2005 Archaeological Inventory
Upper Stevens Canyon Road
Mount Rainier National Park

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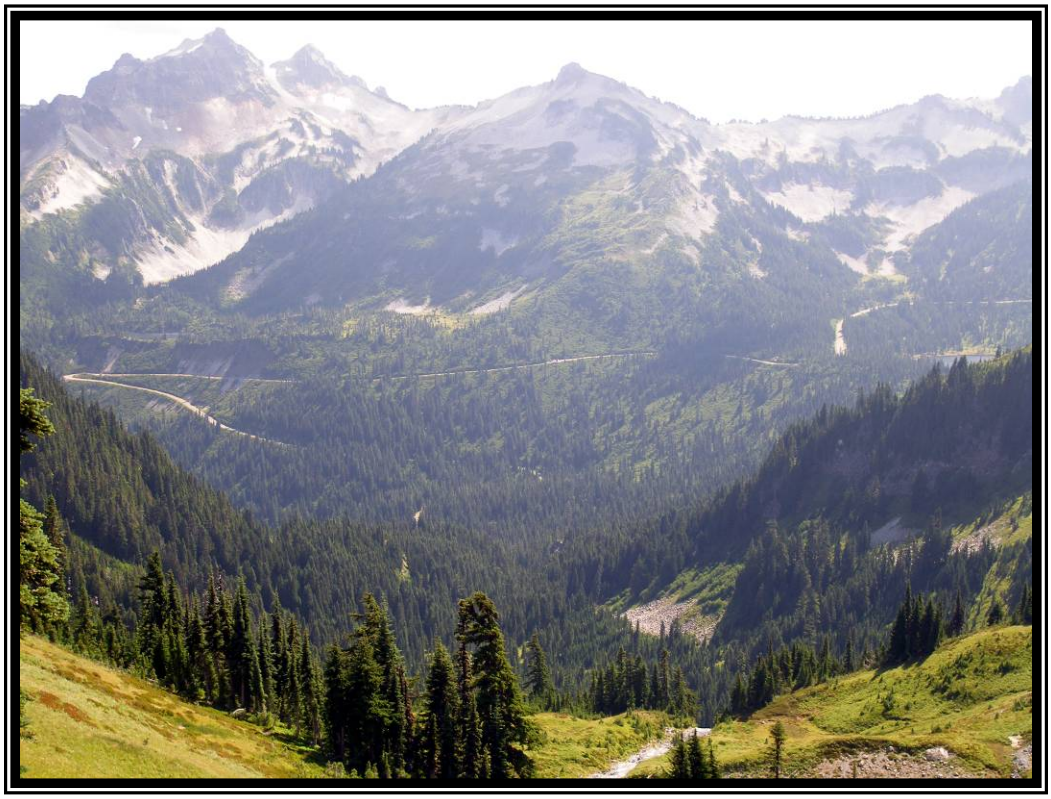

Stevens Canyon Road Looking South from Mazama Ridge

Contents

Introduction

Mount Rainier National Park (MORA), in conjunction with the Federal Lands Highway Program (FLHP), proposes a multi-phased rehabilitation of Stevens Canyon Road scheduled to begin in fiscal year 2007. The first phase of that process consists of the rehabilitation of a five mile section beginning at the intersection with the Nisqually-Paradise Road, extending east to Stevens Creek Bridge. Figure 1 shows the full length of Stevens Canyon Road with the Phase I portion highlighted in red. We refer to the Phase 1 section as *upper Stevens Canyon Road.* This is the portion of the road that is best known for the access it provides to popular Inspiration Point Vista and Reflection Lakes visitation points; as well as the beginning of the cross-park route to Grove of the Patriarchs, Ohanapecosh and other east-side destinations.

The current 2005 project is the first formal archaeological survey specifically directed at upper Stevens Canyon Road. Data presented in the body of this report rely on combined information from 1) various park archaeology results of non-highway related projects in the general upper Stevens Canyon area; and 2) the results of new highway-focused survey completed in the 2005 field season. The report consolidates known sources of archaeological survey, testing and research information relevant to this portion of the road through 2004; outlines survey field procedures employed in 2005; and discusses the results of that survey. Information presented here is intended to help assess potential affects to archaeological resources resulting from road rehabilitation, or other projects focused in or near the upper Stevens Canyon corridor.

The first section below provides environmental and archaeological background to the study area. It addresses characteristics of the study area environment as they relate to long-term human land-use patterns of the upper Steven Canyon area, and summarizes the known archaeological status of the project area prior to the present reconnaissance. The second section describes field procedures and results of the 2005 archaeological inventory of the project area. Summary recommendations conclude the report. Results presented here should provide a notion of the range of prehistoric and historic archaeological properties in the vicinity of the upper Stevens Canyon road corridor. While we have sought to conduct a thorough investigation of cultural properties in the area, systematic pedestrian surface surveys such as the ones described here never cover the area completely. Results should be taken as a substantial sample of the range of resources that may be encountered during highway reconstruction in the study area. It is possible, perhaps likely, that these results will be expanded through monitoring and, if necessary, subsurface testing efforts concurrent with the construction process

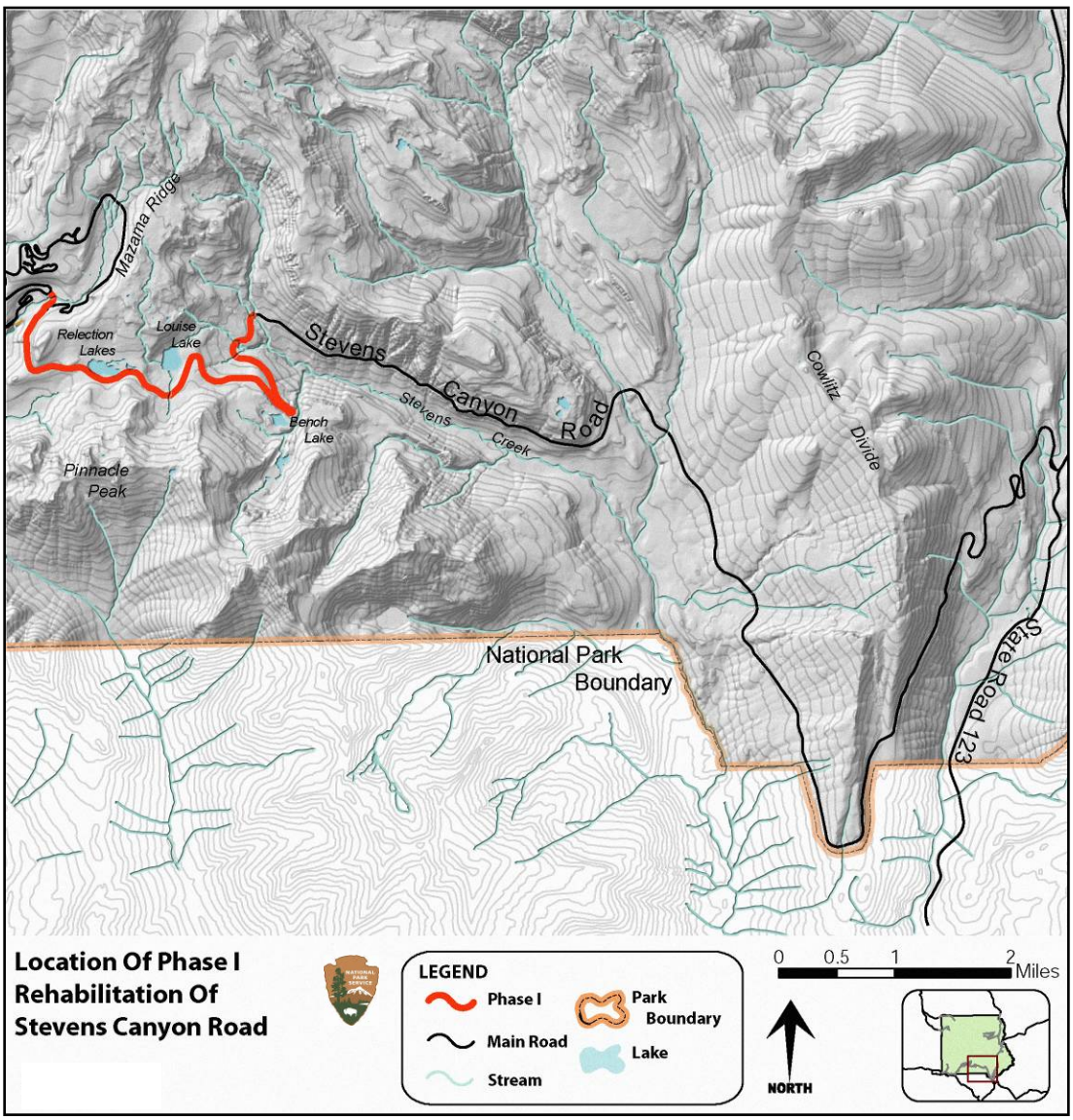

Figure 1. Stevens Canyon Road in Mount Rainier National Park.
(upper Stevens Canyon Road is shown in red.)

