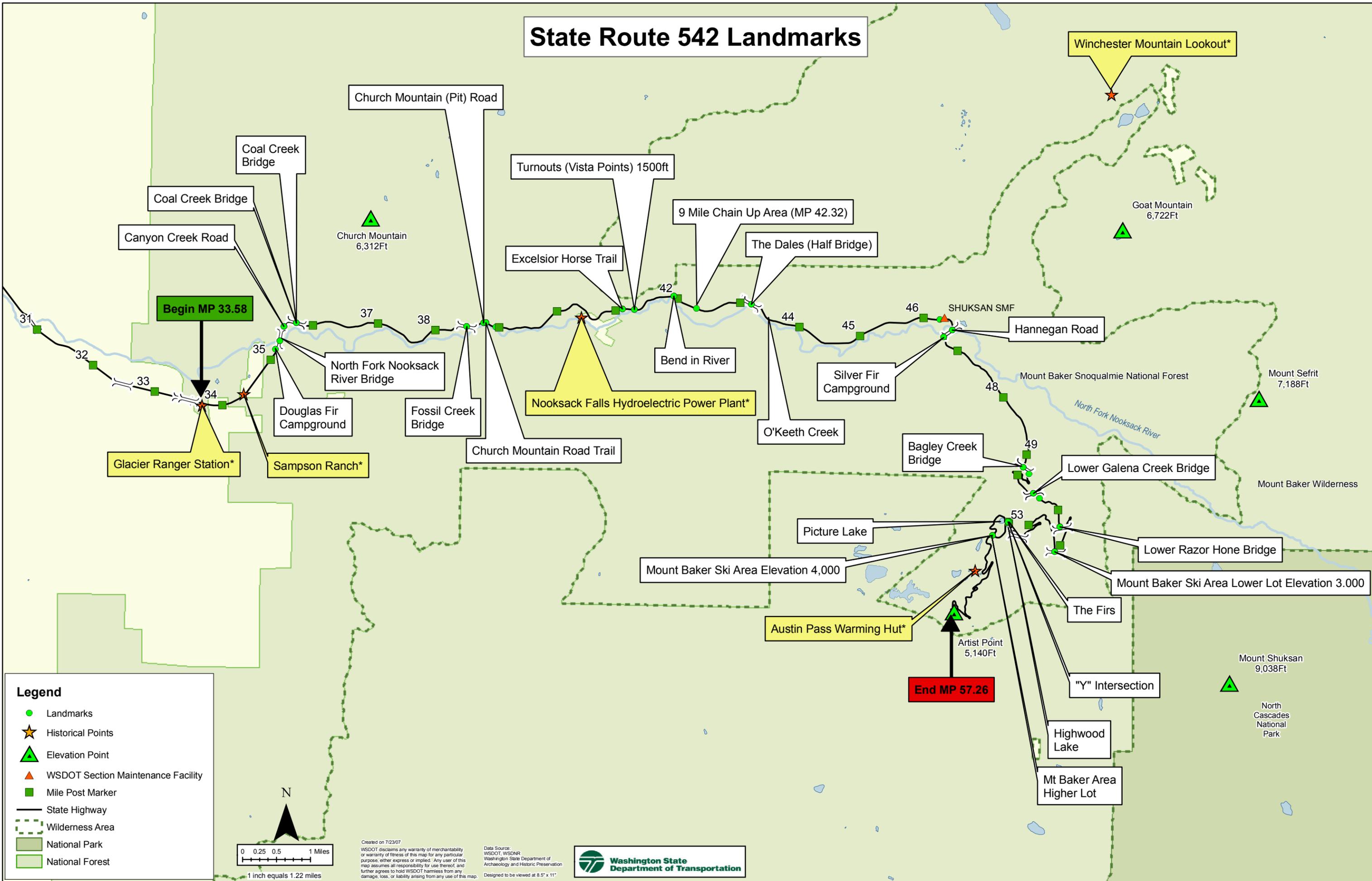
Goal: Encourage strategies and plans that acknowledge and celebrate the different cultures in the corridor that benefit the jurisdictions, tribes, communities, and visitors to the Mount Baker area.

Strategies: Work to preserve all identified resources. Upon discovery of any new archeological resources, WSDOT will comply with the Act for the Preservation of American Antiquities approved June 8, 1906 (34 Stat. 225, 15 U.S.C. 432-433), and the Archeological Resource Protection Act of 1979 (93 Stat. 721, 16 U.S.C. 470aa-47011), and state laws where applicable so as not to disturb, or to detract from the observations that can be made and preserved. Work with tribal, cultural and natural resource experts, local agencies, resource agencies, and affected landowners in all stages of identification, interpretation and possible conservation of special sites, themes, and landscapes. Support the inclusion of interpretive facilities which include cultural / archeological content.

Built site detailing

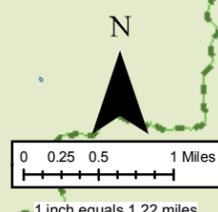
The design of the buildings constructed by the Conservation Corps (“CCC”) in the 1930s showcase the Cascadian theme. These structures have been converted to serve the public traveling along SR 542 and have been maintained and enhanced by the USFS. These buildings convey a unique context within the landscape that adds to how the visitor perceives and remembers the byway and its history. These elements are identified regionally as the *Cascadian architectural style*. These structures enhance the identity and visual experience of this corridor. Building development along the corridor, while unlikely, would occur outside the easement, so would be undertaken by the USFS. Goals and strategies for potential structures fall outside the scope of the easement and so are not included in this review. Map 3 shows the location of significant landmarks that have been identified along the corridor.

State Route 542 Landmarks



Legend

- Landmarks
- ★ Historical Points
- ▲ Elevation Point
- ▲ WSDOT Section Maintenance Facility
- Mile Post Marker
- State Highway
- - - Wilderness Area
- National Park
- National Forest



Created on 7/23/07
 WSDOT disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either express or implied. Any user of this map assumes all responsibility for use thereof, and further agrees to hold WSDOT harmless from any damage, loss, or liability arising from any use of this map.
 Data Source:
 WSDOT, WSDNR
 Washington State Department of Archaeology and Historic Preservation
 Designed to be viewed at 8.5" x 11"



Map 3: SR 542 Identified landmarks

Aesthetics

Aesthetic requirements include consideration of the wall face material, the top profile, the terminal, and the surface finish and the texture, color and pattern of transportation structures along the corridor. Where appropriate they contain planting areas to visually soften and blend walls in adjacent areas. Approval from the WSDOT State Bridge and Structures Architect is required on all retaining wall aesthetics including finishes, material and configuration.

“Retaining walls and slopes can have a pleasing appearance that is compatible with the surrounding terrain and other structures in the vicinity. To the extent possible within functional requirements and cost effectiveness criteria, aesthetic goals are to be met for all visible retaining walls and reinforced slopes.” This information is taken from the Design Manual page 1130-4, and will be augmented by incorporating appropriate *Mather Memorial Parkway Guideline* features.

Development guidelines for SR 542

SR 542 has many of the features, qualities and attractions that encourage both tourists and long-term residents to travel this highway. Our goal in maintaining the roadway will be to preserve the intrinsic qualities unique to this scenic byway. The easement specifies that the theme or style established for the parkway is “rustic Cascadian,” which is characterized by native materials, primarily quarried stone and timber. The corridor has many areas that currently don’t have this theme incorporated in transportation-related construction, but the theme should continue to be the guide for modifications of site and architectural detailing and new construction throughout the byway.

Corridor recommendations from the Mather Memorial Parkway Guidelines

Aesthetic treatments along this corridor follow the *rustic Cascadian* theme. Guidelines developed to promote this appearance have been developed for State Route 410 in the Mount Rainier National Park. These are referred to as “*The Development Guidelines for the Mather Memorial Parkway*” (hereinafter referred to as *the Mather Guidelines*) and have been referred to in the easement for use when promoting specific design detail. The excerpts below are from this document. They, along with safety considerations, set the standard for construction design decisions along this corridor.

Development Guidelines

Mount Rainier National Park
Mount Baker-Snoqualmie National Forest
Wenatchee National Forest

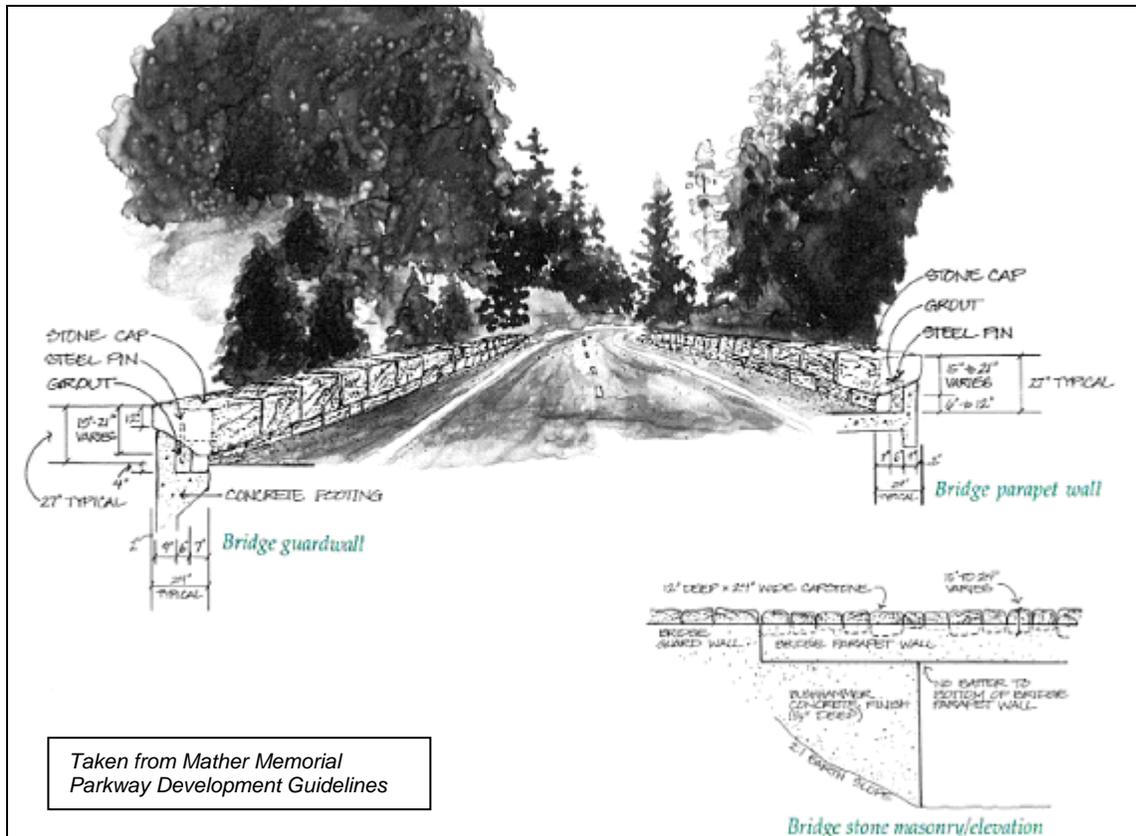
Referred to as the “Greenbook” this guide is used to describe “rustic Cascadian” style.



Bridges

Native stone or native stone veneer should be used on visible inboard faces. Outboard faces should be evaluated individually to determine their visual sensitivity and appropriate type of treatment. Parapet walls on the bridge should be continued into guard walls (off the bridge) that flare and taper into the ground, hillside or rock formations. Existing bridges with incompatible railing designs should be retrofit when their life cycle is complete with new rails that are similar to the following designs. In cases where the structure of the bridge will not support solid stone masonry, stone veneer or similar simulated stone rails may be substituted.

As an example the following has been suggested in the *Mather Guidelines*:



Taken from *Mather Memorial Parkway Development Guidelines*

Example of construction along SR 410

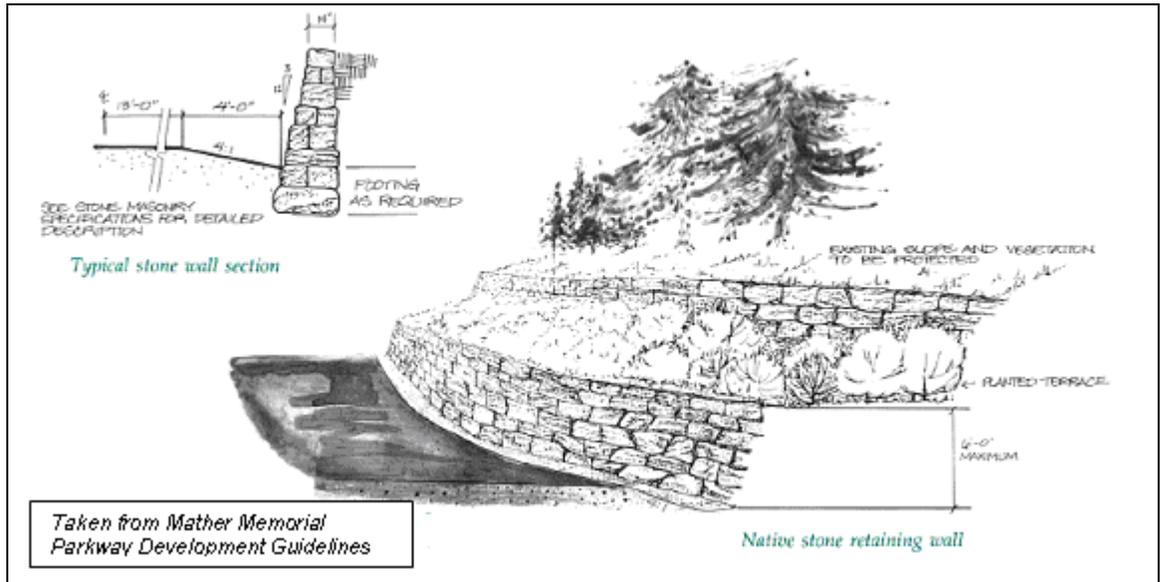


This is a photo of a barrier treatment on SR 410, Mather Memorial Parkway, on a bridge at MP 74.75. This project was designed and constructed by the Forest Service in the 1980s. (The height of this barrier does not meet the current WSDOT design standards, but alternatives are being investigated that can contribute the look and feel of this design.)

Retaining Walls

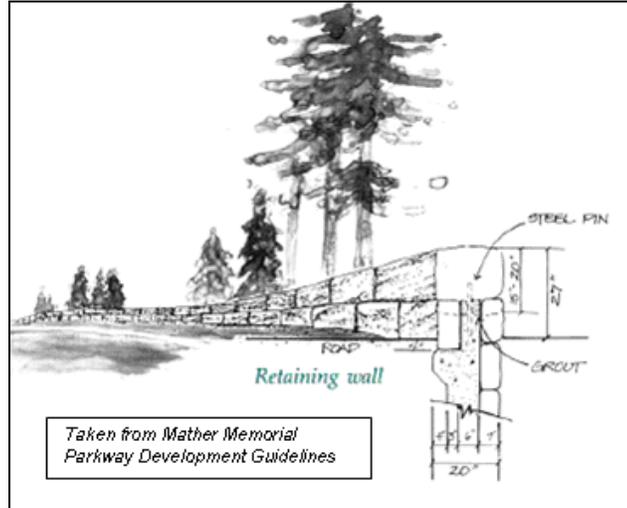
Native stone walls or walls of similar character should be used where visible from the parkway. Wall ends should be flared and tapered into the ground, hillsides or rock formations. If gabions are used, they should be sloped and curved to blend with the site and covered with soil and revegetated as on other fill slopes.

Gabions should not be used in places where they will be highly visible to the public. Walls may be constructed primarily of reinforced mortared stone masonry, concrete with stone veneer, or dry-laid construction in areas where it is deemed appropriate.



Artificial stone

Recent development in the concrete industry has refined surface treatment techniques that allow the creation of very realistic simulated stone surfaces through high-relief form liners. Walls constructed using these methods may be used.



Barriers

Natural barriers and guardrails are the two major types of barriers. Natural barriers are used primarily for traffic control and to prevent parking in inappropriate areas. Guardrails are used to provide protection from safety hazards along the roadway.

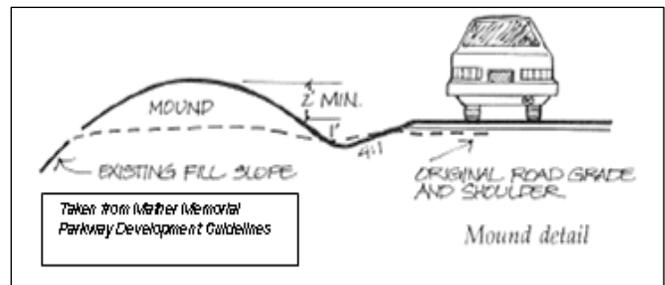
Barriers can differ along the byway, due to aesthetic site considerations and maintenance concerns, (repair costs, snow loading and removal, etc.); however, barrier types should be consistent with the overall theme. Following are the acceptable barrier types and the preferred areas for their use.

Natural barriers

For traffic control, use of the natural elements should be emphasized whenever possible. The natural barriers should maintain the aesthetics of the natural surrounding and be almost maintenance free. Barriers can be created by mounding, boulder placement, planting, etc., which should be evaluated on a site-by-site basis to ensure that the results will blend naturally with the surrounding environment. Some examples of these treatments are shown below.

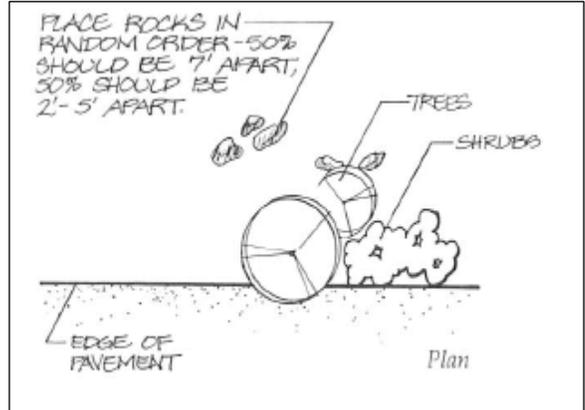
Mounds

Barriers created by mounding should be considered in areas where there is sufficient space, soil, and vegetation to blend the mounds with existing surrounding landforms. The constructed mound should flow or undulate to match the adjacent terrain. Berms in the shape of windows should be avoided. Slopes of mounds should not exceed 2:1; 3:1 and 4:1 are preferable. Slopes steeper than 4:1 should only be used where special conditions exist. Mounds and berms may substitute for guardrails under certain circumstances where adequate space for construction is available.



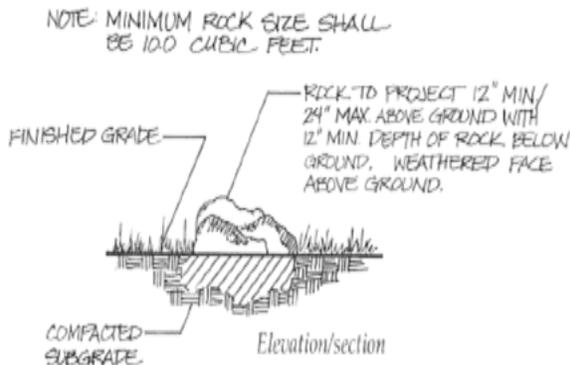
Planting

Roadside plantings can be used control unauthorized vehicular access into roadside areas. Plants used within the clear zone should be limited to shrubs or small trees with an ultimate growth size of less than 6" dbh (outside bark diameter at breast height). If trees are used, they should be planted an appropriate distance from the edge of the pavement to prevent limbs from drooping across the road during periods of heavy snow or ice. All plant material should be indigenous species and planted in natural-appearing patterns.



Boulder placement

Rock barriers should be considered in areas where the existing natural setting has rock outcrops and minimal vegetation. Boulders should be grouped and partially buried. A "dragons tooth" appearance (equal spacing and alignment of boulders) should be avoided. Rock barriers should be used in areas that are outside the designated clear zone.





Guardrails

The standard weathering steel W beam guardrail is the recommended standard. This type of guardrail should be used, as it currently is, in areas where guardrails are frequently damaged by snowplows and blowers. This type of guardrail blends well with browns, beiges, and open forest. The end treatments should be flared away from the road and tapered down into the adjacent ground or hillside or as required by WSDOT design standards.



Design considerations

The 2004 easement refers to the development guidelines for the Mather Memorial Parkway that was prepared by the National Park Service. These graphics were taken from those guidelines so they can be used as guidance when looking at aesthetic attributes of projects along SR 542. They provide a visual link to what has been described as a “rustic Cascadian” look.

These design features will be reviewed when new projects are undertaken on the corridor. Since safety along the roadway is always of primary concern, these design concepts will always require modification to meet current safety standards, and additional modifications in terms of height have been suggested. These will need further refinement before any projects are constructed.

The full text of the Mather Memorial Parkway Design Guidelines has been included in Appendix 4 of this report. The excerpts in this section were included to visually demonstrate what is representative of “rustic Cascadian” design features. It has been suggested that visual treatments be focused on areas that are visible from roadway and that we concentrate on areas that deserve special design consideration such as the following:

- Signs (Other than directional and regulatory highway signs)
- Interpretative elements (wayside pulloffs with interpretative panels, interpretive kiosks, etc...)
- Bridges
- Guardrails
- Trail markers
- Historical markers
- Roadside structure (retaining walls, freestanding walls, barrier, etc)
- Landscaping
- Walkways and trails
- Other elements that may be visible from the highway (restrooms, picnic shelter, fences, etc.)

These will be both within and outside of the right of way along this corridor. These treatments are costly and exceed WSDOT's typical funding processes, so construction of these special designs may require additional funding by both WSDOT and the USFS along with other partners.

Design details, as presented in the Mather Parkway development guidelines, are suggested to retain and enhance the scenic character of the corridor. WSDOT has adopted "Scenic Byway Logo Signing Guidelines" and the Heritage Corridors Program of WSDOT is currently preparing design guidelines for state scenic byways, but these guidelines are in a draft stage and have not been published yet. The diagrams incorporated from the Mather Parkway Guidelines plan will be used to determine what is appropriate when capital projects are proposed.

