Bridal Veil Mill Site: A Plan for Restoration

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Bridal Veil Mill Site
A Plan for Restoration

Presented To: The Trust for Public Land

Prepared By: Bruce Barnett - Richard Friday - Elizabeth Freeston
             Raef Porter - Laurie Shiels

Portland State University - College of Urban and Public Affairs
Workshop 2002
Portland State University
College of Urban and Public Affairs
School of Urban Studies and Planning

Master of Urban and Regional Planning Program
Planning Workshop 2002

Bruce Barnett - Elizabeth Freeston - Richard Friday - Raef Porter - Laurie Shiels

The Portland State University (PSU) Planning Workshop is the culmination of the Master of Urban and Regional Planning (MURP) program. The goal of the planning workshop is for students to synthesize the knowledge and experience gained from the program into a planning project that addresses a relevant regional issue. This project has been undertaken with the Trust for Public Land (TPL), a national non-profit organization that works to preserve the land for its natural, scenic, and recreational values. This document is intended to provide information to TPL about potential restoration of the Bridal Veil mill site. The information contained in this document is advisory-only and is not to be used without permission from TPL.
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### Acronyms

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<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
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<td>ADAAG</td>
<td>Americans with Disabilities Act Accessibility Guidelines</td>
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<tr>
<td>AST</td>
<td>Above-Ground Storage Tank</td>
</tr>
<tr>
<td>CERCLIS</td>
<td>Comprehensive Environmental Response, Compensation and Liability System</td>
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<td>DEQ</td>
<td>Department of Environmental Quality</td>
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<td>EPA</td>
<td>Environmental Protection Agency</td>
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<td>FINDS</td>
<td>Facility Index System</td>
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<td>FWS</td>
<td>United States Fish and Wildlife Service</td>
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<tr>
<td>GMA</td>
<td>General Management Area</td>
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<tr>
<td>LUST</td>
<td>Leaking Underground Storage Tank</td>
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<tr>
<td>MURP</td>
<td>Master of Urban and Regional Planning</td>
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<tr>
<td>NFA</td>
<td>No Further Action</td>
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<tr>
<td>NSA</td>
<td>National Scenic Area</td>
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<td>Oregon Parks and Recreation Department</td>
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<td>PSU</td>
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<td>SMA</td>
<td>Special Management Area</td>
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<td>UPRR</td>
<td>Union Pacific Railroad</td>
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<td>USGS</td>
<td>United States Geological Survey</td>
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<td>UST</td>
<td>Underground Storage Tank</td>
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<td>USFS</td>
<td>United States Department of Agriculture Forest Service</td>
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### Abbreviations

<table>
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<td>Century West</td>
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<td>Columbia River Gorge Commission</td>
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<td>I-84</td>
<td>Interstate 84</td>
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<td>Management Plan</td>
<td>Management Plan for the Columbia River Gorge National Scenic Area</td>
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<td>Scenic Area Act</td>
<td>Columbia River Gorge National Scenic Area Act</td>
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I. Executive Summary

Founded in 1972, the Trust for Public Land (TPL) is a national non-profit organization that works to protect land for its natural, scenic, and recreational values as parks and open space. One way that TPL accomplishes this is through holding property temporarily until the land can be permanently protected by a government agency or a community land trust.

In 1990, TPL purchased a 34-acre property located near Bridal Veil Falls in the Columbia River Gorge. The Bridal Veil mill site property has a lengthy history dating back to 1886. The site was first used for a paper mill. Later, a milling operation received rough-cut timbers from a lumber mill high in the surrounding forests and remilled it into a finished product. It was then transported to market by boat or train. Over the next century the site would see different owners and uses, mainly related to mill operations. Since 1990, the land has remained largely unused and under the ownership of TPL.

In keeping with its mission, TPL wants to see the Bridal Veil mill site transferred to an owner that would ensure its restoration and preservation. Students enrolled in the 2002 Master of Urban and Regional Planning (MURP) Workshop at Portland State University (PSU) worked with TPL to develop a future vision for the site. This document presents one possible restoration plan that incorporates unique features of the site for the enjoyment of those who live in and visit the area.

The restoration plan reviews the existing conditions, examines opportunities and constraints, considers the regulatory guidelines, and offers specific strategies for the site's restoration. The plan incorporates natural, scenic, recreational, and historic elements. It is hoped that those who ultimately own the property and who are entrusted with its welfare will look at this document, use the research that has been compiled, and consider the proposed restoration plan that has resulted from this effort.

Major findings and recommendations in this report include the following:

- The Bridal Veil mill site has a lengthy history of intensive uses that have adversely impacted the environmental integrity and functioning of the site.

- While there are obvious indications of environmental degradation on the site—impervious surface, trash and debris, and surface contaminants—further environmental testing is required to determine subsurface conditions.

- The current regulatory environment, created by various policies at the federal, state, and county level, imposes restrictions and requirements on the type of restoration work that can take place in the project area.

- Based on an analysis of existing conditions and an identification of site opportunities and constraints, this plan recommends that site restoration include a trail system, additional parking, gazebo, trail plaques for natural and historic interpretation, reforestation and revegetation of areas covered by impervious surface, construction of an earthen berm along the Union Pacific Railroad (UPRR), and new picnic facilities.
II. Introduction

The Bridal Veil mill site is located in the Columbia River Gorge, approximately 24 miles east of Portland and 33 miles west of Hood River, in the eastern portion of Multnomah County (Figure 1). It is within the Columbia River Gorge National Scenic Area (NSA)—an area protected by the Columbia River Gorge National Scenic Area Protection Act of 1986, hereafter referred to as the Scenic Area Act—for its unique beauty and natural resource values. The site’s location places it under the jurisdiction of various entities, including the Columbia River Gorge Commission, hereafter referred to as the Gorge Commission; Multnomah County; the State of Oregon; and the federal government.

The site has a lengthy history and has seen many owners since it was first used as a mill in 1886. Kraft Company purchased the Bridal Veil mill site in 1937 and manufactured wooden processed cheese boxes. During World War II, the Kraft manufactured wooden ammunition boxes. By 1960, mill operations had ended and the property was sold to Machinery Sales Incorporated. The property was then sold in 1974 and until about 1988 was operated as a resaw mill.

As a result of the often intensive use of the site, much of its environmental integrity has been impaired. While the south slope of the site remains largely intact and covered by coniferous and deciduous trees, the northern portion of the site, which was used for most mill operations, is now covered with impervious surface. Debris, trash, and remnants of structures that were recently removed can be found throughout the site.

The passage of the Scenic Area Act has placed new emphasis on land already designated for preservation. One way to protect this land is through acquisition by a public agency.

The Bridal Veil mill site, despite years of use as a manufacturing and mill operation, is an area with tremendous potential for restoration. The site presents an opportunity to link Bridal Veil Falls and Angel’s Rest trails. The site plan as proposed, is meant to promote and encourage the transfer of the Bridal Veil mill site to a public agency. It presents a vision of the site’s potential for natural resource restoration, historic interpretation, and public use and enjoyment. This report begins by explaining the research methods that were used to develop an understanding of the site, its history, social context, and existing environmental conditions.
III. Research Methods

The project team employed seven methods to fulfill its research objectives. Using the following research methods enabled the project team to place the project within the larger context of the Columbia River Gorge and inspired creative approaches to restoration.

Primary research methods consisted of interviews, observation, a class site visit, and site analysis. Information was gathered from a variety of sources to form a clear understanding of the site's current condition. This firsthand research was reinforced with information compiled through secondary research methods, which included literature review, web review, and policy analysis.

Research findings shaped the project's recommendations and determined the opportunities and constraints that were used to develop the final site plan. A balanced perspective was achieved that considers the historical, cultural, natural, and regulatory environment, as well as other defining characteristics of the site. For the purposes of this project, we met our research objectives

Research Objectives

- Gain various perspectives of stakeholders and interested parties.
- Become familiar with the history of the project site.
- Ensure that the project is transferable to the client, decision-makers, and potential owner(s).
- Reveal the site's potential and establish priorities for restoration.