Background to Upper Stevens Canyon

Environment, Human Use and the Archaeological Record

In his archaeological overview for Mount Rainier National Park, Burtchard (1998:15-31) identifies a series of five environmental zones that influenced human use patterns in the past, and affect our capacity to locate the archaeological record of these uses in the present. These zones include very high elevation perpetual snowfields and glacial rubble, alpine tundra, subalpine parklands, dense Northwest maritime forests, and high energy river floodplains. They are separated largely on the basis of elevation and dominant vegetation characteristics. Burtchard argues that most prehistoric human use was directed toward subalpine and alpine habitats due to

the relative abundance of exploitable resources that occur there during Mount Rainier's brief summer season. Recognizing that habitat boundaries grow and shrink over very long stretches of time, implications of this perspective suggest that most prehistoric human use of Mount Rainier was directed towards upper elevation landscapes below the permanent snowline.

Chipped stone tools and debitage are the principal visible archaeological remains related to prehistoric use of the mountain. Patterned distribution of these remains, and their sub-surface stratigraphic relationships, are primary data sources for research directed at understanding long-term subsistence and settlement patterns as they relate to Mount Rainier. Presently, over 80 prehistoric sites and isolated finds have been documented in Mount Rainier National Park. As predicted, most are found in subalpine habitats with a lesser, but significant, number in alpine and upper forest settings.

Historic-period archaeological remains are less constrained by resource abundance. Rather, these more recent additions to the archeological record tend to be located in the vicinity of passable transportation and communication routes; or, for National Parks, at areas of particular scenic and recreational interest. Upper Stevens Canyon, for example, was in use by the early 1900s for visitor recreation at Reflection Lakes (see Figure 2). Pressure for an in-park route joining western tourist destinations at Longmire and Paradise with the increasingly popular northeastern destination at Yakima Park (Sunrise Ridge) spurred development of the full length of the road to its junction with State Route 123. Though interrupted by World War II, this need ultimately led to full completion of Stevens Canyon Road in 1957 (Catton 1996:500-502). Historical remains related to these early recreational and road construction events are found along the length of Stevens Canyon Road; particularly in the earliest and most heavily used, western section of the road of interest to this report.

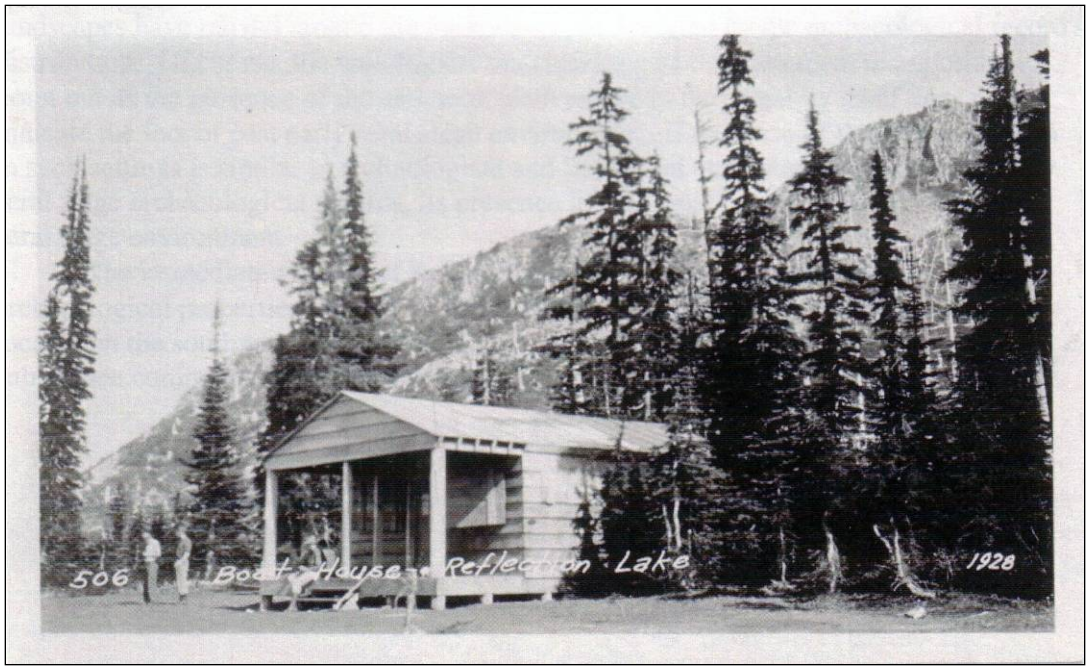

Figure 2. 1928 Boathouse at Reflection Lakes facing Southeast

At Mount Rainier, prehistoric, and even historical, archaeological remains tend to be subtle and difficult to identify. Chipped stone prehistoric artifacts and fragmented, rusted and degraded historic-period remains often are obscured by heavy vegetation, repeated volcanic episodes, and colluvial and alluvial sediments. These create site discovery problems that are exacerbated further by intentional removal of historic-period features and artifacts in the attempt return the landscape to a more natural-appearing state. The combination of heavy obscuring vegetation and buried cultural deposits makes it difficult to identify archaeological materials through traditional pedestrian survey techniques alone. Accordingly, even though surveyed, the archaeological record reported here should be taken as a sample of a still-larger presence of cultural remains in the project area –particularly for prehistoric remains.

To some extent, the character of, and potential for, archaeological remains can be expected to vary with vegetative and slope characteristics of the landforms through which the corridor passes. From west to east, upper Stevens Canyon Road ascends from 4800 feet at the Paradise Road intersection to about 4900 feet at Reflection Lakes, then descends to 4000 feet at Stevens Creek Bridge. In the Reflection Lakes, Lake Louise and Bench Lake areas, the corridor steps down through undulating, moderate-grade terrain deposited through a series of seismic events associated with the Paradise/Osceola lahars about 5,600 years ago.[1] Northeast of Bench Lake, the highway descends sharply to Sunbeam and Stevens Creeks between which are smaller pockets of moderate gradient terrain.

Vegetation along the upper corridor is characterized by patchy tree and meadow associations common to lower subalpine habitats throughout the park. Overstory vegetation is dominated by Pacific silver fir, mountain hemlock, subalpine fir, white bark pine and Alaska yellow-cedar. Understory vegetation is comprised of lush herbaceous meadow communities. Around Reflection, Louise, and Bench Lakes are black huckleberry, Cascade huckleberry, Sitka mountain-ash, subalpine spirea, mountain arnica and wood-rush (McCutcheon & Smith 2003:20).

Lakes perched on the low-gradient areas of upper Stevens Canyon contribute to the cultural resource significance of the area. Historically, it was largely recreational interest in Reflection Lakes that spurred initial trail and road construction along the corridor. Albeit for different reasons, subalpine lakes were important in prehistoric times as well. Lakes and ponds in subalpine context tend to aggregate game, increasing the value of upper elevation lakeshore habitats to prehistoric hunter/gatherers. Accordingly, it is not surprising that three of five probable prehistoric base camps presently documented in the park --FS1988-01, FS1971-01 and FS1995-11-- are associated with lakeshore settings (Burtchard 1998:113). Upper Stevens Canyon's three major subalpine lakes --Reflection, Louise and Bench Lakes-- are all candidates for similar uses; and all are located within 100 meters of the Stevens Canyon Road corridor.

It is likely that, since its creation about 5,600 years ago, upper Stevens Canyon's subalpine environment has been a seasonal destination for the suite of economically useful plants and animals found there; and more recently, for its scenic and recreational attractions.

[1] McCutcheon and Smith (2003:9-14) provide a thorough summary of geological events relevant to the Reflection Lakes area.

Previous studies (Burtchard 1998: 107-108, Burtchard and Keeler 1991:114-115) suggest that prehistoric archaeological sites in mountain environments are associated strongly with low gradient landforms; particularly when located in places, such as subalpine parklands, that attracted prehistoric hunters and gatherers. Flat ground is simply best suited for extended stay, and other activities that lead to discoverable accumulations of archaeological remains such as chipped tool-stone. The highest fraction of low gradient ground in the vicinity of the corridor is found in a series of benches and basins near Reflection Lakes, Louise Lake, Bench Lake and between Sunbeam Creek and Stevens Creek. Co-occurrence of economic resources and scenic variables with low gradient terrain, make these places particularly important archaeologically. Figure 3 is a west facing model of a portion of Stevens Canyon Road. The model shows the bench and basin landforms that have a high probability for intact prehistoric cultural deposition.