It is the goal, but it may not be feasible, to fully replicate all aspects of the design standards suggested in the Mather Parkway Development Guidelines on SR 542. But signing, interpretative elements, roadside visitor facilities and other features should be compatible and consistent with them.

It is recommended that the corridor be consistent in character with the "rustic Cascadian" image to better blend with the surroundings. Use of the guidelines will help to provide guidance when capital projects go forward to ensure that the intrinsic qualities of the corridor are maintained and enhanced. Below is an example from the WSDOT architectural design guidelines showing an example of the "rustic Cascadian" theme. This goes beyond the functional design needed to provide structural improvements along this corridor; however, funding to meet aesthetic standards will be requested with the project proposal. Partnerships and grants will be fully utilized to supplement funding as needed.

Example of Underlying Assumptions for a project

We will mitigate unavoidable visual impacts using Architectural Design Guidelines and Roadside Classification Plan – Treatment Level 2 for Forested Classification



Cascadian Theme

Corridor Continuity

06_27_2009

The image is a composite graphic. At the top, it has a title and a subtitle. Below the subtitle, there are three main visual elements: a black and white architectural sketch of a road winding through a forested area with a stone wall; a technical cross-section diagram of a stone wall with a concrete base and a stone top layer; and a color photograph of a real-world stone wall along a road. The text 'Cascadian Theme' and 'Corridor Continuity' is placed on the left side, and a date stamp '06_27_2009' is at the bottom right of the photograph.



Architectural guidelines

Guidelines provide the designers, engineers and others with guidance necessary to define what is needed for cohesive and consistent transportation structures. The intent is to ensure continuity, uniformity, order and an identity throughout the corridor by blending the manmade material, features, colors and scale with the natural environment, historical precedence and the local social and economic infrastructure. Application of the Cascadian Style in design and construction of the highway infrastructure will maintain and reinforce the motorist's experience of this scenic byway. These guidelines communicate to future designers and maintenance personnel the aesthetic commitments made by WSDOT and the USFS when partnering in the construction of projects along SR 542.

Cascadian Style

The rustic architectural style was originally developed in the late 1800's and early 1900's as part of the Arts and Crafts Movement and was further refined by the (National) Parks Movement in the 1920's and 1930's. Applied by the Civilian Conservation Corps (CCC) and other public works agencies on such noted projects as the Timberline Lodge at Mount Hood, Paradise Inn at Mount Rainier and the Columbia river Gorge National Scenic Area and on highways in both Oregon and Washington States; the "North West Providence" style became known as "Cascadian Style." The highest expression of the rustic style is the in the Pacific Northwest Region, both in quantity and quality and is still known today as the "Cascadian Style." It has been adopted and used by the US Forest Service, Washington State Natural Resources, and State and local Parks Departments.

The Cascadian Style is both understated and yet noticeably apparent at the same time. The use of "native" and rustic concepts is both broad in spatial scale, and inclusive of human endeavor and use. The application of the Cascadian Style in forming shaping, and coloration of the various highway elements will assist in providing context sensitive solutions incorporating highway planning, engineering, architecture and landscape architecture with the natural environment and the local social character. It will provide a cohesive, graceful travel experience that blends with and enhances both the surrounding natural environment and the human-scale built environment.

References used

These architectural guidelines have been developed through teamwork between the Washington State Department of Transportation, the US Forest Service and others; and through the use of several publication including "The Built Environment Image Guide" published by the United States Forest Service and "Aesthetic Alternatives for Selected Roadside Elements" prepared for WSDOT by the Department of Urban Regional Planning, Eastern Washington University. A through summary of the corridor's qualities, public benefits, and the WSDOT commitment to help sustain them is summarized in this document. Partnerships will need to be established to secure funding to further this work.

Where will the style be applied?

The key elements of the Cascadian Style are integrated into the design through the appearance of natural, durable, available and sustainable materials. Muted native earth colors; paying close



attention to the surrounding scale, shape, terrain and other landscaped features will provide additional enhancement to the key highway elements.

The scale and structure of the mountains, rocks, and trees – the scale of the environmental setting, is expressed through the appearance of the substantial structural strength of natural elements such as rock and timber. These elements will be applied where safe and practical and where it has visual significance on such components as:

- Landscape design
- Traffic barriers
- Bridge structures
- Lighting standards and supports
- Signs and sign support structures
- Other structural and safety requirements.
-

How will it be applied?

The Cascadian Style patterns will be made from form liner pattered concrete on both cast in place and pre-cast structures. The concrete will be colored to match the nearby environment using color additives in pre-mixing, dry pigment, and dyes applied after the forms have been removed. If specific graffiti preventing paint is needed that will be colored to compliment the area. Mt. St. Helens Gray, Washington Gray and Mt. Baker color chips are representative of colors that compliment this area. The anticipated color application on various highway infrastructure, traffic safety structures, lighting and other appurtenances are governed by closeness to the roadway (safety concern), degree of visibility and proximity to human use.

Infrastructure applications

Bridges present one of the best opportunities to enhance corridor continuity through the use of Cascadian Style. This aesthetic continuity reinforces the motorist's sense that they are on a Scenic Byway. Cascadian features should be used when the bridge is visible to the public, and concentrate visible facades. Where visible to the traveling motorist, pedestrian, or from afar looking back to the highway, the exterior surface of barriers should be textured and finished with a liner-formed, stained or dyed stone appearance. Coloring will compliment the bridge structure and promote blending with the natural environment. Traffic and bridge barriers are subject to crash safety considerations, and damage where snow removal operations take place.

Guardrail shall be W beam weathering steel. Installation shall be per the WSDOT design manual (M22-01) and shall meet FHWA and WSDOT crash test criteria.

Application of the Cascadian Style provides corridor continuity and an unmistakable identity. It supports both State and National Scenic Byway designations. Due to vehicle safety concerns, constructability and maintenance expense, the use of form lined concrete with admixtures, stains and dyes to appropriate natural materials has been determined as the best method of applying the Cascadian Theme. Exact application locations will be determined during the design process and will be governed by safety visibility and scenic byway context.

MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

**PLACES OF SOCIAL, CULTURAL,
HISTORIC, RECREATIONAL, AND
SCENIC IMPORTANCE**

Places of social, cultural, historic, recreational, and scenic importance

SR 542 provides access to many spectacular locations in the National Forest. Seasonal usage places unique demands on the corridor, so it is important to recognize areas that visitors frequent and maintain safe and appropriate access.

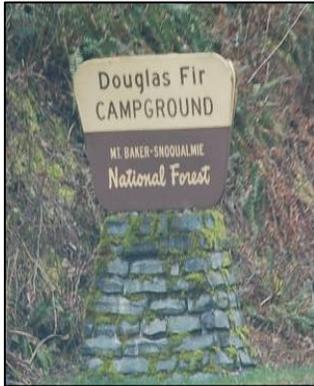
A variety of viewing opportunities enhance the scenic SR 542 experience and many of the landscapes change dramatically throughout the year. WSDOT and the USFS have collaborated to upgrade and acknowledge where additional resources would benefit safe access to and from this corridor. Section 6 of the easement agreement requires joint approval of byway locations that represent special places, viewpoints and appearance of the highway structures. This section provides a list of areas that are focal points for visitors that we would like to preserve and enhance.

Below is a listing of both historically identified and recreationally active areas accessed off SR 542 located approximately by milepost (MP) or identified Forest Service Road (FR), and direction if traveling eastbound. It is important to know where visitors travel and when, so we can jointly plan for safe access to these locations.

MP 34- Glacier Public Service Center- is listed on the National Historic Register of Historic Places. This complex marks the entry into the National Forest and showcases the Cascadian architectural theme that is the signature of Northwest forests. It was built in 1938 by the Civilian Conservation Corps (CCC), and was added to the National Historic Register in 1980- identified as building #80004013.



Glacier Public Service Center (GPSC) is jointly operated by the USFS and National Park Service during the summer season. Visitor information staff provide interpretive material and programs to help plan outings, issue permits for backcountry use, and provide insight to the area's natural and cultural histories. The GPSC is open daily from Memorial Day to October, and weekends during select winter months. Restrooms and self-service information are located in an outdoor plaza year-round. Gallup Creek Picnic Area provides picnic tables and trash cans adjacent to the facility and the community of Glacier.



MP 36-Douglas Fir Campground- National Forest camp built by the CCC in the 1930s. Forested setting along the North Fork Nooksack River, 29 sites available for tent and trailer camping. Day-use picnic area with reservable picnic shelter. Restrooms and hand-pumped wells for drinking water. Concessionaire operated under special-use permit by USDA Forest Service.

MP 36-Horseshoe Bend Trail - This location offers access for guided river rafting on the Nooksack River. The hiker-only trail is approximately 1.5 miles long (2.45 km) one way, and wanders along a forested ledge above the North Fork of the Nooksack River. The first 700 feet of the trail, accessed from Douglas Fir Campground, offers accessible views of the River.

MP 37 -Church Mountain viewpoint- Elev. 6,315 feet. High elevation trails on southern slope are often the first area to open for summer hiking. (Right) Turnouts to view North Fork Nooksack River.

Canyon Creek- A Washington state Sno-Park is located up FR 31. This park provides access to spectacular snowmobiling or cross-country skiing, Washington State Sno-Park Permit required. Damfino Lakes Trailhead is located at the end of the road. This popular family hike leads to Damfino Lakes and on to Excelsior Pass and the scenic High Divide Trail.

Glacier Creek Road- FR 39 provides access to Glacier Creek and the Heliotrope Trailhead which serves as the main access route for hikes and climbers on the North Side of Mt Baker. The end of the road takes you to a dramatic viewpoint (weather permitting) of Coleman Glacier on the west side of Mount Baker. On the lower portion of the road, Washington state Sno-Park program offers plowed parking for snowmobiling, cross-country skiing and snow sports in the winter.

Skyline Divide Trailhead and Boyd Creek Interpretive Trail- FR 37 a quick left off FR 39 takes you to the a short, self guided nature trail focuses on healthy fish habitat, along a forested riparian area.

Church Mountain Trailhead- can be accessed on FR 3040. Church Mountain, elev. 6,315 feet has high elevation trails on the southern slope and is often the first in the area to open for summer hiking. Trailhead begins at an elevation of 2,400 feet. It also has turnouts to view the north fork of the Nooksack River.

MP 40 Excelsior Group Camp –National Forest Campground. There are two group sites for up to 100 people total. Picnic tables, vault toilets and fire grills are provided. The group campground is operated by Forest concessionaire.



Nooksack Falls- A thundering waterfall that tumbles 175 feet. FR 33, Wells Creek Road takes visitors a half-mile to off-road parking across from the falls. This is a popular destination for visitors, providing fence-lined pathways to scenic viewpoints, as well as several information kiosks. Portions of this road and the viewpoint are located on private property.

Nooksack Falls hydroelectric power plant- built in 1900 it functioned as an energy extraction and processing facility until 1924. It was added to the National Historic register in 1988, as District #88002735. It is privately owned, but the transmission conduct is visible next to the parking facility by Nooksack Falls.

MP 41 - Excelsior Pass Trailhead - Parking area and restroom at trailhead, hiker/horse trail leads up steep switchbacks to the High Divide Trail.

MP 43 - North Fork Nooksack research natural area- Established in 1934, this 1,400 acre reserve was established as an example of Douglas Fir-Hemlock forest types found at the mid-elevations in the North Cascades.

FR 3060 High Divide Trailhead – Hiker/horse trail leads up to Welcome Pass and alpine vistas.



MP 46- Shuksan maintenance facility- This property is owned by WSDOT and is not subject to the easement with the USFS. Being located in the heart of the National Forest, this facility provides maintenance for the Mt. Baker Area, along with covered sand storage used for winter road traction.

MP 46 - Twin Lakes Road FR #3065- at Shuksan highway maintenance sheds. Twin Lakes is not accessible until early to mid-August. FR 3065 is very steep and rocky. It provides access to the Yellow Aster Butte Trailhead beginning elevation 3,600, the Tomyhoi Lake Trailhead, beginning at 4,200 feet, the Twin Lakes, Trailhead to Winchester Mountain beginning at 5,200 feet, Silesia Creek beginning at 5,200 feet, High Pass beginning at 5,200 feet, and the High Divide Trailhead beginning at 5,300 feet. Originally constructed as a mine to market road, the road is rough and recommended for high clearance 4 wheel drive vehicles only beyond the Tomyhoi Lake and Yellow Aster Butte Trailhead at the 5-mile mark; visitors without the recommended vehicles can hike the remaining 2 miles to the Twin Lakes area.



Shuksan picnic area - Hannegan Pass Road, is a picturesque picnic spot along the river; picnic tables, stand up grills, restroom.

Silver Fir Campground- There are 20 sites at this National Forest Campground built by CCC. Concessionaire operated during the summer season, reservation sites available, day-use picnic shelter and riverside setting.

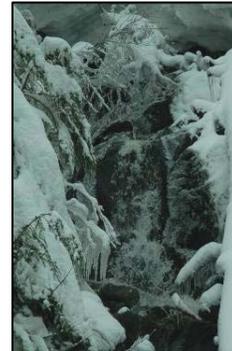
MP 47- FR 32 to Goat Mountain– elevation 6,891 feet to the NE provides summer grazing for one of four bands of mountain goats. The trailhead to Goat Mountain begins at elevation 2,500 feet. This road also leads to Hannegan Pass and Nooksack Cirque Trailheads. This road provides access to cross-country skiing areas in winter.

FR 3071- Anderson Creek- The north fork of the Nooksack River, and 500-year-old western red cedar.

MP 48- “The Climb”



After MP 48 the road hangs on to the hillside as it winds up toward its spectacular summit. For the next 10 miles, the road will climb 3,200 feet. Prepare for a series of switchbacks, sharp drop-offs and steep cliffs along the route. You'll see columnar basalt in the road cuts, waterfalls, and tiny alpine lakes.



Waterfalls located in the steep slopes of “the Climb” along SR 542.

MP 49- View Mt. Shuksan - elevation 9,131 feet to the east.

MP 50- View Mt. Sefrit- elevation 7,191 feet to the southeast

MP 52- Mt. Baker Ski Area- FR 3080- provides access to the White Salmon Day Lodge and parking facility. Day-use facility during the ski season with food and ski lifts. The ski resort boasts an unusually long ski season, deep powder, a variety of terrain and 8 lifts, and prides itself on its spectacular scenery. The base elevation is 3,500 feet at White Salmon, and 4,300 ft for Heather Meadows, while the summit at Chair #8 is at 5,089 feet. The average snowfall is 647 inches, and the vertical rise is 1,500 feet.





MP 53 is the entrance to Heather Meadows- This scenic area has self-guided interpretive trails, hiking trails and picnic spots during the summer season. Sections of the trails leading to scenic vistas are designed for persons of all abilities. At this location lava flows from Mount Baker have resisted glacial carving and columns of basalt are clearly visible against the sky. Exhibits inside the historical Heather Meadows Visitor Center offer a glimpse into the area's colorful natural and cultural history.

MP 55 - The Firs Lodge- A year-round retreat center for Christian groups.



After the road forks, staying to the right provides access to **Picture Lake**, elev. 4,100 feet. This location provides a postcard view of Mt. Shuksan, 9,038 feet. Parking is available on the road shoulder. A half-mile trail around the lake is designed for people of all abilities.



The Mountaineers Lodge- Owned by The Mountaineers Climbing Club. Open to members and the public summer and winter. **Vista Picnic Area-** no restrooms.

Mt. Baker Ski Area- Heather Meadows Day Lodge and Mt. Baker Ski Area Mountain Shop. Open during the ski season; ski lift, cross country trail and food.

MP 56 - Austin Pass Picnic Area- The CCC-built this area that sits in a bowl-shaped valley with glorious views and trails. Picnic tables and restroom.



Heather Meadows Visitor Center (formerly the Austin Pass Warming Hut) - This unique building has historic architectural significance as it was built by the CCC in 1939-1940. It was designated on the Historic Register in 1990, as Building #90001866, USFS No. CR06-05-03-13. Open mid-July to September while road access is available. Visitor information staff help provide current conditions and facilitate interpretive programming out of the center, books, maps and other sales items offered through Discover Your Northwest Sales Association.



Wild Goose Pass tree- was originally located at Austin Pass. This tree originally had the government survey marker blaze of Austin Banning, who surveyed the area back in 1893. It no longer stands at its original location. It has been preserved by the USFS and is available for public viewing during the summer season in the Heather Meadows Visitor Center. This item was added to the National Historic Register in 1991- Object # 91000706, CR05-03-07.



MP58 -Artist Point- elevation 5, 140 feet. End of SR 542. Parking lot surrounded by Mt. Baker's peak (south) Mount Shuksan (east) and Table Mountain, elevation 5,742 feet. This area is a dramatic visual highlight of the Mount Baker Area. The parking facility accommodates hikers and onlookers. The Artist Ridge, Table Mountain, Chain Lakes and Ptarmigan Ridge Trails all lead off from the Artist Ridge parking area. This area usually opens the latter part of July, as soon as WSDOT crews can clear the substantial snow cover. This area is maintained by the USFS during the short period it is open.

This list was developed to identify the many locations that draw visitors, and to better understand the use of the corridor. The maintenance of this corridor in the summer and winter has many challenges and financial commitments. It is appropriate to recognize the unique nature of the vistas sought when evaluating the needs of the corridor.

MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

MAINTENANCE OPERATIONS MANAGEMENT PLANS

1. Maintenance: Definition and standards
2. Roadway maintenance standards
3. Erosion control
4. Barriers and guardrail
5. Drainage
6. Seasonal maintenance and clearing to Artist Point,
7. Resource protection
8. Bridges

Maintenance operations management plan

SR 542 is utilized year-round, and has many seasonal challenges: snow, flooding, steep rocky slopes, falling trees and noxious weeds. These are all maintenance responsibilities that require diligent monitoring. While safety and the protection of the state highway is WSDOT's focus, we will also work with USFS to enhance the visual experience of this scenic corridor. Below is a list of maintenance tasks and the agency responsible for carrying them out. The list is divided into seven sections: 1) maintenance definition and standards; 2) erosion control; 3) barriers and guardrail; 4) drainage; 5) seasonal maintenance and clearing to Artist Point; 6) resource protection and 7) bridges. The items included in this section are based on key issues identified in the 2004 easement and are consistent with applicable state and federal highway safety standards.

Maintenance: Definition and standards¹

1. The term "maintenance" means the preservation of the entire highway, including surface, shoulders, roadsides, structures, and such traffic-control devices as are necessary for safe and efficient utilization of the highway (23 U.S.C. 101).
2. Routine maintenance activities are not subject to NEPA requirements. WSDOT will meet Endangered Species Act requirements with respective regulating agencies on all maintenance activities. WSDOT operates under best management practices (BMPs) as described in "Routine Road Maintenance Water Quality and Habitat Guide, Best Management Practices". NOAA Fisheries has stated that prohibitions of section 4(d) of the Endangered Species Act will not apply to actions carried out in compliance with these BMPs. The "Regional Road Maintenance Endangered Species Act Program Guidelines" complies with requirements of the ESA 4d Program.
3. The provisions contained in this section pertain only to maintenance work performed under WSDOT's control that may affect National Forest lands. The local WSDOT maintenance superintendant will coordinate such maintenance activities with local USFS staff.
4. WSDOT maintenance activities coordinated with the USFS shall include, but are not limited to:
 - a. All maintenance activities that involve disposal of slough material, changes in road drainage patterns, and similar actions that affect National Forest lands outside the right of way.
 - b. The development of any material source or storage area not shown on approved construction plans.
 - c. Snow and avalanche control (removal/storage).

¹ The following has been taken from a Memorandum of Understanding NFS OO-MU-11060000-040 between WSDOT and USDA Forest Service Pacific Northwest region "Forest Highways Over National Forest Lands." regarding maintenance standards and responsibilities.

5. For those activities that will be coordinated with the USFS, the USFS will:
 - a. Expedite review and agreement on maintenance items requiring USFS concurrence. USFS will respond within 30 days of receiving the request for concurrence. (Easement section 7b)
 - b. Assist WSDOT maintenance with matters related to equipment parking and materials storage, emergency communications needs, material sources, and designation of slough and slide material disposal areas.
 - c. Advise WSDOT of planned USFS activities that may have an impact on highway maintenance.

Regulations and agreements²

Challenges that exist along a designated scenic byway within a National Forest have been experienced in other corridors. Experts have defined measures that preserve safety and scenic splendor. From this information, agreements and standards have been negotiated to identify methods that should be used to maintain safety and preserve the unique terrain and scenery. Collected below are regulations, agreements and universally applied standards that have been developed to help provide clarity on how to proceed when circumstances require swift action to protect the public, yet also require minimal impact to the roadside diversity.

Roadway maintenance standards

SR 542 from Glacier to Artist Point is a rural, two-lane roadway that serves travelers bound for recreational areas, including the ski area, national forest and scenic vista points. This highway ends at the USFS parking facility at Artist Point. This corridor is designated a Forest Service Scenic Byway and State Scenic Highway. Our goal is to preserve scenic values and provide access to public recreation.

Established maintenance standards and responsibilities ensure that roadways will be maintained according to design or specified maintenance standards. The USFS and WSDOT shall make good faith efforts to be consistent with the standards applied to SR 542. These summaries include terms of negotiated MOUs related to the maintenance of forest highways. Where applicable, federal and state highway standards approved for road maintenance along this corridor, have also been included. WSDOT and USFS shall meet annually to discuss scheduling of maintenance activities and coordinate tasks outlined in this plan to make sure expectations are being met.