Primary Research Methods

- Interviews: face-to-face, phone, and email.
- Observations: direct and participant, on- and off-site.
- Class Site Visit: Site analysis according to specialization.
- Site Analysis: Review of existing conditions.

Secondary Research Methods

- Literature Review: Used for familiarization with the site and surrounding areas and for restoration strategies and comparison projects.
- Web Review: Used for similar reasons as literature review. Aided in policy analysis, locating interviewees, and identifying other sources.
A. Interviews

Interviews, rather than pencil and paper surveys, were selected for data collection so that the project team could explore interesting comments and observations. Two types of interviews were used: 1) structured interviews with key informants and 2) in-depth interviews with area residents and park users. Interview questions were designed to seek site-specific information. In-depth interviews were conducted in the form of guided conversations with engaged stakeholders throughout most of the project.

"Passed several beautiful cascades...several small streams fall from a much greater height, and in their decent, become a perfect mist which collects on the rocks below...."

Meriwether Lewis
April 9, 1806

B. Observation

Direct and participant observation of users of the site and abutting properties was conducted throughout the duration of the research. Project team members recorded findings and shared them with one another through oral and email communication.

Observation was conducted on the project site in the following areas: Bridal Veil Community Church, Bridal Veil Post Office, along the Historic Columbia River Highway, and at the pond near the pump house. Observations provided information about the level of local and visitor use, circulation patterns on the Bridal Veil mill site, points of interest, and potential hazards.

Observation was performed on abutting public lands at the Bridal Veil Cemetery, Angel's Rest trailhead and parking lot, and Bridal Veil State Park. Information was obtained about the characteristics of visitors, parking capacity, restroom use, and utilization of existing trails and placards.

The data gathered from observation were utilized in the recommendation of trails and the placement of natural and historic interpretive plaques. Findings shaped recommendations for site improvements and restoration.
C. **Site Analysis**

A site analysis was conducted in April and May 2002 to identify significant man-made and natural features of the Bridal Veil mill site. The site analysis was undertaken in order to verify and build upon information that had been collected from previous sources. Since the site has a lengthy history of intensive uses, the site analysis was critical to gathering information for use in the identification of site opportunities and constraints. The information collected in the site analysis helped to establish the parameters for future restoration. Areas that were explored in the site analysis include the following:

- Location and types of vegetation, boundaries of wooded areas, clusters of trees, and identification of invasive plant species.
- Presence of fish and wildlife habitat and identification of candidate, threatened, and endangered species.
- Hazardous areas including steep slopes and erosion-prone areas.
- Evidence of dumping, burial, or storage of trash, debris, oil, or chemicals.
- Evidence of noise, smoke, dust, odors, or other emissions from sources on the site or surrounding areas, such as from highways and railroads.
- Evidence of use of the property, such as footpaths, roads, bike trails, litter, and cleared vegetation.
- View corridors within, to, and from the site.
- Character, condition, and use of adjacent properties.
- Manholes, standpipes, vent pipes, signs, and other evidence of underground storage tanks (UST), sewers, and transmission pipes.
- Location, use, and structural condition of remaining buildings, roads, paved areas, fences, walls, abandoned wells, and other man-made features.
- Evidence of pollution or sedimentation in running and standing water from on-site and off-site uses.
- Marshes, swamps, wetlands, bogs, and streams.
- Zoning and regulatory plan designations that limit the type of activities that can take place on the site.
- Soil information, including types and characteristics.
- Topography, including the identification of streams, swales, ridges, slopes, and similar landforms and features.
- Utilities, including sewer, water, electric, natural gas, and telephone lines.
D. Literature Review

A review of both current and historical literature was conducted to gain background and technical information relevant to the project site.

- Historical literature supplemented the face-to-face interviews of local property owners and tenants.
- Manuscripts and biographies by former residents provided an overview of the site’s history and helped to explain the remnants of the old mill town.

The information was used to inform the recommendation for plaques for historic interpretation.

To reveal the opportunities for historical interpretation, the project team researched the broader topic of historic preservation in the Pacific Northwest.

Literature that discusses timber industry activities and the impacts on the natural environment was used to address challenges for restoration of the Bridal Veil mill site.

Restoration plans for the Columbia River Gorge provided supplemental information about long-term goals for the NSA and Historic Columbia River Highway.

Guidebooks to native plants in the Gorge were consulted to determine what plants are growing on the project site and in surrounding areas. Plant species that support wildlife habitat in the area were also identified. This informed recommendations as to what plants should be included in a revegetation and reforestation program.

Other research topics included watershed restoration, culvert design, daylighting streams, and sediment concentrations and measurements. This information was used to limit and prioritize recommendations to what is feasible for mill site restoration.

"The Gorge holds a special place in both our heritage and our future on a national, regional, and local level."

Earl Blumenauer
June 19, 1997
E. Web Review

A comprehensive web search was performed to supplement the literature review. This provided the most current information, which was especially helpful for the policy analysis. It also enabled us to look at recently successful and ongoing restoration projects throughout the Columbia River Gorge. The key phrase “Bridal Veil” was used to uncover information related directly to the project site. Other search topics included mill site, wildlife, wetland, and salmon restoration; ecosystems in the Columbia River Gorge; native plants: restoration, habitat planning, and erosion control, and invasive plant species; federal, state, and local policies; and funding and volunteer programs for restoration projects.

Research from the literature and web reviews were synthesized for inclusion in the final report. The information helped with an interpretation of existing conditions, identification of opportunities and constraints, and conception of a final vision. In the short amount of time that was allocated to this project, it would have been difficult to locate much of the information if it had not been for the web review.

Much of the information taken from the web was used to expand upon the environmental assessment that was completed by past consultants.

As discussed in “Literature Review,” many of the sources served as background information and are not always cited in the report.

F. Policy Analysis

Interviews were conducted with the Gorge Commission, Multnomah County, USFS, U.S. Fish and Wildlife Service, OPRD, and the Oregon Department of Transportation (ODOT) to identify applicable federal, state, and county policies and regulations. Associated documents containing applicable regulations and policies were collected from a variety of sources and reviewed. Consideration of these policies and regulations was of central importance during the formulation of the final site plan. The regulatory environment that within the Columbia River Gorge provides a framework within which restoration efforts can take place. Before formalizing the plan, it was reviewed by the Multnomah County Planning Department reviewed the plan for consistency with existing policies and regulations. Comments were noted and recorded in the appendix.

G. Class Site Visit

In order to gather additional information on the site and to receive advice and guidance from peers and mentors, a Planning Workshop class site visit was conducted in May 2002. Small group tours were led by members of the Bridal Veil planning group. Following the site visit, group members were asked specific questions about the site. Questions focused on the site’s opportunities and constraints and participants were asked to envision potential uses of the site. The information gathered was used in subsequent steps of the site planning process.
IV. Environmental Analysis

Assessing the existing environmental conditions of the Bridal Veil mill site consisted of three primary tasks: a review of documents and information made available through interviews, an informal site examination, and a review of a 1990 preliminary site investigation conducted by Century West Engineering Corporation, hereafter referred to as Century West.

Since the assessment is limited in scope and has not involved the collection of natural soil samples, it is incomplete. There is a need for a more comprehensive assessment to determine the subsurface condition of the site and how this may influence the restoration activities.

A. Document Review and Interviews

The intent of the document review and interviews was to gather environmental information on the site prior to the site examination. It also sought to determine types of activities that occurred on the site and their potential to exacerbate environmental problems. The review involved an examination of files pertaining to the Bridal Veil mill site from the Department of Environmental Quality (DEQ) and the Environmental Protection Agency’s (EPA) Comprehensive Environmental Response, Compensation and Liability System (CERCLIS) list and Facility Index System (FINDS). Other environmental information was collected from a variety of federal, state, and local sources.