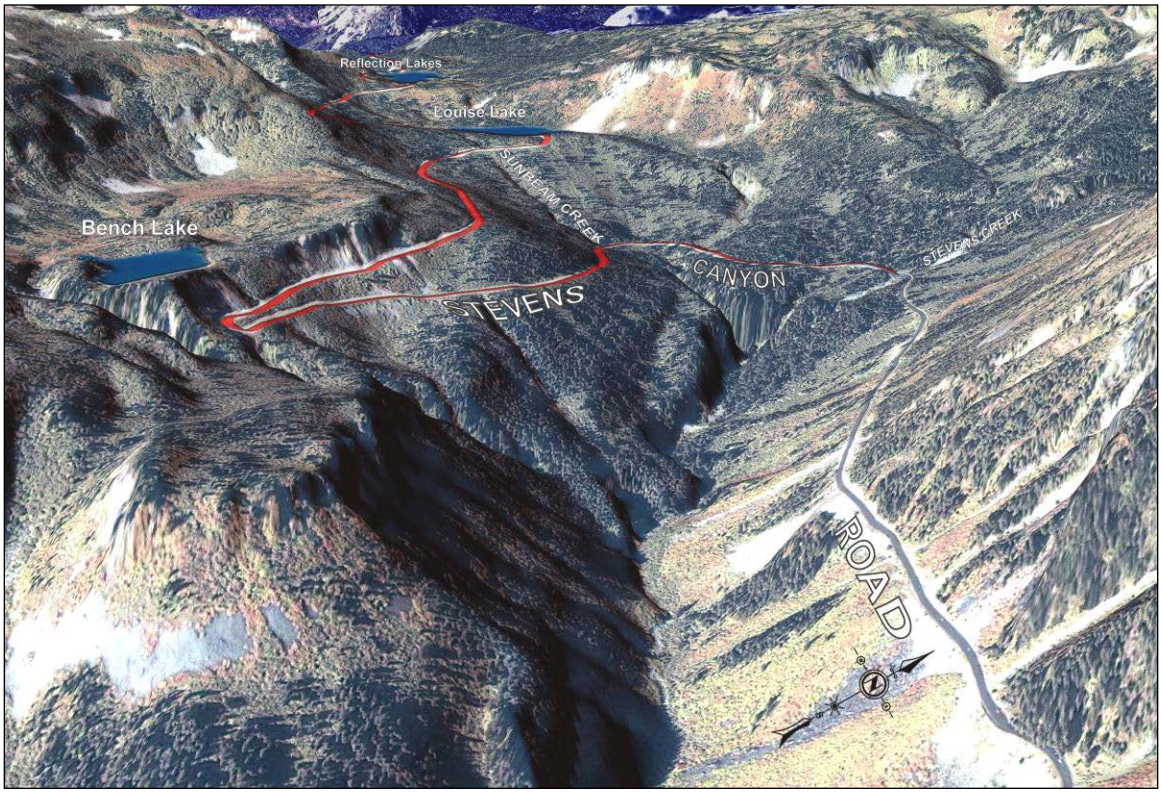

Figure 3. Stevens Canyon Road Landform Map

Archaeological Status of Upper Stevens Canyon Road

Environmental models such as those alluded to above and presented in greater detail in the park overview (Burtchard 1998) help us to understand *why* prehistoric remains should be expected. Extant archaeological projects, while limited in number, provide a more specific notion of the *types* of resources distributed on the landscape and that can be expected in the project corridor. Here, we summarize the status of archaeological work completed in the greater upper Stevens Canyon Road area prior to the most recent survey work in the 2005 field season.

The first systematic survey and substantive compilation of archaeological research in the project area dates to Burtchard's (1998) archaeological overview. Fieldwork for that report was completed in 1995. Archaeological information gathered after that date relies on site records on file in the park's archeological database, relevant research reports (e.g., McCutcheon and Smith 2003, and Smith 2003), and project-specific Archaeological Reconnaissance Reports (ARR) on file in the park's natural and cultural resource division office in Longmire.

Available evidence suggests human activity in the study area during the prehistoric and historic past. Historically, the area has been the focus of cross-mountain travel, park construction, surveys and visitor use from the late 1800s to the present. Figure 4 is a 1915 map showing very early trails through the upper Stevens Canyon area. The east to west trail, visible on that map, formerly linked Longmire and Paradise to eastern parts of the park via Cowlitz Divide and Olallie Creek to the Ohanapecosh River. There, it connected with other trails north to Glacier Basin and Yakima Park (Sunrise Ridge). Near Reflection Lakes and Lake Louise, the trail tread underlies the present roadbed. North of Bench Lake, it deviates from the modern roadbed; descending to Sunbeam Falls and Stevens Creek. Currently, the original trail is incorporated into the Wonderland Trail and is part of the park's National Historic Landmark District designation.

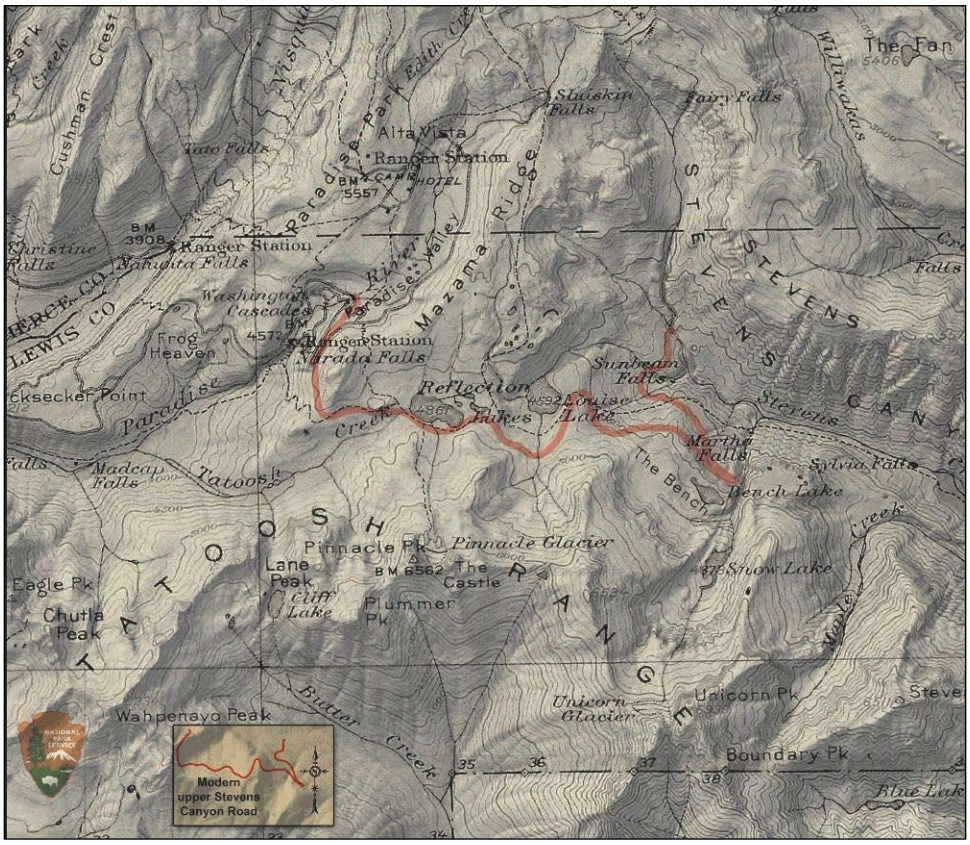

Figure 4. Modified 1915 Map Showing the Upper Stevens Canyon Nisqually to Ohanapecosh Trail. Modern Road Shown in Red**.**

From the early 1900s through 1930, several road surveys were undertaken to select a practical route for vehicular traffic connecting west-side facilities to the east along the southern flank of the mountain (Ackerson et al. 2004:23-26). By the late 1920s, a dirt-track road had been constructed and was serving boat house facilities at Reflection Lakes shown in Figure 1. Construction of the modern Stevens Canyon Road began in earnest in 1931; working east from Inspiration Point. By 1935, the graveled grade had been completed to Stevens Creek (Ackerson et al. 2004:28). Work continued from both the west and east until halted in the vicinity of Box Canyon by the outbreak of World War II in 1941. Work resumed in 1950, and the final paved route opened for use in 1957 (Catton 1996:502, Ackerson et al, 2004:29-30). Visitor use and cross-park travel remains heavy during the summer season.

Earliest evidence for a prehistoric presence in the area dates to the park's first archaeological reconnaissance in 1963 (Daugherty 1964). In that year, Washington State University students inspected parts of the Reflection to Bench Lakes area, and found an isolated prehistoric biface (IF1963-02) shown on Figure 5 eroding from the cut-bank of the newly constructed parking pull-out at the Bench Lake trailhead (Nelson and Rice n.d.). To date, however, no additional archaeological materials have been recovered from the site.

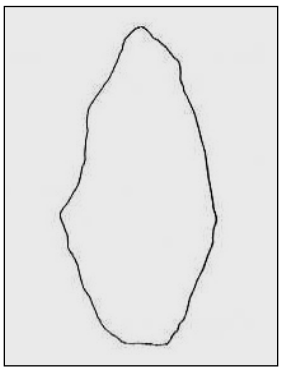

Figure 5. Outline of IF1963-02. (not to scale)

Since 1963, five archaeological survey and testing projects have been completed in the upper Stevens Canyon study area. These projects are spatially consolidated on Figure 6. Please note that, with the exception of McCutcheon and Smith in 2001, we consider these projects to be *reconnaissance level* work in the sense that they do not employ intensive close-interval sampling, or sub-surface test procedures. Rather, they cover the landscape more extensively, directing particular attention toward moderate gradient landforms, bases of cliff rock, and surface visible ground –pragmatic approaches to terrain and vegetative characteristics of the study area. Survey results vary with specific procedures employed and objectives of the surveyors.

