Chapter 3. Environmental Consequences

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in Chapter 2.

The cumulative effects discussed in this section include an analysis and a concise description of the identifiable present effects of past actions to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the agency proposal for action and its alternatives may have a continuing, additive, and significant relationship to those effects. The cumulative effects of the proposed action and the alternatives in this analysis are primarily based on the aggregate effects of the past, present, and reasonably foreseeable future actions. Individual effects of past actions are not listed or analyzed, and are not necessary to describe the cumulative effects of this proposal or the alternatives. (CEQ Memorandum, Guidance on the Consideration of Past Actions in Cumulative Effects Analysis, June 24, 2005.)

Transportation Systems

Affected Environment

Past management activities in and near the Santiam Pass Summer Motorized Recreation Project area have provided the current network of Forest Roads, mainly from timber sales, past fire suppression efforts and historical freight routes. The current system of roads provides sustainable access to the area for administration, fire protection, public recreation, and forest product utilization, consistent with the Willamette Forest Plan. This section incorporates by reference the Willamette National Forest Road Analysis Report (USDA Forest Service. 2003), which provides detailed information regarding the Forest roads, describing maintenance levels, maintenance costs, and management direction.

Scale of Analysis

The analysis considers the current condition and affects of proposed action on the transportation system in the Santiam Pass Summer Motorized Recreation Project. The project area includes 68.2 miles of Forest system roads all within the McKenzie River Ranger District.

Existing Condition of the Road System

Forest road 2690, known as the Big Lake Road, is a double-lane asphalt surfaced road that provides the primary access to the east side of the project area from U.S. Hwy 20. Aggregate surfaced Forest Road 2600-830, known as the Potato Hill Road, and native surface Forest Road 2600-890 are single lane roads that provide access to the central portion of the project area from U.S. Hwy 20. Forest roads 2676-866, 2690-810, and 2690-811 are all single lane native surface roads that together comprise the historic Santiam Wagon Road within the project area, and provide access through the

south end of the project area. Another important Key Forest road is road 2676, an aggregate-surfaced single-lane road known as the Eno Road, provides access along the west project area boundary. These Key Forest Roads, along with other numerous secondary roads that are predominately surfaced with native material, are identified in the tables of Appendix A. Approximately 1.28 miles of the Forest roads are currently closed with berms or other structures.

The current road system provides public recreation opportunities within the project area at Big Lake Campground Complex on the west side of Big Lake, to Ray Benson Snow Park, Hoodoo Ski Area facilities, and to various hiking trails and well-used dispersed campsites. The road system also allows the Forest Service administrative access in order to conduct a wide variety of forest management and fire protection activities in the area. Specifically, the Forest roads provide access to Sand Mountain fire lookout, a communication site, private recreation residences, an Oregon Department of Environmental Quality (DEQ) air quality monitoring site, the Big Lake Youth Camp, and Santiam Pass stockpile site (used by ODOT). In addition, current roads provide the means to transport timber products from the National Forest, and the roads allow the public access to obtain firewood and special forest products.

The road system receives annual maintenance in accordance with established road management objectives. However, a limitation on road maintenance funds on the Forest over the last decade has resulted in a backlog of maintenance work to reduce brush, clean out drainages, and repair road surfaces on many of the Key and secondary roads in the project area.

Environmental Consequences

Effects of Alternative 1

Alternative 1 would not change the current use pattern of the existing road system. Road maintenance would continue in accordance with established road management objectives on roads within the project area. Due to the declining road maintenance budgets vehicle use on many of the existing low standard roads would most likely continue to increase the existing backlog of road maintenance needs. This could eventually result in unsafe traveling conditions for public and administrative traffic and continue to impact the resources.

Effects of Alternatives 2, 3, and 4

Direct and Indirect Effects

Under all action alternatives, road maintenance would continue according to established road management objectives. Such activities may include brushing roads to increases sight distance to improve visibility for safe driving, blading, ditch maintenance, culvert replacement, surface rocking, and installing dips or waterbars to correct or improve water drainage. However, the limitation on road maintenance funds on the Forest over the last decade has resulted in a backlog of maintenance work to reduce brush, clean out drainages, and repair road surfaces on many of the Key and secondary roads in the project area, and that trend is expected to continue.

After actions that include administrative road closures, conversion to motorized trail, and decommissioning, the open road density within the project area would be reduced from approximately

68.2 miles to 51 miles in alternative 2 (least effect) or from 68.2 miles to 40 miles in alternative 4 (greatest effect) as identified in Chapter 2 and Appendix A, Transportation System Analysis.

All action alternatives would designate existing low-standard roads within the planning area to motorized trails to be used by Class I and III ATV use, and to administrative traffic as identified in Appendix A. Actions to convert roads to trails may consist of narrowing the existing surface width and existing road junctions by mechanical or natural means that accommodates vehicles up to 50" in width. Closure may include installation of berms, placement of boulders, and using vegetation or other methods to exclude vehicle traffic.

All action alternatives would decommission existing low-standard roads within the project area as identified in Appendix A. Decommissioning may consist of installing berms or boulders, de-compaction of the road surface, installation of waterbars or allowing natural re-vegetation to occur. Alternative 2, having the least effect on mileage reduction, would decommission approximately 7 miles of road, while alternative 4, having the greatest effect on reducing miles of system roads, would decommission approximately 10 miles. Decommissioning would have the effect of decreasing access to the public, for commercial uses, and for administrative uses. There would be a decrease in the current effective open road density and a reduction of existing road surface erosion problems and road maintenance costs. Roads closed by the project would be left in a condition to drain properly. Road decommissioning would also reduce the spread of noxious weeds as described in the Botany section.

Cumulative Effects

The area considered for cumulative effects analysis for transportation systems is the project area because none of the roads affected by this project provide major transportation connections with other forest roads outside the project area. Changes to the transportation system of forest roads within the project area would have a negligible effect on other forest roads outside the area.

The effects of past management actions in this area has created a 68.2-mile road system within the project area that requires consistent road maintenance levels to provide adequate resource protection and safety. The foreseeable future action of road maintenance on the Santiam Wagon Road scheduled in the spring of 2008 would improve Forest roads 2676-866, 2690-810. This action is described in Chapter 2, Other Actions Analyzed. The work would remove the corrugations and moguls and recondition the surface of the road to a more historical profile. There are no other foreseeable future management actions that would contribute additional change in the system road mileage within the project area.

The cumulative effect of all action alternatives analyzed in this proposal on Forest roads would be a reduction of the miles of road available within the project area that are currently open to all Highway Legal, ATV use and public access, depending on the action alternative. System roads open for motorized mixed use would be reduced by approximately 23 miles in Alternative 2, 30 miles in Alternative 3, and 34 miles in alternative 4, and the limited available funds for road maintenance would be applied to fewer miles of road in this area with any of the alternatives. Reductions would take place by converting existing roads to motorized trails to be used by Class I and III ATV traffic,

designating roads for Administrative use only, and road decommissioning as identified in Chapter 2 and Appendix A.

Soils

Affected Environment

The project area consists of young volcanic terrain that originated from eruptions of vents in the Sand Mountain complex, and has experienced little subsequent glacial alteration. Consequently, this landscape has relatively low relief and is composed of recent basalt and andesite flows with coarse volcanic cinder soils. The Willamette National Forest Soil Resource Inventory (SRI), (USDA Forest Service. 1973) identifies the dominant soil mapping types in the project area as Mapping Units 5, 81, 82, and 85 as well as complexes that consist of combinations of these land-types. These soils consist of volcanic sands and cinders, and are droughty and cold, and develop vegetative cover very slowly. The soils are prone to mechanical displacement when disturbed, but due to high infiltration rates that limit runoff, they typically do not travel far as a result of water borne erosion. Small areas of Mapping Unit 3 (talus slopes on Hayrick Butte) and Mapping Unit 6 (non-forested wet areas adjacent to Big Lake) also occur in the project area.

Field reconnaissance for this project has confirmed the accuracy of the SRI mapping for the project area, and has identified areas of existing disturbance. Recreational OHV use has resulted in disturbed and displaced soils in the following portions of the project area: along a network of existing user-created tracks, adjacent to native surfaced Forest roads and trails, in and near dispersed camping sites, and near the sand blow-out area adjacent to Sand Mountain SIA. Mechanical displacement associated with this disturbance has little real effect on soil productivity in these young, coarse textured soils, and the lack of runoff and low stream density in the area minimizes concerns relating to sediment yield. However, this disturbance has resulted in long lasting alteration of the natural visual landscape. This disturbance also has disrupted fragile plant communities in this harsh environment, and the integrity of archaeological sites.

Streams are relatively scarce in this landscape due to the lack of glaciation, and to the relative youth of the terrain where erosion has not yet created a drainage network. Field reconnaissance of the project area found that many of the stream courses identified on the initial project stream mapping did not actually exist. Streams that were found not to exist have been removed from project maps.

The streams within the project area that do exist do not have a surface connection to the McKenzie River. These streams occur in the northern part of the project area and terminate into Lost Lake, which has no surface outlet and is separated from surface flows in the McKenzie River by nearly 5 miles of recent lava flow terrain. This effectively isolates potential surface impacts to water quality in the project area from having down stream effects on water quality in the river.

Environmental Consequences

Scale and Method of Analysis

Since the project area occupies a closed basin that is isolated hydrologically from the McKenzie River, the analysis for soil and water effects will be conducted on the project area. An assessment of the extent of disturbed soils was made by inventorying the amount of existing road and road related recreational use in the project area, and estimating the extent of displaced soils associated with each use. Estimates were developed based on historic records, aerial photography, and field verification. The following past and ongoing activities were also considered in the analysis: Santiam Forest Health Project Timber Sales, Potato Salvage Timber Sale, B&B Fire, Hoodoo Resort, Benson Snow Park, Big Lake Youth Camp, Santiam Summer Recreation Residences, ODOT facilities, and Santiam Airstrip.

Effects of Alternative 1

This is the No Action alternative that will serve as the baseline for evaluating the effects of the action alternatives. Under this alternative, approximately 677 acres of road and road related recreation disturbance that have resulted in soil displacement would continue to persist. Field observation suggests that use and associated disturbance is increasing in the project area. However the rate and extent of future use and disturbance cannot be accurately predicted.

In addition, approximately 571 acres of disturbance and related soil displacement that is associated with other past and ongoing activities exist in the project area. Field observation suggests that where activities are not ongoing, these areas are slowly re-vegetating in these cold, droughty soils.

When soil disturbance and displacement from all sources is totaled, approximately 1,248 acres or 9.01% of the project area have been impacted. Nevertheless, this is well within the 20% standard for detrimental soil conditions required under Standard FW – 081 in the Willamette Forest Plan (USDA Forest Service. 1990).

Effects of Alternatives 2, 3, and 4

Direct and Indirect Effects

The direct and indirect effects associated with the action alternatives are changes in the amount of disturbed and displaced soil in the project area. Areas that are actively restored through actions such as road decommissioning directly reduce the amount of area that has been disturbed and displaced. Other actions such as road closure and limiting camping access would indirectly reduce the extent of disturbed and displaced soil over time as these areas restore themselves naturally in the absence of recreational motorized vehicle use. The following table summarizes the amount of road and road related recreation disturbance, and the amount of active and passive restoration associated with each of the action alternatives. Information for the No Action Alternative is included for comparison.

Table 7: Acres of Road and Road-related Recreation Soil Disturbance.

Management Activity	Units of Measure	Alt. 1 No Action	Alt. 2	Alt. 3	Alt. 4
Existing Road and Road Related Recreation Soil Disturbance	Acres	677	445	405	346
Amount of Active Soil Restoration	Acres	0	34	35	48
Amount of Passive Soil Restoration	Acres	0	197	237	283
Total Amount of Restored Soils	Acres	0	231	272	331

Each of the action alternatives substantially reduces road and road related recreation soil impacts in the project area compared to the no action alternative. The action alternatives also differ substantially from each other, creating a range of outcomes with respect to the amount of soil restoration that is accomplished.

Cumulative Effects

The area considered for cumulative effects analysis for soils is the project area. In addition to the direct and indirect effects of the action alternatives, this analysis evaluated the effects of other past and ongoing activities, as well as reasonable foreseeable future activities. Activities included in this analysis were previously identified in the discussion of analysis methods. The following table summarizes the amount of road and road related recreation disturbance associated with each of the action alternatives, as well as disturbance associated with past and ongoing activities. With the exception of regular road maintenance, there are no reasonably foreseeable activities that could be accurately quantified were identified. The cumulative amounts of soil disturbance are presented both as an absolute value and as a percentage for comparison with Forest Plan standards. Information for the No Action Alternative is included for comparison as well.

Table 8: Cumulative Effects of Road and Road-related Recreation Soil Disturbance.

Evaluation Factors	Units of Measure	Alt. 1 No Action	Alt. 2	Alt. 3	Alt. 4
Existing Road and Road Related Recreation Soil Disturbance	Acres	677	445	405	346
Other Past, Present, and Reasonably Foreseeable Soil Disturbance	Acres	571	571	571	571

Evaluation Factors	Units of Measure	Alt. 1 No Action	Alt. 2	Alt. 3	Alt. 4
Cumulative Soil Disturbance	Acres	1248	1016	976	917
Percent of Project Area Impacted	%	9.01	7.34	7.04	6.62

Each of the action alternatives substantially reduces the cumulative level of soil disturbance in comparison with the No Action alternative. All alternatives, including the No Action alternative, are well within the 20% standard for detrimental soil conditions required under Standard FW – 081 in the Willamette Forest Plan.

Aquatic Conservation Strategy Objectives

As was previously documented in the Affected Environment discussion, the project area has very few streams, and the streams that do occur in the project area are not surface connected to other portions of the watershed. Also, gentle terrain and infiltrative soils limit the transport distance of sediment by way of water borne erosion. Mitigation measures 8 and 9 on page 60 require that new routes not be designated or constructed within Riparian Reserves, and that existing disturbed sites are to be re-vegetated naturally, or seeded or planted with native species only. Therefore, meaningful effects on ACS Objectives 1 through 8 (either positive or negative) are unlikely considering the favorable conditions in the project area, and that no new facilities are proposed within Riparian Reserves.

In the previous discussion of effects by alternative, the primary effect of each alternative is a net reduction in the amount of soil disturbance within the project area. As vegetative restoration of these areas occurs, either actively or passively, native plant habitats will improve as well as associated habitats for vertebrate and invertebrate riparian dependant species. This will result in a positive trend toward meeting ACS Objective 9.

Heritage Resources

Prehistoric Use

The ethnographic evidence places the Molala as the inhabitants of the portion of the Western Cascades that is currently administered as the Willamette National Forest. Thus the Molala (probably the Santiam Band) are generally considered the primary inhabitants for the purposes of ethnographic analogy. Toepel and Beckham (Beckham, et al. 1981) describe a Molala lifestyle which focused on hunting and plant and animal resources of the small upland prairies. Winter occupation of low elevation multiple family pit house villages complemented the seasonal subsistence rounds into the higher elevations. Several other Native American ethnic groups also may have used this Santiam Pass area for seasonal travel, hunting and foraging. These included the Tenino (from the Warm Springs country east of the Cascade Crest, and possibly the Northern Paiute (from the Northern Desert Great Basin).

Affected Environment – Historic Use, Santiam Wagon Road SIA (Issue 1)

The Santiam Wagon Road is considered the preeminent cultural site within the project area due to its location and access that it has historically provided the area. Former Forest Archaeologist John Stutesman formally evaluated the Santiam Wagon Road in 1983. Constructed in the 1860s, the Santiam Wagon Road began as a commercial trans-Cascade toll road. During the WWI era the wagon road reverted to Linn County ownership and since then portions of the road have been abandoned and other portions have become a Forest Service road. As one of the first trans-Cascades roads, it served to connect the Willamette Valley to eastern Oregon. Large quantities of freight and stock were driven over the road in its heyday. In its long history since development in the 1860s, these segments have served variously as a trans-Cascade toll route, a secondary county road, a Forest Service system road for fire suppression and timber harvest, and as a recreational destination and access node for campers, equestrians, hunters, and OHV enthusiast.