The DEQ administers many different programs that are intended to protect the environment and monitor the generation, storage, treatment, and disposal of hazardous substances. As part of this process, the following DEQ files were reviewed:

- Underground Storage Tanks
- Northwest Region Leaking Underground Storage Tank List
- Hazardous Waste Generators
- Listing of Confirmed Releases

A review of the DEQ’s UST Program files indicated that the DEQ had permits for three USTs on the property. However, the three USTs on the site were decommissioned and removed in April of 1990.

A review of the DEQ Northwest Region Leaking Underground Storage Tank (LUST) List indicated one recorded release from a UST on the property at the time of the decommissioning. A No Further Action (NFA) designation of the release was made by DEQ in 1990.

A review of the DEQ files on Regulated Hazardous Waste Generators indicated that the previous owners of the property were not listed as hazardous waste generators.

A review of the DEQ Listing of Confirmed Releases file showed a record of one release associated with the decommissioning of a UST on the property.
CERCLIS is a list of known sites suspected of posing a threat to the environment or to human health, published by the EPA. Upon a review of this list, it was determined that no CERCLIS sites were present within a one-mile radius of the property.

FINDs is a list of facilities that have federal discharge operation permits for air, water, and land media, published by the EPA. The Bridal Veil mill site property is not listed in the FINDS file.

Historical uses of the site were reviewed to determine the likelihood of environmental contamination. The project team conferred to the Oregon Historical Society Library (OHS), texts describing the mill operations, and personal communication with local residents. Research found no mention of the use of bulk chemicals at the Bridal Veil mill site. However, due to the lengthy history of intensive uses that have occurred on the site, more research is needed.

B. Site Examination

An examination of the Bridal Veil mill site was conducted in May 2002. A tour of the mill site property included observation of existing environmental conditions such as contamination on the site and adjacent properties.

During the site examination, the project team found no evidence that indicated the past or current use of bulk chemicals on the mill site. A visual inspection of the mill grounds revealed several pools of standing water along the southern portion of the property. These pools, located near wood chip piles, were clouded with an orange color that could be associated with the organic breakdown of wood chips.

There were also pools of water approximately 60 feet from the railroad tracks on the northern border of the property that appeared to contain oil. Similarly, there was indication of oil in the water of the pump house along the western border of the site near Bridal Veil Creek. This could be due to the equipment that lies at the bottom of the submerged pump house.

Water in the pond just south of the pump house appeared stagnant and was littered with trash and debris. The level of contamination on the site could not be determined from the preliminary and informal site examination.
C. Century West Site Examination

During the site examination conducted by Century West in 1990, there were several remnant structures. Other than the church and post office located in the eastern portion of the property, all structures have been demolished. An environmental assessment of the remaining buildings is not required. The site is generally littered with debris, including nails, glass, concrete, wood, wire, and trash. None of the surface debris found poses an environmental hazard, although there are safety concerns associated with the debris and remnant foundations.

Olfactory evidence of possible petroleum product contamination was noted at several points along the UPRR tracks, particularly at the west end of the mill yard. It is likely that this odor came from the petroleum contamination of the railroad bed located approximately 50 feet north of the subject property. No other olfactory evidence of contamination was noted on the site or adjacent properties.

During the site examination, no olfactory or visual evidence was found that indicated contamination of the woodland portion of the site. However, there was the scent of paint spray emanating from a remnant foundation that had recently been spray painted. There were also abandoned paint trays, spray cans, and other materials located in this area. The part of the woodland area that borders the Historic Columbia River Highway has areas where remnant foundations remain. There is also trash and debris in these areas. Currently, the remaining structures and debris do not pose an environmental threat, although there are safety concerns associated with the structures.

At the time of the Century West site examination, three USTs and two Above-Ground Storage Tanks (AST) were on the site. One 200-gallon AST was adjacent to a house that was situated along the southern perimeter of the site. This AST was located along the east end of the mill yard; this AST supplied heating oil to a small furnace located in a garage near the southeast corner of the site. The two ASTs have since been removed.

During the 1990 site examination, three out-of-service USTs were located on the site. A single 5,000-gallon diesel tank installed in 1978 was located at the east end of the mill yard. The UST delivered product to a single dispenser by a pressurized piping system. The two other USTs were located adjacent to the mill office building. They were installed in 1976 and contained gasoline with volumes of 1,000 and 5,000 gallons. All three USTs were registered with the DEQ. At the time of their removal in 1990, one of the tanks had a reported release. DEQ responded to the release and issued an NFA in 1990.

UPRR operated a small refueling facility directly adjacent to the mill site property. This facility, dismantled in 1999, refueled service vehicles used in maintaining the rail line. Two decommissioned USTs are located in a vacant lot between the site and tracks. At the time of the decommissioning, no site assessment had been conducted to determine soil contamination.

Visual evidence of petroleum contamination was not observed, although a petroleum odor came from the railroad. Standing water appeared to be clouded with contamination that was likely due to the organic breakdown of a nearby wood chip pile.
V. Existing Conditions

This section moves from an assessment of current environmental conditions to a more comprehensive description of existing site conditions. As discussed earlier, research methods were employed to better understand the project site. The following is a discussion about what was learned about the site: its natural, cultural, scenic, and recreational resources; utilities and infrastructure; and the current regulatory environment that imposes conditions and requirements on development activities.

A. Natural Resources

1. Streams

Previous tenants and land use activities have altered the natural streambeds on the Bridal Veil mill site. Three significant surface hydrologic features exist: Bridal Veil Creek on the western border, a smaller creek on the east end of the property between the post office and the church, and the pond created by the diversion of waters from Bridal Veil Creek at the western border of the site.

The natural channel of Bridal Veil Creek has been altered at a point below the falls and again at the Interstate 84 (I-84) crossing. Both areas have concrete reinforcements on the banks. The Interstate crossing has impeded the flow of the creek on both banks and on the streambed. This barrier prevents natural channel meandering and alter the roughness of stream banks and bottoms.

The natural course of the small stream on the east end of the property appears to have been altered. The United States Geological Survey (USGS) topographic contour maps indicate a westerly course for the stream. This is supported by the site analysis. The stream above Palmer Mill Road south of the site appears to follow a historic bed, but below the road it is channeled in a metal trough. At the point where the stream crosses the Historic Columbia River Highway, it enters an enclosed culvert. It reemerges on the north side of this road where it drops several feet to a stream bed that does not follow the natural topographic contours. Evidence of activities to control and maintain this bed can be found along an unpaved road, in the southern slopes of the site.

The pond at the west end of the property is not a natural feature. The inlet to the pond is through a culvert that draws water from Bridal Veil Creek. An outlet allows drainage back into the creek through a constructed levee on the west side of the pond. The pond is partially or completely lined in concrete. Groundwater seepage, or water entering through pipes connected to the pond, has flooded the pump house below the pond.
2. Vegetation

A significant portion of the Bridal Veil mill site was cleared of natural vegetation and trees with the construction and operation of the mill. Despite the abundance of concrete that currently can be found there, a large portion of the site is covered with stands of Douglas Fir and other deciduous trees that are commonly found in the western portion of the Columbia River Gorge. These trees include Black Cottonwood, Red Alder, Bigleaf Maple, Vine Maple, and Birch. The most dense tree coverage is found along the southern slopes of the site, within the riparian buffer of Bridal Veil Creek. Tree stands on the sloped portion of the site are largely intact and consist of Douglas Fir. Near the bottom of the slope, on the eastern portion of the site, near the post office, and along the creek, deciduous trees are more common.