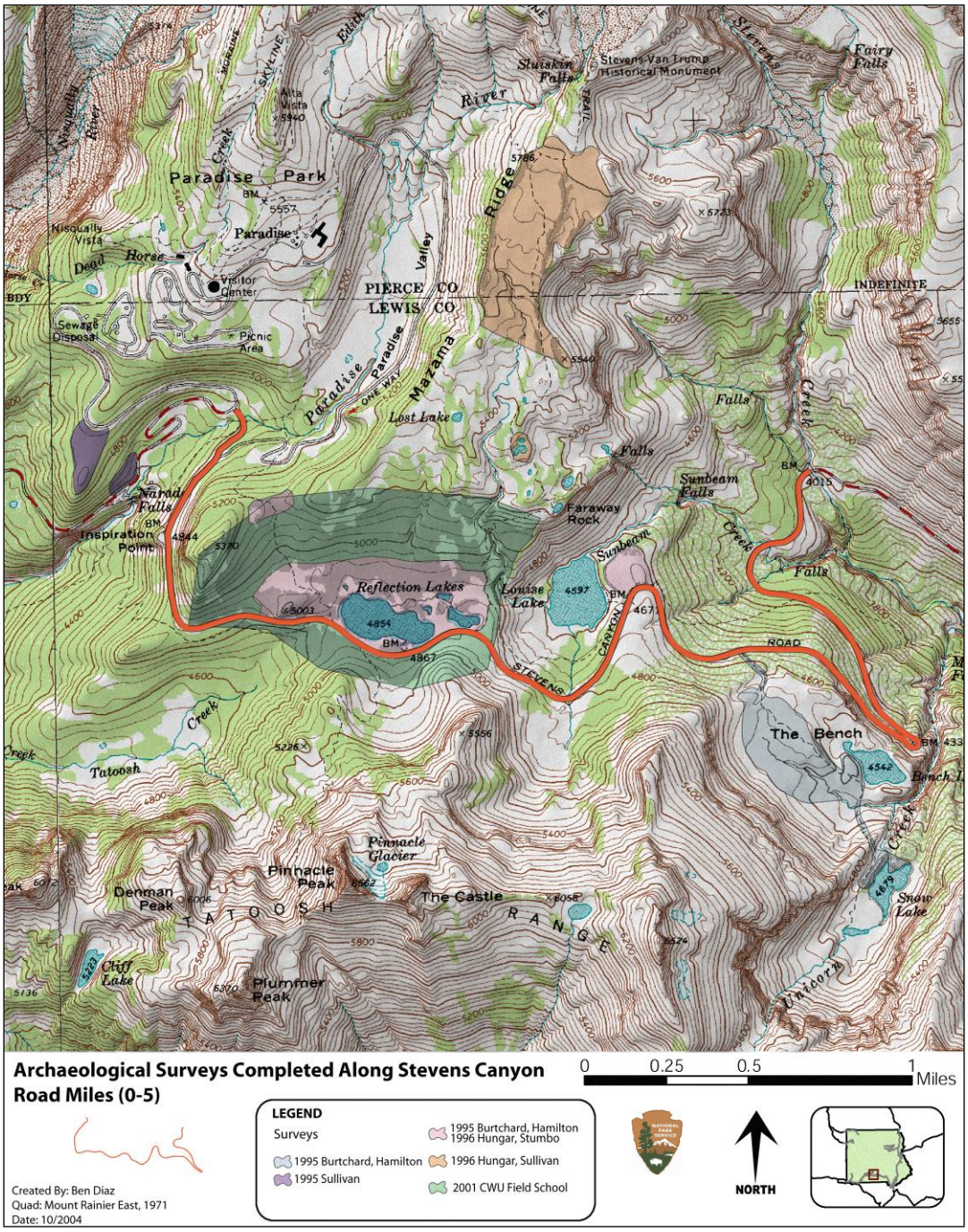

Figure 6. Upper Stevens Canyon Survey Projects, 1995 through 2004

The following text and tables identify previous archaeological work in the project area as intensive, reconnaissance, and limited surveys. *Intensive surveys* are those employing close-interval pedestrian survey with subsurface sampling techniques such as those employed by Central Washington University's field school project at Reflection Lakes in 2001 (McCutcheon and Smith 2003). *Reconnaissance surveys* employ wider transect intervals, focusing particular attention on low-gradient landforms and exposed ground, and involve no subsurface sampling.

Limited surveys provide more marginal coverage; typically oriented toward achieving narrowly focused goals, such as inspection of a small project location.

The large bifacially flaked stone tool (IF1963-02) found by Nelson and Rice eroding from the Bench Lake parking pullout in 1963 (see Figure 5) was the first prehistoric item documented in upper Stevens Canyon area (and, indeed, among the first documented at Mount Rainier as a whole). Rice indicates that the artifact originated from below a volcanic tephra layer that we interpret as Mount St Helens Yn shown on Figure 7. The stratigraphic position of the artifact suggests use of the landform preceding that eruption about 3,400 radiocarbon years ago; establishing human presence at least to that time and perhaps longer. The outline drawings of the biface remain, but the artifact itself has been lost.

Figure 7: 1963 Stratigraphic Profile of the IF1963-02 Cut-bank

The next systematic survey of the area was completed in 1995 in conjunction with fieldwork for MORA's first park-wide archaeological overview and research design (Burtchard 1998). That effort included a 160 acre reconnaissance level survey conducted by Greg Burtchard, Steven Hamilton and Randall Schalk in the vicinity of Reflection Lakes, Lake Louise, and Bench Lake. No surface-evident cultural resources were located at that time. In the 30 years since the initial Nelson and Rice reconnaissance, the Bench Lake cutback had become fully vegetated and could not be reinvestigated without subsurface sampling.

Also in 1995, former park archaeologist Gregg Sullivan conducted a smaller, 15-acre reconnaissance survey near Narada Falls below the Stevens Canyon and Paradise Road intersection. The survey was documented in ARR1995-01 and yielded no cultural resources.

In 1996, several limited surveys were completed by Paula Hungar and Kevin Stumbo in the upper Stevens Canyon area. A survey report was not completed, but the survey area was recorded in the park's archaeological GIS database. That survey involved re-inspection of social trails found within Burtchard and Hamilton's 1995 greater survey area at Reflection Lakes and Lake Louise. Two archaeological sites were located: FS1996-03, a dense charcoal stained area with highly fragmented burned bone southwest of Reflection Lake; and FS1996-04, and a chert bifacially flaked tool fragment and small concentration of burned bone west of the lake. The chert artifact at FS1995-04 is clearly prehistoric in origin. However, because bone deteriorates quickly in the mountain's wet, acidic soils, it is likely that these remains date to the historic-period.

Gregg Sullivan and Paula Hungar conducted several additional limited surveys in 1996 on the bench approximately 900 to 1000 meters north of Reflection and Louise Lakes. The GIS archaeological database indicates that 96 acres were inventoried, but no report was filed and no cultural resources were documented.

In 2001, Central Washington University's (CWU) archaeological field school conducted an intensive survey and subsurface testing routine of the social trails and landscapes around Reflection Lakes in conjunction with a vegetation restoration program for that area. The project report (McCutcheon and Smith 2003) provides a historical and environmental summary of the general area; describes the circa 300 acre survey; and reports results of subsurface constant volume sampling (CVS) and test procedures. Smith (2003), a field school assistant on that project, also uses the Reflection Lakes results for his Master of Science thesis at CWU.

The CWU project was an effort designed to locate archaeological remains in sub-surface context in the vicinity of the lake. CVS units north of the lake successfully recovered prehistoric chipped stone artifacts in that context. The site, FS2001-02 (45LE533) was tested further with a single 1 x 1 meter excavation unit. Four chipped stone artifacts (Figure 8) were recovered from a buried soil, or paleosol, below Mount St. Helens Yn volcanic tephra shown on Figure 9. Combined with the Nelson and Rice discovery almost 40 years earlier, the results confirm human use of the Reflection Lakes to Bench Lake environment over 3,400 years ago. It is important to note in this regard that, because prehistoric remains are deeply buried, they cannot be seen on the modern ground surface. In order for surface survey to identify these remains, artifacts must be exposed in erosion cut-banks, tree tip-ups, or by some other form of disturbance serving to move deep deposits to the surface. The apparent low density of prehistoric remains may be more of a reflection of our inability to find them with standard pedestrian survey techniques than a result of limited use of the upper Stevens Canyon landscape during the prehistoric past.

Figure 8. Assemblage from FS2001-02 (Scale in centimeters)

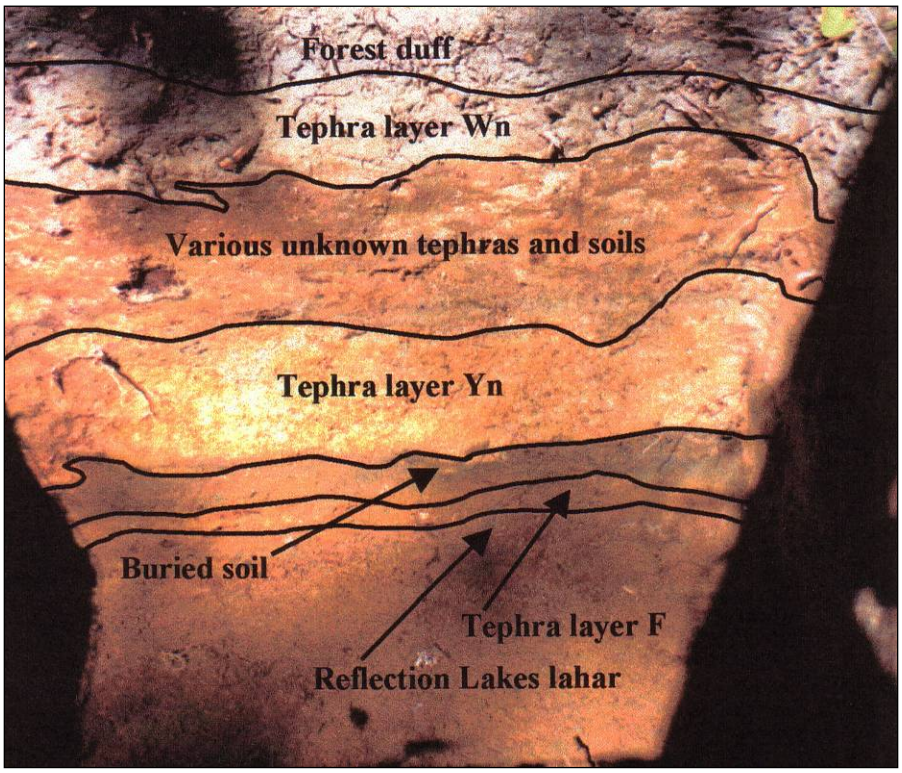

Figure 9. Paleosol below Mount St. Helens Yn at FS2001-02

In addition to searching for new archaeological properties, the 2001 CWU field school was tasked with further examination of the two sites reported by Hungar and Stumbo in 1996. Constant volume sample units excavated in the vicinity of the FS1996-04 prehistoric biface failed to locate additional artifacts. The site designation, however, is retained in recognition of the presence of at least one surface-evident artifact, and probable presence of more yet to be documented materials. Tests at the FS1996-03 charcoal and bone concentration indicated relatively recent use –probably a bonfire in the vicinity of the old boathouse. Historical association with the boathouse is possible but could not be established unambiguously.