Under the Santiam Wagon Road Special Interest Area and Santiam Wagon Historic Property Management Plan, (HPMP) (Lindberg and Kelly. 2006), the 27-mile Santiam Wagon Road was divided into 14 segments for ease of discussion and management. The plan outlines each segment's condition along its 27 mile length across the Forest. These segments were in turn rated and ranked according to condition and integrity. The plan provides a description of each segment, its location, current and desired future condition, and management recommendations. Recommendations are primarily directed toward correction of existing deterioration and rehabilitation of features or attributes to restore the "location and setting" a term used for the National Register of Historic Places (NRHP) to determine eligibility.

Three cultural sites have been recorded within the project area, and prior to this inventory, two historic sites and one prehistoric site had been recorded within or adjacent to the project area. These sites are either eligible or potentially eligible to the National Register of Historic Places (NRHP) and must be protected from project activities or evaluated to determine their eligibility to the NRHP.

Historic Sites

Two of the HPMP segments of the Santiam Wagon Road (Eno segment and Sand Mountain segment) are located within the project area. As previously mentioned, since development in the 1860s, these two segments have served as a trans-Cascade toll route, a secondary county road, a Forest Service system road for fire suppression and timber harvest, and served campers, equestrians, big game hunters, and OHV enthusiasts as an access node for recreation. The single greatest threat to the road is loss of integrity due to unregulated high speed OHV use.

The Eno Road segment, along Forest road 2676-866, is about 2 miles long beginning at Road 2676, runs adjacent to the Sand Mountain SIA, changes to Forest road 2690-811, and ends at its junction with Forest road 2690-860. This segment is the steepest, rockiest portion of the wagon road. It has several "braided" portions that appear to be quite old, most of them in rough rocky areas. Those braided locations are worthy of preservations since they typify conditions in the 19th Century. The

Eno segment road bed is more stable (i.e. less sand) than the Sand Mountain segment to the east. The desired condition on this segment is to enhance and improve the width, corridor, and forest canopy.

The Sand Mountain segment includes both Forest roads 2690-810 and 2690-811. The segment begins on Forest road 2690-810 at its junction with Forest road 2690-860, and ends on the east end of Forest road 2690-811 at the boundary between Deschutes and Willamette National Forest. This segment has been impacted by the 1967 fire, and subsequent vehicle use on and off the Santiam Wagon Road to cut firewood left behind from the fire suppression. The firewood cutters and later the recreational OHVs have created numerous user-created tracks on either side of the Santiam Wagon Road. This segment has the heaviest dispersed camping use due to its proximity to Highway 20, the Pacific Crest Trail, and to Hidden Valley east of Big Lake on the Deschutes National Forest. There are several instances of road widening in this segment such that the single wheel track nature of the roadbed is obscured, with most occurring between Road 2690-860 and Road 2690,. Most of this widening has occurred in the past twenty years.

The condition of this segment continues to worsen each year due to the depth and number of moguls created by high speed OHV use. Under the HPMP, the desired condition includes beginning the process of bringing back the historic road width. Management recommendations include protecting and enhancing the corridor by delineating and posting the Santiam Wagon Road, removing the moguls, and improving the forest canopy by maintaining the cultural landscape (HMPM 2006).

A portion of the 1887 Oregon Pacific Railroad wagon supply route was recorded under the current project. This supply route was used for transport of goods and material during the construction of the Oregon Pacific Railroad line. Work on the Oregon Pacific Railroad was done piecemeal in the Santiam Pass area, which was quite unusual as most other railroads were built and re-supplied by train as rail was laid on completed grade. This piecemeal method of construction made the Santiam Wagon Road a critical entity in the logistical system for the Oregon Pacific at Santiam Pass. Work crews, supplies, and materials were freighted up the Santiam Wagon Road, then from the Fish Lake and Big Lake areas supplies were transported on “service” wagon roads or trails. The segment of this road within the project area has been used by the public over the past few decades as Forest road 2690-911 and 2690-910.

Environmental Consequences

The following addresses effects of alternatives on Significant Issue 1 – Santiam Wagon Road SIA. The SIA is delineated as a 330 foot wide buffer from the centerline, along each side of the Santiam Wagon Road as designated in the Willamette Forest Plan.

Effects of Alternative 1

Alternative 1 would take no action to change the current condition of the Santiam Wagon Road SIA, except for the existing road maintenance contract scheduled for completion in spring 2008, from Big Lake road to Sand Mountain. This alternative would result in continued adverse affects on heritage resources from OHV use. Vigorous high speed use of Class I and III ATVs has resulted in widening and deepening of the road bed, exposure of large rocks and the build up of sand moguls. Many user-

created OHV trail crossings have also contributed to road surface material displacement and road widening. Under this alternative summer motorized recreation use at Santiam Pass would continue to be managed as it currently is.

The No-Action Alternative would not remove and restore the existing user-created crossings on the Santiam Wagon Road beyond the road maintenance that is scheduled for spring 2008. The portions of the road that have been impacted by unregulated OHV use would not be further rehabilitated and restored to the historic route, profile, and width. Since OHV use would remain unchanged on all segments of the historic wagon road over time, there is likely to be continued degradation of the NRHP eligible Santiam Wagon Road over time. Dispersed camping along the Santiam Wagon Road would continue to be unregulated on campsites that together, amount to approximately 40 acres. No speed limits would be implemented or enforced, and no signs to inform the public about the historic road would be installed along its route.

With no changes in current use, the effects of soil and rock displacement, mogul creation, vegetation loss, and road widening would continue, resulting in long lasting alteration of the integrity of location and setting to the Santiam Wagon.

Effects of Alternatives 2

Direct and Indirect Effects

OHV, Road and Trail Development and Santiam Wagon Road: Implementation of Alternative 2 would allow the use of Eno and Sand Mountain HPMP segments of the wagon road within the project area, and is the least prohibitive of the action alternatives for motorized vehicles use on the Santiam Wagon Road. The 6.0 miles of the Santiam Wagon Road would be open to motorized mixed-use, which includes ATV Classes, I, II, III, and highway legal vehicles.

Alternative 2 would include construction of 8 clearly marked crossings over the wagon road and it closes and rehabilitates user-created OHV crossings not incorporated. This alternative would rehabilitate all 6.0 miles of the Santiam Wagon Road as needed, to the approximate historic route, profile, and width, and it would establish speed limits on Forest roads 2676-866, 2690-811, and 2690-810, which would be implemented through a Forest Order. Speed limits are likely to be from 15 to 25 mile per hour depending on location.

Staging areas: Two “Day Use” staging areas would be established for off-loading OHVs from trailers and parking. One of the areas would be located along the Big Lake Road at the junction of Forest Road 2690 and the south side of 2690-860. The other staging area would be located at the junction of Forest Road 2690 and north of the 2690-810 portion of the Santiam Wagon Road, just north of the SIA boundary. Staging areas would have no effect on heritage resources. Natural protection barriers would define the limits of these staging areas and keep the staging areas from widening over time.

Dispersed Camping in the Regulated Camping Zone: Alternative 2 is also the least prohibitive with regard to dispersed camping along the Santiam Wagon Road SIA, and would include 18 camp sites at 1/2 acre each along the 2690-810 and 2690-811 portions only, for a total of 9.3 acres of encroachment by campsites along the 6 miles of Santiam Wagon Road. Both the number and acreage

of the dispersed campsites in the Santiam Wagon Road SIA would be reduced from the present condition which would begin to restore a limited portion of the SIA. A total of 11 existing dispersed campsites or approximately 17.3 acres would be rehabilitated.

Open Play Area and Kiddie Loop: Alternative 2 includes approximately 22 acres as an Open Play Area within the sand blowout feature that exists near the junction of the Sand Mountain lookout Road 2690-810 and Santiam Wagon Road 2676-866. The Open Play Area is outside of both the Santiam Wagon Road SIA and the Sand Mountain SIA, and situated within MA-10b. This alternative would also establish a Kiddie Loop, youth learning trail within an 18 acre area north of Big Lake Campground and between the Big Lake Road 2690 and the Santiam Wagon Road SIA, again situated within MA-10b, but within view from the Santiam Wagon Road.

In summary, reducing the number and size of the dispersed campsites, and rehabilitating and implementing speed limits along the 6.0 miles of Wagon Road within the project begins the trend of restoring the integrity of location and setting along the Santiam Wagon Road. The speed limit would reduce the displacement of road surface materials, help prevent moguls and road widening, and serve to protect the integrity of these road segments. The speed limits would also discourage OHV use on the wagon road. However, designating the entire 6.0 miles of the wagon road to motorized mixed-use, along with the other actions that locate a staging area nearby and an open play area and Kiddy Loop youth learning areas adjacent to the Santiam Wagon Road SIA, would continue the trend toward changing the historic alignment and a diminishing one's sense of being on a historic route.

Effects of Alternatives 3

Direct and Indirect Effects

OHV, Road and Trail Development and Santiam Wagon Road: Alternative 3 is designed to be more restrictive than Alternative 2, by limiting the use of one of the two segments of Santiam Wagon Road within the project area.

The Sand Mountain HPMP segment would remain open to motorized mixed-use, which includes ATV Classes, I, II, III. This segment includes Forest road 2690-810, from the junction with 2690-860 to the Big Lake Road, and east along 2690-811 to the Forest boundary. The Eno HPMP segment from Forest road 2676 to the junction of 2690-810 with 2690-860 would be closed to all public motor vehicles (2.2 miles), allowing only administrative use.

Approximately 3.8 miles of the Santiam Wagon Road are open to motorized mixed-use designation, and 5 clearly designated crossings over the Santiam Wagon Road would be constructed. No other crossings on the wagon road would be allowed. Establishing these north-south crossings at existing road systems and established dispersed camping spots could reduce the impacts to the Santiam Wagon Road.

Alternative 3 would establish speed limits as in Alternative 2 on Forest roads 2690-811 and 2690-810, which would be implemented through a Forest Order.

Staging areas: Two "Day Use" staging areas would be established for off-loading OHVs from trailers and parking. One of the areas would be located along the Big Lake Road at the junction of Forest Road 2690 and the south side of 2690-860. The other staging area would be located at the Ray

Benson Sno Park. The staging areas would have no effect on heritage resources. Natural protection barriers would define the limits of these staging areas and keep the staging areas from widening over time.

Dispersed Camping in the Regulated Camping Zone: Alternative 3 would be moderately prohibitive for dispersed camping along the Santiam Wagon Road SIA. Dispersed camping along the Santiam Wagon Road would include 15 camp sites at 1/2 acre each on the 2690-810 and 2690-811 portions only, for a total of 7.7 acres of campsites along the 3.8 miles of Santiam Wagon Road open to OHV. Under this alternative the dispersed campsites are again reduced in number and size along the Santiam Wagon Road SIA in comparison with the no action alternative. A total of 14 dispersed campsites or 18.9 acres would be closed and restored to natural conditions over time.

Open Play Area and Kiddie Loop: Alternative 3 would not establish an Open Play Area within the sand blowout feature north of Sand Mountain SIA. Alternative 3 would establish a Kiddie Loop, youth learning trail within an 18 acre area north of Big Lake Campground and between the Big Lake Road 2690 and the Santiam Wagon Road SIA as in Alternative 2.

In summary, Alternative 3 furthers the trend of restoring the integrity of location and setting along the historic wagon road more than Alternative 2 by reducing the number and size of dispersed campsites, rehabilitating the wagon road alignment, and implementing speed limits along the open portions of the Santiam Wagon Road. Speed limits would help reduce the displacement of road surface materials, help prevent moguls and road widening, and serve to protect the integrity of these road segments. The speed limit may also discourage OHV use on the wagon road.

Closing the Eno segment of the Santiam Wagon Road to all public motorized use in this alternative would help preserve the more intact HPMP segment within the project area. This segment is more stable (i.e. less sand in its makeup) and it still retains some of the original “braided” portions along its route which contributed to its significance as an NRHP eligible site. Reducing the number of OHV crossings to 5 and moving the staging area away from the Santiam Wagon Road SIA would further the process of restoring the integrity of location and setting along the Santiam Wagon Road, and provide a greater sense of the historic character of the road route compared to Alternative 2.

Effects of Alternatives 4

Direct and Indirect Effects

OHV, Road and Trail Development and Santiam Wagon Road: Alternative 4 is the most restrictive of OHV use along the Santiam Wagon road of the action alternatives. It would designate 4.2 miles of the Santiam Wagon Road as open to Highway Legal Vehicles, which includes all of Forest road 2690-810 from the junction of 2690 to the junction of and 2690-866, and all of Forest road 2690-811 from 2690 to the Forest boundary, which includes the Sand Mountain HPMP segment.

A 0.2 mile portion of the Eno HPMP segment on the 2690-810, from the 2690-860 to the junction with 2676-866 would be open to Highway Legal Vehicles. Highway legal vehicles include passenger cars, 4-wheel drive cars and motorcycles (see Glossary). Alternative 4 would close the rest of the Eno HPMP segment to all motor vehicles along the entire 2676-866, from 2676 to the junction of 2690-810. Two clearly designated crossings would be constructed over the Santiam Wagon Road north of

the Big Lake Campground. Establishing these north-south crossings at existing road systems and at established dispersed camping spots would reduce the impacts to the Wagon Road the most of the action alternatives. This alternative would establish speed limits for all motorized vehicles on the open portions of the Santiam Wagon Road to prevent adverse effects to the road surface material and other important components of this historic property.

Staging Areas: Two "Day Use" staging areas would be established for off-loading OHVs from trailers and for parking. One of the areas would be located along the Big Lake Road at the junction of Forest Road 2690 and the south side of 2690-860. The other staging area would be located at the Ray Benson Sno Park. The staging areas would have no effect on heritage resources. Natural protection barriers would define the limits of these staging areas and keep the staging areas from widening over time.

Dispersed Camping in the Regulated Camping Zone: Alternative 4 is also the most prohibitive for dispersed camping along the Santiam Wagon Road SIA. It would include 10 camp sites at 1/2 acre each, for approximately 5.2 acres of campsites along the 4.2 miles of Santiam Wagon Road. These campsites are on roads only open to highway legal vehicles (2690-810 and 2690-811 portions only) and do not permit access to the motorized trail system.

Both the number and acreage of the dispersed campsites in the Santiam Wagon Road SIA would be reduced from the present condition. A total of 19 existing dispersed campsites or 21.5 acres of dispersed campsites would be rehabilitated.

Open Play Area and Kiddie Loop: Alternative 4 would not establish an Open Play Area within the sand blowout feature near the junction of the Sand Mountain lookout Road 2690-810 and Santiam Wagon Road 2676-866. Alternative 4 includes the additional 4 acre Kiddie Loop youth learning trail adjacent to Ray Benson Snow Park. It does not establish a youth learning trail within the 18 acre area south of the Big Lake Road 2690 as proposed in Alternatives 2 and 3.

The trend of restoring the integrity of location and setting along the historic wagon road is facilitated most in Alternative 4 by reducing the number and size of dispersed campsites, rehabilitating the wagon road alignment, and implementing speed limits along the portion of Santiam Wagon Road open to highway legal vehicles. Speed limits would help reduce the displacement of road surface materials, help prevent moguls and road widening, and serve to protect the integrity of these road segments.