WSDOT maintenance responsibilities

WSDOT is responsible for managing the following within the easement limits:

² Summary of efforts coordinated with agreements, defined by regulation, or applied as standard practice by WSDOT and the USFS. A summary of these is included in Appendix 2. These have been developed by the USFS, FHWA, WSDOT, Federal Law, State law, and regional transportation plans. Excerpted sections of USFS and WSDOT objectives for maintenance in National Scenic Byways can be found in Appendix 15.



Masonry cleaning

Rock structures, i.e. bridges and retaining walls, shall be cleaned as necessary.

Painting

Bridges shall be repainted as needed. Use paints recommended for concrete and colors that match existing paint(s).

Routine bridge decks and surface repairs

Repair damage caused by expansion and contraction, wear and tear as soon as possible after detection consistent with budget, time, and available personnel.

Material staging areas

Staging areas are to be kept clean and organized. Place all materials away from view. WSDOT shall remove material off of National Forest System Lands annually or when staging areas are full.

Road shoulders

It will be our policy to blade road shoulders when sand, vegetation, or debris accumulates and causes poor drainage. We will grade away from pavement, restore ground where needed and use the proper shoulder base material when rebuilding eroded shoulders.

Inadequate sight distance

Dense vegetation blocking blind curves, hazards or signs shall be thinned or removed according to the road prism drawing or roadway topography. If necessary, properly sign hazardous conditions.

Transition to undisturbed area

Lack of transition caused by eroding back-slopes, improper removal of vegetation and soil, and long straight clearing lines are to be corrected by thinning or removing dense vegetation and/or stabilizing slopes with bioengineering or structural devices whenever practical.

Vista clearing

Specific areas have been identified as having scenic significance and require vista clearing to enhance viewpoints. WSDOT will maintain the portions of scenic vistas within the easement after coordinating with the USFS. Trimming in areas outside of the easement, that is not required for safety or highway maintenance, will be the responsibility of the USFS crews.

Litter

Debris within the roadway easement may be removed when an existing maintenance activity is taking place. The "Adopt a Highway" partnership is the primary provider of litter control along the state route. WSDOT will supply litter bags and safety materials. The USFS will provide litter cleanup along all pull-outs and other areas outside of the roadway and parking areas.

Utility work



Prior to issuance of utility easements or permits within the roadway prism, the Forest Supervisor will consult with WSDOT regarding standards for the construction and maintenance of the utility facility. Design, construction and inspection, project timing, maintenance, and restoration of the utility facility are items to be agreed upon prior to granting of the utility easement or permit. Extreme care shall be taken in areas where utilities exist within the road corridor, and all utilities shall be located before digging.

Products

These standards apply to products used in maintenance work as required:

1. Traction Sand: Shall meet WSDOT specifications.
2. Herbicide: All herbicides including Round-up by Monsanto or approved equivalent will be used according to manufacturer's specifications. Only herbicides approved by the USFS will be utilized.
3. Product specification on liquid and solid deicing products selected by WSDOT for application along this corridor will be provided to the USFS at the annual review.

Controlling the spread and invasion of exotic plants and noxious weeds

Measures shall be taken to prevent spreading exotic plants and noxious weeds by the use of chemical, manual and mechanical methods within the easement area.

Hazard tree removal

WSDOT shall remove any hazard tree which it deems constitutes an emergency or imminent public hazard. WSDOT will take the lead in the identification and removal of hazard trees and will coordinate with the USFS to notify of the location and size of hazard trees removed and their disposition. WSDOT and the USFS will coordinate annually to review hazard tree removal protocols. The most recent edition of the Forest Service Field Guide shall be used as the protocol for identifying hazard trees.³ These trees will be classified as a "danger" to the traveling public or to employees/contractors working on the highway and will be removed. (See Annual Coordination section for form used to coordinate review with USFS.)

According to the Field Guide, trees have three failure potentials: imminent, likely, or low. Typically, those trees that are classified with imminent failure, which means a potential that they will intersect the travel way or clear zone, represent a danger to the traveling public and workers. See Appendix 15 for additional discussion on hazard tree removal guidelines.

Erosion control

WSDOT will protect the environment by utilizing Best Management Practices (BMP) that prevent or minimize erosion and the transport of sediment. These include various actions that have been agreed upon with the USFS to prevent scour from within the

³ "Field Guide for Danger Tree Identification and Response" (Toupin, R., and Barger, M., 2008, USDA Forest Service, USDI Bureau of Land Management, R6-NR-FP-PR-03-05, 64p.).



Right of Way and the easement and are consistent with applicable state and federal highway safety standards. WSDOT shall provide for the prevention and control of soil erosion within the right of way and adjacent lands that might be affected by action. WSDOT's goal is to use native grasses as approved by the USFS. WSDOT shall maintain all terracing, leadoff ditches or other preventative works that may be required to accomplish this objective. This provision shall also apply to slopes that are reshaped following slides, which occur during or after construction.

General vegetation clearing

WSDOT can alter or remove vegetation along the roadway within budget and time constraints. Typical reasons for vegetation clearing are:

1. Vegetation covers potential hazards i.e. rocks, logs, posts, abutments, guardrails, or any other low obstruction.
2. Vegetation obscures signs and/or warning devices.
3. Vegetation with root systems, which cause damage to the road surface, safety features or drainage structure.
4. Woody vegetation overhanging roadways is lower than 13 feet 6 inches under snow loads.
5. Vegetation reduces sight distance below minimum design standards.
6. Vegetation has blocked a drainage structure or vegetation is compressed into the roadway under excessive snow loads.
7. Within the operational clear zones, immediately along the roadsides, low growing native species i.e. grasses, ferns, and wildflowers should be encouraged wherever possible. Exceptions are: in and around drainage structures, on retaining walls, bridges, curb cracks and joints.
8. Vegetation classified as noxious weeds or other non-native species requiring control.
9. Moss or lichen is causing accelerated erosion of masonry structures. Vegetation which negatively impacts the scenic view at any designated vista.

Vegetation control

All vegetation shall be controlled manually, mechanically, or chemically. Chemical application must be approved. The following are vegetation removal standards to be used along this corridor.

1. Mechanical mowing shall be performed in a manner consistent with WSDOT standards.
2. Required mowing shall be sensitive to any natural characteristic which adds to the unique features of the byway, i.e. huge rocks or old growth trees.



3. Abrupt cutting edges between undisturbed natural vegetation and cut slopes should be softened by undulated clearing limits.
4. Woody stems are to be cut as close to the ground as possible leaving the cut surface out of sight.
5. Larger plants must be felled away from the roadway. Pruned branches shall be cut close to trunks.
6. Noxious weed control shall be performed in consultation with the Whatcom County Noxious Weed Board. The use of herbicides must be given consideration on a case-by-case basis. Only those herbicides that have been approved for use on National Forest lands will be used.
7. Hand-pulling of noxious weed and exotic species shall be performed in consultation with the Whatcom County Noxious Weed Board where use of herbicides is not advisable. Hand pulling of noxious weeds is typically performed by the Whatcom Noxious Weed Control Board. WSDOT does not have the resources to hand pull weeds.

Disposal of Large Woody Debris

Trees too large (over 12 inches) to conceal along roadsides shall be removed to prescribed staging areas for Forest Service disposal and remain the property of the Forest Service. Smaller logs (less than 12 inches) may be cast to the downhill side of the roadway and if possible out of sight. Chipping is permissible when it can be cast out of sight or hauled to an agreed upon location. Large woody debris can be left in place when it is determined not to be a hazard.

Erosion control

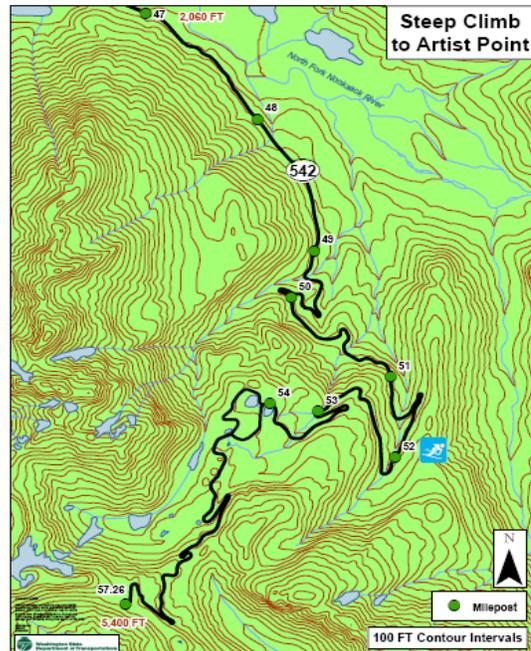
Below is a summary of issues and concerns likely to be encountered on this corridor over time. Each section includes a list of goals and strategies to address them, as well as agreements and guidance that have been previously negotiated regarding actions along this state highway.

Roadside erosion

There are several portions of SR 542 that require slope stabilization to reduce the risk of debris reaching the roadway. Slopes constructed for this roadway are steep and have been destabilized by inclement weather, frost heaves, and general drainage.



“The Climb” up to Artist Point along SR 542 from MP 49 to the top has extremely rugged terrain, with steep slopes, and numerous ridges dissected by small intermittent or permanent drainages.



Slope stabilization

WSDOT’s Geotechnical Branch has developed an “Unstable Slope Management System” that identifies and prioritizes projects in the highway construction program. This system is designed to evaluate all unstable slopes by having engineers perform early project scoping, cost estimation and a benefit cost analysis. Based on this analysis, engineers can prioritize the mitigation of known unstable slopes according to expected benefits. On this corridor there are four areas that have been rated based on identified need and benefit. Below is a summary of these areas as rated in this database. None of these have been found to be a risk to vehicles or have caused any accidents in the last 10 years. The locations do identify areas that require further evaluation and possible stabilization work in the future. This work would be considered a capital improvement.

Unstable Slope Management System Summary for SR 542

	MP	Side of Road	Problem Type
1	41.21-41.26	L	Rockfall/ Catchment
2	43.14-43.30	R	Rockfall/ Catchment
3	52.50-52.65	L	Rockfall/ Catchment
4	53.50-53.60	L	Rockfall/ Catchment

Treatment of steep, raveling slopes

High, bare, rugged slopes and occasional falling rocks are a natural part of the mountainous terrain on the upper part of SR 542. Not every slope that has these characteristics needs treatment.

The basic geological structure of “the climb” up SR 542 is a steep sloped area with fractured granite and little ground cover. Rockslides do occur and are usually caused by periods of heavy rainfall or rapid snowmelt. The photos to the right show the steep road cuts and excavations at locations where rockslides have occurred in the past and steep areas where surface runoff is channeled.

The route is subject to heavy tourist use year-round, with the exception of Artist Point which is only open from July to October, with a significant percentage of the traffic being motor homes and buses in the summer, and skiers traveling the icy roads in the winter. Naturally occurring attributes, such as natural rock faces will be encouraged when stabilization is necessary, but safety and cost factors will contribute to the decision-making process and will be determined on a case-by-case basis.

It might become necessary in the future to provide more visible securing of the rock slide areas to stabilize further rock debris from contacting the highway. The process would require the maintenance office contact the WSDOT soil engineer when any hazardous conditions are noticed to determine appropriate action.

Stabilization improvements may require fractured fin or fractured granite type concrete stabilization barriers. The objective will be to improve safety by eliminating the significant rock slide potential and provide cost effective solutions that maximize the unique visual characteristics of this area. Some form of wall texture would be ideal, and color selected that closely matches the existing granite in the region.

Existing steep slopes that pose problems will be evaluated for treatment and could utilize one of the following methods: toe wall construction, biotechnical structures like brush-layering and willow whittling (when growing conditions allow), terraced slopes, or laying back slopes. Every effort should be made to not create new sliver cuts on existing healed slopes if it is not necessary to safeguard the slope. More detail on these methods can be found in the Maintenance Measures Appendix 15.





Rock faces

Rock faces covered with moss and scattered native vegetation are visually pleasing and contribute to the character of the highway. Cutting rock faces should be avoided if possible. If a cut must be made, the excess rock should be removed along natural fracture planes. Visible drill marks should be avoided. Opportunities for creating planting pockets should be explored. Raw faces should be treated with some type of accelerated weathering agent that gives the rock a natural weathered look.



Before treatment



After treatment

Vegetative management

Vegetation management is part of the normal maintenance of this roadway. The intention is to enhance safety and preserve the vegetative canopy. The forested landscape should dominate the roadside and structures should blend in as much as possible. However, vegetation, if left alone, will grow out of control, blocking visibility of signs, traffic, and wildlife, which could endanger motorists. Weeds must be controlled to avoid impacts on the farming community and native ecosystems. An Integrated Vegetative Management Plan has been developed for this corridor. It will be explained in more detail in vegetative management section of this plan, where guidelines are provided that direct the actions along the roadside of SR 542.

General erosion control

Beyond emergency repair, erosion control is part of the maintenance along the corridor. WSDOT applies BMP guidelines from the RRMP to proactively plan, implement, and monitor activities when undertaking actions to control erosion. All projects that involve land disturbance during construction require a TECS plan. The TECS Plan, in combination with the Spill Prevention Control and Countermeasures Plan will satisfy the requirements of the MPDES/Baseline General Permit.

WSDOT protects the environment by providing stabilization and structural practices that prevent or minimize erosion and the transport of sediment. Effective erosion control helps maintain water quality and drainage while reducing erosion-related costs and facility degradation. Consistent with state and federal highway safety standards, WSDOT shall provide for the prevention and control of soil erosion within the easement. This provision shall also apply to slopes that are reshaped following slides which occur during or after construction.

Winter storm maintenance is only performed under emergency actions. Annually the creek beds are monitored for accumulated debris that needs to be removed if it impedes water flow. This occurs under GHPA's and within the applicable fish windows when the weather improves. Currently this is accomplished in a joint permitting partnership with USFS and WDFW.



To maintain drainage it is necessary to clean excessive brush, debris, and sedimentation from drainage channels. This may require digging out channels with equipment. Routine ditching materials may not be side-cast but will be disposed of at the specified debris storage locations shown in the Maintenance Measures Appendix 15.

WSDOT will maintain drainage by doing the following:

- a. Provide water drainage away from slump areas. Re-establish original contour with suitable material. Utilize vegetation or approved structural devices to protect slopes.

- b. Slides caused by flooding or slope failures may be cleared from roadway by side casting slide debris free of asphalt materials or hauled to temporary storage areas approved by the Forest Service. Side casting materials must not cause erosion problems.

Map 6 shows locations that have required maintenance to minimize erosion of the roadway.

Barriers and guardrail

There are several treatments bordering the highway along SR 542. Some are decorative, some are required for safety. Below are photos of what exists along the corridor today; some are historic, others are temporary.

Concrete stamped barrier- One location along the corridor has rock-faced print on concrete, facing the roadway, located at Half-bridge, the portion facing the roadway. This has not been set as a standard along the corridor, but has been considered visually appealing.



Rock wall- One location along the corridor has a rock wall that appears to be that of the CCC style. It is very appealing. Additions of this style would require a capital funding plan to implement.



Jersey barriers- If jersey barriers are used, they should be treated with appropriate paint to reduce the visual intrusion. The jersey barrier photographed at MP 38.87 has a Cor-10 simulated coloration. Even though this was a temporary measure, these sometimes remain in place after a stabilization effort for three to seven years until a capital project is funded to provide a more permanent solution.



Guardrails- SR 542 has many areas with steep embankments or fixed objects that require protective guardrails to reduce the likelihood of severe accidents. Guardrails prevent vehicles from veering off the roadway. The standard guardrail uses steel rail on wood posts at 6 foot 3 inch centers, and are generally required where there is a drop of 30 inches or more.



The USFS and WSDOT have agreed that the standard for placement and replacement of guardrails will be the use of weathering steel (COR 10 type) guardrails. Some existing steel guardrail still exists. This is being replaced with COR 10 colored rail as repairs are needed and connect to existing COR 10 rail. If a repair is in the middle of a long stretch of existing steel colored guardrail, it will be replaced in kind depending on the length of damage.



WSDOT is responsible for guardrails along SR 542; USFS is responsible for guardrails off of SR 542 serving USFS facilities.

Except for the 2008 Safety project sections, no funding has been requested or secured for additional placement of any barriers along SR 542. Several sections of the route have shoulders with very steep embankments along “the Climb” to Artist Point. These have not had guardrail placed even though the incline is quite steep. Collision data has shown that more precautions in this area would not increase safety, and the visual encumbrances of guardrails would impact the scenic nature of the area.

Seasonal maintenance at Artist Point

The easement specifies that WSDOT and the USFS shall agree on a plan of action regulating vehicle parking, pavement marking, highway signing, end-of-road seasonal gating and closures. The existing facilities have been agreed to by both agencies. Further coordination and planning for additional facilities or changes should be coordinated at the annual meeting so that needed amendments can be accommodated.



A contractual arrangement has developed outside of the easement for the snowplowing of USFS areas within the Heather Meadows Area, and the Firs and Mountaineers adjacent parking areas. It has been agreed that when WSDOT has time and resources, USFS can contract them for the clearing of these areas in the spring. USFS has also worked with Whatcom Parks Department for these services in the past and that is also an option.

WSDOT shall provide highway maintenance, including winter road snow and ice operations. Safety is WSDOT’s primary concern. If conditions are such that safe travel is not possible, WSDOT has the authority to close the roadway.



Seasonal closure/opening at Artist Point

The last 2.5 miles of SR 542 are not maintained year-round. SR 542 closes seasonally at Artist Point after the first substantial snowfall of the year, which usually comes in late September or early October. WSDOT has the authority to gate the road when an unsafe condition presents itself. Currently the roadway is gated to prevent access to Artist Point after the first major snowfall and reopened in the late summer when the snow is cleared. No other closures have been needed.



Snow clearing typically starts in July and is opened to the public after a month long process of snow removal. WSDOT crews start clearing at the milepost 54.7 gate and work their way up to Artist Point, where the snow can be 20 feet deep or more. The highway ends at the Artist Point parking lot, elevation 5,140 feet (MP 57.26). The cost to accomplish this work is about approximately \$40,000 per year.

WSDOT shall clear the parking located at MP 57.2. Snow removal around the restroom is the USFS responsibility. USFS shall maintain comfort stations and associated parking areas. These dates vary based on the snowfall. The decision to open the roadway is at the discretion of WSDOT. Opening and closing dates will be coordinated with USFS.

Snow removal

WSDOT conducts snow- and ice-removal operations on SR 542 from Shuksan Snow Camp. WSDOT maintenance will apply mixed sand in such a manner as to limit and reduce road sand and sediments from entering streams and rivers.⁴

Snow removal shall be performed to the level of service as described in the WSDOT Area 1 Snow & Ice Plan:

1. WSDOT managers are responsible for snow removal on SR 542. Only trained and/or experienced personnel are authorized to operate WSDOT equipment used in snow/ice removal operations. USFS and WSDOT officials shall coordinate the closure to Artist Point. WSDOT shall provide equipment used in all snow removal operations. Seasonal opening shall be performed in the summer to provide the earliest and most economical opening date for Artist Point.
2. Use of explosives in avalanche control area along the highway will be coordinated with the WSDOT and the Mt. Baker Ski Area.
3. WSDOT and USFS shall coordinate all signage for road conditions and chain-up area.

WSDOT is responsible for the clearing of the roadway prism and the easement portion of the roadway. WSDOT is willing to do additional snow clearing work as time permits,

⁴ This will be consistent with the 4(d) Rule guidelines approved by the US Fish and Wildlife Service and National Marine Fisheries Service and established WSDOT Winter Best Management Practices in Snow and Ice Removal.



as long as the associated costs are reimbursed through an established “JA of NA account.” Road safety is WSDOT’s primary concern, and it needs to be clear that clearing of the roadway comes first, and the additional work is only done if time permits.

Avalanche control

The “Galena Slide”, located east of White Salmon lodge requires avalanche control. This service is currently provided by the Mt. Baker Ski Area in their normal course of avalanche control when they are protecting their ski slopes. They are trained and certified. WSDOT coordinates with this team to provide traffic control to safeguard the public when a charge is set off.



Seasonal road maintenance (spring, summer, fall)

Spring brings many of the same issues of winter, but also has more intense drainage problems as the snow melts and discharges glacial materials in the steam beds. Summer has similar snowmelt issues along with additional vegetative maintenance, noxious weed control, and congested public use along many portions of the corridor. Fall brings the possibility of rivers overtopping their banks, localized flooding and the beginning of winter snow issues.

Resource protection

Aquatic and fisheries protection

WSDOT shall protect and preserve the aquatic and fisheries resources within, and/or affected by operation, maintenance, construction or reconstruction activities pursuant to the easement, in substantial accordance with the objectives of the Aquatic Conservation Strategy (ACS) objectives of the Forest Plan.

The Forest Supervisor and WSDOT shall coordinate annually to address aquatic and fisheries resource matters of concern or non-compliance to either party. This annual coordination and consultation may include representatives or guidance from the Washington State Department of Fish and Wildlife, the Lummi Nation, Nooksack Tribe, other federal agencies and other interested parties as may be appropriate. The Forest Supervisor shall initiate this annual coordination.

Natural and cultural resources

WSDOT and the USFS shall make determination as to the necessity for archeological and paleontological reconnaissance and salvage within the easement, to be undertaken by WSDOT per federal standards.

Project review is required for all maintenance and construction projects affecting natural and cultural resources. Project reviews for recurring activities such as ditching, pothole patching,



mowing and slide repairs shall be completed by the USFS under a blanket clearance on an annual basis.

1. Before major work projects begin, such as a major drainage culvert replacement or replacement of historic masonry structures beyond the scope of routine maintenance, a full description of the project must be communicated in writing to the USFS by the WSDOT Maintenance Supervisor. The USFS will review the project and advise the WSDOT supervisor if adjustments to the proposed project are needed and when to proceed.
2. The purpose of the project review is to:
 - a. Assess potential effects from proposed plans and projects on natural and cultural resources (ensuring that projects do not unknowingly adversely affect USFS resources or public lands).
 - b. Ensure compliance with applicable laws, policies and regulations affecting USFS resources and operations.
 - c. Fully explain the need for and thoroughly consider potential effects on resources and alternatives to implementing the project, including alternatives to meet scenic and aesthetic standards
 - d. Facilitate communication among Forest Service staff regarding proposal planning.
 - e. Facilitate the timely accomplishment of projects and plans.