A fairly thick vegetative understory can be found within the forested areas. Unfortunately, this underbrush is often made up of two non-native, invasive plant species that are found throughout the site: Himalayan blackberry and Algerian Ivy. Other plant species that occur on the site include several varieties of ferns (Northern Maidenhair, Western Sword, Bracken), Giant Horsetail, Cascade Oregon Grape, Hazelnut, Lupine, Poison Oak and Ivy, Stinging Nettle, Sticky Currant, and Red Elderberry. A variety of grasses and weeds are also found on the more degraded parts of the site.

3. Wildlife

Few wildlife species were observed on the Bridal Veil mill site. The project team observed amphibians, insects, small mammals, and specifically, the Common Blue Butterfly. Beaver are active on the creek downstream from the I-84 bridge.

Although portions of the site provide habitat to resident species, the habitat value of the site is degraded because of past milling operations and the removal of trees and vegetation. The Columbia River Gorge has many endangered, threatened, and sensitive wildlife species. Reforestation and revegetation would provide additional habitat for a variety of wildlife species including those deemed endangered, threatened, and sensitive. A complete list of endangered, threatened, and sensitive wildlife species can be found in the Management Plan for the Columbia River Gorge National Scenic Area.
B. Recreational Resources

On the western portion of the site there is a paved road, several dirt roads, and trails. The main dirt roads link the former town and mill site to the Historic Columbia River Highway. They are approximately 15 feet wide and connect the I-84 access road to the Historic Columbia River Highway. From the entrance off the I-84 ramp, a dirt road runs along a portion of the site that has remnant foundations on the north and south. After roughly 300 feet, there is a fork in the road with a leg leading south to the Historic Columbia River Highway, a leg leading west to a former house site at a dead end, and a leg leading northwest to the former mill site. A trail extends approximately 100 feet from the middle fork road south through a house foundation to Historic Columbia River Highway.

A partially paved, 30-foot roadway runs across the northern portion of the site with an entrance from the I-84 access road to approximately 40 feet east of the pond. On the western portion of the site there is a trail looping around the pond. The trail is relatively level and constructed of railroad ties and gravel.

On a portion of the site east of the I-84 access road, there are two dirt roads. One road that is now overgrown, once provided access to a house. The second road provides access to the Bridal Veil Cemetery and to an adjacent property.

C. Cultural Resources

Remnant building foundations and rubbish from previous tenants are found throughout the mill site.

Along the southern border, near the Historic Columbia River Highway, there are three house foundations. The house remnants include front steps with a railing, retaining walls, and rubble from the structures. Nearby there is a large circular, wooden structure with large beams that might have supported a storage tank.

The eastern portion of the site is the location of the Bridal Veil Community Church and the Bridal Veil Post Office.

Remnants of a rail spur are located near the railroad tracks along the northern border of the property. The spur once served the Bridal Veil mill facilities.

The western portion of the site contains a pond with a wooden piling structure. Nearby is a pump house and a small abandoned shed. This area has remnant railroad ties that transported the lumber to a railroad-loading area.

D. Scenic Resources

The view from the bridge above Bridal Veil Falls on the Historic Columbia River Highway is a key viewing area in the Management Plan. The entire site is included in the "Seen Areas" map of the Management Plan. The "Seen Areas" map refers to the view from both the Historic Columbia River Highway and I-84.
E. Regulatory Guidelines

Various policies and regulations at the federal, state, and county level help to define the types of development activities that can take place within the project area. The following is a list of existing policies and regulations that are applicable to the project area and whose requirements have been incorporated into the restoration plan:

- **The Columbia River Gorge National Scenic Area Act, (Scenic Area Act) of 1986** protects and provides for the enhancement of the scenic, cultural, recreational, and natural resources in the Columbia River Gorge. Additionally, the Scenic Area Act contains provisions to protect and support the economy of the Columbia River Gorge by directing growth to urbanized areas. It designates specific areas in the Columbia River Gorge as Special Management Areas (SMA) and General Management Areas (GMA). The Scenic Area Act created the bi-state (Oregon and Washington) Commission to provide a uniform regulatory system. It requires the Gorge Commission to complete a study of the Columbia River Gorge and develop a management plan for the area. It also prioritizes funding for the acquisition of SMA land throughout the Columbia River Gorge.

- **The Columbia River Gorge National Scenic Area Corridor Visual Inventory** of 1990, hereafter referred to as the Visual Inventory, was prepared by the Gorge Commission, ODOT, and the USFS. It documents the visual corridors along the Historic Columbia River Highway and I-84. The Visual Inventory contains information about the management of vegetation to enhance views, and recommends priority visual corridors. It assigns a landscape setting designation of Steep Forested Gorge to the Bridal Veil mill site, which highlights the importance of the rich and diverse visual experience at Bridal Veil. It recommends that older conifer trees throughout the site be preserved and a variety of species be replanted. Also, the area above the site should be selectively thinned to open up vistas of the Columbia River Gorge. Selective thinning has been completed around the Bridal Veil bridge to create a view corridor.

- **The Interpretive Strategy for the Columbia River Gorge National Scenic Area** of 1991 was prepared by the USFS and the Gorge Commission. It defines strategies for the selection and design of interpretive activities. The plan explains goals for developing an interpretive program that enhances the scenic, cultural, recreational, and natural experience of visitors of the Columbia River Gorge. References to the cultural significance of mill operations at the Bridal Veil mill site are mentioned in this plan.
The Management Plan for the Columbia River Gorge National Scenic Area of 1992 was prepared by the USFS and the Gorge Commission. It enacts the provisions of the Scenic Area Act. The Management Plan describes resource protection and enhancement, land use designations, action programs, and administration. It provides the foundation for the design of a redevelopment plan for the mill site. It suggests that the development of the Bridal Veil mill site include scenic elements, picnicking, interpretive elements, community activities, fisheries, and riparian rehabilitation. Historic resources were identified as a primary concern. Within this document, the site is classified as a Recreational Intensity Class 3 area.

The Multnomah County Columbia River Gorge National Scenic Area, 1993 is Multnomah County's response to the Scenic Area Act and the Management Plan. The Scenic Area Act gives local county governments jurisdiction to implement rules and regulations on land within the county in the Columbia River Gorge. The regulations found in Multnomah County's zoning ordinance specifically address the information that must be included in site plans for use review and the studies that must be completed prior to approval of a use review.

The Columbia Gorge Management Unit Master Plan of 1994 was produced by OPRD and provides a list of properties that are on a "to be acquired list," which includes the Bridal Veil mill site. This document also states the reasons for acquisition of the site, which include the lower access it provides to Bridal Veil Falls and the potential to provide interpretation of the area's logging history. It also lists the concepts that should be included in a restoration plan. These include the provision of a small parking area, which could be used by Angel's Rest visitors; restrooms; a small-scale interpretive structure that explains the logging history of the area; and a lower falls access trail. The plan further states that the site should be made safe, enhanced visually, and made clear of debris and trash. Native plants are recommended for the majority of the site. The overarching goal is to return the area to a more natural condition.

The Americans with Disabilities Act Accessibility Guidelines (ADAAG), 2000 contains specific regulatory requirements that can be used to incorporate development strategies to facilitate greater participation by physically challenged individuals, the elderly, and families with small children.

F. Utilities and Infrastructure

The Bridal Veil mill site contains 3,250 feet of above-ground power lines, attached to 21 power poles. The majority of these lines run east-west through the middle of the site, with small lines branching toward the church, post office, and former house sites. Although most lines are inactive, one line through the site is active and connects to other uses in the Gorge.
VI. Site Opportunities and Constraints

Following a thorough site analysis, opportunities and constraints associated with existing conditions were identified with regard to possibilities for restoration. The site's location, history, and other characteristics give rise to four themes through which opportunities and constraints should be viewed. These themes represent features common to all areas of the site. They provide an avenue for viewing the site within the broader context of the Columbia River Gorge. The themes are as follows: Scenic Resources, Natural Resources, Gorge Connectivity, and Historic Interpretation.