Closing most of the 2676-866 within the Eno segment to all but administrative use (from the 2676 to the junction with 2690-810) would help preserve the more intact segment within the project area. This segment is more stable (i.e. less sand) and still retains some of the original braided segments along its route which contributed to its significance as an NRHP eligible site. Reducing the number of crossings to two and moving the staging area away from the Santiam Wagon Road SIA would further the process of restoring the integrity of location and setting along the Santiam Wagon Road, and it would provide an even greater sense of the historic character along the route.

Cumulative Effects

The area analyzed for cumulative effects is the Santiam Wagon Road SIA within the project area (from Forest road 2676 east to the Forest boundary at the Cascades crest). Until the Airport Fire occurred in 1967, the Santiam Wagon Road and the area designated as SIA were in relatively stable condition with little to no effect from modern-day influences. During the 1967 fire, the Big Lake airstrip directly adjacent to the Santiam Wagon Road and the wagon road itself was bladed and used during fire suppression activities. After the fire, the Forest Service opened the area to the public for firewood gathering. The subsequent vehicle use on and off the Santiam Wagon Road to suppress the fire and for cutting firewood left behind from fire suppression, had marked the beginning of major adverse effects on both the Sand Mountain and Eno segments. Firewood cutters created numerous user roads on both sides of the Santiam Wagon Road to reach firewood.

From the late 1960s until the mid 1980s, the wagon road saw very little OHV use, and a 1983 inventory of the wagon road describes the smoothness of the road bed. From the mid-1980s, the roadbed smoothness began to disappear and by the mid-1990s, large moguls from OHV use and user-created OHV tracks and road crossings began the adverse affects on the integrity on these two segments of the Santiam Wagon Road.

The No Action Alternative would result in additional cumulative effects from unregulated OHV use through the likely creation of more and larger dispersed campsites, more user-created crossings, more moguls, and widening along the Santiam Wagon Road and SIA. Normal road maintenance would continue to be uncertain. However, all action alternatives would begin to repair the effects of unregulated OHV use on the 6.0 miles of Santiam Wagon Road within the project area, and would reduce the present cumulative effects of past actions, with Alternative 4 providing the greatest removal and rehabilitation of dispersed campsites and OHV crossings.

As discussed in Chapter 2, the foreseeable future action of road maintenance on a portion of the Santiam Wagon Road is scheduled for spring 2008. The maintenance work on the portion of the road from Forest road 2690 to 2690-890, would remove the ripples and moguls and recondition the surface of the road to a more historical profile. This action would improve the historical road integrity by reversing the cumulative effects of unregulated and high speed OHV use.

Recreation

Affected Environment – OHV Spectrum of Opportunity (Issue 2)

The Santiam Pass Motorized Recreation area is a popular recreation destination known for its diversity of recreation opportunities, but in particular, motorized off-road vehicle use, developed and dispersed camping, and water skiing on Big Lake. The area occupies a central location along the crest of the Cascades between the Willamette National Forest and the Deschutes National Forest. The project area is adjacent to US Highway 20 and is within two hours of the central Willamette Valley. Dispersed motorized recreation in the project area appears to be increasing each season. Statements from District fire and recreation patrol staff and campground hosts suggest that motorized use has become the dominate recreation pursuit in this area and use has increased in the past few years (Valevich, 2007).

Dispersed recreation with an emphasis on motorized use is recognized in the Willamette Forest Plan and has been allowed within the project area for over 30 years. To date, there have been no established trail opportunities for ATVs, and use takes place on roads, user created-tracks, or simply as cross-country travel.

A variety of OHVs are used in the project area, including motorcycles, quads, three wheelers, and 4x4 vehicles especially designed for off-road travel. Family groups interested in this type of recreation often use more than one type of recreational motorized vehicle during their visit. Recreation and fire patrols also suggest that ATV Class I and III use within the project area are the most popular, with only minor amounts of ATV Class II use.

ATV users routinely state they desire trails with a variety of topography, vegetation, difficulty, and scenery, and they desire quality signing and mapping. ATV riders desire trail lengths of about 6 miles per day at an easy skill level, and 20 miles per day at a more difficult level. User-created trails are less desirable than designed trails because they can be too straight and encourage speed, poorly drained, poorly located, and inconsistent in degree of difficulty resulting in a less than enjoyable experience.

User-created tracks have been noted throughout the project area for many years. A preliminary inventory of user-created tracks conducted in the project area in 2004 and 2005 identified over 10.0 miles of tracks. Most of the network of tracks is found between the Santiam Wagon Road and the Big Lake Road, north of Big Lake Campground.

Although the project area is visited by the recreating public year-round, the majority of visits to the area occur on weekends and holidays between June and November, as most of the project area is covered with snow from December through late May. The area is used extensively by snowmobiles and cross-country skiers during these winter months, with Ray Benson Sno Park receiving heavy use for day-use staging and parking.

Non-motorized summer recreation activities in the project area include, but are not limited to hiking, horseback riding, mountain biking, sightseeing, and hunting. Some of the current campsites located along the western portions of the Santiam Wagon Road next to an old airstrip were originally developed for stock use. Numerous horse endurance events were once staged out of this location. Non-motorized trail systems within the planning area are limited, with the Pacific Crest National Scenic Trail being the longest and most used, with the Patjens Lake trail also a popular trail to access the Mt. Washington Wilderness. Most non-motorized users have traditionally used the existing road system or have traveled cross-country to destinations outside the project area.

There are no improved camping areas outside the Big Lake Campground Complex, and no fees are charged for any of the dispersed campsites found within the project area. Dispersed campsites areas have been maintained on a very limited basis during the past several years due to lack of personnel and funding.

Ray Benson Sno Park is a winter day use parking and overnight camping facility for snowmobiling, Nordic skiing, snowshoe, and some snow play activities. Snowmobiling is considered to be the dominate winter recreation activity in the project area. Ray Benson Sno Park is designed to accommodate approximately 240 vehicles, with a considerable number of visitors needing room for

vehicles pulling trailers for hauling snowmobiles. On any weekend day during periods of good snow conditions, as many as 300 to 400 snowmobiles may use the trail system in and around the Sno Park.

Near to Ray Benson are 13 recreation residences, or homes owned by private individuals with a special use permit to occupy residences on National Forest System land. These recreation residences are located along the Big Lake Road, adjacent to Hoodoo Ski area to the north, and approximately ¼ mile west of the Ray Benson Sno Park.

Environmental Consequences

Direct and Indirect Effects of Alternative 1, No Action

Alternative 1 is a continuation of the current management situation. With the no action alternative, there would be no effort to provide for comprehensive management of OHV use in the project area. Alternative 1 would provide the most opportunity for OHV freedom, and ATVs would continue to be allowed on all system roads, user-created tracks, and would be able to travel cross-country. No user-created tracks would be closed to OHV use and rehabilitated.

Dispersed camping opportunities would continue to be managed as they currently are. The expansion of user-created tracks and dispersed camping sites is likely to continue. Associated impacts would continue to move into other areas of undisturbed vegetation. Designated camping areas, sanitary facilities, and day-use staging and parking areas suitable for loading and unloading ATVs would not be added.

Under Alternative 1, there would be no trail system improvements to benefit ATV users. Because no trails exist, user-created tracks would remain in poor design, with poor trail location, and with dead-ends. This alternative would do nothing to promote responsible, "light on the land" riding ethics, ATV rider etiquette, or encourage safe behaviors. Enforcement would continue to be difficult for Forest Officers, and County or State patrols due to the lack of specific rules for motorized recreational vehicle use. However, OHV enthusiasts who prefer minimal management in the area would not see any changes to current uses of the project area with this alternative.

Effects of Alternative 2

OHV, Road and Trail Development and Santiam Wagon Road: Alternative 2 maximizes utilization of the current Forest road system for motorized recreation by establishing approximately 37.3 miles of the existing 68.2 mile road system for motorized mixed-use. Motorized mixed-use includes ATV Class I and III along with Class II vehicles and highway legal vehicles.

This alternative includes Forest Plan Amendment #49, which prohibits off-road or cross-country travel, which greatly reduces the opportunities and freedom to travel over the area that ATV riders are accustomed to. Restrictions on OHVs to remain on designated roads, trails, or specific area may diminish the freedom to ride that some ATV users seek in this area.

All of the designated motorized road system that is open for motorized mixed use would utilize existing Forest roads. However, the majority of roads within the project area are not frequently maintained, and it would provide a challenge to low clearance vehicles not equipped with four-wheel drive. Utilizing the maximum existing road system available over a larger portion of the project area

would allow for more user dispersal and less potential for concentrated use around congested areas. With the addition of about 7.6 miles of road designated for ATV Class I and III, the total amount of road system within the project area that is open to ATV's would be about 44.9 miles. Motorized trail construction includes approximately 7.9 miles of new trail and approximately 4.4 miles of user-created tracks, built for ATV Class I and III only.

Alternative 2 designates more miles as motorized mixed use than the other action alternatives, allowing less separation of the different class of ATVs. However, those ATV users seeking a single track experience would find less opportunity under this alternative.

Alternative 2 also allows motorized mixed use access to the parking area at the saddle of Sand Mountain, which is currently a popular ride for ATV users to enjoy vistas. All of the Santiam Wagon Road, from Forest Road 2676 east to forest boundary at the Cascade crest would be open to motorized mixed use.

Staging areas: Development of two centrally located day-use staging and parking areas in Alternative 2 would provide local access to most of the designated motorized system along with multiple trail access points within the Big Lake Campground. The staging areas would enhance visits to the project area by informing the OHV user of the trail system, rules and regulations, and of the natural and historic features to be enjoyed. The staging areas would also have toilets during the summer.

Dispersed Camping in the Regulated Camping Zone: Alternative 2 provides the best access to the core of the motorized trail system from dispersed campsites. All 34 designated dispersed campsites are connected to the trail system along the main ATV travel corridors or at major trail crossings within the regulated camping zone.

Open Play Area: Alternative 2 would designate approximately 22 acres as an open play area along the north side of Sand Mountain, which would allow the ATV user the freedom to travel cross-country within the small designated area, and not be confined to either a designated Forest road or ATV trail. The open play area would provide a location within the planning area where motorized users could experience a challenging, cross-country riding experience on sand.

Kiddie Loop: The Kiddie Loop youth learning trail area would provide an opportunity for youth to develop positive motorized riding skills and location for teaching rider etiquette and trail skills. Development and construction of a beginner trail riding area would help reduce dust and noise in this area due to the smaller size vehicles used by youth and reduction in speed associated with slower trail usage. Adult supervision would be a key component to help foster and develop this skill level.

Effects of Alternative 3

OHV, Road and Trail Development and Santiam Wagon Road: Alternative 3 continues to maximize the existing road system with 30.6 miles of road open to motorized mixed use, but increases the miles of road designated for ATV Class I & III, to 12.1 miles. Motorized mixed-use includes ATV Class II vehicles along with Class I and III. Most of the road system open to motorized mixed use would still challenge low clearance vehicles but would be less demanding for high clearance, four wheel drive vehicles. Motorized trail construction includes approximately 9.8 miles of new trail and

approximately 5.2 miles of user-created tracks, which provides the most mileage of ATV Class I & III routes of all the action alternatives.

This alternative includes Forest Plan Amendment #49, which prohibits off-road or cross-country travel and reduces the freedom to travel over the area that ATV riders are accustomed to. The restriction that OHVs must stay on designated roads, trails, or specific area may diminish the freedom to ride that some ATV users seek in this area.

Closure of the Santiam Wagon Road, west from 2690-860 to Road 2676 would eliminate all highway legal and ATV Class II access from within the central core of the trail system to the far western portion of the project area. Highway legal and ATV Class II access to this area would be permitted via Road 2676 at the Little Nash Snow Park into the western portion of the project area. All motorized access to Sand Mountain would be prohibited, with the only exception given for administrative use.

Staging areas: Alternative 3 includes the development of one centrally located day-use staging area on the Big Lake Road, as in Alternative 2. This staging area provides local access to most of the motorized trail system. A second day-use staging area at Ray Benson Sno Park would provide parking and access to the northern portions of the trail system. The staging areas would enhance visits to the project area by informing the OHV user of the trail system, rules and regulations, and of the natural and historic features to be enjoyed. The staging areas would also have toilets during the summer.

Dispersed Camping in the Regulated Camping Zone: Alternative 3 would include 20 designated campsites, or 14 fewer than Alternative 2. All 20 of the campsites would allow ATV user to be able to ride directly from their camp locations onto the trail system.

Open Play Area: Alternative 3 does not include an open play area anywhere in the project area.

Kiddie Loop: Alterative 3 provides the same youth learner opportunity as Alternative 2, but adds a second smaller 4 acre youth learning trail area adjacent to Ray Benson Snow Park staging area, which would help disperse this type of training opportunity within the project area.

Effects of Alternative 4

OHV, Road and Trail Development and Santiam Wagon Road: Alternative 4 is the most limiting alternative for ATV use of all the action alternatives with the closure of the Santiam Wagon Road to all but highway legal vehicles, and the closure to all motorized vehicles west of the Sand Mountain junction, or all of Forest road 2676-866. This alternative utilizes 17.8 miles of existing forest road open to mixed motorized use, and it identifies 14.5 miles of road open only to ATV Class I & III vehicles. This alternative includes Forest Plan Amendment #49, which prohibits off-road or cross-country travel and reduces the freedom to travel over the area that ATV riders are accustomed to. The restriction that OHVs must stay on designated roads, trails, or specific area may diminish the freedom to ride that some ATV users seek in this area.

Motorized trail construction includes approximately 6.6 miles of new trail and approximately 2.7 miles of user-created tracks, built for ATV Class I and III only. Even with the reduction of current roads available for motorized use, this alternative still provides 23.8 miles of designated road and trail open only to ATV Class I and III vehicles, which is only 3.3 miles less than with Alternative 3.

Within the planning area, all of the road system south of the Santiam Wagon Road and west of Big Lake Campground to the wilderness boundary would be closed to all motorized travel. ATV Class I and III vehicles would be able to cross the Santiam Wagon Road at only two locations to access the central trail system from Big Lake Campground. Motorized road access to the northwest portion of the planning area for other than ATV Class I and III vehicles, would only be accessed by Little Nash Snow Park at the junction of Forest road 2676 and US Highway 20.

Staging areas: Alternative 4 includes the development of the centrally located day-use staging and parking area on the Big Lake Road, which would provide local access to the bulk of the designated motorized system. A second day-use staging area at Ray Benson Sno Park would provide access trail systems from the north. The staging areas would enhance visits to the project area by informing the OHV user of the trail system, rules and regulations, and of the natural and historic features to be enjoyed. The staging areas would also have toilets during the summer. Alternative 4 also includes an overnight fee camping area at Ray Benson which improves camping opportunities for larger recreational vehicle camping.

Dispersed Camping in the Regulated Camping Zone: Alternative 4 provides fewer designated dispersed campsites than Alternative 2, but distributes them over a wider area within the regulated camping zone. However, of the 15 dispersed campsites, only 4 would have direct access to the motorized trail system, and 11 would require ATVs be transported by trailer from the camp locations to a staging area or trail access points to be unloaded for use.

Open Play Area: Alternative 4 does not include an open play area anywhere in the project area.

Kiddie Loop: This alternative establishes one youth learner trail area next to Ray Benson Sno Park. The constructed youth learning trail would be much smaller than the larger kiddie loop in Alternatives 2 and 3, and would limit the number of users at one time. Competition for access may be much higher with reduced capacity.

Cumulative Effects

The area considered for analysis of cumulative effects on OHV spectrum of opportunity is the project area. Prior to this initiative, no attempt had been made to design and build a motorized system of trails within the project area to enhance motorized recreation, and to reduce any negative effects of unregulated OHV use on the quality of OHV experience. Without the development of a motorized trail system, OHV use has freely expanded the network of user-created tracks, and it includes most Forest roads and open areas.