Standard action upon the discovery of archaeological resource:

Procedures identified in federal and state laws and regulations will be followed if an archaeological or paleontological discovery is made as appropriate. Upon discovery of any resources within the easement, WSDOT will comply with the Act for the Preservation of American Antiquities approved June 8, 1906 (34 Stat. 225, 15 U.S.C. 432-433), and the Archeological Resource Protection Act of 1979 (93 Stat. 721, 16 U.S.C. 470aa-47011), and other state laws where applicable.

Bridge maintenance and future capital construction

SR 542 within the National Forest System lands has 11 bridges from MP 35.32 to 53.65. These range in age from 14 to 74 years old, built from 1934 to 1994.

Bridge Inventory SR 542 -USFS	Year Built	MP
North Fork Nooksack Bridge 542/34	1963	35.32
Coal Creek 542/35	1971	35.74
Fossil Creek 542/36	1934	38.65
Half Bridge 542/38	1938	43.2
Half Bridge 542/39	1994	43.23
North Fork Nooksack River 542/40	1957	46.55
Bagley Creek 542/42	1946	49.16
Galena Creek Lower X-ing 542/46	1945	50.38
Razorthone Creek Lower X-ing 542/44	1946	51.28
Razorthone Creek Upper X-ing 542/45	1945	52.09
Galena Creek Upper Xing 542/46	1946	53.65

These bridges will eventually require upgrades and replacement, but no major improvements are funded or scheduled for construction in the next 20 years. Bridge maintenance, beyond the normal roadway clearing and minor repairs, is a capital project requiring funding, and specialized expertise.

WSDOT manages all state-owned bridges using the Washington State Bridge Inventory System, which tracks the condition of all bridges statewide. Bridges along SR 542 are routinely inspected by technical experts to determine the structural condition of the bridges. The condition rating is based on the structural sufficiency standards established by FHWA Recording and Coding Guide for the Structural Inventory and Appraisal of the national's Bridges. This rating relates to the evaluation of the bridge superstructure, deck, substructure, structural adequacy, and waterway adequacy. WSDOT's bridge preservation program consists of the following:

Bridge inspection-Inspect half of the bridges every year unless condition necessitates additional inspections.

Bridge replacement and rehabilitations- repair bridges with deteriorated bridge elements such as concrete columns or floating bridge anchor cables. Replace as needed.

Preservation- Extend bridge service life by repainting steel structures; also repair and overlay concrete bridge decks.

Risk reduction- Seismic retrofit of bridges and scour repair of bridge piers in rivers. This work provides a proactive approach to minimizing bridge damage due to earthquake and high water events.

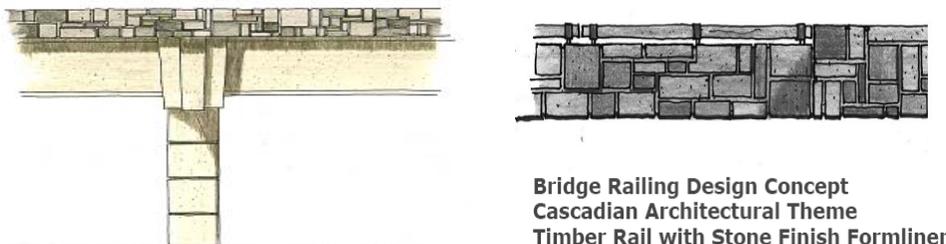
Expectations for new and/or replacement bridges:

- It is anticipated that bridge options will be preferred over culverts where fish habitat will be enhanced, provided that this option is cost-effective.
- Bridge aesthetics should be reviewed by both the USFS and WSDOT to achieve a safe, cost-effective and visually pleasing structure.
- Native stone or native stone veneer should be used on visible inboard faces in a safe manner. Outboard faces should be evaluated individually to determine their visual sensitivity and appropriate type of treatment.
- Existing bridges with incompatible railing designs should be retrofit with new rails that are similar to the designs that have a Cascadian theme. In cases where the structure of the bridge will not support solid stone masonry, stone veneer or similar simulated stone rails may be substituted. The cost of this additional detailing needs to be explored further in terms of grants or other sources of funding.

These requirements are based on provisions in the easement agreement and will add to the cost of future projects along this corridor. The responsibility for aesthetic reconstruction is not budgeted at this time and will require funding partnerships to finance these projects.

Cascadian bridge design:

The Cascadian style is to be incorporated into new projects when visible to the traveling public. WSDOT does not have funding to replace any of the structures along this corridor, but it is hoped that more aesthetically pleasing designs can be integrated when new projects are developed. The conceptual design below shows the Cascadian style and provides a reference for what might be suggested if funding were available.



Conceptual designs provided by WSDOT Bridge Architect Paul Kinderman- Winter2008

In Appendix 14 is an inventory of the bridge structures along SR 542. It would be a major undertaking to provide retrofits for existing structures or design standards for future projects. USFS and WSDOT will need to discuss this at the time of pre-construction reviews.

MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

CAPITAL PROJECT DEVELOPMENT PLAN

1. Development review process
2. Pre-design review protocol
3. Design standards and criteria
4. Design review process
5. Environmental review
6. Capital projects that require quick action
7. Projects funded outside of General Maintenance Funds
8. Chronic Environmental Deficiency projects (CED)
9. Anticipated labor intensive preservation projects
10. Grant partnerships available

Capital project development plan

Capital projects provide long-range benefits along the corridor, and are developed over time to facilitate partnerships and input. These include any work that enhances the existing roadway and any new development needed to preserve the intrinsic qualities of the corridor. These projects fall outside of the realm of normal maintenance work and require dedicated funding before they can begin. It is important to distinguish this type of work because it is beyond the scope of regular maintenance activities, and undergoes different coordination and site-specific scrutiny before development.

Safety, preservation and environmental retrofit projects are considered capital projects. These projects require a more interactive coordination process and will have specific funds for the work specified. The expectation for these projects is that they will undergo a predesign review process with the USFS and WSDOT to make sure that the work meets the needs of the corridor. Below we will identify the procedures and discuss decision points relevant to both agencies' review of capital projects and funding sources required prior to moving a project forward.

WSDOT's project development process is described in the table below. The easement calls for WSDOT and USFS to develop a joint process for facilitating interagency review during predesign, design and construction. The table below explains phases of the project so early and continuous coordination can take place to get the best information from both agencies.

Capital project development review process	
Project Phase	Process
Transportation planning	Both agencies contribute to needs assessment based on Forest Plan and safety and design criteria.
Project scoping and programming	When a project has been identified along the corridor, both agencies participate in dialogue to streamline the environmental review process and pursue funding opportunities.
Design and environmental review	<ul style="list-style-type: none"> • WSDOT leads design process with input from USFS. • Funding needs to be determined at this point for any aesthetic treatments proposed. • Easement specifies pre-design review process by USFS
Environmental permitting and PS&E	<ul style="list-style-type: none"> • WSDOT undertakes NEPA, Section 106, and Integrated Vegetative Management Planning. • WSDOT determines how to proceed with ESA consultation including potential to contract with USFS. • Easement requires USFS approval prior to construction.
Construction	WSDOT leads bid process and construction. Follows BMP during construction.



Pre-design review protocol:

The following summarizes the process specified in the easement agreement:

- WSDOT will coordinate with USFS at project inception for projects using or affecting National Forest lands or interests.
- USFS will consult with WSDOT on projects that may affect SR 542.
- WSDOT and USFS will coordinate designs and participate in field reviews for all construction projects.
- WSDOT and USFS will agree on needed environmental documents and determine lead agency responsibility for all projects.
- WSDOT will have the primary responsibility for highway-related projects.
- WSDOT and USFS will cooperate to develop a single set of environmental documents for each project and jointly seek public involvement when necessary.
- Draft and final environmental documents will be circulated to each agency for review before distribution for public comment.
- USFS will publish a decision notice of its intent to issue a letter of consent for easement. WSDOT and USFS will agree which requirements will be provided in the plans and specifications, and which will be in the stipulations (special provisions).
- Written stipulations will be kept to a minimum.
- WSDOT and USFS will address ways to prevent the spread of invasive plants, and the design and construction plans of proposed projects will incorporate standards that prevent the spread of noxious weeds.
- The forest supervisor will have an opportunity to review plans relative to effects, if any, that the project will have upon adequate protection and utilization of the land traversed by the easement and adjoining land under the administration of the USFS. This may require surveys if outside the current alignment in order to determine adequate protection and utilization.
- The forest supervisor will review and comment back to WSDOT within 30 days of receiving the plans.
- Those features of design, construction and maintenance of the highway facility and the use of the easement that would have an effect on the protection and utilization of the forest are to be mutually agreed upon by the Forest Supervisor and WSDOT during the preparation of the plans and specification for each construction project. The plans shall be revised, modified or supplemented to meet the approval of the forest supervisor, or when deemed appropriate supplemented by written stipulation between the forest supervisor and WSDOT prior to the start of construction.
- Final design and construction specification for any highway construction project on the easement will be presented to the forest supervisor for approval; construction shall not begin until such approval is given, provided that if it is supplemented, any amendment or supplement which affects alignment or subgrade shall be approved by the forest supervisor and the WSDOT before being placed in effect.

Compliance Components: All projects will undertake the following:



- 1. Information:** Ensures the USFS staff is aware of a proposed project or plan and they understand the purpose and need for the work and have an opportunity to comment.
- 2. Procedural:** A written record is made of how and when a project originated, when it was reviewed, who is responsible, and whether alternative solutions were considered.
- 3. Legal:** The process enables the USFS to demonstrate that projects meet legal requirements under federal laws, applicable executive orders, state statutes, and USFS policies and regulations.

Compliance Processes: Projects will be reviewed by USFS staff using the current project review procedures:

1. When a major project is proposed, beyond the scope of maintenance as described in Article III Supporting Documents 2 Maintenance Responsibilities, WSDOT staff will contact the USFS verbally and/or in writing and explain the project details and procedures. USFS program coordinators will review the project. WSDOT staff will be notified as soon as possible after the necessary compliance is completed as to whether and when work may begin.
2. When emergencies occur, i.e. rockslides, imminent danger due to hazard trees, washout, surface or structural failures that pose threats to travelers, all work crews may respond without project reviews to clear or stabilize the hazard and to make passage safe and will notify the USFS as soon as possible. If extended repairs are necessary beyond emergency repairs, WSDOT supervisors are to notify the USFS before additional repairs are made.

Major Construction Projects: Before major construction projects commence, plans shall receive full compliance.

Material staging areas will be designated prior to construction, and WSDOT and USFS shall work jointly in the design and placement of screening materials to hide staged vegetation, soils, and other materials from the traffic's view.

Capital project construction objectives

Safety: The USFS and WSDOT shall make good faith efforts to be consistent with up-to-date safety programs that enforce the latest OSHA, MUTCD and WISHA rules and regulations. The USFS and WSDOT shall furnish each employee working on the project a place of employment free from recognized hazards likely to cause serious injury or death. The USFS and WSDOT shall require safety devices, furnish safeguards, and shall adopt and use practices, methods, operations and processes which are reasonably adequate to render such employment and place of employment safe. The USFS and WSDOT shall do everything reasonably necessary to protect the life and safety of employees.

Protect cultural resources: The Forest Supervisor and WSDOT shall make determination as to the necessity for archaeological and paleontological reconnaissance and salvage within the right of way. Any such action determined necessary because of reconstruction of the highway facility is to be undertaken by WSDOT in compliance with



the acts entitled An Act for the Preservation of American Antiquities, approved June 8, 1906 (34 Stat.225, 16 U.S.C. 432-433), the Archaeological Resources Protection Act of 1979 (93 Stat. 721, 16 U.S.C. 470aa-47011), and State laws where applicable.

Minimize impacts to air, land, and water: WSDOT designs stormwater facilities; implements erosion control measures and manages waste; works with regulators to develop stormwater permits and innovative alternative stormwater control options; secures water quality certification; reduces air emissions and highway noise; and identifies energy efficiency improvements.

Protect biological resources: WSDOT biologists, and other environmental staff and/or their consultants will evaluate and provide guidance on wetland, fish and wildlife and rare plants, watershed, and ESA compliance regarding stormwater management; correct chronic environmental deficiencies and fish blockages; improve wetland site management and measurements; develop effective approaches to habitat connectivity in transportation planning and project development; and provide innovative mitigation opportunities for specific projects.

Improve and streamline environmental documentation: Effective coordination helps reduce time to complete high-quality environmental assessments and environmental impact statements. We strive to work with other agency professionals to develop comprehensive environmental management tools that help us negotiate useful programmatic permits; we also strive to work with other professionals across the country to develop and implement new procedures and better practices that streamline the permitting process, and provide predictable results and expectations for project delivery.

Regulatory coordination and compliance: We maintain a robust and effective liaison program with regulatory agencies. We work collaboratively with federal, state, local and tribal interests to develop practical methods of achieving the highest standard of environmental compliance. These relationships and interactions help us all maintain a highly qualified group of professionals dedicated to environmental management. This coordination keeps project managers informed and helps WSDOT be responsive to input, and keep projects on task and on schedule.

These objectives are utilized when developing projects and scoping project delivery. The projects we are undertaking on SR 542 are mainly concerned with the preservation of the system. The process specified above makes sure to include all agencies and make decision points understandable so that the process can proceed in a streamlined fashion.



SR 542 capital project development: goals and strategies:

Safety and mobility is the goal along this corridor. Projects need to be planned to protect and enhance the roadway. This facility has been designed and utilized for more than 50 years, and ongoing capital projects will be necessary to safeguard its viability. Use along this corridor will continue to increase, so necessary maintenance and aesthetic attributes of the corridor need to be preserved and enhanced through long-range planning. It is assumed that future projects will be required to secure the safety of the roadway and will be coordinated as described in protocols identified in USFS, and WSDOT agreements. They will always be developed in a manner that adheres to regulations and policies developed to minimize impacts and adhere to designs that augment the rustic Cascadian feel of the corridor.

Goal: Secure safety along the corridor in a cost-effective way and provide longevity to the system. Provide a visually appealing solution that meets with WSDOT and aesthetic design parameters.

Strategies: Include aesthetic design solutions in the original funding package. Find funding partners to secure resources that will enhance safety and provide visually appealing accommodations to needed capital enhancements if needed.

Design standards and criteria

Each project shall have a project-specific written design criteria document. The design team will review existing design, construction, maintenance and operations standards; and, as necessary, will recommend additions or changes to WSDOT for incorporation into the design criteria. Any exceptions or deviations to the standard design criteria shall be documented and approved in writing. The project-specific design criteria shall reference all applicable WSDOT manuals and FHWA criteria.

Federal design standards

Title 23 USC 109 provides that design standards for projects on the National Highway System (NHS) must be approved by the Secretary of the U.S. Department of Transportation in cooperation with the state highway departments. The Secretary has delegated this authority to the Federal Highway Administrator. Accordingly, the FHWA project representative will review and approve design standards or forward to the appropriate FHWA Division or FHWA Headquarters for approval. The design standards for this Project will be as contained in the Design Manual WSDOT M22-01 as approved by the FHWA Division Office.

Context Sensitive Design

Context sensitive design shall be incorporated in all federally funded Major projects in accordance with the requirements of Flexibility in Highway Design, FHWA-PD-97-062.

All context sensitive design shall be in accordance with the WSDOT Context Sensitive Solutions Secretary's Executive Order number E1028.01.



Design review process

The WSDOT design team will prepare engineering submittal documents and review them for compliance with contractual requirements in accordance with the WSDOT Design Manual, Plans Preparation Manual, and Bridge Design Manual. Design output documents shall be sealed by a registered engineer or architect as required by the laws of the State of Washington.

Throughout the project, the design team will oversee and monitor all design activities, including the coordination required with various governmental and environmental agencies. Periodic design reviews will be conducted by WSDOT to evaluate and compare design progress against project scope, design intent, quality objectives and schedule. The design review process requires formal reviews that result in written review comments, written comment responses, comment resolution meetings and written final disposition of comments. This process is required to ensure that review comments will be recorded and the appropriate management evaluation and actions are initiated in a timely and coordinated manner.

WSDOT will track all design review comments to satisfactory resolution. Comments from participating third-parties, municipalities and other agencies will also be received by WSDOT and forwarded to the Design Team for response. Each review, after completion, will be maintained as a part of the record of the Project.

Aesthetics

New projects will require design review to incorporate aspects of the rustic Cascadian design whenever feasible. This is explained in more detail in the section of this plan dedicated to the Identification of Natural and Scenic Values. Aesthetics will be reviewed during the development of capital projects and the costs included in the project proposal. The cost of these improvements could be considered for partnership funding to support costs needed beyond functional design required for highway improvements if needed.

Project endorsement

Executive leadership endorsement should occur at the initial and all subsequent updates of the project management plan. It is suggested that the executive leadership of the WSDOT, the FHWA, and USFS as well as other agencies sponsoring the project endorse the project management plan via a briefing and a signature page. Executive leadership endorsement will further the commitment of achieving the project objectives and will officially initiate the procedures and requirements as set forth in the project management plan. It should be noted on the signature page that the effectiveness of the project management plan will be continuously evaluated, and that revisions will be issued as the project progresses in order to generate the most effectively managed project meeting the project objectives.

Project review and reporting

Project status, schedule conflicts, changes and delays will be monitored and reported on a regular basis. Schedule reports will be prepared and distributed to the project team and other involved parties regularly. The reports will provide a



consistent basis for evaluating progress and will allow managers to focus on exceptional events or negative trends.

As the need arises, the project control team will produce special studies and analyses of particular situations. The format and distribution of such reports will be tailored to the specific needs of the situation.

Responsibilities

WSDOT is responsible for publishing a monthly progress report that will be used to coordinate with the USFS staff. WSDOT will review these summaries and provide estimates of progress and impacts to project delivery. WSDOT staff will make arrangements with USFS to keep them apprised of the progress as it relates to the scope of work and overall work plan.

Guidelines

The following guidelines are used as a framework for project performance reviews.

Project performance reviews are performed on a set schedule:

- Monthly by project and program
- Weekly or biweekly for projects with special concerns or existing significant problems

Project performance reviews determine where action is needed and assist with accurately recording costs and performance. If encountering significant budgetary, scope, resource or management problems, the project manager should be prepared to discuss alternatives and strategies for optimizing performance and reducing liability and risk.

During the project performance reviews, the project director is informed of budget overruns, pending out-of-scope work and funding issues. At monthly and quarterly progress meetings, appropriate information about progress and current issues is communicated to higher levels to avoid surprises and provide early warning.

Environmental review

Environmental interests are part of every aspect of WSDOT's work, from planning and design through construction and into operation and maintenance of the highway. WSDOT's environmental commitment is to operate an effective and efficient transportation system in an ecologically sound and cost-effective way. We proceed with project development in accordance with the dictates of sound environmental protection practices. We avoid, minimize and appropriately mitigate adverse environmental impacts as established by applicable laws and regulations. To support Washington's transportation system and project delivery needs, we work with a skilled team of policy and scientific experts who foster environmental stewardship. This team's role is to coordinate with the USFS to facilitate collective input that will facilitate project development and streamline the permitting process.



Our investigation into the process for environmental review has found that there is an existing MOU between USFS and WSDOT (2002) that documents steps to coordinate transportation activities. Where appropriate, these will also be referred to and utilized to clarify the processes set out in this plan. Since these may change over time, updates to these documents are hereby incorporated by reference.

MOU NFS 00--11060000-040 (2002) stipulates the following for transportation planning: "WSDOT and USFS will agree on needed environmental documents and lead agency responsibility project by project. WSDOT will have the primary responsibility for highway related projects." The easement established for SR 542, held by FHWA, is expected to accommodate most work envisioned by WSDOT. In the event that WSDOT proposes a project that extends beyond the boundaries of the existing SR542 easement, WSDOT and USFS will meet to agree on needed environmental documents and lead agency responsibility.

Interagency review of highway projects takes place in a very complex administrative arena defined by many federal, state and local laws, ordinances and regulations.¹ This has resulted in overlapping jurisdictional responsibilities and some duplication of efforts that cause increased costs and time delays for transportation projects.

WSDOT and USFS both have an interest in the stewardship of SR 542 and surrounding environment, and therefore must work together on the development, review and construction of transportation improvements. When this works well, the two agencies capitalize on their respective areas of expertise to complete projects that preserve transportation safety and mobility while minimizing negative impacts on the surrounding environment.

The challenge for this interagency partnership is to clarify roles and responsibilities to avoid unnecessary delays and duplication of effort. We recommend the following base case because it appears to work well on most projects. It will provide a starting point for discussion between WSDOT and USFS at the start of individual capital projects.

Environmental monitoring

The final environmental document defines the environmental impacts and required mitigation for capital projects. In addition, other environmental permits will be obtained during the design of the project that will specify additional requirements to be adhered to during construction.

The general requirements will be included in this documentation so we can ensure that all environmental commitments are included in the design and construction of the project. It will describe the proactive approach that will be

¹ *Nothing in this document is intended to conflict with current directives of any of these agencies. If the terms of this plan are found to be inconsistent with current directives, then those portions of this agreement that are determined to be inconsistent shall be invalid, but the remaining terms and conditions not affected by the inconsistency shall remain in full force and effect. At the first opportunity for review of the plan, all necessary changes will be accomplished by either an amendment to this plan or by entering into a new plan, whichever is deemed expedient to the interest of all parties.*



used for overseeing and inspecting environmental work during construction to help guard against cost overruns and schedule delays.