Figure 5 shows existing conditions that pose opportunities, constraints, or both on certain recommendations. There are 11 categories and 28 subcategories of existing conditions that affect 9 recommendations. An existing condition that provides an opportunity is marked with an "O" and a "C" indicates a constraint. When an existing condition has no significant effect on a recommendation, it is marked "NA" for not applicable. Opportunities and constraints are discussed in greater detail in the proceeding text.

“On starting the surveys, our first business was to find the beauty spots, or those points where the most beautiful things along the line might be seen in the best advantage, and if possible to locate the road in such a way as to reach them.”

Samuel C. Lancaster
## RECOMMENDATIONS

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Figure 5 - Opportunities and Constraints
A. Scenic Resources

Vistas of the Columbia River Gorge are available from locations throughout the site, particularly in the higher elevations along the Historic Columbia River Highway and the Bridal Veil Falls trail. The Historic Columbia River Highway is a scenic route from which the site can be viewed, and I-84 provides views of lands along the railroad including the project site.

1. Bridal Veil Falls and Creek

Bridal Veil Falls and Creek are integral parts of the scenic resources available in the Columbia River Gorge. With their adjacency to the project site, they offer several opportunities for the integration of new scenic resource elements.

Opportunities: A trail system that allows for ADA use could be created on the site to provide additional access to the falls and creek.

Constraints: Potential flooding and safety hazards exist with the falls and creek. In addition, management of non-native, invasive species like the Himalayan Blackberry will be difficult because such species thrive on water.

2. Historic Columbia River Highway

The old highway is the southern boundary of the site and is adjacent to the upland slopes. Its location affords views of the site and vistas of the Columbia River Gorge.

Opportunities: Informative plaques along the old highway could highlight the history of the road, the past and current uses of the site, and the Columbia River Gorge.

Constraints: Special regulations with regard to the Historic Columbia River Highway may pose design constraints.

3. Steep Slopes

The ground slopes steeply from the middle of the site toward the Historic Columbia River Highway. Despite its sheerness, this feature creates potential scenic opportunities.

Opportunities: The steep slopes allow for viewing the Columbia River and Bridal Veil mill site below, and create a challenging hike to the Angel's Rest trailhead.

Constraints: The steep grade prevents making much of the area ADA-accessible.
4. Cleared Site

There is a shady, peaceful area with natural surroundings, located at the end of a dirt road on level ground in the upland slopes.

Opportunities: The clearing provides an area for picnic facilities, interpretive plaques, and an additional viewing area of the Columbia River Gorge.

Constraints: The cleared site is located among the steep slopes, which poses constraints on development and ADA accessibility.

B. Natural Resources

Wildlife habitat restoration is an integral element in the protection of ecosystems within the Columbia River Gorge. Many activities exist for visitors throughout the area, and restoration of the project site could expand these opportunities. There are examples of successful and ongoing aquatic restoration projects within the Columbia River Gorge, many of which focus on wetland and salmon habitat. Bridal Veil Creek, the pond, and several streams exist on the site.

1. Pond

The pond located next to Bridal Veil Creek, near the western border of the site, is an attractive and potential nuisance.

Opportunities: The pond offers a place for historic interpretation or creative design on the site.

Constraints: The pond might pose a safety concern for visitors. It collects trash, is need of cleanup, and makes management of invasive plants difficult since these species thrive on water.
2. **Streams**

There are submerged streams that run north-south through the site.

**Opportunities:** Streams could be daylighted to create ambient noise, restore habitat, improve water quality, and enhance aesthetics.

**Constraints:** The placement and/or design of parking, restrooms, and picnic facilities would be restrained if certain streams were daylighted. Management of non-native, invasive species like the Himalayan Blackberry will be difficult since such species thrive on water.

3. **Soils**

There are three main soil types found on the site: Ashcoff cobbly loam, Sauvie silt loam, and Ashcoff-rock and outcrop Wahkeena.

**Opportunities:** These soils are good for revegetation of native plant species.

**Constraints:** Erosion and run-off hazards are high for Sauvie silt loam, Ashcoff-rock and outcrop Wahkeena, which creates the potential for flooding and restricting recreational development.

4. **Vegetation**

Much of the site is covered with native and non-native plant species.

**Opportunities:** The thick vegetation on the steep slopes lessens erosion and creates wildlife habitat.

**Constraints:** Algerian Ivy has spread throughout the upland slopes, particularly along the Historic Columbia River Highway, and will be difficult but necessary to manage. Himalayan Blackberry bushes have spread throughout the site and should be kept under control.

5. **Wildlife**

Frogs, butterflies, rabbits, and several bird species have been identified on the site.

**Opportunities:** Wildlife on the site has the potential to attract visitors. Interpretive plaques can be used to inform visitors of habitat restoration.

**Constraints:** Increased use of the site could disturb existing habitat and wildlife found on the site.
C. Recreational Resources

The site is accessible from the Historic Columbia River Highway and I-84. There is a steep trail that winds down from the Bridal Veil Falls State Scenic Viewpoint parking lot to Bridal Veil Falls. The project site can be accessed from this trail once it crosses the bridge over Bridal Veil Creek. There are two informal paths that continue from the bridge around the pond, one of which is adjacent to the creek. The Angel's Rest trail commences on the western side of the Historic Columbia River Highway, across from the site. There is an opportunity to develop a trail system through the site that connects the Bridal Veil Falls and Angel's Rest trails.

1. Impervious Surface

Large portions of the site are covered with manmade impervious surface, such as concrete, asphalt, and oiled gravel.

Opportunities: The existing surface on the lower portion of the site could potentially be used for parking. Any removed surface could be used as fill in earthen berms, or recycled for new roads and parking areas.

Constraints: Much of this material will need to be removed. Some areas may be contaminated, would make site restoration difficult.

2. Highway Access

The site is accessible from I-84 and the Historic Columbia River Highway via an access road.

Opportunities: Easy access to the Bridal Veil mill site and its potential uses. Road signs could be used to inform visitors of the site's location and facilities.

Constraints: Without a berm or vegetative buffer, potential air and noise pollution from vehicular travel along these routes may deter people from spending time on the site.

3. Existing Trails

Bridal Veil Falls, Angels Rest, and a network of dirt roads exist on the site and surrounding areas.

Opportunities: Existing dirt roads could be converted to trails, creating a network of trails on the site. These could connect to other trails in the area, potentially bringing more visitors to the site.

Constraints: Existing dirt roads are located on the steep portions of the site, making ADA access difficult.
D. Historic Interpretation

The project site was once used as a lumber mill and town, and is an integral part of the logging history of the Pacific Northwest. Remnants of past uses can be found throughout the site, including building foundations, a pump house, pieces of machinery and other debris, a cemetery, and a post office. Historical interpretation of the old mill site and of logging within the Pacific Northwest would expand the educational opportunities for visitors.

1. Bridal Veil Post Office

The small Bridal Veil post office sits on the western portion of the site. It rests on a level area and is served by a large gravel parking lot.

Opportunities: The post office is a popular attraction for Bridal Veil residents and visitors. The gravel parking area could be used to accommodate site visitors, and the post office.

Constraints: The post office and parking area, if left in place, may limit restoration activities such as revegetation.

2. Bridal Veil Community Church

The Bridal Veil Community Church is used on Sundays for worship service and holds occasional weddings and funerals. Due to its small parking area, motorists have limited visibility when pulling out and must contend with cars that often exceed the speed limit when entering or exiting the freeway.

Opportunities: Like the post office, the church is a landmark for local residents and visitors.

Constraints: The church may also limit restoration and revegetation efforts.

3. Bridal Veil Cemetery

The cemetery located on the eastern boundary of the site serves as a cultural resource and would benefit from historic interpretation.