Historical archaeological remains are to be expected in the vicinity of Reflections Lakes. Use of early trails shown on map Figure 4 dates to at least the late 1800s. The extent to which these trails were built over pre-existing proto-historic and prehistoric routes is not known. Recreational use of the park grew in the early 1900s. Recreational use of Reflection Lakes eventually led to construction of the boathouse in the 1920s, at least four years prior to construction of the modern Stevens Canyon roadbed. Figure 10 shows the boathouse and the Stevens Canyon Road alignment under construction in 1932. The photo also shows a swimming platform, and a boat dock in front of the boathouse; plus trails and a possible tent platform area north of the lake (all highlighted in light orange). The original road serving the Reflection Lakes recreation facility can be seen in converging with, then paralleling, the new road. Other older roads and trails are visible in the photograph as well.

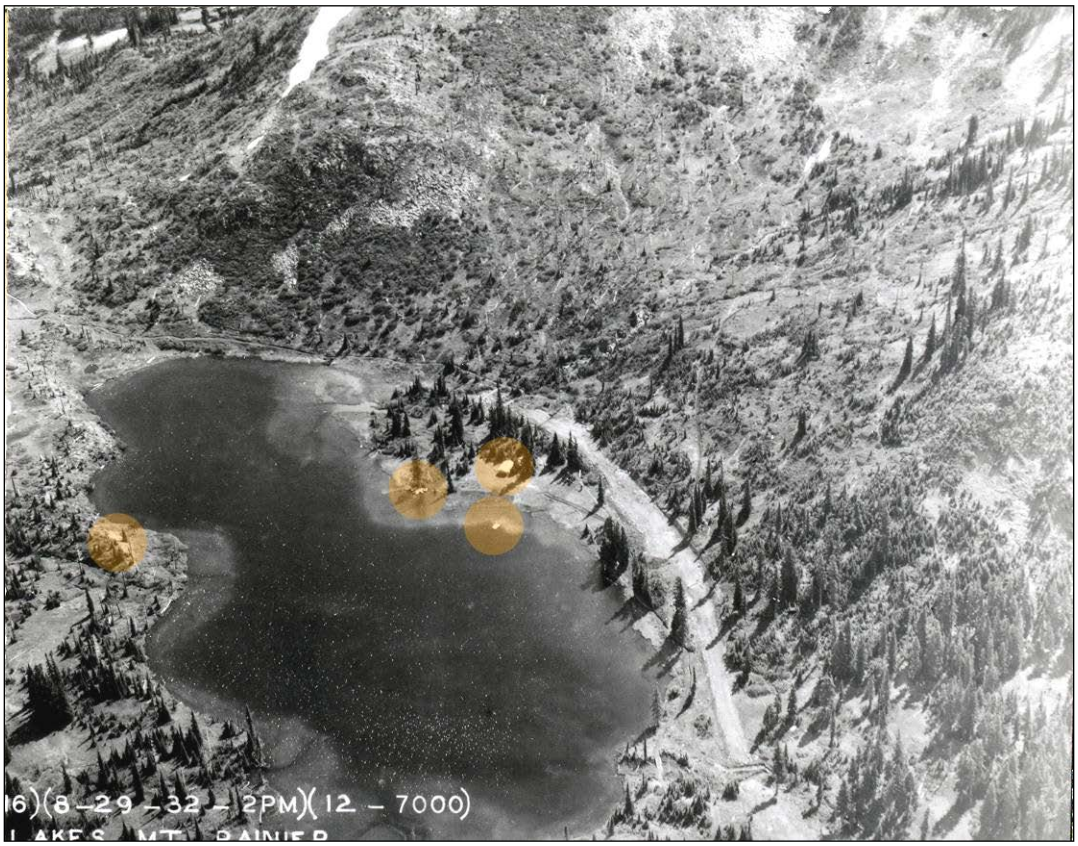

Figure 10. 1932 SE facing View of Reflection Lakes Facilities & Stevens Canyon Road

McCutcheon and Smith (2003:25) summarize Reflection Lakes history very briefly, noting historical presence of the boathouse. Their survey of the boathouse area, however, failed to identify an archaeological signature of the facility, beyond the possible bonfire area previously recorded as FS1996-03. As will be seen below, additional materials related to early use of the area and construction of the road were found in the 2005 survey.

Park records document no additional archaeological surveys for upper Stevens Canyon prior to the 2005 effort reported here. Table 1 summarizes the results of all known archaeological surveys in the project area at the outset of the 2005 project. These efforts, while not exhaustive, establish the presence of prehistoric and historic period archaeological resources in the upper Stevens Canyon area, and set the stage for continuing research. Results reported in subsequent sections of this report expand the database. It is important to emphasize, however, that because of difficulties inherent in any pedestrian, surface survey, documented remains should be considered a sample of a still-larger population of archaeological materials preserved on, or more properly *under* the modern landscape.

Table 1: Summary Archaeological Resources and Surveys through 2004

Project	Inventory	Sites	Description	National Register Status
1963 Daugherty, Nelson & Rice - roadside survey- (ARR1964-01)	Limited coverage, Reflection to Bench Lakes	Prehisitoric Isolate IF1963-02	Large dart (atl atl) sized hafted biface or preform eroded from below 3400 BP St Helens Yn tephra	Not eligible
1995 Burtchard & Hamilton – Mount Rainier Overview (Burtchard 1998)	160 acres recon-naissance survey Reflection, Louise & Bench Lakes	None		
1995 Sullivan - Narada Falls Water Line (ARR1995-01)	15 acres recon-naissance survey	None		
1996 Hungar & Stumbo - - Survey of Reflection Lakes and Louise Lake	113 acres, limited coverage focusing on social trails	Multi-component FS1996-04	Chert biface thinning flake and burned bone scatter west of Reflection Lake	Unevaluated
		Historical FS1996-03	Charcoal stained dirt & burned bone concentration south of Reflection Lake	Not eligible
1996 Hungar & Sullivan – Survey north of Reflection Lakes	96 acres, limited coverage on south Mazama Ridge	None		

Project	Inventory	Sites	Description	National Register Status
2001 CWU Field School research, (McCutcheon & Smith 1963)	300 acres intensive survey and testing at Reflection Lakes	Prehistoric FS2001-02 (45LE533)	Low density lithic assemblage in situ below 3400 BP St Helens Yn tephra	Eligible

The 2005 Upper Stevens Canyon Inventory

As described above, six archaeological surveys, of varying levels of sophistication, documented three sites and one isolated artifact related to prehistoric use of upper Stevens Canyon through 2004: FS1996-03 and 04, FS2001-02 and IF1963-01. Two of these --FS1996-04, and historical site FS1996-03-- contain bone concentrations most plausibly related to historical use of Refection Lakes; though direct affiliation with the 1920s to 1930s boathouse facilities cannot be demonstrated unequivocally. Our primary intent with the fiscal year 2005 project was to expand and refine this earlier view in a manner that improves our understanding of prehistoric and historic-period use of upper Stevens Canyon; and helps us to predict more accurately the potential effects of rehabilitation of the road corridor.

Project Objectives

Because previous studies were reconnaissance and limited surveys not directed specifically at the upper Stevens Canyon Road corridor, an intensive archaeological inventory was needed to document historic and prehistoric resources within the area of potential effect. Our overriding intent was to gain sufficient information to assess potential damage to these sites, and to make avoidance and/or mitigation recommendations necessary to protect them. In addition, newly acquired site data were to be added to the park's archaeological database to improve baseline information relevant to historic and prehistoric site distribution and land-use patterns at Mount Rainier. We also sought to refine procedures suitable for inventorying the park's developed areas more widely in order to meet broader resource management and compliance needs.

Given what was known about the extant site distribution patterns adjacent to the upper Stevens Canyon Road, and the relatively flat, well-watered, subalpine character of at least part of the landform, it was probable that archaeological remains would preserved in sediments adjacent to the highway corridor. The stratigraphic position of assemblages at FS2001-02 (Reflection Lakes) and IF1963-02 (Bench Lake) suggests that *prehistoric resources* could date to over 3,500 years ago. Those results also indicate that some, perhaps most, prehistoric remains would be difficult or impossible to locate by simple pedestrian survey of the modern ground surface, but rather must be sought through reconnaissance-level sub-surface testing.