The cumulative effect of implementing any of the action alternatives would be to reduce the range of use and would restrain the freedom that presently exists to travel cross-country with Forest Plan Amendment #49. All action alternatives would designate a motorized trail system and would restrict OHV use. Even though the proposed ATV trail development for all action alternatives would reduce OHV opportunities from the present condition, the proposal would construct trails on existing user-created tracks to incorporate them as new constructed routes, which would add a motorized trail system that offers a diversity of challenge for all skill levels while providing for safety. OHV opportunities for some Class I and III ATVs riders would be enhanced.

Designated dispersed campsites within the regulated camping zone would be reduced in size and number from current conditions in all action alternatives. Opportunities would be reduced for campers recreating with OHVs as access to the motorized trail system from the existing dispersed campsites is reduced especially along the Santiam Wagon Road. Alternative 2 provides the greatest access to the motorized trail system with all 34 designated campsites having access, and Alternative 4 provides the least opportunity with only 4 of 11 designated campsites having access along the motorized trail system. The improvements in day-use staging and parking facilities proposed in all action alternatives would enhance OHV user education over the current situation. Informational kiosks would provide OHV use restrictions and laws, promote protection of natural and historical resources in the area and make maps available.

Though this initiative would inevitably be seen as reducing the freedoms and riding opportunities by some ATV riders, scoping comments indicate that many of the proposed activities would also be considered as improvements to enhancing the overall OHV experience from the currently unmanaged situation. There are no foreseeable future actions known that would add to the effects of this action to improve the spectrum of opportunity for OHV use in the project area.

Affected Environment – Recreation User Conflicts (Issue 3)

With an apparent increase in popularity nation-wide, ATV use within the project area has also been on the increase over the past decade. Motorized recreation vehicle users have utilized much of the project area and created an open network of roads and user-created tracks which connect dead end roads to other roads and various open play areas. At the same time, the non-motorized recreating public has expressed concerns that they are being displaced by unrestricted expansion of motorized use.

Dispersed camping within the project has grown in numbers of sites and existing sites have grown in size over the last decade, both along the Santiam Wagon Road, adjacent to the Big Lake Campground Complex, and along the Big Lake Road. On summer weekends these three areas often have concentrated use by mostly campers with ATVs.

Non-motorized recreation opportunities in the area include mountain biking, horseback riding, and hiking the Patjens Lake Trail and the Pacific Crest National Scenic Trail. The PCT experiences trespass by motorized vehicles due to current unrestricted travel, user-created access points, lack of signs, and numerous existing road crossings.

Ray Benson Sno Park is most often closed in the summer. Its facilities are intended to serve as a winter day-use parking facility with overnight camping for snowmobiling, Nordic skiing, snowshoeing, and some snow play activities.

The 13 recreation residence owners have raised a concern that any plan to designate trails near their residences or use the nearby Ray Benson facility for staging and parking during the summer is of concern. Such actions could result in increased noise disturbance from ATVs in the area.

Environmental Consequences

Effects of Alternative 1, No Action

With Alternative 1, the existing management situation would continue. Without a designated motorized travel system, all sections of the planning area would be available for mixed recreation use. The lack of a cohesive motorized management plan within the project area would continue to foster expectations for an un-regulated recreation experience, which is a primary reason for user-conflicts.

No restrictions would be placed on dispersed camping within the project area for Alternative 1. The recreating public displaced from other areas with more management controls would be attracted to this area. With increased use, existing dispersed campsites would be able to expand along the Santiam Wagon Road, adjacent to Big Lake and Big Lake West campgrounds, and along the Big Lake Road. Management of dispersed camping areas and day-use parking would not change from the current condition. Traditional campers who place a high value on freedom of use and minimal restrictions may prefer this alternative. Motorized trespass along the Pacific Crest National Scenic Trail is likely to continue unchecked due to the numerous road crossings and user-created access points to the PCT.

Non-motorized recreation opportunities for mountain biking, horseback riding, and hiking the PCT would continue to be affected by effects of OHV activity, mainly from noise and dust in the summer. In the long-term, some of the recreating public that traditionally camp and use the area may be displaced to other areas. The recreation experience for the public could be diminished by unmanaged dispersed camping with the expanding size of camping areas.

Effects Common to All Action Alternatives

Recreation opportunities at individual dispersed campsites may become more restrictive due to fewer sites and smaller size areas, depending on the action alternative. Actions that benefit non-motorized users include mixed-use design to provide multi-family camping, establishment of vegetation screening for noise muffling and privacy between sites, and placement of hardened (metal) campfire rings to reduce the potential for escaped fires.

Actions that could restrict freedom for non-motorized users and which result in a negative recreation experience include the requirement for dispersed camping only in designated sites along the Santiam Wagon Road and Big Lake Road, and closing and re-vegetating formerly preferred areas. Some of the recreating public who place a very high value on freedom of use could be displaced to other dispersed camping areas with less management controls, either within the project area or outside the regulated camping zone. Dispersed camping would be permitted outside of the regulated camping zone, but vehicles would be required to stay within 100 feet of a designated mixed-use road.

Actions that may be neutral to the traditional non-motorized user could include defining camp area perimeters and providing educational or informational signing. Enforcing appropriate use of OHVs and dispersed camping in the regulated camping zone would be perceived positively by those campers who have been previously disturbed by large camps with loud behavior, and negatively by those who prefer the freedom to camp in large groups.

Non-motorized user to the area would have few opportunities for recreational activities outside of the existing non-motorized trail system. Those users wanting to travel cross-country within the project area would continue to encounter motorized activity at trail or road crossings.

Effects of Alternative 2

OHV, Road and Trail Development and Santiam Wagon Road: This alternative provides the most miles of routes for motorized recreation use within the project area. Those seeking a non-motorized recreation experience would need to evaluate the motorized trail system and to select isolated blocks of area not influenced by motorized use. Alternative 2 would reduce the total number of motorized crossing along the Pacific Crest Trail from 9 to 4 to reduce potential for conflict. One crossing would be located along the Santiam Wagon Road, 2690-811, one along Forest road 2690-940 and one at the junction of 2690-920 and trail 3558. Informational signing and barrier placement would also help prevent unintentional motorized access along the Pacific Crest Trail corridor, which would reduce potential for non-motorized and motorized user conflicts.

Staging areas: Construction of the two day-use staging areas at the proposed locations would remove two existing dispersed campsites. Noise and dust associated with concentrated motorized use around staging areas and in close proximity to nearby campsites could influence non-motorized campers to select overnight sites at other areas.

Dispersed Camping in the Regulated Camping Zone: Alternative 2 designates 34 dispersed campsites in the regulated camping zone, and all campsites would have access to the motorized trail system. The small reduction in dispersed camping opportunities from the current condition in Alternative 2 would slightly incease demand for the limited number of sites during weekends of high visitor numbers, resulting in a slightly increased potential for recreation user conflicts associated with dispersed camping.

Most of the reduction would occur around or adjacent to Big Lake Campground, along the south side of the Santiam Wagon Road, the area north of Big Lake, and along the north side of the Santiam Wagon Road between Big Lake Road and the Pacific Crest Trailhead. Since all dispersed campsites would be favored by OHV campers, the campers that wish to be away from dust and noise associated with motorized recreation would have little opportunity around more popular sites, and they would need to travel to more remote portions within the project area or seek that opportunity outside the project area.

Open Play Area: Designation of the 22-acre open play area would allow more freedom of choice for ATV use. The area requires the OHV user to operate within area that has a marked boundary for open, unrestrained motorized recreation. This open play area may concentrate ATVs in close proximity to the Sand Mountain SIA and Sand Mountain lookout. Noise and dust from this play activity may increase the potential for conflict with non-motorized users visiting the lookout to enjoy vistas.

Kiddie Loop: Developing the 18 acre youth learner trail area north of Big Lake Campground Complex would provide an area away from the main travel system and allow beginning OHV users a place to learn in a safe environment away from and not in competition with more advanced users on

the trail system. This area would also serve to reduce the dust and noise affecting the campground area by restricting speeds and riding behavior on the youth learning trail occurring in that area north of the campground, and reduce potential for conflicts between non-motorized and motorized users.

Effects of Alternative 3

OHV, Road and Trail Development and Santiam Wagon Road: User conflicts associated with mixing motorized and non-motorized uses would generally be the same as in Alternative 2. Non-motorized users would need to be selective when choosing areas within the planning area for camping and recreation to avoid noise and dust associated with motorized recreation.

This Alternative would reduce the total number of motorized crossings along the Pacific Crest Trail from 9 to 3 also reducing the opportunities for motorized intrusions and potential conflicts between trail users and ATV riders. Informational signing and barrier placement would help prevent unintentional motorized access along the Pacific Crest Trail corridor and reduces the potential for conflicts between PCT hikers and ATV users.

Staging areas: Alternative 3 establishes two day-use staging areas for off-loading OHVs from trailers and parking at convenient locations. The staging areas would include user education and information kiosks, and toilet facilities. One staging area is located along the Big Lake Road at the junction of Forest Road 2690 and south side of 2690-860, and the other utilizes a portion of Ray Benson Sno Park. The two staging areas would help to reduce congestion associated with motorized use around Big Lake Campground. The development of both staging areas away from concentrated use areas at the developed campground would reduce the effects of noise at those areas more than Alternative 2.

The existing stands of trees and brush between the Ray Benson Sno Park and the recreational residences would be retained to help reduce the effects of noise on the recreation residence owners.

Dispersed Camping in the Regulated Camping Zone: Alternative 3 would further reduce the total number of designated campsites to 20, and all campsites would have access to the motorized trail system. This alternative would result in most demand for the reduced number of campsites in the zone and result in a greater increase in potential for recreation user conflict between campers than Alternative 2.

Areas outside the regulated camping zone would start to show signs of increased use as traditional campers seeking a non-motorized experience are displaced to other areas. As in Alternative 2, campers that wish to camp away from dust and noise associated with motorized recreation would have little opportunity around the more popular sites in the regulated camping zone. They would need to travel to more remote dispersed campsites outside the regulated camping zone or seek that opportunity outside the project area.

Open Play Area: Alternative 3 does not include an open play area anywhere in the project area.

Kiddie Loop: Alternative 3 includes the 18 acre youth learner trail area north of Big Lake Campground Complex with the same effects as in Alternative 2. There would also be a second youth learner area at Ray Benson Sno Park. This constructed youth area would be much smaller and would limit the number of users at one time more than at the youth learning trail area near Big Lake Campground. The 4-acre loop at Ray Benson would be approximately ¼ mile from the Hoodoo

Recreation Residences, but there would be a low potential for conflict with those residences due to the slow ATV speeds and adult supervision likely to be present.

Effects of Alternative 4

OHV, Road and Trail Development and Santiam Wagon Road: This alternative would close all Forest roads to OHV travel south of the Santiam Wagon Road, on 2690-810 between the west end of Big Lake Campground and Sand Mountain. Closing the area to ATVs would lower the potential for conflict with non-motorized users the most. Non-motorized users would be able to travel cross country and along the existing road system in this area without encountering motorized activity. As a result, the area may be more appealing to non-motorized recreation users. Implementation of this alternative may reduce the potential for unintentional trespass into the Mount Washington Wilderness by ATV riders. Alternative 4 also reduces crossings over the PCT from 9 to 2, with one located at trail #3558 (Class I and III) and the other on the Santiam Wagon Road 2690-811 (highway legal vehicles only), which lowers the potential for conflict along the PCT the most of the action alternatives.

Staging areas: Alternative 4 establishes two day-use staging areas at convenient locations for off-loading OHVs from trailers and parking the same as in Alternative 3. The staging areas would include user education and information kiosks, and toilet facilities. One staging area would be located along the Big Lake Road at the junction of Forest Road 2690 and south side of 2690-860, and the other utilizes a portion of Ray Benson Sno Park.

Alternative 4 also includes a section of Ray Benson Sno Park as a designated overnight fee camping area, which may help reduce some of the competition for campsites in other areas. Since Ray Benson Sno Park is a winter, day-use parking and overnight camping facility, its capacity is currently suitable for approximately 240 vehicles. In the winter, roughly 75% of the activity is for snowmobiling. During good snow conditions on a winter weekend day, as many as 300 to 400 snowmobiles will use the trail system in and around the Sno Park.

Campers seeking more support facilities for motorized overnight camping would prefer Ray Benson over the designated dispersed sites since there are currently restrooms and a group shelter, and access to the central trail system could be made by the trails designated through the Hoodoo Ski Area. Campers at Ray Benson Sno Park may provide value-added benefits to Hoodoo Ski Area, a Special Use Permit holder, as some overnight fee campers could provide a potential customers base for the general store at the lodge.

The existing stands of trees and brush between Ray Benson Sno Park and the recreational residences would also help reduce the effects of noise.

Dispersed Camping in the Regulated Camping Zone: Alternative 4 is the most restrictive for overnight camping within the Regulated Camping Zone by reducing the designated sites to 15. Only 4 of the remaining dispersed campsites would have access to the motorized trail system. In turn, the designated dispersed campsites along the Santiam Wagon Road would become more desirable for non-motorized users because of the limited motorized trail access. Alternative 4 reduces noise and dust around Big Lake Campground by moving the motorized activity north and away from the campground.

Open Play Area: Alternative 4 does not include an open play area.

Kiddie Loop: This alternative establishes one Kiddie Loop youth learner trail area next to Ray Benson Sno Park. The area for this constructed learning trail would be much smaller than the area in Alternatives 2 and 3 near Big Lake Campground. Competition for access and use of the learner trail would be much higher with reduced capacity.

Cumulative Effects

The analysis area for cumulative effects on recreation user conflicts is the project area. There is potential to affect other nearby areas indirectly through displacement of either non-motorized or motorized users due to user conflicts, but depending on the action alternative, it is not predictable or quantifiable at this time. Additional cumulative affects from OHV or non-motorized user displacement on Deschutes National Forest roads and trails east of the project area is likely in the short term. However, the Deschutes is currently involved in a road management planning effort, but the Forest does not have a proposed action identified.

Recreational OHV use in the Santiam Pass area has grown dramatically in the past two decades in the absence of actions to manage it. As a result, OHVs utilize almost all open roads and more than 10 miles of user-created tracks that currently exist on the landscape. With the unregulated use of OHVs and dispersed camping, the project area has become dominated by motorized recreation, with much of the dispersed camping by OHV users concentrated near Big Lake Road and along the Santiam Wagon Road. Non-motorized recreation uses, including mountain biking, horseback riding, and hiking on foot are at times adversely affected by noise and dust from ATVs, and have generally chosen to go to other areas for recreation. The Pacific Crest Trail continues to be affected by motorized vehicle trespass in unmarked areas.

All action alternatives would block and rehabilitate user-created tracks not incorporated into the motorized trail system to reduce OHV user impacts from the current management situation, varying by action alternative, with alternative 2 having the least potential conflict reduction and Alternative 4 having the most reduction potential.

Action alternatives also have a cumulative effect of reducing the number of designated campsites within the regulated camping zone that have direct access to the designated trail system or are on roads allowing motorized mixed-use. Alternative 2 would have the greatest number of designated campsites available with direct OHV trail system access with 34. Alternative 4 would have the fewest designated campsites with direct OHV trail system access at 4 out of a total of 15, which may lower potential for user conflicts around the 11 campsites without access.

Encroachment on the Pacific Crest Trail by OHVs would be reduced by closing access roads and user-created tracks that result in OHV encounters for PCT hikers. Alternative 4 would have the greatest positive cumulative effect on reducing potential conflicts with only two motorized crossings in the project area.

There are no reasonably foreseeable future actions that would add to the effects of this action to reduce recreation user conflicts within the project area.