In addition, many records of decision require environmental compliance after a facility is open to traffic on an ongoing basis (e.g. storm water management or wetlands performance). It is suggested that, for capital projects with a substantial amount of sensitive environmental issues, environmental monitoring procedures include some or all of the following:

- An overall environmental monitoring plan.
- Roles and responsibilities of the environmental monitoring staff.
- Any strategic stationing or positioning of staff members to maintain constant contact with resource agencies and a working knowledge of the project's environmental issues to ensure that all FEIS and permit commitments are followed through.
- Any planned proactive coordination with the resource agencies during the project design and construction, in order to ensure early and constant communications of issues and requirements.
- Any fluctuating work schedules among the environmental monitoring staff members to ensure constant coverage of key contractor schedules and activities that may affect the environment.
- Coordination of environmental monitoring staff members' daily activities with the project management and construction management teams, in order to monitor and observe critical contractor activities.
- Record-keeping and reporting procedures.
- Noncompliance and violations procedures.
- Permit modification procedures related to construction activities, including strategies for guarding against cost overruns and schedule delays while still acting as a good steward to the environment.
- Post-construction environmental performance for wetlands, storm water, vegetation, wildlife crossings, endangered species, etc.

Capital projects that require quick action

Planned capital projects are expected to be programmed along the corridor based on anticipated need. Sometimes projects are necessary due to an event or unforeseen structural issue that develops. It is imperative that we respond to these in a timely manner. Below is a description of two such types of projects that require expedited review.

Urgent Projects

During the normal review of the roadway, sometimes potential roadway failures are observed. The road may still be passable but stabilization might be needed. These projects still require environmental review and design work. The desire is to formulate a productive process that allows for streamlined review and timely construction. These projects are not yet declared an emergency, but will elevate to such if not undertaken immediately. These projects will be coordinated with the Forest Service upon discovery.



Emergency Projects

When emergencies occur, i.e. rockslides, imminent danger due to hazard trees, washout, surface or structural failures that pose threats to travelers, all work crews may respond without project reviews to clear the hazard and to make safe passage.

The following has been the policy followed:

Damage to roadway structure:

1. Pavement damaged by erosion, cracking, potholes or settling shall be repaired as soon as possible, consistent with budget, time and available personnel.
2. Clean drainage structures or clear vegetation causing road surface failure as soon as possible consistent with budget, time, and available personnel.
3. Repair unstable fill slopes caused by poor drainage saturation of the soil, slopes greater than 2:1, and the lack of native vegetation by rock scaling, mechanical removal of loose fill materials and regularly cleaning drainage structures.

It is critical to continue with this procedure. If extended repairs are necessary beyond emergency repairs, WSDOT supervisors will notify the USFS before additional repairs are made. This has been the standard practice to date, and has worked well for both agencies.

SR 542 emergency/urgent projects. Goals and strategies: Emergencies necessitate immediate action to secure the safety of the roadway. We plan to undertake these actions in a way that meets the safety needs of the public and opens the roadway as quickly as safely possible. The coordination of these actions will vary based on urgency, but will be coordinated when feasible and as described in protocols identified in USFS and WSDOT agreements. They will always be developed in a manner that adheres to regulations and policies developed to minimize impacts.

Goal: To quickly restore the roadway in a cost-effective way so it can safely accommodate travelers and minimize damage. Empower WSDOT maintenance to immediately address safety issues along the corridor to best secure the roadway, but at the same time maintain and not alter the unique setting. This could require after-the-fact actions to restore areas to predisaster conditions. When damage repairs go beyond that of normal maintenance, additional funding needs will be included in the project proposal including actions required to meet aesthetic design criteria. Partnership funding will be used to the fullest extent to augment repairs and support aesthetic needs.

Strategies: Emergencies require immediate action to secure the roadway. Reasonable actions necessary to secure the roadway need to get under way as soon as possible, and need to follow accepted protocols and regulations put in place to safeguard the environment and surrounding vegetation. Sometimes alterations require extraordinary reconstruction. We will need to partner to secure funds that will enhance safety and minimize solutions that visually alter surrounding roadway.

Projects funded outside of general maintenance funds

Maintenance funds cannot be used for projects that go beyond restoring a facility to its functional form. Additions or improvements, no matter how reasonable, that exceed these limits require outside funding. Below are projects along the corridor that have obtained capital funding for development and could provide opportunities for future project development if similar conditions are met.

Roadside safety improvement projects

The State Legislature provided funding to target safety improvements on SR 542 where the history of collision occurrence is above average. These projects were funded and were completed in 2008. Crews will install guardrail, remove fixed objects and improve roadsides to reduce collisions and improve safety. A total of \$1.3 million has been allocated to improve safety on both SR 542 and SR 547.

2008 SR 542 Safety Projects

- MP 37.55-37.63 Install guardrail
- MP 40.15-41.14 Additional curve signing and delineation
- MP 40.65-40.68 Tie guardrail together

Chronic Environmental Deficiency projects (CED)

Roadside improvements have been limited by funding and have mainly been centered on maintenance and restoration of the existing roadway. Chronic Environmental Deficiency (CED) funds have recently been made available for projects that will protect the roadway from continued erosion and environmentally invasive emergency remedies. When awarded, these projects greatly reduce weather-related closures and damage but are only available for specified projects. The majority of the roadway does not qualify for this funding, but it still requires constant evaluation and preservation to maintain safe conditions.

CED-funded projects are at locations along the state highway system where recent, frequent, and chronic maintenance repairs to the state transportation system are causing impacts to fish and fish habitat. In 2002, WSDOT established a partnership (Memorandum of Agreement) with the Washington Department of Fish & Wildlife (WDFW) to move away from the repetitive repair of WSDOT roads and instead concentrate on long-term solutions that will optimize the improvements for fish and fish habitat while also addressing transportation needs. WSDOT established the CED program as a strategy to provide for highway improvements to specific locations where repeated maintenance and preservation activities create unacceptable environmental impacts.

CED projects have to meet two qualifiers:

1. Maintenance has been conducted on the site three times in the previous 10 years.
2. The maintenance being conducted has a negative impact on fish habitat.



How CEDs are identified?

Potential CEDs can be nominated by WSDOT, WDFW, tribes or other concerned parties. Nominations will be screened to determine if the sites meet the program's criteria. The initial site assessment consists of the CED coordinator, WSDOT's senior hydrologist, the region maintenance environmental coordinator, and persons familiar with the site verifying eligibility to the CED list and filling out an intake form with initial recommendations. Those projects meeting the criteria are all added to the list of CED sites.

For each site, WSDOT conducts either a reach assessment, reach analysis or corridor analysis that evaluates and identifies the hydrologic mechanisms for failure and develops a conceptual design solution. In 2005, WDFW developed a prioritization methodology which provides a scientifically based priority to the order of CED correction.

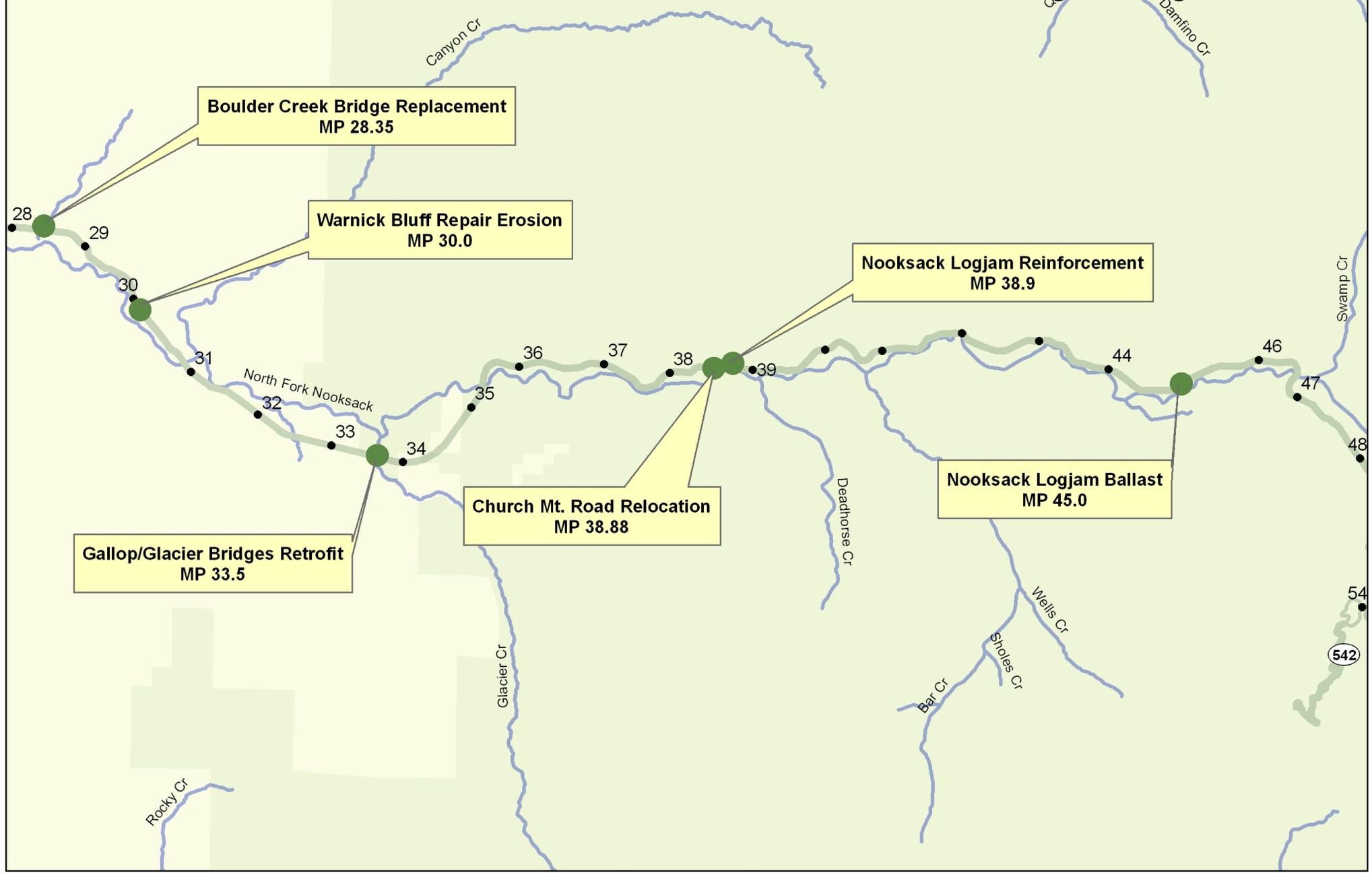
How does WSDOT fund CED projects?

Those projects that qualify as CEDs can be fixed with project funds, emergency funds or bridge funds, and others can get fixed as line-item projects funded by the Legislature under Improvement - Environmental Retrofit.

WSDOT has prioritized projects that will provide long-term relief for chronically eroded areas along this corridor. If a long-term project has not been planned, then the most a maintenance project can do is secure the area from harm, not make it safe for future occurrences. More funding and projects are needed. It has been suggested that joint funding applications be made in the future to help secure needed funding for additional areas along SR 542.

WSDOT maintenance does not have funding to accomplish long-term solutions or provide aesthetic treatments to roadside projects. Their budget is such that even normal maintenance is not fully funded on an annual basis. While costs have continued to increase, their budget has remained the same despite heavy flood, storm and snow years. It is still important that expectations on maintenance not be increased beyond their ability to provide services. It has been discussed that additional goals for aesthetic treatments along the corridor be sought from outside funding sources. Partnerships with the community, Whatcom County, WSDOT, USFS and other local entities will help secure needed funding from other resources.

SR 542 Chronic Environmental Deficiency Projects





Funded CED projects

Along SR 542, the Church Mountain Road relocation and culvert replacement project is funded through the CED program. The dynamic flows of the Nooksack River eroded portions of SR 542 during high flow events. A strategy was developed to provide long-term improvements at this specific location since maintenance and roadway preservation activities have created repetitive and unacceptable environmental impacts.

This project is located between MP 38.72 and MP 39.04, approximately 5.51 miles east of the town of Glacier in the Mt. Baker- Snoqualmie National Forest. This project will relocate the existing roadway away from the Nooksack River in order to prevent further erosion of the existing roadway prism. Construction work associated with this project includes a horizontal and vertical realignment of approximately 1,600 feet of highway, installation of a fish passable structure at Chain-up creek, minor drainage improvements and minor safety items. The goal of this project is to:

- Preserve SR 542 by reducing the risk of catastrophic loss, minimizing the need for repetitive maintenance.
- Maximize wetland impacts, provide fish passage and restore riparian habitat where possible.
- Visual quality will be maintained by re-vegetating in key locations to integrate the project into the surrounding rural landscape character.
- This project is expected to undergo construction in 2010.

When this project is complete, drivers will have a safer highway that is less prone to flood damage. This proactive approach will reduce flooding and maintenance road closures, save money, and protect vital fish habitat.

SR 542 scenic byway CED project goals and strategies:

Safety and mobility is the goal along this corridor. We intend to minimize disruption and cost required to maintain the roadway by making it a priority to pursue funds to minimize damage. We should also prioritize and fund projects that reduce maintenance costs and improve the corridor's stability. Partnerships will be needed to identify and construct stabilization measures that go beyond normal maintenance.

Goal: Secure safety along the corridor in a cost-effective way by acquiring funds to improve areas that see constant erosion. Secure funding to augment road stability that promotes ecological benefits as well as reduces maintenance concerns, and disruption of the use of the roadway, and maintains the ambience that draws people to this unique setting.

Strategies: Partner to secure funds that will enhance safety and provide funding for preventative projects that will decrease the impact of erosion on the roadway. These projects will minimize solutions that visually alter the surrounding area and will work to promote an appropriate vegetative canopy that helps augment appropriate solutions in the areas being reconstructed.

Anticipated labor intensive preservation projects:

WSDOT anticipates, based on history and available information, that more labor intensive projects will need to be undertaken in the next five years as explained below:

Bridge work: Preservation of the existing bridges is needed along this corridor to keep bridges in sound operating condition. The objective is to achieve the best long-term financial investment for a transportation facility and prevent failure of the existing system. WSDOT's bridge preservation program aims to extend bridge service life through diligent review of conditions and implementation of strategies that preserve the structures. Based on this work, the following has been identified for the SR 542 corridor:

The North Fork Nooksack Bridge at MP 35, Coal Creek Bridge at MP 36, and Fossil Creek Bridge at MP38 are susceptible to damage from slides or flooding. All of the bridge rails either meet or have been retrofitted to meet current standards except Half Bridge 542/38. It will likely receive a retrofit in the future. Coal Creek and Fossil Creek bridges both have metal guardrail and are more vulnerable to needing repairs due to third-party damage and falling trees. These are the two oldest bridges and will reach the end of their design life in 2009 and 2013, but they are not yet scheduled for replacement. Also, both are timber bridges and will likely need to have some of the members replaced in the future. Also, Fossil Creek Bridge is currently weight restricted.

Retaining walls: There is a leaning retaining wall that may need some future attention at the NE corner of MP44. It has moved recently and is listed in the "Recommended Bridge Repair List" as a Priority 4 - Monitor. This is currently not funded but being observed for future work.

Overlay work required: At MP 36 an asphalt overlay was applied; it will need a new one in five to 10 years. At MP38 an asphalt overlay will be needed in 10 to 15 years. Mileposts 34, MP 35, and MP 40 are overlaid with LMC and will be due for a new one by 2015. At MP 34 the roadway will also need to have the four expansion joints replaced. MP 42, 43, 44, 45, and 46 all have LMC overlays and will be due for a new one in 2023.

Funding has not been secured for these projects at this time, but they will be included in identified work programs so future funds can be identified and obtained.



Grant partnerships available:

Project development along SR 542 needs to be a partnership with federal, state and local jurisdictions. The Whatcom Council of Government has the ability to prioritize local initiatives and pursue regional, state and federal funds. Below are some potential funding opportunities for aesthetic treatments that go beyond safety improvements undertaken by WSDOT. Each listing includes a summary of the types of projects eligible for funding, some of the criteria for selecting projects and contacts for more information. This list is a good starting point to identify possible funding sources; however, grant funding programs change frequently, so diligent review and development of applications is necessary to facilitate partnerships that will help augment the scarce resources available through WSDOT and USFS.

Statewide enhancements:

Overview

The Federal Transportation Acts have provided a 10 percent set-aside from the Surface Transportation Program (STP) for the enhancement program. The enhancement program was created to invest in a more balanced, multi-modal approach to mobility and accessibility.

Purpose

The purpose of the transportation enhancement program is to fund projects that allow communities to strengthen the local economy, improve the quality of life, enhance the travel experience for people traveling by all modes, and protect the environment. Projects must relate to surface transportation and include at least one of the 12 qualifying activities listed below:

- Provision of facilities for pedestrians and bicycles.
- Provision of safety and educational activities for pedestrians and bicyclists.
- Acquisition of scenic easements and scenic or historic sites (including historic battlefields).
- Scenic or historic highway programs (including the provision of tourist and welcome center facilities).
- Landscaping and other scenic beautification.
- Historic preservation.
- Rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals).
- Preservation of abandoned railway corridors (including the conversion and use of the corridors for pedestrian or bicycle trails).
- Inventory control and removal of outdoor advertising.
- Archaeological planning and research.
- Environmental mitigation
 - to address water pollution due to highway runoff; or
 - reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.
- Establishment of transportation museums.



Applications for enhancement grants must be filed by a public agency and require a 13.5 percent match. Matching funds can be in-kind services, as long as the match can be quantified and is directly related to finishing the project.

For further information:

Statewide Enhancement Program, contact:

WSDOT Highways and Local Programs
Attn: Kathleen Davis, Director
Federal Funding Office
PO Box 47390
Olympia, WA 98504-7390
Telephone: 360.705.7377
e-mail: Davisk@wsdot.wa.gov

Statewide competitive surface transportation program (STP):

This program funds projects that seek to develop, improve, and/or preserve an integrated transportation system that encourages multimodal choices to the public. A broad range of projects and programs are eligible for funding, with the following eleven types specially defined:

- Construction, seismic retrofit, operational improvements, and 4R, including Interstate system and bridges,
- Capital costs for transit projects eligible for FTA funding,
- Fringe and corridor parking, carpool, vanpool, bicycle, and pedestrian facilities,
- Highway and transit safety improvements,
- Highway and transit research and technology transfer,
- Capital and operating costs for traffic monitoring, management and control facilities and programs,
- Surface transportation planning,
- Transportation enhancement activities including bicycle and pedestrian facilities, historic and scenic easements and facilities and wetlands mitigation,
- Certain Clean Air Act transportation control measures (TCMs),
- Development and establishment of management systems,
- Wetland mitigation.

A 20 percent matching fund is required for non-motorized (trail projects); all other projects require a 13.5 percent matching fund. Only public agencies may apply for funds.

For further information concerning statewide competitive Surface Transportation Program contact:

WSDOT Highways and Local Programs
Attn: Kathleen Davis, Director
Federal Funding Office
PO Box 47390
Olympia, WA 98504-7390
Telephone: 360.705.7377
e-mail: Davisk@wsdot.wa.gov



National Scenic Byway program:

This is a federally funded program specifically for the development of scenic highways. This program requires a minimum matching fund of 20 percent from a non-federal government source.

Types of projects and areas of eligibility are as follows:

- Planning, design, and development of state scenic byway programs,
- Making safety improvements to a highway designated as a scenic byway to the extent such improvements are necessary to accommodate increased traffic and changes in the types of vehicles using the highway, due to such designation
- Construction along the scenic byway facilities for the use of pedestrians and bicyclists, rest area, turnouts, highway shoulder improvements, passing lanes, overlooks and interpretive facilities,
- Improvements to the scenic byway that will enhance access to an areas for the purpose of recreation, including water-related recreation,
- Protecting historical, archeological and cultural resources in areas adjacent to the highways, and
- Developing and providing tourist information to the public, including interpretative information about the scenic byway.

This program requires a minimum matching fund of 20 percent from non-federal government source. Funds are administered through WSDOT.

For further information contact:

Washington State Department of Transportation
Highways and Local Program Division
Heritage Corridors Program
Carrie Sunstrom
PO Box 47393, Olympia, WA 98504-7393
Telephone: 360.705.7274
e-mail: Sunstrc@wsdot.wa.us

MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

TRAFFIC AND OPERATIONS PLAN

1. Background
2. Signs
3. Vehicle parking
4. Pavement marking
5. Chain up area
6. Access control
7. Special events

Traffic and operations plan

Operational considerations along the roadway are important to support safety and traffic flow along this corridor. Seasonal variations, events, and the increased use of facilities require ongoing coordination and the consideration of additional safety measures. Traffic operational considerations include the evaluation and placement of signs, chain up areas, viewpoint pullout locations, parking, pavement marking, access control and the coordination of special events. These all impact the operation of the roadway and require review to enhance the safety of the roadway. The following details these issues along the SR 542 corridor.

Background

WSDOT follows the “Manual on Uniform Traffic Control Devices” (MUTCD) when making traffic control decisions. The MUTCD contains the standards for traffic control devices that regulate, warn, and guide road users along highways, county roads, and city streets. The MUTCD functions as both a legal and an engineering document. The Revised Code of Washington (RCW) 47.36, Traffic Control Devices, requires WSDOT to adopt uniform standards for traffic control devices installed along state highways. The law also requires that traffic control devices along other roadway that connect to our system fully conform to these adopted standards to the extent possible.

Traffic control devices are defined as all signs, signals, markings, and other devices used to regulate, warn, or guide traffic placed on, over or adjacent to a street, highway, pedestrian facility or bikeway by authority of a public agency having jurisdiction. The MUTCD is the national standard for all traffic control devices in accordance with 23 U.S.C. 109(d) and 402(a). The MUTCD will provide the standard used to determine sign placement along the SR 542 corridor.

To be effective, a traffic control device should meet five basic requirements:

1. Fulfill a need;
2. Command attention;
3. Convey a clear and simple meaning;
4. Command respect from road users; and
5. Give adequate time for proper response.