We also anticipated that *historic-period* remains associated with early use of park trails, recreation at Reflection Lakes, and original Steven Canyon road construction would be present near, or on, the modern ground surface. However, like their prehistoric antecedents, historical

remains have proven to be difficult to locate; probably due to intentional removal to recreate a more natural setting.

Survey Procedures and Results

Inventory procedures pursued in 2005 were linked to recommendations made in the 2004 archeological status report for upper Stevens Canyon (Diaz and Burtchard 2004: 13-15). In essence, these recommendations called for 1) intensive survey centered on the modern roadbed from the zero to five mile points along Stevens Canyon Road; 2) sub-surface reconnaissance sufficient to identify buried site components in certain locations adjacent to the road-grade; and 3) reevaluation of previously documented site areas to search for additional associated cultural remains, and to update extant site records. Results are summarized below for each of these three classes of activities.

Road Corridor Survey

Inventory of upper Stevens Canyon Road relied primarily on systematic pedestrian survey of the highway corridor. Centered on and running parallel to the highway corridor, the survey consisted of two transects on each side of the highway spaced 10 meters apart measured from the edge of the road surface. This procedure effectively created a 20 meter wide intensive survey corridor on both sides of the highway. The total survey corridor, including the road surface, was 47 meters wide and five miles long for an anticipated total of 93 acres.

The upper Stevens Canyon Road survey began on June 23 and was completed on July 20, 2005. Actual survey acreage came to 80.5 acres; slightly less than the anticipated total due to presence of extreme landscape features not practical for survey. Bedrock cliffs, rock-cuts, rip rap toe-slopes, and slopes with over 45% gradient were not walked. These limiting landscape features were most characteristic of the corridor along the east and west sides of the road near the Bench Lake hairpin turn, and the east and west sides of the road near Inspiration Point where the corridor narrows. Throughout the survey corridor, survey was hindered by thick vegetation cover and low surface visibility. Even so, pedestrian survey procedures resulted in documentation of nine new historic-period archaeological sites and one isolated find. Table 2 summarizes newly discovered sites. Figure 11 shows the boundary of the survey area.

Table 2. Summary of Newly Recorded Archaeological Resources

Site/Isolate Field No.	Site Name	Quadrangle	Site Type	Description / Condition / NRHP Recommendation
FS2005-02	Reflection Lake Spring Boxes	Mount Rainier East Quad/ Near Reflection Lake	Historic Pit features	Historic site consisting of two wood lined "Spring boxes. Related to FS2005-19. Features filled with water causing some natural deterioration. *Condition Fair* *Recommendation undetermined*

Site/Isolate Field No.	Site Name	Quadrangle	Site Type	Description / Condition / NRHP Recommendation
FS2005-05	Sunbeam Creek Camp	Mount Rainier East Quad/ near Sunbeam Creek	Historic Campsite	Historic camp consisting of three pit features and associated artifacts. Some erosion over bank into Sunbeam Creek. *Condition Fair* *Recommended eligible*
FS2005-19	Reflection Lakes Trail and Road Grade #1	Mount Rainier East Quad/ near Reflection Lakes and Pinnacle Peak along Stevens Canyon Road	Historic Transportation Route	Historic trail and road grade site running east-west and connecting to the Pinnacle Peak trail. No noticeable deterioration. *Condition Good* *Recommended eligible*
FS2005-20	Stevens Creek Spring Box	Mount Rainier East Quad/ between Stevens Creek and Sunbeam Creek along Stevens Canyon Road	Historic Storage Feature	Historic site consisting of a pit "Spring Box" feature, metal pipes and cut stumps. Little to no noticeable deterioration. *Condition Good* *Recommendation undetermined*
FS2005-21	Sunbeam Creek Historic Pits #1	Mount Rainier East Quad/ near Sunbeam Creek along Stevens Canyon Road	Pit Feature	Historic site consisting of three pits with associated artifacts. No noticeable deterioration. *Condition Good* *Recommended eligible*
FS2005-22	Sunbeam Creek Historic Pits #2	Mount Rainier East Quad/ near Sunbeam Creek along Stevens Canyon Road	Pit Feature	Historic site consisting of one large pit with associated artifacts. *Condition Good* *Recommended eligible*
FS2005-23	Reflection Lakes Historic Telephone and stockpile	Mount Rainier East Quad/ near Reflection Lakes along Stevens Canyon Road	Historic Other	Historic site consisting of a feature of the 1920s telephone line and a log stockpile. No noticeable deterioration. *Condition Good* *Recommended eligible*
FS2005-24	Reflection Lakes Trash Pits	Mount Rainier East Quad/ near Reflection Lakes along Stevens Canyon Road	Historic Dump	Historic site consisting of two pit features with associated artifacts and a trail tread. Placed four CVS units in area. No cultural material was found. No noticeable deterioration. *Condition Good* *Recommended ineligible*
FS2005-25	Stevens Canyon Road Historic Trail/ Road Grade Segments 1 and 2	Mount Rainier East Quad/ west of Reflection Lakes along Stevens Canyon Road	Historic Transportation Route	Historic site consisting of a trail tread and road grade with associated features. No noticeable deterioration. *Condition Good* *Recommended eligible*

Site/Isolate Field No.	Site Name	Quadrangle	Site Type	Description / Condition / NRHP Recommendation
IF2005-04	Reflection Lakes Rainier Isolate	Mount Rainier East Quad/ Near Reflection Lake	Historic Artifact	Historic isolate consisting of one Rainier Beer can. *Recommended ineligible*

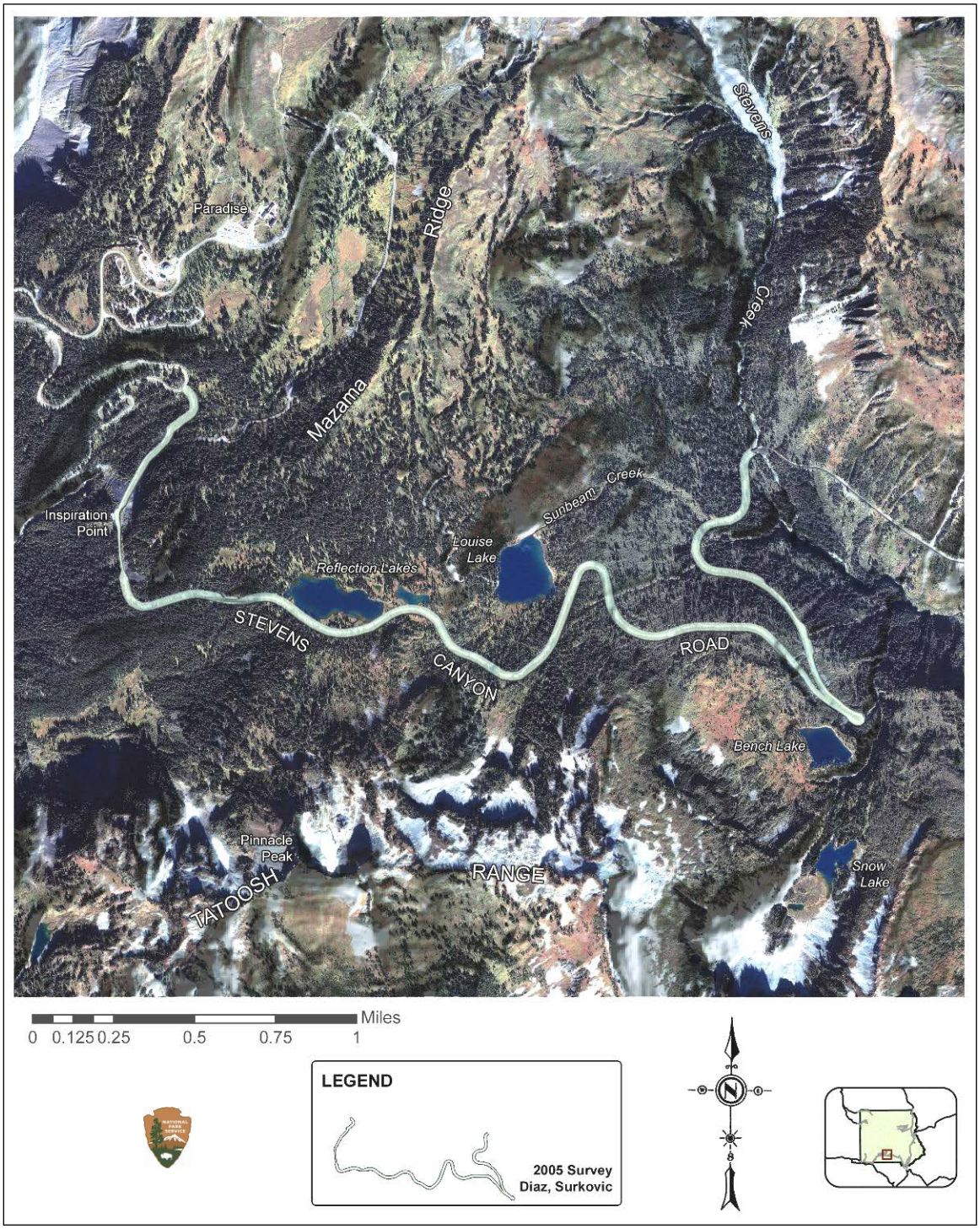

Figure 11. Upper Stevens Canyon Survey Area for 2005

Historical properties included in Table 2 are associate with the Reflection Lakes recreation area, early to mid-1900s park service operations. Each of these newly documented sites are described more thoroughly below. Complete site data have been entered into the park's archaeological database, and are available for professional use as needed.