Opportunities: Even with its off-site location, the cemetery offers a glimpse into the past uses of the site. Road signs, entry ways, and plaques could inform visitors of the cemetery's location and importance to the history of the area.

Constraints: Future improvements to the cemetery depend on financial feasibility.
4. Various Debris

The site is littered with debris from the past uses of the site.

Opportunities: Potential trail systems could incorporate old railroad ties to enhance historic interpretation. Plaques could be designed using leftover material from the railroad and mill.

Constraints: Substantial cleanup of debris must occur to increase public safety and improve the aesthetic quality of trails.

5. Remnant Foundations

Most remnant foundations are along the Historic Columbia River Highway and are quite visible and intact.

Opportunities: There is an opportunity to retain the structures for historic interpretation and as interesting elements for visitors to encounter. Signage near or along the Historic Columbia River Highway could direct visitors to the site of the old mill.

Constraints: Revegetation on the former building sites is impeded because of intact foundations and leftover debris.
VII. Recommendations

The recommendations for site restoration included in the proposed site plan reflect an analysis and consideration of site opportunities and constraints, existing environmental conditions, the cultural, social and historic context of the site, and the regulatory framework. The proposed site plan also reflects a balance between competing values. While much attention has been given to natural resource restoration, attention has also been paid to the history of the site and how this history can be properly acknowledged in a restoration plan. Figure 21 shows the site plan, and the sections that follow discuss the plan’s individual elements. Taken together, these elements are meant to provide an overall vision of what the site may become in the future and how a restored site can serve the interests of human and non-human communities alike.

The site plan reflects an assessment of what is feasible in terms of site restoration, but it does not present the full range of restoration possibilities. While it recognizes constraints imposed by the site, it also reflects constraints imposed by limitations of time and resources. In particular, the plan does not specifically address the possibility of wetland restoration. Assessing the possibility of wetland restoration is beyond the scope of this report and would require further environmental testing.

The restoration of wetlands is a long, complex, and uncertain process, especially for an area that has been degraded and covered with impervious surface for much of the past century. Similarly, this plan does not address the relationship between Bridal Veil Creek and the subject property, the possibility of restoring the creek to its more natural course, or the restoration of stream habitat for salmon. This is also beyond the scope of this report. Nevertheless, we believe the proposed site plan for restoration offers several workable ideas for the renewal of a site with important natural and historic values.

The following restoration recommendations are listed according to priority. The order considers what must occur before recommendations can be initiated. For example, site cleanup is considered to be the highest priority and must occur before further restoration can take place.

A. Site Cleanup

Site cleanup would entail removing debris from throughout the site, especially from the pits containing the remains of demolished buildings. It would also include the removal of non-native, invasive plants as part of an ongoing maintenance program. Removal of barbed wire fences, pieces of machinery, and overgrown vegetation, particularly blackberry bushes, would eliminate potential hazards.

When possible, materials such as concrete and asphalt could be recycled for use in a berm, and materials such as railroad ties and building remnants could be used for historic interpretation. Once the initial cleanup is complete and hazards are eliminated, steps can be taken to achieve the overall site vision.
B. Vegetation

An important element in this restoration plan is the reforestation and revegetation of the Bridal Veil mill site. The intent is to return the site to a more natural condition and to enhance native habitat and improve site aesthetics.

Several issues make reforestation and revegetation of the site difficult. Much of the site is covered with impervious surface from past mill operations. While replanting could be done without removing this surface, most areas would require the removal of concrete and debris prior to any restoration activities. Further, it is difficult to determine how subsurface conditions of the site have been impacted by nearly a century of mill operations. An important issue is whether soil contamination from past uses has occurred and if so, to what extent this would affect revegetation and reforestation efforts. Once this surface is removed, an assessment of soil type, possible soil contamination, and site hydrology could be performed. This would give an indication of the type of restoration work that is appropriate for the site and how the site might be recover naturally. Establishing natural restoration goals requires knowledge of the range of conditions that existed prior to degradation, and what future conditions might be. It has been difficult to find information that describes the environmental characteristics of the site prior to mill construction in 1886.

Since this report is based on a partial assessment of current surface conditions and lacks information on subsurface conditions, the revegetation and reforestation plan it outlines is necessarily limited. It is based on the assumption that at a minimum, the removal of concrete would allow for the replanting of native plant and tree communities. Also, in its site examination, Century West concluded that it is unlikely that the site has significant contamination. The proposed site plan envisions the planting of native trees that are already found on the site and that are commonly found within the western portion of the Columbia River Gorge. These include Black Cottonwood, Big Leaf Maple, Vine Maple, Red Alder, and Birch. Revegetation would use native plant species, such as ferns, grasses, elderberry, Cascade Oregon grape, sticky currant, and Pacific ninebark. As indicated on the site plan map (see Figure 21), most of the reforestation and revegetation would take place on that portion of the property that was the primary location for mill site operations. The sloped portion of the project area, which is populated with Douglas Fir and deciduous trees, is largely intact and does not require reforestation. No revegetation or reforestation of the eastern portion of the site beyond the Bridal Veil Post Office is proposed. Landscaping around the gazebo, restroom, and covered bike areas would include the use of native plants as well.

Due to a level of uncertainty about current site conditions, this report recommends an adaptive management approach to reforestation and revegetation. This is a reasonable approach, given our knowledge about the site. Adaptive management would allow for monitoring and for new information to be integrated into any restoration plan. Once clear, achievable, and measurable goals are set and implemented for the natural restoration of the site, monitoring of the restoration process should occur, to determine whether mid-course adjustments are needed. It is conceivable that when more is known about the subsurface conditions of the site, when concrete has been removed, and when natural processes are allowed...
to resume, portions of the area will be recognized as having the potential for wetland restoration. In this case, a revegetation plan would need to include species appropriate to wetland conditions. The Bridal Veil mill site has the capacity to become only what its physical and biological setting will support. Reaching a better understanding of the physical and biological setting will provide the foundation for future natural restoration work.

C. Berm

The Management Plan identifies Bridal Veil as a Key Viewing Area from both I-84 and the Historic Columbia River Highway. As a Key Viewing Area, the siting of new buildings and roads must be shielded from these roadways. Development must blend with the natural environment and contribute to the visitor's and highway traveler's experience. At places such as Rooster Rock, earthen berms have been constructed to form high, vertical walls to shield Key Viewing Areas. The following points must be considered when developing an earthen berm in the Columbia River Gorge NSA:

- Earthen berms must have an attractive and organic appearance.
- A combination of trees and shrubs will enable the berm to blend with the surrounding environment.
- Plants must be planted on the berm at natural, irregular intervals.

- The slope of an earthen berm must rise gradually to guarantee stability of the structure. For most earthen berms, side slopes of 2:1 are typical, although on occasion, steeper slopes such as 1½:1 may be acceptable.
- The rise and fall of the berm's slope must create an organic appearance.
- The existing grade of the site must be used to reduce cut and fill.

In addition, earthen berms will work to reduce noise. At the Bridal Veil mill site, the sound from large trucks and cars traveling at 65 miles-per-hour along I-84, measures between approximately 60 and 80 decibels. This level makes the site less comfortable for visitors. A continuous earthen berm at a height above ear-level along I-84 will reduce the traffic sound as much as ten to fifteen percent. The most effective earthen berms for noise reduction are constructed from natural materials such as soil, stone, rock, and rubble. Many of these materials are currently available on the Bridal Veil mill site.

![Figure 13 - Earthen Berm](image-url)
D. Restroom Facilities

The location and current condition of the Bridal Veil mill site supports the development of restroom facilities. Located just off Historic Columbia River Highway with access to I-84, the site is readily accessible to highway traffic and hikers in the area.