Botany

Affected Environment

Sensitive Botanical Species –- Surveys of the proposed project area for sensitive botanical species were conducted during August of 2005 and 2006. Survey results are found in the Appendix C – Botany Biological Evaluation, Table 1. Three sensitive plants have potential to occur in the project area; *Gentiana newberryi*, and *Agoseris elata* are species of mesic meadow communities. *Botrychium pumicola* is a species of lodgepole pine forest with pumice substrate. No sensitive botanical species were located during the surveys.

Many of the current user-created tracks have little to no need for vegetation removal. These user-created tracks are through lodgepole pine forest, with well-drained volcanic soils. Productivity on these sites is low; trees are scattered and the understory is sparsely vegetated with shrubs, small forbs, and grasses. The plant communities are often limited and fragile in structural composition because of the dry soils which are easily displaced.

Most sensitive fungi from the Regional Foresters sensitive species list are mycorrhizal, living in symbiosis with the roots of trees. While complexities such as mycorrhizal relationships are somewhat understood by researchers and resource managers; difficulty lies with consistently locating individual fungi over a period. With the exception of *Bridgeoporus nobillisimus*, pre-disturbance surveys for all other listed fungi is impractical at this time. Bridgeoporus is a large conk found on older noble fir trees. There are no noble fir trees in the project area, therefore no habitat for Bridgeoporus would be disturbed.

Survey and Manage Botanical Species – Survey and manage species are genuinely rare or because of lack of information about them, the agencies did not know if they would be adequately protected by other elements of the Northwest Forest Plan. In August 2006, surveys were conducted for survey and manage species and no species were located. The list of species that have potential habitat within the project area is in the Botanical Resource Report located in Appendix C.

On July 24, 2007, the Under Secretary of the Department of Agriculture signed a new Survey and Manage Record of Decision[6] that removed the survey and manage requirements from all of the National Forests' land and resource management plans (LRMPs) within the range of the northern spotted owl. However, since the court in *Northwest Ecosystem Alliance et al v. Mark Rey et al, Civ. No. 04-844, Western District of Washington* has not yet granted the government's motion to lift the modified October 11, 2006 injunction, this project is designed to be consistent with the 2001 Survey and Manage ROD as modified by subsequent annual species reviews as allowed by the modified October 11, 2006 injunction.

6

Complete Title: Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Forest Service Land and Resource Management Plans Within the Range of the Northern Spotted Owl

Special Habitats – Special habitats are non-forested habitats that are limited in size and distribution across the landscape. Small, scattered habitats may play important roles not only for full time residents of the sites, but also for those who use them seasonally, or for only a portion of their life cycles. Numerous factors contribute to the creation or maintenance of special habitats. Among such factors, topography and hydrology often determine the microclimatic conditions at these sites. However, user-created tracks indicate potential to expand further into the meadow habitat, resulting in the need to designate trails and prohibit cross-country travel, which could minimize disturbance to plant communities and control trail erosion.

Dry bunchgrass meadows are present in the project area, and were located in three of the survey routes south of Forest road 2690-810.

Noxious Weeds – Several populations of St. John's Wort (*Hypericum perforatum*), Scotch Broom (*Cystisus scoparius*), tansy ragwort (*Senecio vulgaris*), Bull thistle (*Cirsium vulgare*) are located along roads within and adjacent to the project area. From a resource viewpoint, these weeds are considered "established invaders" because they are commonly found throughout the project area, on adjacent properties, and throughout the Willamette National Forest. Because of this, they are lower priority weeds managed. Spotted knapweed (*Centaurea maculosa)* is a new invader species in the project area, and has high potential for further spread with the introduction of OHV vectors.

Environmental Consequences

Effects Specific to All Action Alternatives – Sensitive Botanical Species

Surveys of the proposed project area for sensitive botanical species were conducted during August of 2005 and 2006. Survey results are found in the Botanical BE, Appendix C. Three sensitive plants have potential to occur in the project area; *Gentiana newberryi*, and *Agoseris elata* are species associated with mesic meadow communities. *Botrychium pumicola* is a grapefern species suspected to occur on the Willamette National Forest. It is found in lodgepole pine forest on pumice substrates at high elevations above 7200 feet. No sensitive botanical species were observed during these surveys.

This project involves habitat disturbance with trail construction. Without knowing for certain the presence or absence of sensitive fungi deemed impractical for pre-disturbance surveys, it is assumed that there would be very localized direct impacts to the mycelial network by selecting any of the alternatives. The soils in the project area are volcanic, well-drained, and nutrient-poor. The risk of negative impacts to listed fungi is low due to the lack of nutrient-rich organic material available for decomposition. Therefore, the likelihood of offering suitable habitat for other listed fungi is low.

The indirect impacts to fungi would be evident by increased soil compaction, which reduces pore space for root penetration and production of feeder rootlets where mycorrhizae form. The volcanic soils in the project area are readily displaced, thus not subject to the degree of compaction of other soil types found in the Western Cascades. Therefore, the risk of indirect soil compaction is low in the project area and would not lead to a trend toward federal listing of species.

Cumulative Effects – Sensitive Botanical Species

The cumulative effects analysis area for the sensitive botanical species is the entire project area. Past management activities in the last 50 years include road construction, road maintenance, fire suppression, salvage logging, construction of Hoodoo Ski Area, and other developed recreation areas. Included in these activities is the Fall 2007 Santiam Wagon Road maintenance work, involving heavy machinery. Because the equipment to implement this maintenance would need to meet timber sale contract provisions for cleanliness, there are no expected cumulative effects on sensitive plants from the road project. Implementing any of the action alternatives would have no additional cumulative effect on sensitive botanical species because no sensitive plant species were located in the project area during surveys.

Effects of All Alternatives – Survey and Manage Species

Direct, Indirect, and Cumulative Effects

Botanical Survey and Manage species are not present in the project area, and therefore, there would be no effect on any Survey and Manage botanical species from the implementation of any project alternative, including Alternative 1, No Action, and there would also have no additional cumulative effect on Survey and Manage Species.

Effects Specific to Alternative 1 – Special Habitats

Direct and Indirect Effects

Selecting the No Action alternative would continue the current level of soil displacement created from OHV use and it would have the highest risk of adverse effects to special habitats. The no-action alternative continues to permit OHVs to operate cross-country in the project area and does not designate OHV trails. OHVs would still be free to travel cross-country in one area of known special habitats on approximately 40 acres, which south of the Santiam Wagon Road and east of Sand Mountain SIA. This negatively affects the special habitats that exist in the area because user-created tracks are already present and are likely to expand over time.

Effects Common to All Action Alternatives – Special Habitats

Direct and Indirect Effects

The disturbance associated with the construction of trails may have the indirect effect of providing suitable ground conditions for noxious weed establishment. Alternatives 2 and 3 propose disturbance in the bunchgrass meadows with trail construction. All action alternatives would restrict OHVs to designated Forest road and trails by Non-significant Amendment # 49, which would prohibit cross-country travel in MA-10b within the project area. Even though the designated Class I & III trails are limited to 50” in width, this analysis will consider that trails actually have a 75 ft. wide corridor that may be susceptible to infestation of noxious weeds transported by unwashed ATVs.

Effects Specific to Alternative 2 – Special Habitats

Direct and Indirect Effects

Implementation of this Alternative would have a direct effect on the dry bunchgrass meadows south of the Santiam Wagon Road and east of Sand Mountain SIA, by constructing approximately 1.5 miles of OHV trails through the meadows that would be open to motorized use. Currently, user-created tracks are found at the end of roads 881 and 883, which affects the meadows most because they provide access. Implementing this alternative has the highest risk of negative impacts to special habitats of all the action alternatives because of the disturbance associated with 1.5 miles of trail construction

This alternative also has the highest potential to vector noxious weeds into the bunchgrass meadows because it proposes the most trail construction of the action alternatives. Even though OHV riders would be restricted to designated Forest roads and trails, they may not ride the system with weed-free OHVs. Minimally, there is still the potential for 8.8 acres of new infestation along the 75 ft. corridor of susceptibility along Class I & III trails.

Effects of Alternative 3 – Special Habitats

Direct and Indirect Effects

Implementation of this alternative would have a direct effect on the dry bunchgrass meadows by constructing approximately 0.5 mile of OHV trails open to motorized use through it. Implementing this alternative has a moderate risk of negative impacts to special habitats compared to the other Alternatives.

This alternative has the moderate potential to vector noxious weeds into the bunchgrass meadows because it proposes construction in the meadow complex. Because of the vector potential of ATVs as previously mentioned, there is still the potential for 3.7 acres of new infestation along the 75 ft. corridor of susceptibility along Class I & III trails.

Effects of Alternative 4 – Special Habitats

Direct and Indirect Effects

Implementing this alternative has the least risk of negative impacts to special habitats compared to the other Alternatives because no OHV use would be allowed south of the Santiam Wagon Road. This alternative has the lowest potential to vector noxious weeds into the bunchgrass meadows because it does not propose trail construction in the meadow complex.

Cumulative Effects on Special Habitats

The cumulative effects analysis area for special habitats is the meadow complexes found south of the Santiam Wagon Road. Past management activities in the last 50 years include road construction, road maintenance, salvage logging, fire suppression, construction of Hoodoo Ski Area, and other developed recreation areas. Forest roads are presently adjacent to bunchgrass meadows with user-created tracks continuing on beyond them. With Alternative 1, no action, continuing to allow cross-country travel could potentially expand the user-created tracks entirely throughout the meadows and add to the existing adverse impacts on habitat for native plants with spread of competing noxious weeds.

Although designating Class I & III trails through special habitats in action alternatives 2 and 3 would have short-term impacts, there would be a net improvement of protection of special habitats gained through Non-significant amendment #49 that would restrict OHV travel to designated Forest roads and trails. Alternative 4 would not construct trails and would result in no additional cumulative effects on special habitats. In addition, there are no foreseeable future actions that would contribute additional cumulative effects to known special habitats within the project area.

Effects Specific to Alternative 1, No Action – Noxious Weeds

Selecting the No Action alternative would continue the current level of soil displacement created from OHV use and it would have the highest risk of adverse effect of spreading noxious weeds in the project area. This alternative does not designate camping in the regulated camping zone and permits cross country OHV use. The No Action alternative provides for no rehabilitation, reconstruction, or closure of any roads or user-created tracks.

OHV use would continue un-regulated, likely resulting in more user-created tracks. This negatively affects the native plants because of the high risk of spreading noxious weeds in undisturbed areas throughout the 13,850-acre project area.

The No Action alternative would not provide an opportunity to contain or control invasive plant populations, or reduce the current rate of spread of these species within the project area. This alternative does not reduce the available propagative materials, does nothing to manage vehicle weed dispersal along roadways and user-created trails, and would not further educate the public about invasive species prevention.

Effects Specific to Alternative 2 – Noxious Weeds

Compared to the three action alternatives, Alternative 2 poses a moderate risk to the spread and establishment of noxious weeds. It proposes 12.3 miles of trail open to Class I and III OHV. Assuming no new user created tracks, there would be the potential for approximately 89.8 acres of potential new infestation. This alternative proposes to rehabilitate 5.6 miles of user created tracks, or 40.9 acres closed to OHV use.

Effects of Alternative 3 – Noxious Weeds

Of the three action alternatives, Alternative 3 poses the greatest risk to the spread and establishment of noxious weeds. It proposes 15 miles of trail open to Class I and III OHV, and it proposes to rehabilitate approximately 35 acres of user created tracks, thus providing the potential or approximately 110 acres of new infestation.

Effects of Alternative 4 – Noxious Weeds

Implementing this alternative would have the lowest risk of spreading noxious weeds compared to the other action alternatives. It proposes 9.3 miles of trail open to Class I and III OHV and would equal approximately 67.9 acres of potential new infestation. This alternative proposes to rehabilitate approximately 53.3 acres of user created tracks.

Cumulative Effects

The cumulative effects analysis area for noxious weeds is the entire project area, associated and adjacent roads. Past management activities in the last 50 years include road construction, road maintenance, salvage logging and winter recreation. Included in these activities is the Santiam Wagon Road maintenance project, involving heavy machinery and scheduled for fall 2007. Because the equipment to implement this maintenance would need to meet contract provisions for cleanliness, there are no expected cumulative effects on noxious weeds from the road maintenance project.

The action alternatives propose to create staging areas, designate regulated camping zones, and designate OHV trails which would prohibit cross country travel. Trails would be maintained to be consistent with Forest Plan Standards and Guidelines. The short term impacts from designating trail would be limited to the trail itself. However, the non-significant Forest Plan amendment would prohibit cross country travel, and therefore produce a net reduction in the spread of noxious weeds through confining the OHVs, or vectors, to designated areas.

Fisheries

Affected Environment

The project area lies within that portion of the watershed that is dominated by the Early High Cascades Platform. This area is characterized by very porous and permeable soils, and has relatively few perennial streams. A majority of streams in the area are ephemeral in nature and have no surface connection to the McKenzie River.

Big lake is the only fish bearing water body in the project area. Historically, it is a fishless lake, but is currently stocked by the Oregon Department of Fish and Wildlife (ODFW). The Upper McKenzie Watershed Analysis documented that brook trout, rainbow trout, cutthroat trout, and kokanee (landlocked sockeye salmon) are stocked in Big Lake. ODFW has recently begun stocking spring Chinook salmon in the lake in order to decrease the kokanee population. Like the kokanee, these Chinook salmon are landlocked (i.e. there is no outlet streams that would allow the fish to fulfill their anadromous life history).

The hatchery Chinook salmon planted in Big Lake are not considered part of the ESU (Evolutionary Significant Unit) listing because there is no opportunity for the salmon to migrate to the ocean. The non-ESU listed status of the hatchery Chinook was affirmed by the National Marine Fisheries Service (NMFS) in an e-mail message to the Willamette National Forest (USDC, NOAA Fisheries. 2006) In that message NMFS stated the following:

> "The lake is out of the range of naturally migrating and outplanted listed fish, with no access by other Chinook populations. The fish stocked into Big Lake are surplus to the smolt program in the North Santiam River and are not needed, nor intended for, conservation/recovery purposes of the ESU. This release is strictly for fishing purposes in the lake.
>
> Because the purpose of the fish in Big Lake is recreational fishing opportunities, the effects of other actions will not affect the ESU. Depending on when your proposed actions take place, they may be gone--and further outplantings are not expected. The Hatchery ESA Listing Policy was

described originally in Federal Register Notice 69 FR 31354, and summarized in the final policy in 70 FR 37204 with the following statement germane to these stocked fish:

> 'Tribal harvest, non-tribal harvest, and other beneficial uses of surplus listed hatchery fish may be allowed provided they are managed consistent with the conservation and recovery needs of listed salmon and steelhead ESUs. Specifically, NMFS proposed to allow for the harvest of hatchery fish listed as threatened that are surplus to the conservation and recovery needs of the ESU, in accordance with fishery management plans approved under section 4(d) of the ESA.'

In this situation, the Chinook stocked in Big Lake, not for reintroduction or recovery purposes, provide no conservation value to the ESU, and fit the intent of our regulations."

Environmental Consequences

None of the alternatives would have actions adjacent to Big Lake (the only fish bearing water body in the project area). There is no designated EFH upstream of Tamolitch Falls. The hatchery Chinook salmon planted in Big Lake are not necessary to the conservation of the ESU (Evolutionary Significant Unit); and there are no streams with surface connection to the McKenzie River. The following rationale is used for this effects determination, as incorporated from the Fisheries Biological Evaluation in the analysis file:

There are no listed fish (spring Chinook salmon and bull trout) or designated critical habitat upstream of Tamolitch Falls, which is approximately 20 miles "downhill" from the project area. In addition, there are no streams in the project area that have surface connection to the McKenzie River. It is therefore physically impossible for effects from OHV use to be transmitted downstream to ESA listed fish habitat. This rationale is also applicable for a "no effect" designation for critical habitat for spring Chinook salmon and bull trout, and therefore, no additional cumulative effects would occur for these fish species.