Site FS2005-02 is an historic site consisting of two wood-lined pit features approximately 25 ft apart. The pits are approximately 4 x 4 ft square constructed of lumber and nails. At the western-most feature, several pieces of lumber have fallen into the pit. These pieces appear to have been a lid for the pit. Each feature is estimated to be 3 ft deep, but they currently have approximately 18 inches of water in them. These wood/lumber lined pits are sometimes referred to as "spring boxes". An old constructed trail from the Pinnacle Peak trail leads to these pits and a faint trail continues west and downhill a bit to join the very definite old trail that parallels the Stevens Canyon road on the south side of the road. (The trail feature is recorded as FS2005-19).

Site FS2005-05 is an historic camp-site situated close to Sunbeam Creek below Louise Lake. At the time this camp was used, the Stevens Canyon Road was most likely not constructed in this area; however, today, this old camp is lies within 100-200 yards of the road. The largest feature of the camp is a garbage pit, approximately 20 ft long x 8 ft wide and approximately 4 ft deep; now partially filled with water. The pit is partially log lined with lumber on the upper surface. Part of the pit is covered with logs and dirt. In the pit (especially the part covered by logs and dirt), is a collection of glass, metal, broken dishes, and other residential rubbish. There is at least one unbroken bottle in this pit. A more recent broken "Coke" bottle and a brown beer bottle are at or near the pit and are not historic. This pit is located on top of the bank just above Sunbeam Creek. Between the pit and the stream are numerous rusted can fragments and an old metal skillet. Approximately 20 ft to the south of this garbage pit is a small pit which appears to be man-made. A small tree is growing out of the feature and it may have been a "spring box" type pit. Nothing was seen in this pit. Approximately 100 ft upstream of the garbage pit is a 6 in x 6 in piece of lumber approximately 10 ft long. Approximately 50 ft east of the pit is a yellow metal drum with the words "open with monkey wrench", "truseal closure", "RHEEM Manufacturing Co". Closer to the road is another pit with what looks like a metal grate in it- Possibly an outhouse pit. Nearby is a metal pipe driven into the ground- function unknown.

Figure 12. Pit feature at FS2005-05

Site FS2005-19 is a multi-historic component site consisting of two linear features and associated trail/road features. Site features consist of a network of trails connecting to a road grade and associated bridges and culverts. The trails and road grade are the remains of a larger site that may have been destroyed by the Stevens Canyon Road construction, and developed area construction/rehabilitation. Feature 1 is a trail grade approximately 5 ft wide and running along the northeastern sloping grade. The trail starts at the Pinnacle Peak trail and runs northwest for approximately 230 ft. At approximately 80 ft there is a branch in the trail which heads southeast back to the Pinnacle Peak trail. Along the trail are three trail features. Feature 2 is a road grade that intercepts the trail feature at its terminus in the northwest. The road grade spurs off of the present Stevens Canyon Road west of the Pinnacle Peak trailhead. The feature runs southwest from the south side of Stevens Canyon Road, intersects the trail feature and turns toward the northwest. The length of the feature is approximately 100 ft and the width of the grade is 10 ft. The north end of the grade disappears at the Tatoosh Creek drainage. There is one feature associated with the road grade. Feature 3 is a trail feature that consists of a small stringer foot bridge at the beginning of the trail. The stringers are 9 in diameter and the dimensions of the foot bridge are 59 in x 47 in. There are ½ in nails in the stringers. Feature 4 is a trail culvert approximately 16 ft northwest of where the trail branches. The culvert is rock lined with dimensions 71 in x 24 in. Feature 5 is another trail stringer bridge. It is located along the lower branch halfway between the branch junction and the Pinnacle Peak trail. The bridge is covered heavily with moss and duff. The dimensions are 79 in x 40 in. Feature 6 is a stringer bridge associated with the road grade. The bridge consists of three 9 in diameter log stringers 3 ½ ft long. There are a few planks on the bridge 5 ½ ft long. There are also ½ in nails in the planks. The bridge spans a wet meadow that can be seen from Stevens Canyon Road. The site is most likely associated with FS2005-05 which is located adjacent to the site 12 m from the datum.

Figure 13. Stringer bridge feature at FS2005-19

Site FS2005-20 is an approximately 800 m^2 historic site consisting of 4 features. Feature 1 is a spring box storage feature. The spring box is a square wood-lined pit measuring 52 in x 51 in x 20 in. There are 1/8 in round nails in the wood boards. The wood is heavily deteriorating. Most of the boards are in the bottom of the feature covered by a thick layer of duff. The spring box is dry in the bottom and there is no evidence that it is next to a spring, however it is consistent in description with other spring boxes recorded in the park and the feature is within 35 m of a stream channel. Feature 2 is a metal pipe running underground with approximately 61 in exposed on the surface. It is 1 ½ in diameter and runs E-W. Feature 3 is 2 metal pipes running east-west along the stream bed in the north end of the site. One pipe is 2 in diameter and 23 ft in length. The second pipe is 1 ½ in diameter and 23 ft in length. Both pipes are in the stream bed and were probably used for carrying water. Feature 4 is a springboard cut stump in between the two pipe features.

Site FS2005-21 is a single component historic site consisting of three features and associated artifacts. The site is approximately 340 m^2 consisting of three pit features on a slight bench landform. Feature 1 is a round pit lined with mounds of fill-dirt and cobbles. The dimensions of the pit are 140 in x 90 in. The pit is approximately 30 in deep and contains deteriorating wire and sheet metal. The interior of the pit is covered in 4 in of duff. Feature 2 and 3 are two meters apart north to south and 15 m west of feature 1. Features 2 and 3 are both pit features. The dimensions of feature 2 are 55 in x 50 in and feature 3 is 106 in x 70 in. The two features are shallower than feature 1 and there is no obvious fill-dirt pile or artifacts located within the pits.

Figure 14. Pit feature at FS2005-21

Site FS2005-22 is an historic site with one feature and several wood, metal and glass artifacts. This site was probably used as a storage or garbage pit. The dimensions of feature 1 are 143 in x 118 in x 55 in deep. Fill-dirt of the pit seems to be piled on the north and east side of the pit. Within the pit are wood, metal and glass fragments. There also is a "Purex" bottle 11 in long x 5 in diameter. Also in the pit are milled boards supporting walls of the pit and there are some milled boards on the floor of it. The boards are 1 in x 4 in. There are two pieces of large rusty metal. The duff found on top of these metal pieces is 5.5 in deep.

Figure 15. Pit feature at FS2005-22

Site FS2005-23 is a single component, approximately 400 m^2, historic site consisting of two features. Feature 1 is an historic telephone feature. It consists of a 3 in x 12 in x 72 ½ in board bolted at a 59 degree angle between two trees. There are a series of spikes driven into one tree and oriented vertically for climbing. The spikes go up the tree to approximately 7 ft. Approximately 9 ft up the same tree is a telephone board with a single bear wire. Feature 2 is located approximately 10 m northeast of feature 1 and consists of a stockpile of nine logs. All logs have been limbed and lie parallel to each other running northwest- southeast. This feature is shown on Figure 10 just behind the location of the historical Reflection Lake boathouse.

Figure 16. Log stockpile feature at FS2005-23

Figure 17. Close-up of Figure 9 showing log stockpile (circled in yellow) from FS2005-23

Site FS2005-24 is a single component historic site consisting of two pit features, trail and associated artifacts. Feature 1 is a shallow ovoid pit 104 in x 51 in x 20 in. The fill-dirt from the pit is piled immediately to the south. At the bottom of the pit are several can fragments. One

piece of amber glass, unidentifiable rusty metal fragments, unidentifiable aluminum and rubber are also noted on the surface and surrounding pit. Feature 2 is a deeper pit 5 m to the east of feature 1. It is a circular pit with a diameter of 60 in and 25 in deep. There are no artifacts associated with this pit on the surface. Running northeast- southwest is a narrow trail that runs through both pit features. The trail segment is approximately 22 ft in length. 15 m to the southeast of the datum is one round metal lid with a rubber seal 12 in diameter.

Site FS2005-25 is an historic single component site consisting of several segments of trail features. The trail appears as segments very near the present Stevens Canyon Road. The segments travel east-west and the ends are either obliterated by the highway itself or the highway rip-rap. The trail tread is 5 ft wide and has been cut into the slope. Segment 1 and 2 were the only remains located and recorded. Segment 1 is a total of 150 ft in length. Feature 1 consists of a stringer foot bridge over a small creek on the east end of Segment 1. There are ½ in round nails in the stringers. Segment 2 is approximately 200 m to the west of the datum. It runs a total of 200 ft in length. The tread is cut into the southern slope beneath the highway and looks as if it may have been a road grade. The site is most likely related to site FS2005-19.

Figure 18. Trail feature at FS2005-25

Isolate IF2005-04 is a single component historic-period artifact –a discarded, but well preserved 12 oz "Rainier" beer can. The can is steel without a self-opening device (ie,. a "church key" opened container). The isolate is part of the brewery Jubilee can series which came out in 1957 and lasted until 1964. The can is simply and artifact of intoxicated recreation in the Reflection Lakes area.