Several existing conditions in the Columbia River Gorge, as well as the restoration suggested for the Bridal Veil mill site, support the development of additional restroom facilities. Throughout the year, the Angel’s Rest Trailhead, without restroom facilities or space for the development of restroom facilities, attracts visitors from around the region.

Based on observations and interviews, the project team determined a need for additional restroom facilities. It is the intention of this plan to support the construction of a level access trail through the site to Bridal Veil Falls. This plan will make Bridal Veil Falls accessible to a larger segment of the population, including families with small children, senior citizens, and the physically challenged.

The restroom facilities will benefit the site and surrounding area by improving the site’s current condition and providing additional services to visitors. Since the site is located in the Coniferous Forest area of the SMA, new development must appear vertical, must not be taller than the tree line, and painted exteriors of structures must be dark earth-tones, resulting in low contrast with the surrounding landscape as seen from Key Viewing Areas.

The development of restroom facilities is also supported by OPRD’s Columbia Gorge Management Unit, which states that the Bridal Veil mill site provides an opportunity for the development of additional restroom facilities in the Columbia River Gorge.

The project team suggests further exploration of composting toilet systems—also known as biological toilets, dry toilets, and waterless toilets—for use in restroom facilities. Composting toilets contain and control the composting of excrement, toilet paper, carbon additive, and occasionally, food wastes. The inclusion of composting toilets in a restoration plan will limit the waste produced on the site.

Figure 14 - Restroom Facilities
E. Parking

The need for additional parking in the area was emphasized in the policy review, mentioned by site visitors in interviews, and discussed during the class site visit. A small parking lot with approximately 24 spaces, including a minimum of two handicapped spaces, is recommended for the site. The parking lot should be located near the middle of the site, toward the northern boundary. (see Figure 15).

The recommended number of spaces is based upon Management Plan requirements and the total amount of available land. The Management Plan requires that parking in the Columbia River Gorge is limited to 50 spaces per half mile. With roughly 40 spaces between Angel's Rest and Bridal Veil Falls parking lots, the site is limited in the number spaces it can provide. Moreover, assuming that the average parking space is 10 feet wide by 20 feet long, a minimum of 4,800 square feet is needed. This number is then doubled to allow for easy maneuvering into each space, giving a total area of 9,600 square feet. To accommodate the 24 spaces, ADA access, and landscaping within the parking area, a total area of 10,000 square feet is recommended.

Another factor in determining the potential location of a Bridal Veil mill site parking lot is site access for the physically challenged. In order to address ADA standards, an area that offers level grade access to the site's trail network and other features is required. Along with the regulatory and physical constraints previously described, this limits the space available for parking lot development.

Figure 15 - Half-Mile Parking Buffer
F. Trails

Site analysis, observation, and face-to-face interviews of Angel's Rest and Bridal Veil Falls visitors revealed a need for level access to Bridal Veil Falls. Respondents emphasized the difficulty that the current trail poses for some people. An elderly man described the steep trail as "treacherous." Some people expressed a desire for long, rugged, and "adventurous" trails that are not necessarily level. There is an opportunity to create a trail network that accommodates a variety of needs.

The Management Plan calls for enhancement strategies such as creating a lower access trail to Bridal Veil Falls. The proposed trail system would meet the intent of this regulation.

The Management Plan states that Goal 2 for SMAs is to provide a diversity of trail opportunities in the Columbia River Gorge. Further, the policies state that new trails and trail systems should connect existing trail segments. A trail through the site could accomplish this goal by connecting the existing Bridal Veil Falls and Angel's Rest trails. This connection was supported by Friends of the Gorge and participants in the class site visit.

A path that leads south to the Angel's Rest trailhead should connect to the level trails near the site's proposed parking area.

The new trail should offer level access to Bridal Veil Falls and provide a direct route to the Angel's Rest trailhead. The level trail is described in the proceeding section. The trail to Angel's Rest may lead directly to the trailhead or it may branch off to the east along an existing path that traverses a downhill stream.

There is an opportunity for a trail that leads uphill toward the Historic Columbia River Highway on existing gravel and dirt roads. It may also lead west along an existing dirt road that ends in a cleared former house site. This site provides an opportunity for a picnic area and plaques for historic interpretation.

Figure 16 - Trail
G. Americans with Disabilities Act Site Requirements

As described above, level access to Bridal Veil Falls is an important component of a restoration plan and is a motivating factor for acquisition of the project site. Regulations that pertain to the NSA place highest priority on accessibility to the scenic, historical, and cultural resources of the area. Bridal Veil Falls is currently accessible only by an almost entirely unpaved, rocky, steep, and winding downward trail that is approximately one mile round trip. OPRD (2001) states, “Although short, this is a steep little trail full of switchbacks.” There is clearly the need for a level, paved trail to access this important scenic resource. The project site provides an opportunity for development strategies to facilitate access by the physically challenged, elderly, and families with young children.

Development of a new trail system should include a route that meets ADA requirements. The following technical specifications for trail design are recommended in the ADAAG:

- **Clear Tread Width:** 36-inch minimum
- **Tread Obstacles:** 2-inch-high maximum
- **Cross Slopes:** 5 percent or less
- **Running Slope:**
  - No more than 30 percent of the total trail length may exceed a running slope of 8.33 percent.
  - 5 percent or less for any distance
  - 8.33 percent for 200 feet maximum
  - 10 percent for 30 feet maximum, resting interval every 30 feet
  - 12.5 percent for 10 feet maximum, resting interval every 10 feet
- **Passing Space:** At least every 1,000 feet where trail width is less than 60 inches.

It is recommended that ADA access be provided on the level, northern portion of the site and extend as close as possible to Bridal Veil Falls. The ADA trail should lead east from the parking area and along the berm to Bridal Veil Creek, then lead south between the pond and creek to the Bridal Veil Creek’s bridge. A second path looping around the pond would connect with the trail originating from the parking lot.

![Figure 17 - ADA Access](image_url)
H. Interpretive Plaques

The Bridal Veil mill site provides a unique opportunity to witness how human activity such as timber and milling operations has impacted the Columbia River Gorge. Providing interpretation of the site's history can help those who visit this area understand what has taken place on this site and how that activity has impacted the area and region. The history of the railroad, the mill, the town, and the flumes connecting mill facilities to the railroad, can further an understanding of the area and of the lives of individuals who made this place home. This restoration plan proposes that plaques be placed along the trails.

The Management Plan and the Interpretive Strategy were consulted to determine what information the plaques should convey. The plans list three objectives to be considered:

- Increase knowledge of the site's history
- Increase awareness, understanding, and appreciation of the relationship of the site to the surrounding area.
- Increase awareness about how the resources of the Columbia River Gorge have affected human activity, and how human activity has impacted the resources of the Columbia River Gorge.

This site plan recommends that the plaques include information on the following topics:

- Flumes
- Mill operations
- The town of Bridal Veil and its residents
- The timber industries in the Columbia River Gorge
- Natural History
- Railroad use in Bridal Veil
- School history and the children of Bridal Veil
- Scenic views
- Wildlife

Figure 18 - Interpretive Plaques
The following sections are subject to the *Scenic Area Act*, Section 11.15.3836, which requires that design of new development emphasize the natural qualities of the area. Section 11.15.3816 (D) (2) (f) requires that structures be dark and earth-tone in color and have a low contrast when seen from Key Viewing Areas.

I. Gazebo

The site restoration plan looks at ways to acknowledge historic values of the Bridal Veil mill site. One way to do this is through the construction of a gazebo near the site parking lot. Figure 19 represents a possible design for a gazebo, which serves the primary function of providing a place to view photographs, maps, and text explaining the natural and cultural history of the site. It may also function as a shelter during rain storms or as a place to sit and rest. Paths around the gazebo should be connected to the trails this plan envisions. The gazebo should be ADA accessible.