MSA-EFH is not designated upstream of historical barriers (i.e. Tamolitch Falls). Therefore, no EFH exists in the project area, and as described above it is physically impossible for effects from OHV use to be transmitted downstream to EFH.

MIS fish that inhabit Big Lake were planted in the lake to provide for recreational opportunities. From a biological standpoint, they would not be considered desirable to the lake ecosystem. These populations persist naturally and by hatchery plantation (ODFW), and given the impacts from current OHV use and the ability of these fish to persist, it is highly unlikely that any alternative would have a negative effect to these fish nor would there be any cumulative effects. The proposed action is consistent with Executive Order 12962 (Recreational Fishing) as it would not limit recreational fishing opportunities in Big Lake.

Considering the above stated disclosures, the implementation of any of the action alternatives would have no direct, indirect, or additional cumulative effects on fish.

Wildlife

Affected Environment – Threatened, Endangered, Sensitive, and Other Wildlife Species of Concern (TES)

The Endangered Species Act (ESA), administered by the U.S. Fish and Wildlife Service (USFWS), mandates protection of threatened and endangered species. Listed species are typically habitat-specific with narrow geographic and environmental distributions. Proposed, threatened, endangered, and sensitive (PETS) species have specific requirements under the ESA and Willamette National Forest Plan to maintain viability. Protection includes managing habitat to minimize impacts, as well as prohibition of noise disturbance during the breeding season. Consultation is required with USFWS on activities that may affect these species or their habitat.

Table 9 lists the PETS wildlife species on the Willamette National Forest (USDA Forest Service, 2002) and whether there is potential habitat in the planning area. Additional detailed information about these species is in Appendix E –Wildlife Biological Evaluation.

Table 9: Potential for Occurrence of PETS Species in the Project Area.

Species	Habitat Present in the Project Area
Amphibians and Reptiles	
Oregon Slender Salamander	No
Cascade Torrent Salamander	No
Foothill Yellow-legged Frog	No
Oregon Spotted Frog	No
Northwestern Pond Turtle	No
Birds	
Least Bittern	No
Bufflehead	Yes
Harlequin Duck	No
Northern Bald Eagle	Yes
American Peregrine Falcon	Yes
Yellow Rail	No
Black Swift	No
Tri-colored Blackbird	No
Northern Spotted Owl	Yes
Mammals	
Baird's Shrew	No
Pacific Shrew	No
California Wolverine	Yes
Pacific Fisher	No
Pacific Fringe-tailed Bat	Yes
Lynx	No

Species	Habitat Present in the Project Area
Mollusks	
Crater Lake Tightcoil	Yes
Invertebrates	
Mardon skipper	No

Environmental Consequences – Threatened, Endangered, Sensitive, and Other Wildlife Species of Concern (TES)

Effects of Alternative 1

Alternative 1 does not propose management activities at this time and therefore would not alter habitat conditions for threatened, endangered or sensitive wildlife species. Existing vegetation conditions would continue to follow natural successional pathways and wildlife populations would respond accordingly. Additional snag habitat would occur through natural mortality in forest stands. No snag habitat used by certain TES species would be lost from hazard tree removal along roadsides or trails.

Effects of Alternatives 2, 3, and 4

Direct and Indirect Effects

Felling of trees associated with trail construction and staging area widening for this project would be within predominately open lodgepole pine timber stands, but due to the limited context and intensity of actions within TES habitat, there is not expected to be a measurable negative effect on TES species populations.

Cumulative Effects

The area considered for cumulative effects analysis for TES species is the project area. Past management activities within this area, which includes timber harvest, recreation development, road building, and wildfire suppression activities, have resulted changes to the seral stage composition across the landscape. These past actions have altered habitat conditions for some TES species that utilize a more continuous forest canopy. Different species occupy different seral stage habitats, and therefore, the effect on each species depends on the type of change that has occurred. However, effects from the proposed project activities would result in only a small reduction of present snag habitat available on this landscape, and which may impact some TES species by reducing any habitat that exists in the young stands of trees. There are no other reasonably foreseeable future management activities planned for the project area that would result in additional cumulative effects to habitat for TES wildlife species.

Affected Environment – Migratory Land Birds

Migratory landbirds and their required protection are outlined in the January 11, 2001, Executive Order “Responsibilities of Federal Agencies to Protect Migratory Birds.” A Memorandum of Understanding was signed between the USFS and USFWS to complement the January 2001,

Executive Order. Agreed-to measures include identification of habitats needed by priority species. Habitats vary broadly for this large group of species. The Project Area contains populations of migratory landbirds typical of the western Cascades.

There are 85 bird species recognized as neotropical migrants on the Willamette National Forest. Thirty-five of these species found on the Willamette National Forest have been identified as species of concern (Sharp, Brian. 1992). These species are associated with old-growth, riparian, rocky cliffs, or grass habitats. Snags in the area may be providing important habitat for Vaux's swifts, Williamson's sapsuckers, and American kestrels. Old growth stands can be found on the far western portions of this landscape, which may be supporting Cooper's hawks, olive-sided flycatchers, western wood-pewee, and mountain bluebirds.

Past wildfires and harvest in the project area has changed the seral stage composition of the landscape, altering habitat conditions for landbirds. In general, large snag habitat used by some landbird species, i.e. hairy woodpeckers and brown creepers, has been lost due to past wildfires, timber sales, and roadside salvage.

Environmental Consequences – Migratory Land Birds

Effects of Alternative 1 (No Action)

Alternative 1, No-Action, does not propose management activities at this time and therefore would not alter habitat conditions for migratory landbirds. Existing vegetation conditions would continue to follow natural successional pathways, and bird populations would respond accordingly. No snag habitat used by certain species of migratory land birds would be lost from roadside hazard tree removal. Additional snag habitat would occur through natural mortality in forest stands.

Effects of Alternatives 2, 3, and 4

Direct and Indirect Effects

Felling of trees associated with trail construction and staging area widening in this project may unintentionally affect individual migratory birds, but is not expected to have a measurable negative effect on bird populations because of the limited context and intensity of actions with the potential to remove habitat.

Cumulative Effects

The analysis area considered for cumulative effects on migratory landbirds is the project area. Past management activities and wildfire within the project area have resulted in changes to the seral stage composition across the landscape altering habitat conditions for landbirds. Different species occupy different seral stage habitats and therefore the effect on each species depends on the type of change that occurred. However, given the small reduction in snag habitat expected on this landscape from the proposed activities, only minor impacts are expected to any migratory landbirds by reducing habitat that exists in the young stands of trees. There are no other reasonably foreseeable future activities planned that could further reduce habitat for migratory landbirds.

Affected Environment – Wildlife Management Indicator Species

Management Indicator Species (MIS) were addressed in the Willamette Forest Plan. They include the spotted owl, pileated woodpecker, marten, elk, deer, cavity excavators, bald eagle, and peregrine falcon. All of these management indicator species may occur in the project area.

Through Region-wide coordination, each Forest has identified the minimum habitat distribution and habitat characteristics needed to satisfy the life history needs of MIS. Management recommendations to ensure their viability were incorporated into all Willamette National Forest Plan Action Alternatives. Current conditions for the spotted owl and bald eagle are discussed in the Wildlife BE in Appendix E. Habitat for elk and deer is discussed below in the Elk Emphasis Area Management section.

Environmental Consequences – Management Indicator Species

Effects of Alternative 1 (No Action)

Direct and Indirect Effects

Under Alternative 1, no changes would occur to habitat of management indicator species. Forest stands would continue to develop following natural successional pathways and the aquatic resources would remain unchanged from current conditions. Alternative 1, no action, would meet all applicable Standards and Guidelines for management of MIS from the Willamette Forest Plan.

Effects of Alternative 2, 3, and 4

Direct and Indirect Effects

All action alternatives meet all applicable Standards and Guidelines from the Willamette Forest Plan and Northwest Forest Plan Standards and Guidelines, and therefore maintain persistent populations of spotted owls, pileated woodpeckers, and marten (USDA Forest Service, USDI Bureau of Land Management. 1994. Appendix J2). Changes in the amount or in the characteristics of required habitat for these species would be minimal.

A discussion of the effects of alternatives on the spotted owl, bald eagle, and peregrine falcon can be found in the Biological Evaluations in Appendix E. This project is not expected to have any effect on the northern spotted owl since no removal of suitable habitat is proposed, and a seasonal restriction on the felling of danger trees is included in Mitigation Measures. This project would also have no effect on bald eagles or peregrine falcons. Impacts of this project on elk habitat are discussed below in the elk and deer habitat analysis.

The Regional Forester's Sensitive Species List (USDA Forest Service. 2002) does not indicate that populations of pileated woodpeckers and marten are in decline throughout their range. However, individual pileated woodpeckers and marten may be temporarily displaced by the effects of OHV activities in this area.

Cumulative Effects

The analysis area considered for cumulative effects on MIS species is the project area. Wildlife species listed as MIS for the Willamette National Forest and present in the project area are discussed elsewhere in this EA and in the analysis file. Cumulative effects on elk and deer are discussed below and in the analysis file.

When considering the effects from past actions such as road building, developed site construction, and fire suppression, there would be almost no measurable additional effects on MIS species or their habitat, including pileated woodpeckers and marten, from the proposed action or any action alternatives. There are no reasonably foreseeable future habitat management activities planned for the project area, which would add to the cumulative effects of past actions and the proposed action.

Affected Environment – Elk Habitat

The Santiam Pass Summer Motorized Recreation project contains three Elk emphasis areas as a designated under the Willamette NF Land and Resource Management Plan. The Watershed Analyses covering the project area included results from a Habitat Effectiveness Index (HEI) analysis (Wisdom et al. 1986) for these Emphasis Areas. Table 10 displays the habitat values for habitat patch size and spacing (HEs), open road density (HEr), cover quality (HEc), forage quality (HEf), and overall habitat quality (HEI) that existed for big game habitat when watershed analyses was conducted for this area in 1995.

The analysis for these elk emphasis areas showed standards for all habitat variables were being met except for the amount and quality of forage in the Frost Emphasis Area, and cover quality and overall habitat effectiveness in the Hoodoo Emphasis Area. Forest management emphasis since that time has shifted, and resulted in a forest-wide trend towards decreasing forage quality for big game. Management activities that affect big game forage habitat at a scale sufficient to reverse the declining trend in forage quality, has not occurred in most of these Elk Emphasis Areas during the past decade. However, the large wildfire (B & B Complex) that occurred within the Hoodoo Emphasis Area in 2003 is expected to provide good quality forage in the near future

Table 10: Habitat Effectiveness Index Analysis.

		Individual HEI Indices				Overall Index
Big Game Emphasis Area Name	**Emphasis Level**	**HEs**	**HEr**	**HEc**	**HEf**	**HEI**
Frost	Moderate	0.53	0.57	0.57	0.28	0.47
Hoodoo	Moderate	0.55	0.40	0.21	0.49	0.49
E. Side Upper McKenzie	Low	0.63	0.54	0.36	0.27	0.23

Environmental Consequences – Elk Habitat

Direct and Indirect Effects

Project effects on elk and deer habitat within the affected Elk Emphasis Areas are essentially unquantifiable on an individual basis relative to the amount of habitat modified or disturbed against the amount available to these species on a daily basis. Direct and indirect effects are largely limited to potential temporary displacement of individual animals, which may occur in habitat during implementation of the proposed activities.

In light of what is currently known about local deer and elk populations, the future viability of these species should be assured given good distribution of habitat components. The recent wildfires to the north and east have created an abundance of much needed forage. The proposed closure of roads to motorized traffic with Alternatives 2, 3, and 4 would help provide security for big game and reduce disturbance to wildlife.

Cumulative Effects

The analysis area considered for cumulative effects on elk habitat is the combined area within the Elk Emphasis Areas listed above. Past management activities within this area, which includes timber harvest, recreation developments, road building, and wildfire suppression activities, have resulted in changes to the seral stage composition which alters the habitat for elk. Proposed project activities, which include a minor amount of tree removal during trail construction or staging area widening, and road closure and decommissioning, would not result in any measurable change to existing elk habitat. There are no other reasonably foreseeable future management activities planned for the project area which would result in additional changes to elk habitat.

Survey and Manage Wildlife Species

As discussed above for botanical Survey and Manage Species, on July 24, 2007, the Under Secretary of the Department of Agriculture signed a new Survey and Manage Record of Decision[7] that removed the survey and manage requirements from all of the National Forests' land and resource management plans (LRMPs) within the range of the northern spotted owl. However, since the court in *Northwest Ecosystem Alliance et al v. Mark Rey et al, Civ. No. 04-844, Western District of Washington* has not yet granted the government's motion to lift the modified October 11, 2006 injunction, this project is designed to be consistent with the 2001 Survey and Manage ROD as modified by subsequent annual species reviews as allowed by the modified October 11, 2006 injunction. To comply with this order, Forest Service and Bureau of Land Management units are required to survey for 2001 ROD (amended March 2004) Category A and C species.

Surveys were not required for the project area for red tree voles or Survey and Manage mollusk species. Historic surveys were conducted on Great gray owl and no nests were found (see Wildlife

[7] Complete Title: Record of Decision To Remove the Survey and Manage Mitigation Measure Standards and Guidelines from Forest Service Land and Resource Management Plans Within the Range of the Northern Spotted Owl.

Specialist Report in the analysis file). Therefore, there would no effect on any Survey and Manage wildlife species.

Scenic Quality

Affected Environment

The landscape within and adjacent to the project area can be characterized as a lodgepole pine dominate forest with grassy openings against a backdrop of the cinder cones north and south Sand Mountain, and Hoodoo and Hayrick Buttes. In the distant are higher peaks along the Cascade crest that include Mt. Washington and the Three Sisters. The two main travel routes into the project area from Highway 20 are the paved Big Lake Road and the native surfaced Santiam Wagon Road, that extends from the west boundary at the Eno Road east to the Forest boundary at the Cascade crest.

Natural and human-caused disturbances have modified the landscape and are visible within and adjacent to the project area. Modification that have occurred over the last century are attributed to wildfire, tree disease, timber harvest, fire suppression, road construction, ground disturbance from recreational OHVs, and development of facility at Hoodoo Ski Area, Ray Benson Sno Park, Big Lake Campground Complex, and Big Lake Youth Camp.

The project area includes Forest Plan Management Area 11-f, *Scenic, Retention Foreground*, which is the foreground along the south side of US Highway 20. This management allocation has a scenic emphasis, and was partially burned in the B & B Complex Fire in 2003.

Visual Quality Objectives (VQO)

The Forest Plan establishes Visual Quality Objective (VQO) categories to describe degrees of acceptable alteration of the natural landscape when considering timber stand management (Forest Plan FEIS, page III-112). As detailed above, action alternatives would occur in Management Areas MA-5a, MA-10b, MA-10e, and MA-12b (Chapter 1, Forest Plan). Management Areas within the project area include standards and guidelines that relate to Scenic Resources, with a reference to the VQO standard that is to be met. Management Area MA-5a has a VQO of Retention, MA-10b has a VQO of Partial Retention, MA-10e has a VQO of Retention, and MA-12b has a VQO of Partial Retention,

Environmental Consequences

Effects of Alternative 1, No Action

The no-action alternative would not change the current management situation within the project area. No management actions would occur within MA-11f along US Highway 20, nor would any harvest of trees occur within the project area for developing staging areas. All management areas within the project area would meet the assigned VQOs for Scenic Resources. No actions would be taken to regulate OHVs by designating Forest roads and trails, and no amendments to the Willamette Forest Plan to restrict off-road, or cross country travel.