Design, placement, operation, maintenance, and uniformity are aspects that should be carefully considered in order to maximize the ability of a traffic control device to meet the five requirements listed above.

Signs

Signs along the SR 542 corridor are important for safety and to support the visitor experience. These guidelines provide an operational tool to assist in the implementation of appropriate signing along this corridor. These guidelines interpret existing WSDOT sign policy pertinent to scenic byway signing, incorporate a Memorandum of understanding regarding signs, and interpret the Whatcom Council of Government's recording of the community's vision and goals in the Mt. Baker Highway corridor management plan. Further, we hope to clarify technical information and operational guidance needed to ensure that scenic byway signs meet traffic safety requirements and serve as an effective identification tool. We seek to balance traffic requirements for uniformity with flexibility to guide travelers to interesting sites along this scenic corridor.



The SR 542 corridor was incorporated into the State of Washington's Scenic and Recreational Highways Act in 1967. As a state-designated Scenic Highway, Mt. Baker Highway is covered by signage regulations specific to the Act.

Four authorities govern signing regulations:

- State Scenic Vistas Act 1971
- USDA Forest Service (USFS)
- Washington state
- Whatcom County

Developing a coordinated approach to sign placement is one of the most important elements in creating a unique identity for the highway. Signs are the most visible and important man-made structures that visitors see from the highway. The signs need to be easy to read and clearly convey orientation and traffic safety information. They must also be carefully designed and located to avoid creating hazards to drivers while allowing convenient maintenance.

The examples given in this document provide guidance in the placement of signs along the corridor. For the highways to be recognized as a unique entity, we have worked with the various managing agencies to develop a unified approach that addresses the many legitimate technical and maintenance concerns along the corridor.

The visitor experience is enhanced by providing consistent signage along the corridor that does not distract from the visual quality of the byway.

Signs are installed and maintained by WSDOT maintenance. Road sign placement is the responsibility of the Mt. Baker Area WSDOT traffic division. This group reviews safety needs and identifies sign needs in the areas. WSDOT follows the MUTCD and finds that less is more in terms of sign placement - they like to keep drivers focused on the roadway. This roadway has many scenic vistas, but also requires a driver's full attention to navigate the curves along the steep slopes leading to Artist Point. Safety is the primary concern for the traffic division. They also want to provide good information so drivers can safely navigate sites and vistas along this corridor. WSDOT will work cooperatively with the Forest Service and our partners to process additional signing requests or signing changes on the highway within the easement.

SR 542 signage types:

Warning signs (Maintained by WSDOT)



Warning signs call attention to unexpected conditions on or adjacent to a highway and to situations that might not be readily apparent to road users. Warning signs alert road users to conditions that might call for a reduction of speed or an action in the interest of safety and efficient traffic operations.



Recreational, cultural interest and educational plaques (maintained by WSDOT)



Specific Service signs shall be defined as guide signs that provide road users with site information and directional information for services and eligible attractions.

Guide signs (maintained by WSDOT)/ national forest road sign



Reference

Location signs (maintained by WSDOT)



Milepost markers are used throughout the length of the highway. Marking will be based on WSDOT milepost marking system and maintained by WSDOT. This system will help facilitate the development of an integrated interpretative plan and informational brochures as proposed by the Whatcom Council of Governments. Areas of interest can easily be identified and referenced in the publications and readily located on the ground by visitors. This system will work equally well regardless of the direction the visitor is traveling.



Regulatory signs (maintained by WSDOT)



Regulatory signs shall be used to inform road users of selected traffic laws or regulations and indicate the applicability of legal requirements. Regulatory signs shall be installed at or near where the regulations apply. The signs shall clearly indicate the requirements imposed and shall be designed and installed to provide adequate visibility and legibility in order to obtain compliance.



The Adopt-a-Highway sign

Adopt-a-highway litter control program is a statewide program where volunteer organizations remove litter along identified sections of the corridor. Since this effort provides beautification to the corridor, it is encouraged at the locations currently selected and promoted at new locations as needed.



Scenic Byway sign

Scenic byway signing provides an identity and guide to travelers along designated scenic byways. The Scenic Byway designation is part of a larger initiative for corridor planning and stewardship established by RCW 47.39 to preserve the unique scenic character along Washington’s transportation corridors. The Mt. Baker Scenic Byway emblem symbolizes the “essence” of this particular route, and was designed locally for this corridor. These signs are located strategically along the corridor to provide an association between the route and marketing publications that promote the scenic byway and the special characteristics of the area, and scenic byway identity. These signs were developed and are funded by the scenic byway committee.

Scenic Byway sign at MP 34.28

Prominent features signs

In the 1989, USFS Mt. Baker Scenic Byway Implementation Plan, the following prominent feature signs were identified as needing to be funded and installed to help the traveling public know more about the corridor. At this time the funding has not been secured for these yet. (Page 25 of the Whatcom County Council of Government, Whatcom Corridor Management Plan, December 22, 1997)

The Whatcom Council of Government has recommended additional signs be installed at the following locations:

MP 34.4 Mt. Baker National Forest Scenic Byway “Gateway Sign”

MP 35.4 Horseshoe Bend Trail

MP 35.5 West Church Mountain. Goat Observation interpretive sign and site development plan

MP 46.85 Silver Fir Marsh interpretative sign and site development plan

Emergency signage:

During fire suppression emergencies that impact the highway, USFS and WSDOT maintenance personnel will coordinate to identify signing requirements and install signs and devices as soon as possible after an emergency occurs. The WSDOT maintenance representative supervisor will work with the logistics chief and finance chief assigned to the fire to obtain reimbursement. The signs and devices are chargeable to the fire suppression activity.

Signing standards agreed to within the National Forest

The state of Washington and the Forest Service have agreed to the following regarding signs in the National Forest: ([MOU- NFS 00-MU-11060000-040](#))

1. WSDOT has authority and responsibility to furnish, install, and maintain all standard (MUTCD) signs within the easement on the State Highways System.
2. All such signing will be in accordance with the MUTCD and the WSDOT Traffic manual.
3. WSDOT will furnish, install, and maintain guide signs within the easement, consistent with the MUTCD, as requested by USFS including the following (See the attached Appendix for sign layouts.)
 - a. The WSDOT National Forest Boundary sign; a highway sign that includes script for National Forest and white on brown colors. This sign will be used on highways where there is no acceptable location for the USFS National Forest standard boundary sign.
 - b. Approach signs for National Forest facilities.
 - c. Directional signs to important destinations within the National Forest.
 - d. Junction signs for National Forest primary routes.
4. Other USFS informational signs (such as the standard National Forest Entrance sign, recreation site sign, headquarters sign and special interpretive signs) will be provided, installed and maintained by the USFS. A permit will be obtained from WSDOT for each installation that must be within the easement. Installations will meet the requirements of the current highway safety standards and the MUTCD.
5. Northwest Forest Pass logo signs will be provided by USFS. WSDOT will install the logo signs on existing directional guide signs that direct motorists to National Forest facilities.
6. Signs installed outside of the easement and visible to highway travelers shall comply with the United States Code, Title 23, Section 131; revised Code of Washington (RCW) 47.42, Scenic Vistas Act of 1971; Washington Administrative Code (WAC) 468-66; and WSDOT Traffic Manual. These are considered Type 1(a) signs.

- Where USFS work activities (emergency, construction, or maintenance) require the use of temporary traffic control devices, USFS will furnish, install, and maintain all traffic control devices that are needed in the easement to warn and control traffic.

This work will be done under the direction of WSDOT. All such traffic control devices and their application conform to the MUTCD.

Informational and interpretive signs

Informational and interpretive signs can enhance the byway travelers' experience by providing information on recreational opportunities, rules and regulations, and/or describing the natural, cultural, historic or physical aspects of the area. These signs help to provide the flavor and character that can make the forest visit informative, safe and fun. These signs are not for regulatory, traffic safety or directional purposes for highway needs.



Entrance signs (maintained by USFS)

This sign is the Gateway Entrance to the National forest at MP 35; similarly styled signs are located at the public service center and campgrounds.

Interpretive displays and trailhead boards (maintained by USFS or concessionaire.)



The Forest Service is responsible for locating National Forest and other Department of Agricultural information signs on the portions of the right of way outside of construction clearing limits. The placement of signs shall be in conformance with WSDOT specifications and standards.



Interpretive signs such as the one above provide a historical context and add information not otherwise available that augments the traveler's understanding of the area.

Sign inventory:

A list of all existing signs along the corridor is included in Appendix 12. This list includes location, sign message, and size. Currently there are 195 eastbound signs located between MP 33.557 to 55.387, and 164 westbound signs from MP 57.198 to 33.670.

SR 542 scenic byway signs: goals and strategies

Goal: To preserve the scenic character along the corridor by providing travelers with guide signs to safely direct them to significant vistas and heritage sites so they can appreciate and learn about the unique natural, cultural, and historic heritage and recreational opportunities.

Strategy: Conform to Scenic Byway logo signing guidelines and WSDOT standards.

Goal: Provide direction on how to manage the sign placement along this Scenic Highway by limiting the number of signs in the scenic highway corridor to the minimum required to give clear direction to motorists.

Strategy: Conform to Manual of Uniform Traffic Control Devices and WSDOT standards.

Vehicle parking

Recreation and viewing opportunities abound along this corridor. Appropriate parking facilities are needed to accommodate visitors wishing to stop and enjoy the surroundings. Many vista points and trailheads have established parking and access points that are managed by the USFS. In other locations along the corridor, the roadside is used for visitor parking. The roadside is the area outside the traveled way. Some areas have widened shoulders to accommodate parking, while other areas do not. Roadside parking needs to be managed by WSDOT so it does not affect roadway operations.



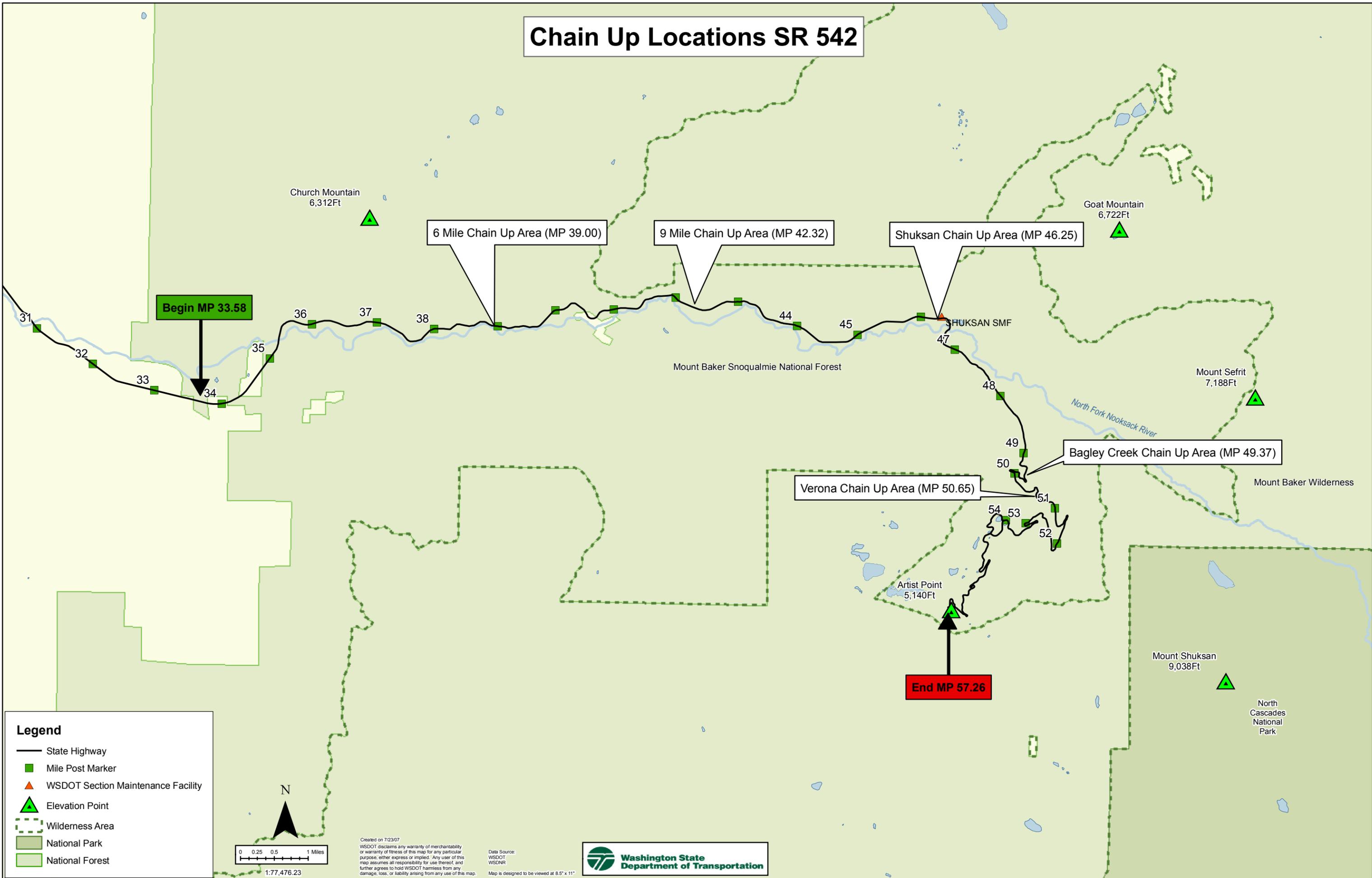
Pavement marking

Pavement marking will be performed by WSDOT per the MUTCD Part 3. Markings on highways have important functions in providing guidance and information for the road user. These include pavement and curb markings, object markers, delineators, colored pavement, barricades, channelizing devices and islands. These are used to supplement other traffic control devices such as signs, signals and other markings. In some instances, pavement markings are used alone to effectively convey regulations, guidance or warnings. The responsibility for determining appropriate markings, application of appropriate marking, and maintenance is the responsibility of WSDOT when on the SR 542 roadway.

Chain-up areas

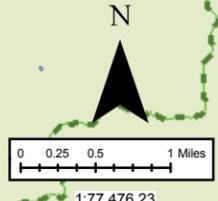
Chain-up areas allow motorists a widened shoulder located outside the highway mainline for putting on or taking off chains. SR 542 has five designated chain-up areas as shown on the map below. WSDOT and the USFS will coordinate future chain up areas for location and size.

Chain Up Locations SR 542



Legend

- State Highway
- Mile Post Marker
- WSDOT Section Maintenance Facility
- Elevation Point
- Wilderness Area
- National Park
- National Forest



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 Data Source: WSDOT, WSDNR
 Map is designed to be viewed at 8.5" x 11"



Map 8: SR 542 Chain-Up locations



Access control

Safety is the No. 1 concern when providing access to SR 542 from side roads, roadside pullouts and recreation areas. Under the Revised Code of Washington (RCW) 47.50, SR 542 is designated an access-controlled facility. The goal of this law is to preserve the safety and operational characteristics of the highway by managing access. Access control manages traffic movements onto and off of state highways to improve system performance, minimize conflicts and increase traffic flow. Access control preserves highway safety and capacity, reducing accidents. SR 542 within the National Forest is classified as a class two managed access highway, meaning mobility is favored over access, speeds of 35 to 55 are allowed and minimum access spacing is 660 feet. Managed access was established to clarify that access rights are subordinate to the public's right and interest in a safe and efficient highway system. Direct access to a state highway may be restricted if reasonable access can be provided to another public road. WSDOT has developed access design standards and adopted permitting procedures to manage this system.

The USFS currently has Forest Service roads that have access off of SR 542. These locations have access permits for the existing uses. Most of these lead to Forest Service roads and provide access to trailheads within the forest. Given the function and nature of this study area, it is unlikely that development will occur. Access impacts to the highway could require additional evaluation if the use and impact to the highway change. If areas require a change in access, the USFS and its permittees will need to obtain an access permit when approaches connect to state highways. WSDOT and USFS will determine an access arrangement where highway safety will not be jeopardized. New approaches will be at the expense of USFS or its permittee. Future maintenance of approaches will be covered in the approach and use permit.

Temporary approaches required by USFS during fire fighting or other emergencies may be constructed as necessary without formal WSDOT approval. WSDOT will be notified as soon as practical. Removal and restoration measures will be determined by WSDOT but conducted at the expense of USFS. USFS will take precautions during such emergencies to safeguard the highway users by coordinating with WSDOT on needed signs and/or traffic control.

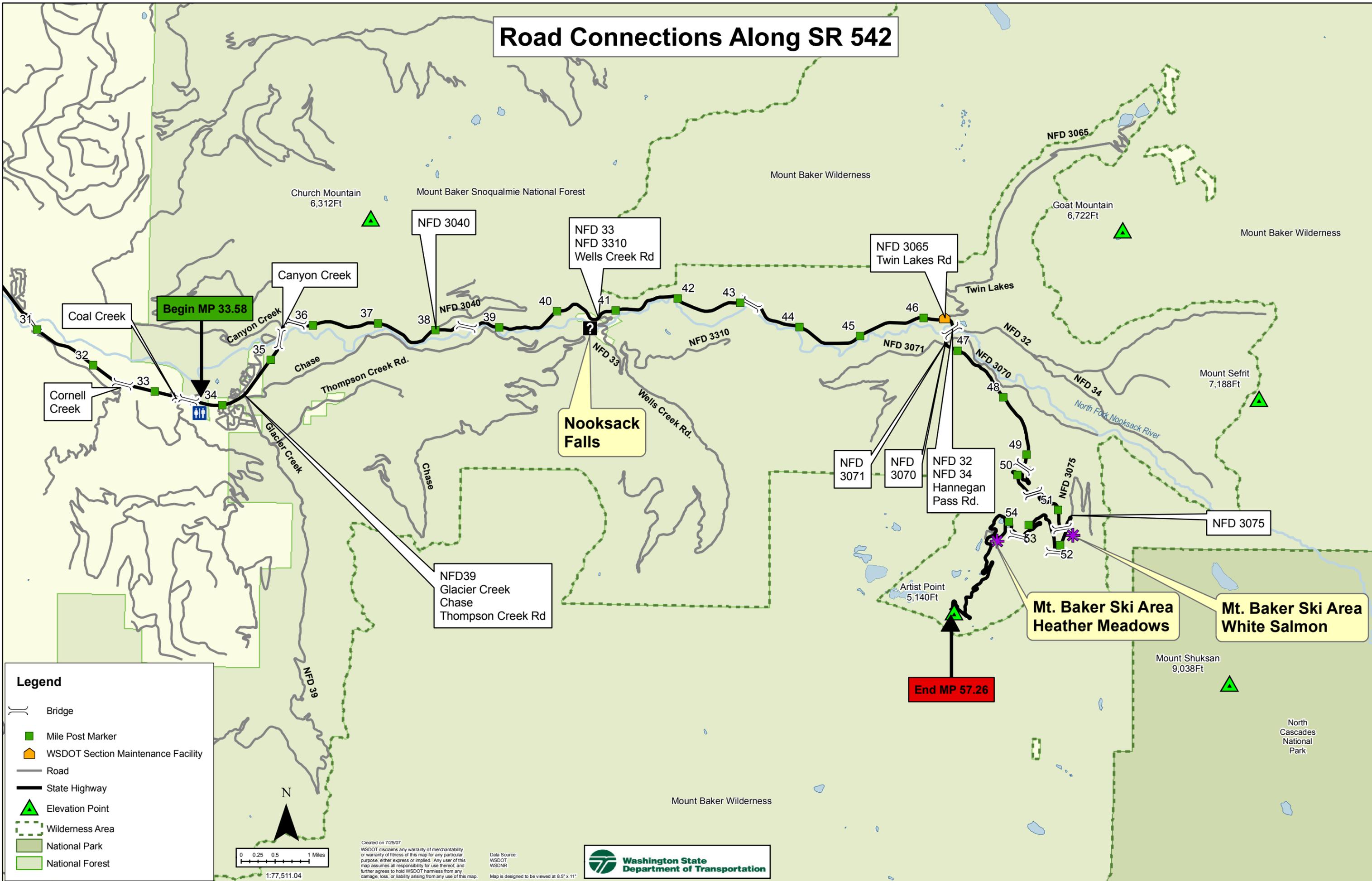
SR 542 scenic byway access: goals, and strategy:

Our focus is on providing a safe scenic corridor.

Goal: *Provide an approach to safely and efficiently move people and goods while enhancing and conserving the aesthetic qualities of the SR 542 corridor by identifying areas that draw interest to focus on how to accommodate access needs.*

Strategy: *Cooperatively work to achieve enhancements along the corridor that benefit the traveling public and provide access to visually stimulating and unique attributes within the National Forest.*

Road Connections Along SR 542



Legend

- Bridge
- Mile Post Marker
- WSDOT Section Maintenance Facility
- Road
- State Highway
- Elevation Point
- Wilderness Area
- National Park
- National Forest

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Map 9: Road connections along SR 542



Special Events



Special events conducted on state highways may include filming, organized bicycle or pedestrian events, or other types of activities that may impact highway operations. Conducting special events safely on state highways is enhanced by cooperation between the event organizer, WSDOT, the Washington State Patrol and the USFS. Requests for such events will be coordinated among these agencies before any permits are issued. WSDOT will be the lead agency, but will consult with the USFS prior to issuing any permits. The WSDOT NW Region contact is at (206) 440-4474, Construction Traffic Office.

MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

INTEGRATED VEGETATIVE MANAGEMENT PLAN

1. Integrated Vegetative Management
2. Landscape Management Approach
3. Roadside Vegetative Management
4. Noxious Weed Control



Integrated vegetative management plan

The primary objective in maintenance of roadside vegetation is to promote the safety of the highway user, preservation of the highway infrastructure and control of legally designated noxious weeds where they occur on the right of way. Other considerations include protection and preservation of natural environment, preserving and enhancing the natural scenic quality of the roadside and being a good steward of the forest along this corridor. In all cases, roadside vegetation maintenance activities are planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation.