The design of the gazebo could reflect the history of the site by having a rustic in character, similar to former mill buildings, and constructed from materials used at the time. The gazebo must also be compatible with its surrounding. Native plants and trees could be used for landscaping around the structure.

J. Picnic Facilities

Based on the site analysis and interviews with Angel's Rest and Bridal Veil Falls visitors, picnic facilities are a desired use for the site. The first opportunity for picnic facilities exists in the vicinity of the proposed parking area near the level access trail. Approximately three to four picnic benches should be provided in this area, enough should be provided to serve visitors' needs while maintaining a natural setting. The picnic facilities should be near the restrooms, trash receptacles, and possibly a drinking fountain.

The second opportunity for picnic facilities exists at the end of the westward trail that leads from the uphill path toward the Historic Columbia River Highway. This clearing, once occupied by a house, is explained in the last statement of the “Trails” section above. The location is a natural wooded setting that is an ideal resting spot within the higher slopes of the project site.

![Figure 19 - Gazebo](image-url)
K. Signs

Signs are needed to inform visitors of the site’s location and its features, and should include the following:

- Directions from the I-84 access road to the project site.
- ADA accessibility and restroom and picnic facilities available on the site.
- Directions to Angel’s Rest and Bridal Veil Falls trailheads available on the site.

L. Streams

The surface features on the Bridal veil mill site indicate a significant amount of surface runoff. The current course of small streams should not effect the implementation of the recommendations. However, at least two stream crossings must be addressed during construction of the roads to and from the site. The seeps and the small stream—if from a natural source—should be included with the design elements of the lower portion of the site. The plan should also consider daylighting the stream that flows through the eastern portion of the property, especially if research indicates that this is the historic natural course. If this is confirmed, the recommendations proposed in this plan should be considered in the early redevelopment and construction phases.

Possible benefits of daylighting streams include:

- Reduced runoff velocities to help prevent erosion by re-creating natural channel meandering and the roughness of the stream beds and bottoms.
- Improved water quality by exposing water to air, sunlight, vegetation, and soil, all of which help transform, bind up, or otherwise neutralize pollutants.
- Improved fish passage by re-creating aquatic habitat.
- Enhanced wildlife movement by re-creating valuable riparian habitat and corridors.

Further environmental and social benefits of daylighting streams and information about design, facilitation, and funding for daylighting projects can be found in the document, *New Life For Buried Streams*, available through the Rocky Mountain Institute.

Figure 20 - Streams
VIII. Site Vision

The views from the Historic Columbia River Highway, the sheer slopes, deep vegetation, and waterscapes invite a variety of users into the scenic Columbia River Gorge. Trails wind their way through the landscape, opening to vistas that have existed for millennia.

Visitors are welcomed to the newly restored Bridal Veil mill site by road signs that signify where the site exists and they are introduced to the various recreational opportunities. Entering the site to the west, one is lead down a two-lane road lined with trees. There is a natural berm to the north that softens the view and sound of I-84 and the railroad. After a short distance, there is a parking area to accommodate visitors. Nestled among the north-facing hills near the parking area, there are interpretive signs and a gazebo.

The interpretive signs, with information about natural features and history, lead visitors on a tour of the Bridal Veil mill site. This wide, level grade trail is engineered to accommodate the needs of families with small children, physically challenged, and honored citizens. Along the trail, there are areas to rest and enjoy the environment. At these stopping points, there are plaques with information about logging in the Columbia River Gorge and at Bridal Veil, the community life of the old town, and the revegetated landscape. Finally, it connects to Bridal Veil Falls and the existing trail.

For the more spirited adventurer, there is a more adventurous trail that climbs up the slope face, joining the Angel's Rest trailhead from the Historic Columbia River Highway. A fork in this trail leads to a quiet picnic area and further west to Bridal Veil Falls.

Adjoining the extensive Bridal Veil mill site trail network are facilities that everyone can enjoy. From atop the flat overlook above the parking area, visitors can view the Gorge and the Bridal Veil site. Further up the hill, and below the Historic Columbia River Highway, people benefit from an outdoor lunch or snack at the picnic tables that are provided. Here they will be able to not only take in the surrounding views, but will enjoy the sound emanating from the daylighted stream.

The newly restored Bridal Veil mill site offers several opportunities for local residents and visitors of the Columbia River Gorge, which allows them to experience its unique natural and historic character.
VIII. Limitations of the Research

The final work plan for this project was completed in early April 2002, which charted the course for the next two months. Once the work plan was granted client and school approval, work was initiated. We had approximately two months to perform the necessary research; create a site plan, written report, and supplementary pamphlet; and give presentations to the client and school. Two months is not sufficient time to complete a plan that can be immediately implemented. However, based on our research and a policy review with Multnomah County, the recommendations contained in this report are feasible. They consider the opportunities and constraints imposed by the existing site conditions and are sensitive to the necessary costs and permitting. This document serves as a stepping stone for further study and consideration of the site's restoration potential. It was our intent to create a document that is useful for TPL, decision-makers, and those who are interested in purchasing the property.

In addition to time constraints, there was a limited amount of money available for research. With more funding (and time), a more in-depth study and site analysis could have been performed. Consultants could have been hired for their expertise in environmental planning, aquatic restoration, biology, mill site restoration, and other fields. A more detailed environmental assessment is necessary to determine the possibility for future wetland and salmon restoration. Soils need to be tested for contamination and the environmental impacts associated with the excavation of concrete and asphalt need to be analyzed. Recommendations for basic site cleanup are prioritized over more costly recommendations. The exclusion of aquatic restoration as a recommendation does not preclude it from occurring on the site, however, research by qualified experts is needed to determine its feasibility.

Our research is limited by a lack of specific information about the portion of the site that was occupied by the former mill. Substantial amounts of asphalt and concrete from roadways, parking, and storage areas, as well as building foundations, remain on the site. Additional information is required, which may involve a future site assessment. The American Society for Testing and Materials has published a guide that identifies impediments to brownfield development. It suggests solutions to facilitate redevelopment. The publication is titled, E1984-98 Standard Guide for the Process of Sustainable Brownfields Redevelopment. It is available for a fee online at www.astm.org.
Appendix: Permitting

The project team met with staff from the Multnomah County Planning Office (Department of Environmental Services, Land Use Planning Division) three times during the development of the site plan. The team discussed the impacts of the Multnomah County Land Use code on proposed development at the Bridal Veil mill site. With assistance from Multnomah County planners, the recommendations were reviewed for compliance with existing regulations. When potential problems were identified, the project team worked with county planners to arrive at productive solutions, such as changing the number of proposed parking spaces. As a result, the proposed site plan and accompanying recommendations have been found to be in substantial conformance with Multnomah County Land Use Code.

A redevelopment plan for the Bridal Veil mill site is required to undergo one of the two identified review processes for approval by Multnomah County:

Administrative Review: A pre-filing meeting will be required prior to submittal of an Administrative Review. This process will be required if development of the site is limited to public trails and structures or vegetation for the management of wildlife or plant enhancement.

Conditional Use Review: A pre-application conference will be required prior to submittal of a Conditional Use Review application. A Conditional Use Review will be required for public natural resource-based recreational facilities such as restrooms and picnic areas. It is also required for interpretive facilities such as the gazebo that is suggested in the plan. All subsequent reviews, such as the Administrative Review of trails, will be concurrent with the Conditional Use Review.

A fee schedule with the cost of the aforementioned reviews is attached. The required pre-filing meeting (free) or pre-application conference ($307) will layout the application process and provide information about the necessary elements required to meet the approval criteria for the reviews.

Other permits identified: Grade Permits, Fill Permits, DEQ Permit (for septic fields).

Other Regulations: The Gorge Commission has an interpretive sign code template that must be utilized in the creation of signs on public lands in the NSA.

The Oregon Division of State Lands will require wetland delineation prior to redevelopment of the site.
References