The soils and vegetative cover are susceptible to displacement as discussed above (Soils), so it is likely that over time, soil disturbance from recreational OHVs would continue and new user-created tracks would appear to the Forest visitor driving into the project area.

Effects Common to Alternatives 2, 3, and 4

None of the action alternatives propose management activities within MA-11f along the south side of US Highway 20 to further reduce the tree canopy.

Actions taken to designate Forest roads and trails for OHV use within all action alternatives include restoration of user-created tracks that would not be incorporated in the system of trails created and are located in the Management Areas listed above. All action alternatives would include non-significant Forest Plan amendment #49 to restrict OHV use to designated roads and trails. With the restriction on cross-country travel, visual quality would be improved because many of the user-created tracks and OHV crossings seen when driving along the Big Lake Road and Santiam Wagon Road would be blocked and rehabilitated, and no new user-created tracks would be created on the landscape.

All action alternatives would create a staging area along Forest road 2690 at the junction of 2690-860, which would include widening the existing opening and cutting approximately one-half acre of lodgepole pines. Developments at the day-use staging area would include an area to off-load ATVs, a parking area, informational kiosks, and portable toilet facilities. Development of this staging area would not have a negative effect on visual quality along the Big Lake Road. This proposed action would maintain a VQO of Partial Retention for MA-10b where the staging area is located, and it would remain consistent with Forest Plan Standards and Guidelines.

Effects of Alternative 2

Alternative 2 would include a second staging area to the north of the intersection of the Big Lake Road and Santiam Wagon Road, outside of the SIA. The staging area would be approximately one acre and constructed along Forest road 2690-862. The staging area would be out of view for travelers on the Big Lake Road and Santiam Wagon Road. Developments at the day-use staging area would include an area to off-load OHVs, a parking area, informational kiosks, and toilet facilities. A small number of lodgepole pines would be cut and removed during construction. Development of this staging area would also be consistent with a VQO of Partial Retention for MA-10b, and consistent with the Forest Plan.

Alternative 2 would include an Open Play on area south of the Santiam Wagon Road SIA, and north of the Sand Mountain SIA and visible from the Santiam Wagon Road along Forest road 2676-866, and from Forest road 2690-810 on the climb to Sand Mountain Lookout.

This alternative also includes a Kiddie Loop youth learning trail which would be seen from both the Santiam Wagon Road on Forest road 2690-810 and from the Big Lake Road 2690, near the Big Lake Campground Complex. The Kiddie Loop trail would appear as a winding loop trail within an area of approximately 18 acres, where parents can instruct and monitor younger OHV users on the looping trail.

Effects of Alternative 3

Alternative 3 would include a second staging area at the Ray Benson Sno Park north of Forest road 2690. The staging area would not be seen from 2690. Developments at the day-use staging area would include an area to off-load OHVs, a parking area, informational kiosks, and toilet facilities. Development of the staging area would utilize the Sno Park facility and would not require any tree removal for expansion. The staging area development would not be seen from the Big Lake Road and would not affect scenic quality.

This alternative does not include the Open Play Area near Sand Mountain Lookout. It also includes the Kiddie Loop youth learning trail as in Alternative 2, and a smaller Kiddie Loop youth learning trail north of and adjacent to Ray Benson Sno Park, which would not be seen from the Big Lake Road 2690.

Effects of Alternative 4

Alternative 4 would include a second staging area at the Ray Benson Sno Park north of Forest road 2690. The staging area would not be seen from 2690. Developments at the day-use staging area would include an area to off-load ATVs, a parking area, informational kiosks, and toilet facilities. Development of the staging area would utilize the Sno Park facility and would not require any tree removal for expansion. Alternative 4 also designates a section of Ray Benson Sno Park for overnight fee camping. The staging area development and the overnight camping area would be seen from the Big Lake Road and therefore, would not affect scenic quality.

This alternative also does not include the Open Play Area near Sand Mountain SIA. It includes only the smaller Kiddie Loop youth learning trail north of and adjacent to Ray Benson Sno Park, which would not be seen from the Big Lake Road 2690.

Cumulative Effects

The area of analysis considered for cumulative effects on scenic quality is the project area. Much of the past actions that altered the scenic landscape an be attributed to construction of Forest roads, fire suppression during the 1967 Airstrip Fire, and the facilities development at the Hoodoo Ski Area, the Big Lake Youth Camp, and the Big Lake Campground Complex. The proposed actions of constructing day use staging areas near the Big Lake Road, construction of Kiddie Loop youth learning trails, and the Open Play Area adjacent to the Santiam Wagon Road, would add developed use areas to the landscape. OHV use would be evident to travelers on the Big Lake Road and Santiam Wagon Road, as these areas would be seen within the foreground and middleground to travelers on these roads.

Considering that non-significant Forest Plan Amendment #49 would restrict OHVs to designated Forest roads and trails, and that many user-created tracks along the Big Lake Road and Santiam Wagon Road would be and rehabilitated, there would be a net improvement in scenic quality as OHV impacts would be reduced from the foreground while driving the Big Lake Road and Santiam Wagon Road.

The foreseeable action of reshaping and grading the Santiam Wagon Road, as discussed in Chapter 2, would begin to improve the scenic quality along the historic wagon road.

Mt. Washington North and West Inventoried Roadless Areas

Affected Environment

The Mt. Washington North and West Inventoried Roadless Areas (IRA) were designated as a result of an evaluation process that was conducted in following important legislative activities in the 1970s and 80s. These include the Wilderness Act, the second Roadless Area Review and Evaluation (RARE II), the National Forest Management Act, and the 1984 Oregon Wilderness Act, and the Forest Service Roadless Area Conservation FEIS (USDA Forest Service. Volume 2, November 2000) and the January 12, 2001 Roadless Rule (US Code of Federal Regulations. 2001).

Mt. Washington North IRA

The 1,003 acre Mt. Washington North IRA is what remains unaffected by road development activities from the original 1,130 acres analyzed in RARE II, but not included in the Oregon Wilderness Act. The area is contiguous to the central northern boundary of Mt. Washington Wilderness, immediately southwest of Big Lake. It is characterized by rolling gentle terrain common to the project area, with a mixed stand of lodgepole pine, mountain hemlock, Pacific fir, and noble fir covering virtually the entire area. The vegetation is dense and continuous over the entire area with an occasional small opening.

Management activities within this IRA include maintaining the two trails which traverse the area. The Patjens Lake trail received the majority of use, with a trailhead near the Big Lake Campground Complex. No motorized use is allowed on the two trails, and dense vegetation precludes cross-country OHV use in the area.

The surroundings to the north of the IRA are dominated by the Big Lake Campground and the OHV use along the east-west Santiam Wagon road. However, the rolling terrain and limited diversity of topography offers some screening potential while dense vegetation screens people from one another, even within a quarter mile. However, the opportunity for solitude is affected year-around by powerboats on Big Lake and OHV use in the summer and fall and snowmobiles in the winter and spring, which can be heard from the IRA (USDA Forest Service. 1990a, Appendix C, pages 87-93 and 94-101).

Mt. Washington West IRA

Of the 6,676 total acres within the Mt. Washington West IRA, approximately 2,212 acres is located in what remains unaffected by road development activities within the project area. The area analyzed for this project is roughly bounded by Forest road 2676 to the west, 2676-723 to the north and east, and the Mt. Washington Wilderness to the south. Contiguous with the northern boundary of Mt. Washington Wilderness, it includes the west side of Sand Mountain and Nash Crater. Slopes are much steeper than Mt. Washington North IRA as the terrain slopes down to lower elevations at road 2676 and to the west. Timber stands are mixed stand of lodgepole pine, mountain hemlock, Pacific fir, and

noble fir, with western hemlock, Douglas-fir, and western red cedar along the northern and western portions.

The Eno Segment (road 2676-866) of the Santiam Wagon Road bisects the lobe of the IRA within the project area. The opportunity for solitude within the project area may be limited due to the narrow width of the area between road 2676 and 2676-723.

Environmental Consequences

Effects of Alternative 1

Alternative 1 would not change the current management situation of the area adjacent to either the Mt Washington North or West IRAs. Forest road 2690-890, currently provides motorized vehicle access to the northern boundary of the Mt. Washington North IRA, and those roads previously mentioned above provide vehicle access to the area surrounding the Mt. Washington West within the project area. There would be no change to Management Standard and guideline that permits off-road vehicle access in MA-10b, which allows OHVs to travel cross-country within the Mt. Washington North and West IRAs.

Effects of Alternatives 2, 3, and 4

Direct and Indirect Effects

None of the action alternatives would directly affect either the Mt Washington North or Mt. Washington West IRA with new road or trail construction. Alternatives 2 and 3 propose OHV trails in the area to the north of the Mt. Washington North IRA. However, with OHV continuing to be used adjacent to the IRA in Alternatives 2 and 3, there would be no change to the effects of noise along Forest road 2690-890. Alternative 2 would allow motorized mixed use on the Eno Segment of the Santiam Wagon Road (2676-866), as with the existing condition within the Mt. Washington West IRA. However, Alternatives 3 and 4 would prohibit OHVs from using the Eno Segment of the Santiam Wagon Road thereby reducing access within the IRA from the Wilderness boundary north to the 2676-723 on the northern boundary.

The effects of the action alternatives on water quality, soils, and air are discussed elsewhere in this chapter (Soils and Fire and Fuels). Because of the heavily roaded condition of the project area, these Roadless areas would continue to provide the diversity of plant and animal species that would be found in large, natural unmanaged stands where there would be no disturbance from roading and forest management activities. None of the action alternatives would decrease the diversity of plant and animal species in the IRA. Effects of the proposed units on the habitat for other Threatened, Endangered, or Sensitive species are also discussed elsewhere in this chapter. Action alternatives 2, 3, and 4 do not propose actions that would affect TES species or their habitat within either the Mt. Washington North or Mt. Washington West IRAs. Because of the existing roaded condition adjacent to the IRAs the proposed action is not expected to affect areas that would function as biological strongholds or refuges for species that depend on large undisturbed areas, such as for the Threatened northern spotted owl. Alternatives 2, 3, and 4 would not change the current level of opportunity to experience primitive or semiprimitive non-motorized recreation within the IRAs.

There are limited opportunities for recreation activities that depend on remoteness and wilderness-like experiences in this area, as discussed above. Recreational use of OHVs and motor boats on Big Lake can be heard from the eastern portion of the Mt. Washington North IRA. The proposed action and other action alternatives would not diminish any sense of remoteness or solitude as it currently exists within the IRA. Since no actions are proposed within the IRA, there would be no adverse affects on the landscape character and scenic integrity.

There would be no effect on traditional cultural properties or sites within the IRA from implementation of the proposed action or any other action alternative.

Cumulative Effects

The area considered for cumulative effects is the Mt. Washington North and Mt. Washington West IRAs and the area adjacent to them because this is the extent of the area that could potentially impact the IRA. As described previously (in Visual Quality), management that includes timber harvest, fire suppression, road construction, ground disturbance from recreational OHVs, and development of facilities at Big Lake Campground Complex, and Big Lake Youth Camp is evident on lands in the project area adjacent to these IRAs. Alternative 2 would continue to allow OHV use on Forest road 2690-890, 2676, 2676-723, the Eno Segment of the Santiam Wagon Road, and on road 690-811 that accesses Sand Mountain Lookout. As a result Alternative 2 would not change the cumulative effect of past management on the IRA from OHVs, except than to restrict OHVs to designated roads and trails with Non-significant Amendment #49. Alternative 3 and 4 would eliminate motorized mixed use access on the Eno Segment of the Santiam Wagon Road which transects through the Mt. Washington West IRA, and therefore, it would reduce the cumulative effects of past management within this IRA. No action alternative would construct roads or harvest timber within IRA, and therefore all alternatives remain consistent with the January 12, 2001 Roadless Rule.

The developments at Big Lake Campground and Big Lake Youth Camp contribute high levels of noise for most of the summer and autumn from motor boats, recreation vehicles and camping generators. Noise from motor boats on Big Lake would still have a dominant affect on the noise environment in the Mt Washington North IRA.

Big Lake Youth Camp is situated immediately adjacent to the Mt. Washington North IRA on the east side of Big Lake. The camp proposes to construct additional buildings and recreation facilities within their Special Uses Permit Area and adjacent to the IRA. This reasonably foreseeable future action is not expected to change the noise environment within the Big Lake Youth Camp, and it would therefore, not constitute additional cumulative effects from noise for this IRA. No other management actions are planned within the project area that would result in additional cumulative effects to the Mt. Washington North and Mt Washington West IRA.

Fire and Fuels

Affected Environment

Large, stand-replacement wildfires that occur in the Santiam Pass area tend to grow in an east to west direction, as the winds funnel through the mountains that make up the Cascade Crest. In 1967, lightning caused the 2,700 acre Airstrip Fire northwest of Big Lake. The fire started near the old airstrip and Cayuse Horse Camp and grew mostly in an east to west direction. The fire created an opening in the timber canopy from Sand Mountain on the west end extending to beyond the forest boundary, where it burned east another 3,412 acres on the Deschutes National Forest. It also grew to the north threatening the Hoodoo Ski Bowl and south across the Santiam Wagon Road, to what later became the Mt. Washington Wilderness boundary. During fire suppression efforts, numerous dozer lines were made to control the fire boundary. These dozer lines eventually became well-traveled forest roads that are currently being used by OHV.

Within the last 10 years, the largest fires have been lightning ignited. The B&B Fire in 2003 and the Lake George Fire in 2006 both occurred on the Deschutes National Forest and burned west onto the Willamette National Forest. Annual human-caused fires have been few and small, generally less then one tenth of an acre in size, and many are campfires left unattended or not extinguished when campers leave and discovered by fire patrols before they have a chance to grow.

Environmental Consequences

Effects of Alternative 1

Under the no-action alternative, fire patrols, public fire information education, and response to fires and emergencies would continue to be difficult because of the existing road conditions and driving safety hazards. The safety hazards are related to unregulated use of existing roads and trails by OHVs and the development of user-created tracks, which connect the Forest roads and may result in sudden appearance of ATVs onto roads used by Fire Patrol and Forest Service workers on patrol for fire hazards and abandoned campfires.

Alternative 1 does not address maintenance of the Santiam Wagon Road, which provides an important access the Sand Mountain Lookout on Road 2690-810. Traveling to and from the lookout for administrative use and is done frequently in the spring, summer, and fall seasons. The driving safety hazards would remain with a continuation of mixed motorized traffic and a continuing degradation of the Santiam Wagon Road.

Effects of Alternatives 2, 3, and 4

Direct and Indirect Effects

The proposed action to designate a motorized system of roads and trails would reduce the potential for safety hazards for fire patrols and administrative traffic. Proposed amendment #49 would restrict OHVs to the designated routes and aid in reducing the potential for fire starts in the forested areas where combustible fuels are continuous and susceptible to fire ignitions. Implementation of this plan

would include kiosks where fire precautions can be posted, thus helping users to understand safety measures they can take to reduce fire hazards.

All action alternatives include a Regulated Camping Zone to restrict dispersed camping to within 100 feet of either sides of the Santiam Wagon Road and the Big Lake Road. Known locations of designated dispersed campsites in the regulated camping zone would help to identify where fire patrols can scout for unattended or forgotten campfires, a common way human-caused wildfires occur.

The construction and rehabilitation of roads and trails would involve brushing and limbing or falling trees in the new area of construction, but this activity is not likely to create a large amount of hazardous fuels. The fuels that are created would be treated in place or taken to a place where it can be treated. Preferred treatments for the minor amounts of fuels would be by lopping and scattering of the slash in the area. If there are 10 or more trees then they would can be piled and burned in the winter. The hazardous fuels created (slash of 0-3 inches in diameter) would remain to be less than a fuel loading of 7 to 11 tons per acre, consistent with Forest Plan Standard and Guideline.