Integrated vegetation management is a coordinated decision-making and action process that uses the most appropriate vegetation management methods and strategy, along with monitoring and evaluation system, to achieve roadside maintenance program goals and objectives in an environmentally and economically sound manner.

The process consists of the following principle components:

- Prevention
- Monitoring
- Determining action thresholds
- Proper timing of maintenance efforts
- Selection of least disruptive control and effective revegetation tactics
- Evaluation

The integrated vegetative management process provides information for the total roadside management system, which is used to analyze vegetation problems and implement long-term solutions. This broad overview approach helps vegetation managers answer four key questions:

- If treatment action is needed
- Where treatment activity should take place in the system
- When action should take place
- Which mix of strategies, tactics and treatments are the best to use

Integrated vegetation management (IVM)

What is roadside vegetation management?

Roadside vegetation management involves caring for and/or controlling plants along the highway. If managed properly, roadside vegetation can become self-sustaining over time and require less maintenance. This helps reduce costs and minimizes herbicide use.

Why is roadside vegetation management important?

Safety is the highest priority at WSDOT. Vegetation, if left alone, can grow out of control and block visibility (signs, traffic, wildlife) which could endanger motorists. Weeds must be controlled to avoid impacts on the farming community and native



ecosystems. Pride of ownership and the beauty of Washington State are also important factors, both aesthetically and economically, such as with the tourism industry.

What is a roadside vegetation management plan?

Roadside vegetation management plan is a "how to" guide for the best way to manage roadsides in any given area. Washington State has diverse climates and the highways have many neighbors, so the plans vary depending on location. The plans determine the right tool or combination of tools, for the right plant at the right place and time. WSDOT often uses the term Integrated Vegetation Management (IVM) in reference to this process. Vegetation management tools include:

- Mowing and trimming
- Selectively using herbicides
- Releasing of weed-eating insects
- Improving soils
- Planting native plants
- Hand pulling by volunteers and contracted services USFS

Using IVM and roadside vegetation management plans help reduce herbicide use and maintenance costs. When undertaking vegetative management, WSDOT follows the NW Region, Area 1, Integrated Roadside Vegetative Management Plan, adopted in December of 2006 and as amended. This document can be found at <http://www.wsdot.wa.gov/maintenance/pdf/BellinghamPlan.pdf>

This plan was developed with the specific needs of this region in mind and is updated to reflect improved technology and guidance. WSDOT will utilize this document when undertaking vegetative management along this corridor and discuss alterations to this management plan with the USFS at the annual meeting.

Consultation with NW Region Principal Landscape Architect

Capital projects along the scenic byway will undergo review by a qualified Landscape Architect for scenic quality, roadside function and maintainability issues.

Landscape management approach

The USFS and WSDOT will be jointly responsible for promoting and protecting scenic and other distinctive features while providing safe access along SR 542. We have approached the complex art and science of determining the relative value and importance of the scenery of this unique eco-system with a straightforward and systematic process that can be implemented along this corridor. Our intent is to establish direction for the management of positive natural attributes of the landscape as they exist along the highways corridor. Uniform procedures will be agreed upon that will describe the actions necessary to preserve the safety of the roadways while also establishing acceptable measures for maintaining the scenic integrity.

The landscape in this area has developed over time. When SR 542 was constructed, human-caused disturbance in the landscape occurred. We have taken steps to maintain

natural settings and scenic quality along the roadway. The following considerations guide management of the landscape:

- Perpetuate an appropriate landscape character that fits within the context of the overall corridor and surrounding areas.
- Identify strategies for landscape management that will promote safe corridors and an aesthetically pleasing visual experience.
- Define approach for noxious weed prevention.

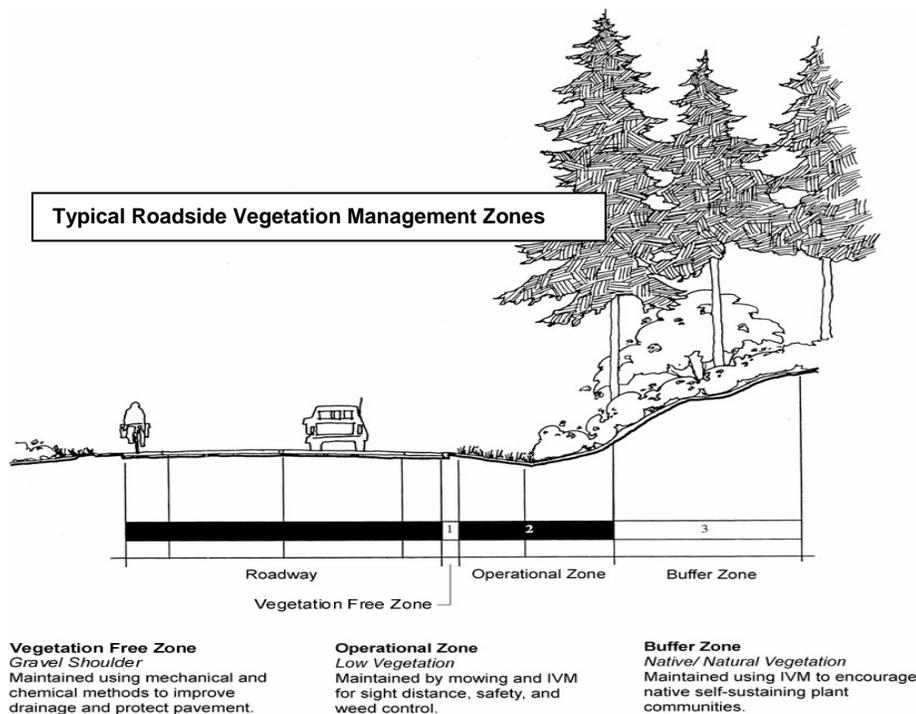
Beyond aesthetic values, roadside vegetation will also be placed to:

- Prevent soil erosion
- Enhance water quality
- Stabilize slopes

Methods to accomplish these will be explained further throughout this section of the plan.

Roadside vegetation management

WSDOT has created a management plan that provides detailed information and polices regarding planned routine maintenance practices, reoccurring weed infestations, management of sensitive areas and other areas requiring special management consideration. This information is included in the WSDOT NW Region, Area 1 Integrated Roadside Vegetation Management Plan dated 12/2006 and its updates and will be utilized in the vegetation management along this corridor. It is attached as **Appendix 7**.



Excerpt from the WSDOT NW Region Area 1, Vegetative Management Plan



Planting guidelines

When restoring road slopes, unwanted turnouts and other disturbed areas, the goals are to control erosion and re-establish low-maintenance, non-invasive vegetation compatible with nearby undisturbed native plant communities and to not present undue hazards to motorists. Some specific ways of achieving these goals are as follows:

Slope preparation. The graded surface of disturbed areas should have a natural appearance. If possible, existing topsoils should be salvaged and replaced. In some locations it may be more feasible to amend disturbed areas with compost and place a layer of rough compost on the ground surface to emulate forest floor conditions and support improve wildlife habitat, and accelerate the re-establishment of native forest-edge species.

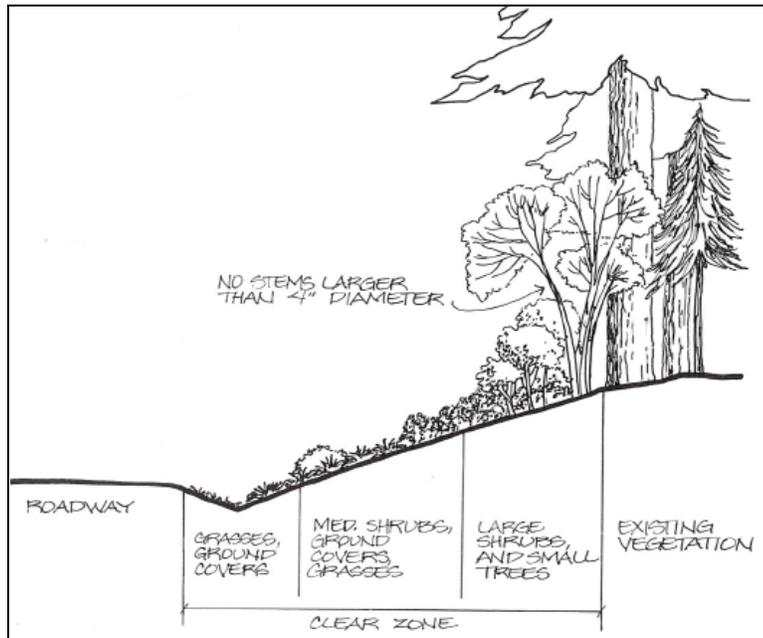
Plant materials. Indigenous plant materials should be used whenever possible. The USFS has approved a seed mix that is used for erosion control on large open slopes and in disturbed areas near the roadway to prevent establishment of noxious weeds.

Select species that are appropriate to the environmental conditions at the planting site. If road construction creates a large open slope, plant mostly sun-tolerant early to mid-successional species. Later successional, forest-edge species can be used where there is part shade near undisturbed forest (e.g., in restoring an unwanted turnout in lowland forest). The success of forest-edge species is often enhanced by the application of native duff, litter and woody debris.

At the annual meeting WSDOT will identify areas that will be disturbed in the development of capital projects or extensive maintenance projects along the corridor. If the USFS desires they can identify and salvage, at their cost, plants in the potentially disturbed areas for their own use.

Planting design

Planting design should imitate the patterns of naturally occurring plant communities. Planting in clusters or with random spacing rather than straight rows is recommended. Abrupt edges between undisturbed natural vegetation and cut slopes should be softened by using undulating clearing limits. Planting various different-sized shrubs and adding native forbs can also break up the abrupt transition between forest and bare or grassy slopes. Low mat-forming shrubs or grasses should be used within about 10 feet of the road edge. The graphic below identifies the areas needed to protect the clear zone and appropriate plantings that will accomplish that goal.



This practice will help maintain good sight distances. Grasses may inhibit establishment of woody shrubs (e.g. alder) next to the road, the visual impacts of mowing are less noticeable if there is a ground cover of low mat-forming shrubs (e.g. salal) or forbs (e.g., coltsfoot).

To achieve variation in plant height while minimizing safety hazards in the clear zone, plant several types of multistemmed shrubs or small trees that can be pruned to a multistemmed form (e.g., vine maple).

Roadside vegetation along the corridor

SR 542 navigates through a tremendous variety of natural resources. More than 300 plant species exist in the Mt. Baker Area. They are primarily found in the dominant habitat-forests.

More than 90 percent of the land is occupied by mixed coniferous deciduous forests. These forests are in either second or third growth following the forestry boom of the 1800s and 1900s and are primarily made up of western hemlock, (*Tsuga heterophylla*), western red cedar (*Thuja plicata*) and Douglas fir (*Pseudotsuga menziesii*) in the lower elevations and Silver fir (*Abies amabilis*), mountain hemlock (*Tsuga mertensiana*) and Douglas fir. Also common are grand fir and Sitka spruce.

Understory trees are primarily vine maple (*Acer circinatum*), Pacific dogwood (*Cornus nuttallii*) and western yew (*Taxus brevifolia*). Typical shrubs and herbaceous plants associated with the coniferous forests include Oregon grape (*Mahonia aquifolium*), salal (*Gaultheria shallon*), sword fern (*Polystichum munitum*), bracken fern (*Pteridium aquilinum*), huckleberries (*Vaccinium* spp) and rhododendron (*Rhododendron*), at higher elevations).

The deciduous components of these forests include species such as red alder (*Alnus rubra*), black cottonwood (*Populus balsamifera*), Pacific dogwood, willow (*Salix* spp) and bigleaf maple (*Acer macrophyllum*). Red alder dominates as a pioneer species on landscapes disturbed by logging, burns or other clearing activities. Birches (*Betula* spp), willows and cottonwoods grow beside streams and in low moist areas. These trees provide riparian zones with stream-bank stabilization, preventing flooding and helping to reduce runoff and erosion, minimizing damage to the roadway and protecting fish habitat.

Shrubs commonly associated with this deciduous and mixed coniferous deciduous forests include wild rose (*Rosa*), ocean spray (*Holodiscus discolor*), red elderberry (*Sambucus racemosa*), salmonberry (*Rubus spectabilis*) thimbleberry (*Rubus parviflorus*), wild gooseberry (*Ribes*), chokecherry (*Prunus virginiana*) and hazelnut (*Corylus cornuta*). Typical herbaceous plants include lady fern (*Athyrium filix-femina*), skunk cabbage (*Lysichitum americanum*) and devil's club (*Oplopanax horridus*) in wet swampy areas and deer fern (*Blechnum spicant*), twisted stalk (*Streptopus* spp), trillium (*Trillium ovatum*), false Solomon's seal (*Smilacina racemosa*), stinging nettle (*Urtica dioica*) and buttercup (*Ranunculus*) in moderately moist areas.

This area is also well know for its mycological diversity and is a hunting ground for avid mushroomers. (*Credit to Whatcom County Planning Department- Foothills Sub area Plan*)

The type and extent of vegetation will vary depending on the location along the corridor.

Vegetation management

USFS and WSDOT will coordinate the use of chemical application or other vegetation management activities.

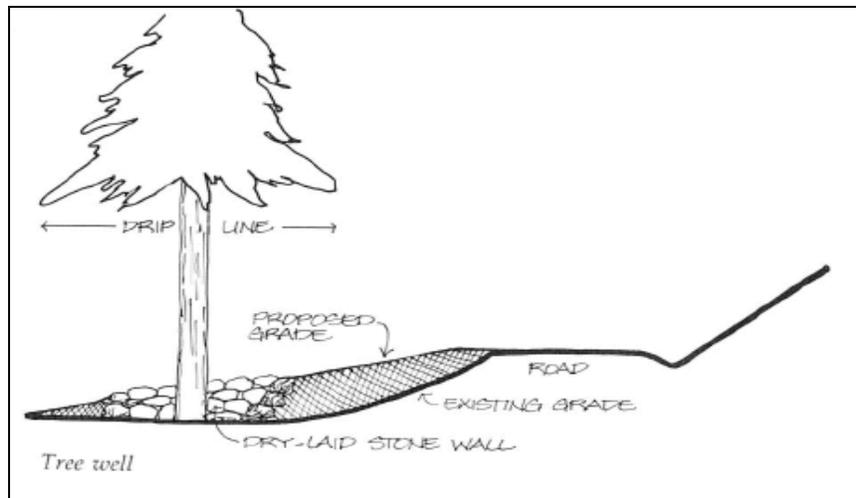
The following is a summary of USFS policies and guidelines for vegetative management:

1. Native Vegetation Management will be guided by the USFS most current issue of "A Guide to Conducting Vegetation Management Projects in the Pacific Northwest Region".
2. Invasive Plant Management will be guided by the applicable standards contained within USFS "Preventing and Managing Invasive Plants Record of Decision", October 2005.
 - a. In this decision, standards 3, 7 and 8 apply to road maintenance activities.
 - b. This decision emphasizes the use erosion control grasses approved by the USFS.
 - c. Standard 7 of this decision can be met by using USFS, WSDOT, or county weed specialists to review material sources before integrating materials into the road.
 - d. Standard 8 of this decision can be met by local weed specialists at USFS, WSDOT, or County Noxious Weed Control Board, consulting with WSDOT road maintenance managers on location of invasive plant populations and appropriate timing of brushing and ditch cleaning operations.

Tree protection

The forest contains many trees along the roadway. Some of these are in excellent health and augment the visual character of the corridor; others have been damaged or are weak and cause safety hazards along the roadway. Within the easement, implementing tree preservation is the goal and it has been agreed that tree removal will only occur if it poses a hazard to the roadway. (See maintenance appendix 14). The scenic value of the corridor is enhanced by large trees and every effort will be made to preserve them when possible. All conifers 50 years and older (i.e., 18dbh and larger) are candidates for preservation. Each tree that meets this criterion will be evaluated individually. Four methods are proposed for protecting them: sensitive road alignment, tree wells in fills, shortening fills with toe wall and guardrails. The Region Landscape Architect and State Horticulturist are WSDOT resources that should be used to evaluate trees and determine best methods for protection and preservation.

- **Preservation.** The most effective method of preserving large trees is a sensitively designed road alignment that avoids these important resources whenever possible.
- **Root zone protection.** Ideally, the root zone of vegetation is protected out to 1.5 times the diameter of the drip line. At a minimum, protect the root zone to the outermost research of its branches (the drip line). If cuts or fills are required in the vicinity of the trees to be saved, consider retaining walls, tree wells, gravel, or drainage systems to protect the root systems.

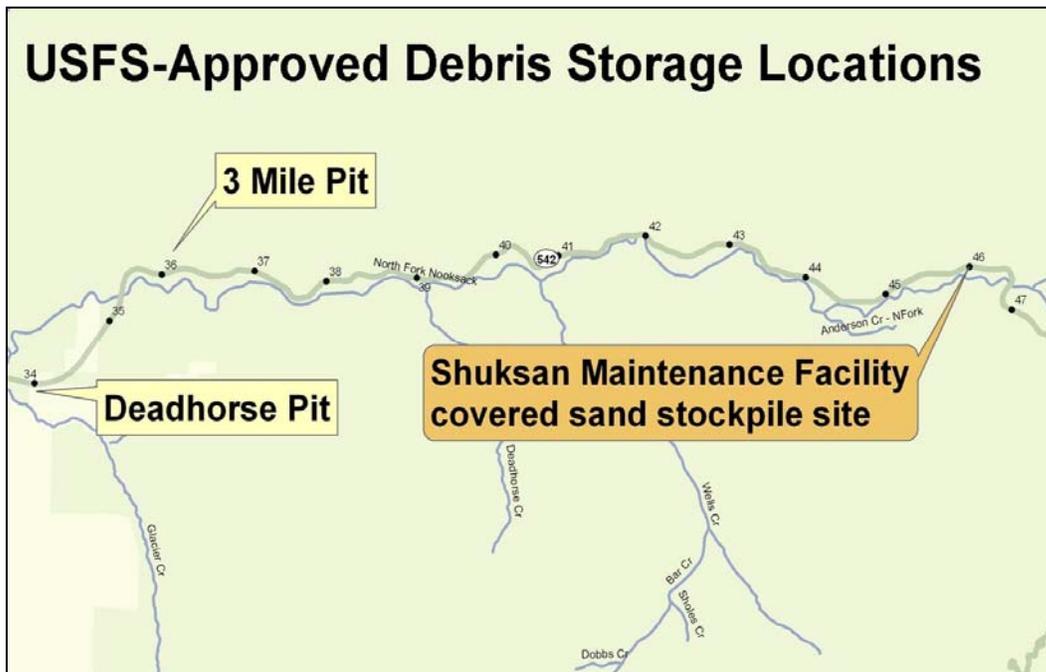


- **Toe wall.** If several large trees are found within 10 feet from the end of a fill, construction of a toe wall should be considered to save the trees. Toe walls can be constructed of various materials: dry laid stone, reinforced concrete and concrete with stone facing. In areas well hidden from public view, gabions would be acceptable. Dry-laid stone is preferable because there is no need for foundation digging that may damage root systems.

- **Vehicle free zone.** Care should be taken to avoid damaging trees during construction or maintenance activities. The common practice of driving or parking construction equipment under large trees is prohibited. The resulting soil compaction and root damage can be as destructive to the tree as the effects of filling around it.
- **Guardrail.** Barricade or fences should be used in sensitive areas to help minimize this type of damage. Where appropriate, guardrails should be used to protect large healthy trees close to the road. These protect both trees and motorists from direct impact.

Clogged watercourses and structures

Watercourse and structures clogged by excessive brush, debris or sedimentation must be cleared to provide drainage. Clear and/or clean associated interceptor drains. This may require digging out channels by hand or with equipment to minimize disturbance to adjacent vegetation. Clear only the necessary minimum amount of vegetation. Side casting may be permitted after review and approval by the Forest Service. All other debris shall be hauled to approved staging areas.



**In an emergency, to enable road reopening, scenic vista sites maybe used as temporary stockpile sites. Debris will be removed from these locations as soon as equipment can be mobilized to take it an appropriately designed area.



Noxious weed control

Preventing the introduction and spread of noxious weeds is one objective of the Integrated Vegetative Management Plan for SR 542. “Noxious Weeds” are defined by the USFS as “plants designated as noxious weeds by the Secretary of Agriculture or by the responsible State official. Noxious weeds generally possess one or more of the following characteristics: aggressive and difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects....” (FSM 2080.5)



Knap weed

Noxious weeds are non-native plants that have been introduced to Washington from other parts of the world. Because of their aggressive growth and lack of natural enemies in the state, these species can be highly destructive, competitive, or difficult to control. Non-native plants grow particularly well along SR 542 in areas where native trees and shrubs are cleared and the soil is disturbed, gravelly or well drained.

Noxious Weed Prevention and Control is a coordinated effort with WSDOT, Whatcom County Noxious Weed Control Board and the USFS to address planned prevention and control measures, type and amounts of chemical treatment if any, timing of activities, area



Tansy Ragwort

to be treated and monitoring of results. As guidance we use the Washington State Noxious Weed list to identify guidance for appropriate treatment. WSDOT will annually report progress to the Forest Supervisor. The control of noxious weeds requires ongoing prevention practices and strategy.

Whatcom noxious weed control board

The authority on locally present noxious weeds is the Whatcom County Noxious Weed Control Board. They have identified Noxious Weeds along the SR 542 Corridor and have been working with the USFS to control these. Included in the appendix is the 2008 Whatcom County Noxious Weed Control List, which shows the designations and class of noxious weeds, identified in Whatcom County.