Subsurface Reconnaissance

Subsurface reconnaissance employed constant volume sampling (CVS) procedures designed to provide a preliminary view of cultural remains in subsurface context. CVS testing consists of excavating small units with controlled volume, unit diameter and depth. Systematic use of such units in an area of either known or probable site presence provides a time-efficient means to estimate 1) the vertical and horizontal extent of archaeological sites and isolated surface finds; and 2) the relative density of these remains across space (Burtchard and Miss 1998: 75-78).

Subsurface testing along the Stevens Canyon route in FY2005 was limited to excavation of four CVS units located along the southwest side of the highway near Reflection and Louise lakes. These areas were selected because of their intact sediment deposits, feasibility of access, low slope gradient, and close proximity to previously discovered subsurface prehistoric remains.

All CVS units were excavated to a depth of 70 to 135 cm below the modern ground surface; that is, below the depth necessary to intercept 3,500 year old Mount St. Helen's Yn tephra. No cultural remains, however, were recovered in these units. While limited in total number, these results suggest that subsurface remains are present within the direct impact portion of the roadbed. Assuming construction is limited to the direct impact zone as presently understood, no additional testing is recommended. Periodic monitoring efforts during the rehabilitation process will provide a final means to identify cultural materials that may have evaded both surface and subsurface reconnaissance measures.

Extant Site Revaluation

Three sites were reevaluated during the upper Steven's Canyon project in FY2005. These include the general area of the prehistoric isolated biface found in 1963; and two sites with charred sediments and burned bone situated at the southwestern and western margins of Reflection Lake. No additional remains were found at these locations. Brief statements pertinent to observations at each location follow below.

Isolated find, IF1963-01 was, and remains, a particularly interesting prehistoric artifact because of its unique morphology, its location near the relatively flat subalpine (and hence high site probability) terrain, and the fact that the original artifact has been lost. The biface (see Figure 5) is one of two archaeological properties documented during the park's first formal survey completed in 1963 (Daugherty 1964). It was found eroding from the cut-bank of what is now the Bench Lake parking pull-off area. Since original documentation, however, the bank has grown over, obscuring further investigation without substantial vegetation removal. The dense cover of Sitka alder (*Alnus sinuate*), vine maple (*Acer circinatum*) and low-ground surface vegetation covering the landform made subsurface testing impractical and pedestrian survey highly ineffective. Road improvement limited to the existing foot-print of the roadbed and parking pull-out will not endanger possible presence of additional materials. Careful monitoring of the area

during construction should further project additional cultural materials, if any, from further damage.

Site FS1996-03 is a low-density concentration of calcined bone in charred sediments at the southwestern margin of the westernmost Reflection Lake. Reexamination of this site by the park archaeologist in 2000 and testing by the Central Washington University archaeological field school in 2001 concluded that the site was most plausibly a bi-product of bonfires associated with Reflection Lakes recreational use. Accordingly, the site was determined to not meet the criteria for a MORA defined site and was deleted from MORA and ASMIS archaeological databases. Interestingly, new ashes were found deposited atop the same surface during the 2005 reconnaissance. While no bone was seen in the ash, it is possible that the new material (and perhaps the old) represents modern cremation remains scattered on the lakeshore. We believe that there is no substantive reason to once again alter site status. Please note, however, that placement of human cremation remains (both sanctioned and otherwise) is common at Mount Rainer, and at Reflection Lakes. Assuming construction activities are constrained to the existing footprint of the roadbed, or do not extend beyond present lakeshore parking curbs and walls, Stevens Canyon roadwork should have no effect on these remains –archaeological or otherwise. Construction monitoring anticipated for the project will help to assure that they remain intact.

Site FS1994-04 consists of a single chert biface tool fragment and a small concentration of ash and burned bone on the western shore of the same Reflection Lake. The specific site location could not be relocated unambiguously in 2005 or by the CWU field school in 2001. The site area as mapped, however, was tested with tested with CVS techniques by the field school (McCutcheon and Smith 2003:28-39). No additional cultural remains were located at that time. Because of the site's location well north of the highway, plus its absence of demonstrated cultural presences in sub-surface context, we do not believe that Stevens Canyon roadwork will effect this site.

Inventory Summary & Recommendations

Currently, ten sites and two isolated finds have been documented along the upper Stevens Canyon Road corridor. Eight of the ten sites are associated with historic-period activities. The remaining two sties have prehistoric components. Seven of the ten sites are recommended eligible for inclusion in the National Register of Historic Places as shown in Table 3 below.

Table 3. Sites Recommended Eligible for Inclusion in the NRHP

Sites	Site Name	NRHP Recommendation
FS2001-02 (45LE533)	Reflection Lakes North Shore	*Eligible* under criterion D
FS2005-05	Sunbeam Creek Camp	*Eligible* under criterion D
FS2005-19	Reflection Lakes Trail and Road Grade	*Eligible* under criterion C
FS2005-21	Sunbeam Historic Pits #1	*Eligible* under criterion D
FS2005-22	Sunbeam Historic Pits #2	*Eligible* under criterion D
FS2005-23	Reflection Lakes Historic Telephone and Boathouse Stockpile	*Eligible* under criteria D and C
FS2005-25	Stevens Canyon Road Historic Trail/Road Grade Segments 1 and 2	*Eligible* under criterion C

Sites that are undetermined for inclusion in the NRHP should be considered as eligible sites *in lieu* of testing or research sufficient to determine status satisfactorily. These sites are ones which need more field data and research in order to determine their archaeological significance. NRHP ineligible sites do not warrant the protection that such status provides.

Table 4. Sites Undetermined, or Ineligable, for NRHP Eligibility

Sites	Site Name	NRHP Recommendation
FS1996-03	Reflection Lakes Bone Concentration #2	*Ineligible*
FS1996-04	Reflection Lakes Bone Concentration #2	*Undetermined.* Unable to relocate site by surface pedestrian survey
FS2005-02	Reflection Lakes Spring Boxes	*Undetermined.* No diagnostic artifacts. However may be related to other sites in the area FS2005-19, FS2005-23, FS2005-25
FS2005-20	Stevens Creek Spring Boxes	*Undetermined.* No diagnostic artifacts or features, may be the site of a temporary camp pre-construction of Stevens Canyon Road

Subsurface testing of the area south and east of Reflection Lakes and the highway produced no cultural remains. The four CVS units excavated in 2005, however, displayed intact stratigaphic horizons consistent with those observed by the CWU archaeological field school in 2001 (McCutcheon and Smith 2003: 20-23). Figure 9 above shows the basic stratigraphic profile common to the Reflection Lakes area. Figure 19 below shows some of the tephra layers discovered during the 2005 testing. The upper gray layer is probably Mt. St. Helens W dating to approximately 450 radiocarbon years ago. The lower grayish white layer is probably Mount Rainier C dating to approximately 2300 radiocarbon years ago. Intermediate sediments were deposited during the intervening period. Note that archaeological remains statigraphically below, and hence predating, Mount Rainier C tephra are common in the park.

Figure 19. CVS No. 3 Showing Intact Stratigraphy

If constrained to the existing roadbed, construction activities associated with rehabilitation upper Stevens Canyon road should not impact either prehistoric or historic-period archaeological resources in its vicinity. However, because archaeological remains are difficult to document with reconnaissance procedures alone, we recommend that the park archaeologist or archaeological technician periodically monitor the corridor during the highway rehabilitation process. Monitoring will be particularly important in the event that construction expands beyond present boundaries; such as shoulder widening, alteration of the road corridor, bank-cuts along present side-slopes (especially in the vicinity of Bench Lake), and extension the toe of the fill-slope. If such events are anticipated, the archaeologist should be contacted in advance so that proper monitoring and/or test procedures can be implemented.

National Register eligible sites documented by survey or found through the monitoring processes should be protected by avoidance. In the event adverse effects cannot be avoided, excavation procedures approved by the Washington State Department of Archaeology and Historic Preservation may be necessary to mitigate adverse effects through data recovery. Presently unevaluated sites FS1996-04, FS2005-02 and FS2005-20 are unevaluated for eligibility to the NRHP and should be considered eligible, and protected, until a determination can be made. Since these sites will not be damaged by the rehabilitation process, such work should not be required prior to construction unless those plans change.

We consider the Bench Lake parking area on the south side of the highway to be particularly sensitive. This was the site of the isolated artifact (IF1963-02) found in 1963, and it is reasonable, indeed probable, that additional archaeological remains are located in its near vicinity. To protect this location, the area from the Bench Lake hairpin to approximately one mile west should be intensively monitored by an archaeologist during highway rehabilitation activities.

In closing, we wish to emphasize the importance of archeological resources for improving our understanding of long-term human land-use processes at Mount Rainier. Only a few decades ago, it was widely believed that humans seldom visited, much less routinely used, high elevation landscapes on the mountain. The growing suite of archeological sites in the park now provides firm evidence that, for at least 3,500 years, Indian people regularly traveled to subalpine and alpine habitats to hunt and gather resources found here in relatively high abundance. More recent cultural properties such as abandoned trails, construction camps, early park facilities also provide significant information about on-the-ground activities that tend to be overlooked in historical accounts that focus on broader events. Through careful stewardship and informed research, the archaeological record can help us understand Mount Rainier's place in the broader sweep of time and human events that have surrounded it for thousands of years. Archaeological work associated with projects like those anticipated for Stevens Canyon Road provide an opportunity, in a small but vital way, to advance these understandings.

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