<http://www.co.whatcom.wa.us/publicworks/weeds/index.jsp>

On-going coordination

Teamwork is needed to work toward the control of noxious weeds. WSDOT, the USFS and the Whatcom County Noxious Weed Control Board coordinate each year regarding the need for manual removal, mowing and herbicide applications. This coordination needs to continue in the future. It will be WSDOT's policy to not mow known areas with “Class A” noxious weeds before consulting with the USFS, so hand pulling can be accommodated. Below is a map showing the areas where noxious weeds have been identified along the corridor by the Whatcom Noxious Weed Control Board and have had active involvement by the USFS to work toward the removal of these species.



SR 542 scenic byway noxious weed control: goals and strategies:

Goal: Control the introduction and spread of weeds caused by moving infested sand, gravel, borrow, and fill material in the Forest. **Strategy:** Use materials that are certified weed free.

Goal: Avoid or remove sources of weed seed and propagules to prevent new weed infestations and the spread of existing weeds. **Strategy:** Work with Whatcom County (on-going) or WSDOT biologists and landscape architects (during design and construction phases) to identify areas of noxious weed infestation and provide appropriate removal.

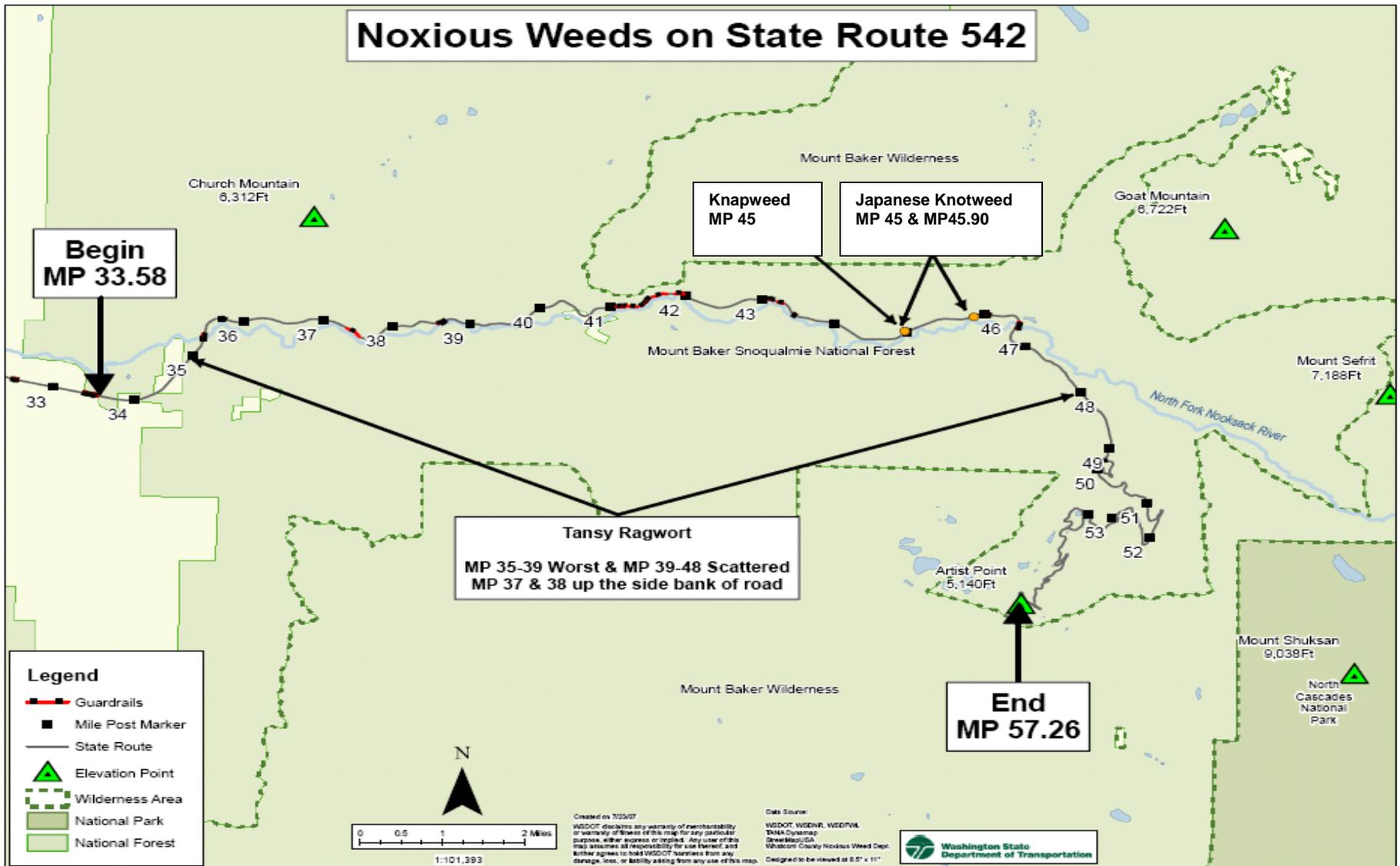
Goal: Prevent the introduction and spread of weeds caused by moving infested sand, gravel, borrow, and fill material in Forest Service, contractor and cooperator operations.

Strategy: Incorporate Weed Prevention and control into project layout, alternative evaluation, and project decisions. WSDOT specifies weed control prior to disturbance if appropriate. WSDOT and the Forest Service have agreed to prescriptive measures to manage weed removal with approved herbicides. The Herbicide Fact sheets included in Appendix 8, show both State and County guidance for the areas to be managed.

Goal: Work with Whatcom County, the Forest Service, WSDOT and other groups to provide early detection and control. **Strategy:** Determine prevention and maintenance needs to include the use of herbicides, if needed, at the onset of project planning. Coordinate project activities with any nearby herbicide application to maximize cost effectiveness of weed treatment.

Goal: Where project disturbance creates bare ground, consistent with project objectives, reestablish vegetation to create conditions that compete with weeds.

Strategy: When WSDOT establishes new roadside plantings, select plants that will compete well with noxious weeds. We also improve the soil with organics, such as weed-free compost, to create more favorable conditions for desirable vegetation.



Map 10: SR 542 Noxious Weed locations identified by Whatcom Noxious Weed Control Board



Below is the best management practices prescribed by the USFS. These will be incorporated into all noxious weed control planning as available.

Noxious weed prevention and treatment best management practices	
Exhibit B of 2004 Easement	
Management Requirement	Management Practices (These should be followed unless the intent of the first column can be met with an alternate method that better meets the management requirement)
Avoid spread of weeds during road decommissioning or construction activities.	<ol style="list-style-type: none"> 1) In decommissioning projects, existing infestations should be treated before the road is made undrivable. 2) If weeds are present in project areas, all equipment and gear should be cleaned (power wash or high pressure cleaning) before leaving area to avoid spreading the infestation further. 3) Use only weed-free plant materials for revegetation. 4) Use only weed-free straw, erosion control mats, or other weed-free mulch. 5) For new construction minimize clearing limit widths.
Avoid Spread of weeds during road maintenance activities. <i>This is not meant to apply to surface vehicles or equipment doing work within the limits of the road surface, <u>or</u> and work in non-infested areas.</i>	<ol style="list-style-type: none"> 1) For areas beyond the road surface, existing infestations should be treated before the maintenance activity occurs. 2) If weeds are present in project areas, all equipment and gear should be cleaned (power wash or high pressure cleaning) before leaving area to avoid spreading the infestation further. 3) Within small infested areas, consider using alternate methods to accomplish maintenance work (e.g. cleaning hand tools for small sites will be more efficient and cheaper than cleaning large equipment). 4) When feasible, work from relatively weed-free areas into the infested areas rather than vice-versa. 5) When feasible, do not maintain ditches when noxious weeds are in the flowering or seed stage. 6) Do not maintain ditches or mow shoulders within 2 weeks before or after herbicide application - this will minimize herbicide use and increase effectiveness. 7) Road maintenance programs should include monitoring for noxious weeds. Infestations should be inventoried and scheduled for treatment.



<p>Avoid spreading weeds via use of infested materials.</p>	<p>1) On the MBSNF, all gravel, fill, winter sanding, stockpiles, quarries and borrow material should be inspected, treated if necessary and ensured that it is weed free before transport and use. These areas should be designated as “zero tolerance” zones.</p> <p>2) All seed purchased or otherwise designated or accepted for the Mt. Baker-Snoqualmie National Forest will be required to be tested for “all states noxious weeds” according to Association of Official Seed Analysts (AOSA) standards. It also will be certified in writing by the Registered Seed Technologist and Seed Analyst as meeting the requirement of the Federal Seed Act and State Seed Act and State Seed law for Washington regarding the testing, labeling, sale and transport of prohibited and restricted noxious weeds.</p> <p>3) Do not draw water (e.g. for dust abatement) from known weed infested water sources.</p>
<p>Limit transport of weed seeds onto the MBS National Forest.</p>	<p>1) Specify clearing of heavy equipment entering the MBSNF that is contracted for work outside the limits of the road surface. Equipment should be free of all dirt, mud and plant parts.</p>
<p>Incorporate weed prevention in Access and Travel Management Planning.</p>	<p>1) During transportation planning and alternative development, consider weed risk factors (presence, habitat type, aspect, etc.) to evaluate road location and design.</p> <p>2) EAs for road construction must consider weed risk in development of alternatives and mitigating measures.</p>
<p>Retain shade to suppress weeds.</p>	<p>1) Minimize the removal of trees and other roadside vegetation, particularly on southern aspects.</p> <p>2) Where shoulders or ditches are covered by desirable vegetation, consider leaving it in place rather than blading it off if such a practice can be done without causing excessive damage to the road surface or public safety hazards.</p>
<p>Re-establish desirable vegetation on all bare ground to minimize weed establishment or spread.</p>	<p>1) Seed all exposed soil (except travelway) before soil crusting or otherwise treat in a manner that optimizes establishment of desirable species.</p> <p>2) Monitor all seeded sites and spot re-seed as needed. Preferably use native, pioneer species because they require fewer nutrients and less fertilizer.</p> <p>3) If using fertilizer, do so only after desirable vegetation has become established, to help the desired species maintain a competitive advantage over the weeds.</p>
<p>Ensure quick re-establishment of desirable vegetation to discourage weeds.</p>	<p>1) Require that all bare soil resulting from projects be re-seeded, planted, and/or mulched promptly after clearing.</p> <p>2) Use only weed-free plant materials, straw, or mulch for revegetation and restoration projects.</p>



The easement, as summarized above, specifies some measures that have not been developed in Washington State; such as certified weed free sand, and power washing of maintenance vehicles on site. WSDOT will take all available precautions to help control the spreading of noxious weeds, but some of these are not possible at this time. WSDOT shall annually coordinate the vegetation management along the right-of-way. Clearing by means of chemicals will be done per approved herbicides specified in this plan, or by amendment by the forest service. Consultation must address the time, method, chemicals and exact portion of the right-of-way to be chemically treated. Below is a link to WSDOT policy on Herbicide Use. Measures to prevent infestations of weeds within the easement areas should be in accordance with Best Management Practices. EPA approved procedures will be used.

WSDOT's policy on herbicide use

Herbicides are efficient and effective tools for vegetation management and weed control. WSDOT uses herbicides two ways:

- to maintain a vegetation-free strip at the edge of the pavement where necessary
- to selectively control and eliminate undesirable plants

For herbicides used to control weeds and other unwanted plants, WSDOT follows a process that helps ensure herbicides are used appropriately and only when necessary in combination with other effective control measures. The ultimate goal in any treatment is to replace unwanted vegetation with appropriate native plants. In many cases herbicides are an effective tool for initial control of a problem. When combined with other control measures, herbicide use can be minimized or eliminated over time.

Link to WSDOT's current policy on herbicide use:

http://www.wsdot.wa.gov/maintenance/vegetation/herbicide_use.htm

WSDOT policy for approval and use of any new herbicide products

Any new herbicides or formulations of existing herbicides that become available and have potential for use in roadside vegetation management will be screened, evaluated and approved based on the following procedures:

All new pesticide products that may be used for roadside vegetation management by the Washington State Department of Transportation will be formally evaluated for environmental and human health impacts prior to addition to the statewide contract and use on WSDOT rights of way. No pesticide products will be used on WSDOT right-of-way without approval through the process. As technology changes and new products and procedures are developed, it is anticipated that updated applications will be suggested at the annual meeting, with the understanding it will be reviewed by the USFS for final approval.

Full documentation of WSDOT Herbicide use analysis and risk assessment is also available: 1993 - Roadside Vegetation Management EIS, Appendix B.

http://www.wsdot.wa.gov/maintenance/pdf/Roadside_Vegetation_Management_Feb_1993_Appendix_B.pdf



Herbicides approved for use within the National Forest

USFS recommendation: The MB-S National Forest currently uses the following herbicides on the following weeds:

All composite (thistles, hawkweeds, common tansy, tansy ragwort) - clopyralid or aquatic glyphosate

Blackberries- glyphosate

Knotweeds- combination of imazapyr and aquatic glyphosate

Scotchbroom – aquatic glyphosate

Herb Robert- aquatic glyphosate

Wild carrot- aquatic glyphosate

Yellow archangel- aquatic glyphosate

Comments on the latest (January 2009) draft of the SR 542 Scenic Byway Plan, Vegetation Management section. This information was requested at the January 13th meeting with DOT.

The MB-S National Forest currently uses the following herbicides on the following weeds:

All composites (thistles, hawkweeds, common tansy, tansy ragwort) – clopyralid or aquatic glyphosate

Blackberries – glyphosate

Knotweeds – combination of imazapyr and aquatic glyphosate

Scotchbroom – aquatic glyphosate

Herb robert – aquatic glyphosate

Wild carrot – aquatic glyphosate

Yellow archangel – aquatic glyphosate

Ann Risvold
North Zone Botanist
January 21, 2009

* The herbicides highlighted are approved for Forest Service use



Washington State Department of Transportation

Technical Appendix 9- Approved Herbicide information and website link

Appendix of Herbicides approved for use with links to website fact sheets.

- 2,4-D <http://www.wsdot.wa.gov/maintenance/pdf/2,4-D.pdf>
 - Aminopyralid <http://www.wsdot.wa.gov/maintenance/pdf/Aminopyralid.pdf>
 - Bromacil <http://www.wsdot.wa.gov/maintenance/pdf/bromacil.pdf>
 - Bromoxynil <http://www.wsdot.wa.gov/maintenance/pdf/Bromoxynil.pdf>
 - * → Chlorsulfuron <http://www.wsdot.wa.gov/maintenance/pdf/chlorsulfuron.pdf>
 - * → Clopyralid <http://www.wsdot.wa.gov/maintenance/pdf/Clopyralid.pdf>
 - * → Dicamba <http://www.wsdot.wa.gov/maintenance/pdf/dicamba.pdf>
 - Dichlobenil <http://www.wsdot.wa.gov/maintenance/pdf/dichlobenil.pdf>
 - Diflufenzopyr <http://www.wsdot.wa.gov/maintenance/pdf/diflufenzopyr.pdf>
 - Diuron <http://www.wsdot.wa.gov/maintenance/pdf/diuron.pdf>
 - Flumioxazin <http://www.wsdot.wa.gov/maintenance/pdf/flumioxazin.pdf>
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 - Pendimethalin <http://www.wsdot.wa.gov/maintenance/pdf/pendimethalin.pdf>
 - * → Picloram <http://www.wsdot.wa.gov/maintenance/pdf/Picloram.pdf>
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 - Tebuthiuron <http://www.wsdot.wa.gov/maintenance/pdf/Tebuthiuron.pdf>
 - * → Triclopyr <http://www.wsdot.wa.gov/maintenance/pdf/triclopyr.pdf>
- Full documentation of WSDOT Herbicide use analysis and risk assessment is also available: 1993 - Roadside Vegetation Management EIS, Appendix B.
http://www.wsdot.wa.gov/maintenance/pdf/Roadside_Vegetation_Management-Feb_1993_Appendix_B.pdf

* and Sethoxydim



MT. BAKER HIGHWAY SCENIC BYWAY MANAGEMENT PLAN

ANNUAL COORDINATION

1. Annual coordination topics
2. Maintenance annual coordination report
3. Hazard tree review form
4. Contact information



Annual coordination topics

The Mt. Baker Highway Scenic Byway Management Plan was produced to provide guidance that takes into account the unique attributes of the SR 542 corridor within the National Forest boundary, and fulfills the requirements of the easement entered into by USFS and WSDOT. The goal of this document was to articulate the roles and responsibilities of WSDOT and the USFS in the management of this highway system. The easement also specifies the need to jointly coordinate activities along the corridor at an annual meeting with the forest supervisor and WSDOT. Below is a summary of topics to discuss:

1. Preservation of aquatic and fisheries resources: The forest supervisor and WSDOT shall jointly coordinate and consult annually to address Aquatic and fisheries resource matters of concern or non-compliance. This annual coordination and consultation may include representatives or guidance from the Washington State Department of Fish and Wildlife, the Lummi Nation, Nooksack Tribe, other Federal agencies and other interested parties as may be appropriate. The forest supervisor shall initiate this annual coordination.

2. Storage: WSDOT shall establish no borrow, sand, or gravel pits; stone quarries, permanent storage areas, sites for highway operation and maintenance facilities, camps, supply depots, or disposal areas within the right of way; unless shown on approved construction plans, without first obtaining approval of the forest supervisor, Mt. Baker-Snoqualmie National Forest. It would be helpful to establish vista areas that could be used in case of emergency. The Forest Supervisor and WSDOT shall meet annually to coordinate and agree upon suitable sites for disposal of slide and waste debris, hazard tree storage areas, for temporary or permanent use as required.

3. Noxious weed prevention and control: Coordination of control measures used, type and amounts of chemical treatment, timing of activities, such as mowing, identify areas to be treated, and monitoring of results. WSDOT adherer's to the Washington State Noxious Weed list.

4. Funding coordination: Planning and prioritization of projects desired to enhance scenic byway aesthetics associated with new construction or retrofits along the corridor. Joint priority list developed to seek outside funding for capital projects from scenic byway program, and other funding sources.



5. Ongoing coordination:

- Emergency maintenance.
- Coordination of maintenance schedule for snow removal needed to open the road to Artist Point. Herbicide use, mowing timing to coordinate hand pulling schedule. Hazard tree identification and removal.
- Special event coordination and any access management development if circumstances require alteration and traffic control planning.
- WSDOT will consult with USFS during development of the WSDOT six-year highway construction program. Preconstruction coordination for new construction and non-routine maintenance projects
- Cultural and archeological compliance.

This planning effort has produced guidance that takes into account the unique attributes of the SR 542 corridor within the National Forest boundary, and fulfills the requirements of the easement entered into by USFS and WSDOT. The goal of this document was to articulate the roles and responsibilities of WSDOT and the USFS in the management of this highway system.

6. Plan amendment:

The easement established that review and update of this plan are to occur not less than every five years. Amendments should take on the same formality as the initiation of this plan. It will require the signatures of both the forest supervisor as well as the WSDOT assistant regional administrator to amend this plan. At the annual meeting the parties should determine if any items need to be revisited, amended or augmented as part of that years work program.

**Northwest Region
Maintenance Emergency Contact List**

AREA 1 - Bellingham- SR 542				
NAME	TITLE	RADIO	WORK	CELL
Tony Hernandez	Superintendent	112	(360) 788-2507	(360) 739-2060
Maintenance Main Office			(360) 788-2500	(360) 739-0548
Bill Joyce	Supervisor - Shuksan/ Winter	118	(360)599-1020	(360) 739-5246
Rod Morgan	Supervisor - East	115	(360) 788-2527	(360) 319-6878
AREA 2 - Mt. Vernon- SR 20				
NAME	TITLE	RADIO	WORK	CELL
Gary Ward	Superintendent	121	(360) 848-7235	(360) 961-4034
Kim Glass	Asst. Supt.	122	(360) 848-7236	(360) 961-2849
Clint Terwilliger	Supervisor	123	(360) 848-7246	(360) 770-4219
Rodney Hayes	Supervisor	124	(360) 848-7230	(360) 961-2316
ADMINISTRATORS & MANAGERS				
NAME	TITLE	RADIO	WORK	CELL
Todd Harrison	ARA - Mt. Baker	112	(360) 757-5990	(360) 661-1744
Marco Foster	Mt. Baker Area Manager		(360) 757-5991	(360) 661-1746
Alan Soicher	Environmental Program Manager		(360) 757-5995	(360) 333-8946
John Himmel	Emer. Managm. Progr. Mang.		(360) 705-7973	(360) 239-6759
Shane Spahr	Design Manager		(360) 757-5856	
Chris Damitio	Design Manager		(360) 788-7403	
Dave Crisman	Design Manager		(360) 428-1593	
Patricia Hardway	Special Events Coordinator		(206) 440-4474	
24 hr PIO Pager	Region Hwy. Radio		(206) 440-4490	(206) 437-6314
PLANNING				
NAME	TITLE	RADIO	WORK	CELL
Todd Carlson	Planning and Operations Manager		(360) 757-5980	(360)661-6293
Kerri Woehler	Assistant Planning Manager		(360) 757-5981	(360) 661-1749
Elizabeth Sjostrom	Highway System Planner		(360) 757-5984	



Washington State
Department of Transportation

Mt. Baker Area Maintenance
3920 Airport Way
Bellingham, Washington 98226
Phone (360) 788-2500

Date:

WSDOT maintenance annual coordination report to the USFS for SR 542

1. Storage areas. How are they working. Are any additional areas needed.

2. Noxious weed control- schedule of mowing

3. Hazard tree Identification scheduling review in spring, removal in summer

4. Artist Point road opening schedule

4. Emergency maintenance

5. Anticipated special events

6. Other coordination



**Washington State
Department of Transportation**

**Mt. Baker Area Headquarters
1043 Goldenrod Road, Suite 101
Burlington, Washington 98233
Phone (360) 757-5999**



**USDA Forest Service Mt. Baker
District 810 State Route 20
Sedro-Woolley, WA 98284
Phone: 360-856-5700**

**WSDOT and USFS coordination and prioritization for partnership
funding needs for projects along SR 542**