A staging area would to constructed on Forest road 2690 south of road 2690-860. It is designed to be approximately one to two acres in size and would require clearing of minor amounts of lodgepole pine. Any residual fuels from cutting these trees would not result in more than the 7 to 11 tons per acre. If there are less than 10 trees removed, hazardous fuel would be lopped and scattered in the forested area. If more than 10 trees are cleared the hazardous fuel would be piled and then subsequently burned in the late fall or winter season. Air quality standards would be met.

Effects Specific to Alternatives 2

In addition to the staging area common to all action alternatives, one additional staging area would be created at the junction of the Forest roads 2690 and 2690-810, approximately one acre in size. The area is already partially clear with some tree islands. There would be several trees removed to adjust for spacing and safety in the staging area. Hazardous fuels would remain within Forest Plan standard and guideline of 7 to 11 tons per acre.

Effects Specific to Alternatives 3

Alternative 3 proposes to establish road closures on the Santiam Wagon Road, from the junction of Forest roads 2690-810 and 2690-860, along 2676-866 to 2676, which would allow administrative use only including access to the Sand Mountain Lookout and for fire patrols as well as for fire suppression. Existing driving safety hazards for fire patrols along this roadway would be reduced with the road closures.

Effects Specific to Alternatives 4

Alternative 4 proposes to allow only highway legal vehicles on the Santiam Wagon Road. The restriction would help with driving safety hazards that exist for fire patrols encountering ATVs at trail crossings. Additionally, this alternative does not designate OHV routes south of the Santiam Wagon Road, except for two trail crossings that provide access to the Big Lake Campground Complex. The restriction would aid in reducing the potential for human-caused wildfires from OHV use south of the Santiam Wagon Road.

Cumulative Effects

The area considered for analysis of cumulative effects for fire and fuels is the project area. Considering the current roaded condition of the project area from past actions, the area is known for having driving safety hazards for summer fire patrols that encounter ATVs at unmarked road crossings. The unregulated use of ATVs also increases potential for human-caused fires in the area. The no-action alternative would not reduce any of these hazards that current exist, and may allow an increase over time.

The action alternatives would reduce cumulative effects from unregulated OHV use with respect to fire patrol safety by regulating OHV use with a designated system of roads and trails. Action alternatives would also reduce the potential for human-caused fires throughout the project area by restricting OHV use to designated roads and trail. There are no other reasonably foreseeable future actions in the project area that would affect the safety of fire patrols or change the potential for human-caused fires.

Compliance with Other Laws, Regulations and Executive Orders

This section describes how the action alternatives comply with applicable State and Federal laws, regulations and policies.

State Laws:

Consistency with State of Oregon Vehicle Code – Operation of all off highway vehicles within the Santiam Pass Summer Motorized Recreation project area will be required to meet all pertinent rules and regulations found within, Oregon Revised Statutes, Chapter 821 – Off-Road Vehicles; Snowmobiles; All-Terrain Vehicles. Additional Federal rules and regulations may apply that exceed Oregon Revised Statutes.

Federal Laws and Executive Orders:

The Preservation of Antiquities Act, June 1906 and the National Historic Preservation Act, October 1966 – Before project implementation, State Historic Preservation Office consultation is completed under the Programmatic Agreement among the United States Department of Agriculture, Forest Service, Pacific Northwest Region (Region 6), the Advisory Council on Historic Preservation, and the Oregon State Historic Preservation Officer regarding Cultural Resource Management on National Forests in the State of Oregon, dated June 2004.

According to the district records, 3 sites and 2 isolated finds have been recorded within or adjacent to the proposed Summer Santiam Motorized Recreation project area and both pre-contact and historic. The pre-contact sites are lithic scatters or lithic isolates, which represent both task locations and camp sites. The sites relate to trans-Cascade travel, since Santiam Pass provided ready access to several prominent river drainages.

Historic sites in the planning area also relate primarily to travel and secondarily to recreation. There are many historic isolates such as cans and bottles, which are technically historic in that they are over 50 years old, but which are mundane and not significant because of their limited ability to yield information. Conversely, there are scatters of such materials associated with highly significant cultural sites including the Santiam Wagon Road, and the Oregon-Pacific Railroad construction sites. The Wagon Road is eligible for the National Register of Historic Places and the Oregon-Pacific Complex (also known as Hogg Railroad) is listed on the National Register. These two sites and their associated features are highly significant. Field surveys have been completed where ground-disturbing activities would occur in the Santiam Pass Summer Motorized Recreation project area and are documented in the Heritage Resources Specialist Report in the project analysis file. Should previously unknown sites be found during ground disturbing activities, contract provisions would provide protection and the McKenzie River District Archaeologist would be immediately notified.

These various measures resulted in a determination of **No Historic Properties Adversely Affected**. Various mitigation measures would be implemented under the action alternatives. There would be no adverse effect to any NRHP eligible or potentially eligible historic property.

The Endangered Species Act (ESA), December 1973 – The ESA establishes a policy that all federal agencies would seek to conserve endangered and threatened species of fish, wildlife and plants. Biological Evaluations for fish, plants, and wildlife have been prepared, which describe possible effects of the proposed action on sensitive, and other species of concern that may be present in the project area. (See Botany, Fish, and Wildlife analyses.)

Clean Air Act Amendments, 1977 – The alternatives are designed to meet the National Ambient Air quality standards through avoidance of practices that degrade air quality below health and visibility standards. This project is consistent with the 1990 Clean Air Act and the 1977 Clean Air Act and its amendments. Little to no burning of slash is anticipated. (see Fire and Fuels).

The Clean Water Act, 1987 – This act establishes a non-degradation policy for all federally proposed projects. Compliance with the Clean Water Act would be accomplished through planning, application and monitoring of Best Management Practices (BMPs).

There are no streams in the Santiam Pass Summer Motorized Recreation Project that have a surface connection to the McKenzie River. There are no streams in the project area listed by Oregon Department of Environmental Quality as 303(d), as water quality limited based on water temperature during the summer season. (See Soils)

Inventoried Roadless Areas (IRAs) and Wilderness – The Mt. Washington IRA is included within the project area. There are no actions proposed within Inventoried Roadless Areas (IRAs) or Wildernesses in the Santiam Pass Summer Motorized Recreation Project. No alternative propose any action that would affect these designations. (See Mt. Washington North IRA.)

Executive Order 11644: Use of off-road vehicles on the public lands – Executive Order 11644 establishes policies and provides for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.

The Santiam Pass Summer Motorized Recreation Project proposes to address this Executive Order by designating a system of roads and trails and staging areas to encourage safe and challenging recreational OHV use, by taking steps to rehabilitate and protect the historic Santiam Wagon Road into the future, by restricting OHV use to the designated road and trail system to protect soils, plants, and other natural resources within the project area, and by minimizing recreation user conflicts currently identified within the project area.

Executive Orders 11988 and 11990: Floodplains and Wetlands – Executive Order 11988 requires government agencies to take actions that reduce the risk of loss due to floods, to minimize the impact of floods on human health and welfare, and to restore and preserve the natural and beneficial values served by floodplains. Proposed actions within the Santiam Pass Summer Motorized Recreation Project would not occur within 100-year floodplains.

Executive Order 11990 requires government agencies to take actions that minimize the destruction, loss, or degradation of wetlands. All actions detailed in Chapter 2 comply with amended Willamette Forest Plan Standards and Guidelines. All actions proposed would be consistent with Executive Orders 11988 and 11990.

Executive Order 12898: Environmental Justice – Executive Order 12898 requires that federal agencies adopt strategies to address environmental justice concerns within the context of agency operations. With implementation of the proposed action or any of the alternatives, there would be no disproportionately high and adverse human health or environmental effects on minority or low-income populations. The proposed actions would occur in a remote area, and nearby communities would mainly be affected by economic impacts connected with contractors implementing road and trail construction and reconstruction or rehabilitation, and Santiam Wagon Road restoration activities. Racial and cultural minority groups could also be prevalent in the work forces that implement road and trail work and restoration activities. Contracts contain clauses that address worker safety.

Executive Order 12962: Recreational Fishing – The June 7, 1995, Executive Order requires government agencies to strengthen efforts to improve fisheries conservation and provide for more and better recreational fishing opportunities, and to develop a new policy to promote compatibility between the protection of endangered species and recreational fisheries, and to develop a comprehensive Recreational Fishery Resources Conservation Plan.

None of the alternatives would impact fish stocked in Big Lake, and none of the alternatives propose to limit fishing opportunities. The Forest Service would continue to work with ODFW to stock fish appropriate for recreational angling purposes (See Fisheries).

Executive Order 13186: Neotropical Migratory Birds – There are 85 bird species recognized as neotropical migrants on the Willamette National Forest. Thirty-five of these species found on the Willamette have been identified as species of concern (Sharp 1992). A Memorandum of Understanding was signed between the USFS and USFWS to complement the January 2001, Executive Order.

The Santiam Pass Summer Motorized Recreation Project area contains populations of migratory landbirds typical of the western Cascades. However, no vegetation management actions are proposed that would affect neotropical migratory bird habitats. (See Wildlife)

The National Environmental Policy Act (NEPA), 1969 – NEPA establishes the format and content requirements of environmental analysis and documentation. Preparation of the Santiam Pass Summer Motorized Recreation Project EA was done in full compliance with these requirements.

The National Forest Management Act (NFMA), 1976 – No stand treatments are proposed with this action. Isolated trees may require cutting to relocate or improve roads and trails designated for OHV use. Clearing of trees would also occur to widen existing clearings in order to create two 1 acre staging areas along Forest road 2690 and near the junction of 2676-810 and 2690.

Forest Plan Consistency – Actions analyzed in the Santiam Pass Summer Motorized Recreation Project EA are consistent with a broad range of Forest Plan Standards and Guidelines that have been discussed and disclosed throughout the document. Designation of roads, trails, and other areas for recreational OHV use associated with the Santiam Pass Summer Motorized Recreation Project are consistent with the goals and management direction analyzed in the Willamette National Forest Land and Resource Management Plan FEIS and Record of Decision. The restoration of the Santiam Wagon Road and other improvements to rehabilitate user-created tracks not incorporated into this project address watershed restoration needs, and are designed to be consistent with the 1994 Northwest Forest Plan amendments to the Forest Plan and the Aquatic Conservation Strategy objectives.

Other Jurisdictions – There are a number of other agencies responsible for management of resources within the Santiam Pass Summer Motorized Recreation Project Area. The Oregon Department of Fish and Wildlife is responsible for management of fish and wildlife populations, whereas the Forest Service manages the habitat for these animals. The Oregon Department of Fish and Wildlife received the scoping document.

This document was prepared in collaboration with Oregon Department of Environmental Quality and United States Environmental Protection Agency to provide documentation of Northwest Forest Plan compliance with the Clean Water Act with regard to state water quality standards for stream temperatures. As such, it redeems several of the Forest Service responsibilities identified in "Memorandum of Understanding between USDA Forest Service and Oregon Department of Environmental Quality To Meet State and Federal Water Quality Rules and Regulations" (USDA Forest Service and Oregon DEQ, May 2002).

Oregon Department of Environmental Quality and the Oregon Department of Forestry are responsible for regulating all prescribed burning operations. The USDA Forest Service Region 6 has a Memorandum of Understanding with Oregon Department of Environmental Quality, Oregon Department of Forestry, and the USDI Bureau of Land Management regarding limits on emissions, as well as reporting procedures. All burning will comply with the State of Oregon's Smoke Management Implementation Plan and, for greater specificity, see the memorandum of understanding mentioned above.

Energy Requirements and Conservation Potential – Some form of energy would be necessary for proposed projects requiring use of mechanized equipment: Projects such as road reconstruction and maintenance, and rehabilitation of the Santiam Wagon Road could require heavy machinery for a small amount of time. These possibilities would result in minor energy consumption.

Prime Farmland, Rangeland, and Forestland – No prime farmland, rangeland, or forestland occurs within the analysis area.

Unavoidable Adverse Effects – Implementation of any of the alternatives, including the No Action alternative, would inevitably result in some adverse environmental effects. The severity of the effects would be minimized by adhering to the direction in the management prescriptions and Standards and Guidelines in Chapter IV of the Willamette Forest Plan, and additional Mitigation Measures and Design Measures proposed in Chapter 2 of this document. These adverse environmental effects are discussed at length under each resource section.

Irreversible and Irretrievable Effects – "Irreversible" commitment of resources refers to a loss of future options with nonrenewable resources. An "Irretrievable" commitment of resources refers to loss of opportunity due to a particular choice of resource uses.

Mitigation Measures and Design criteria and the Santiam Wagon Road and Santiam Wagon Road Special Interest Area Historic Property Management Plan, along with Forest Plan Standards and Guidelines are designed to avoid or minimize the potential for irreversible losses of heritage resources from the proposed management actions.

No new construction of permanent roads is planned. Some new trails would be created from the existing user-created tracks that currently exist. Staging areas would be created, which involve changes in the natural appearance of the landscape. Rock used to surface roads would be an irreversible commitment of mineral resources. Best Management Practices are designed to avoid or minimize the potential for irreversible losses from the proposed management actions.

Concerning threatened and endangered plant, wildlife, and fish species, a determination has been made that the proposed actions will not result in irreversible or irretrievable commitment of resources that foreclose formulation or implementation of reasonable or prudent alternatives.

With Alternative 1 (No Action): With the no action alternative, effects to Santiam Wagon Road surface by continued OHV use may result in irreversible changes to the historic integrity of the road.

With all Action Alternatives (2, 3, and 4): Tree removal to create staging areas may result in an irretrievable loss of the value of removed trees for some wildlife habitat, and relating to soil resource productivity. Staging areas could result in irreversible changes in the natural appearance of the landscape.

Glossary

Unless otherwise indicated, these terms are taken from Forest Service Regulations at 36 CFR 212.

ATV, (All terrain Vehicle) – Oregon Statutes consider all vehicles intended for off-highway use to be All-terrain Vehicles. They are broken into three classes:
Class I ATV – (quads, 3-wheelers)

- Vehicles 50 inches wide or less, and
- Dry weight of 800 pounds or less, and
- Has a saddle or seat
- Travels on 3 or more tires

Class II ATV – (jeeps, sand rails, SUVs, pickups etc.)

- Vehicles wider than 50 inches and
- Dry weight more than 800 pounds

Class III ATV – (motorcycles)

- Vehicles on two tires
- Dry Weight Less than 800 pounds

Decommissioned – A road that has been stabilized to a more natural state.
Forest Road – A motor vehicle road over 50 inches, wholly or partly within or adjacent to and serving a part of the National Forest System and which has been included in the Forest Transportation System Plan or Atlas.
Forest Trail – A less than 50 inch travel trail wholly or partly within or adjacent to and serving a part of the National Forest System and which has been included in the Forest Transportation System Plan or Atlas.
Highway – Any public way, road, street, thoroughfare, place, bridge, viaduct, open, used/intended for use of general public for vehicular traffic.
Highway Legal Vehicles – Any motor vehicle equipped registered and licensed to operate on a public highway within the State.
Key Forest Road – Roads that are that are the most traveled to sites within the Forest. They will provide the majority of forest visitors, administrative, commercial, research, and other travel needs. These roads will be identified as the key roads to important destination points and provide a network of vital inter-forest connections. They lead Recreationists, resource managers, permittees, landowners, commercial users, and emergency services along direct routes into and across necessary areas of the Forest (USDA Forest Service. 1998. Willamette Roads Analysis).
Motor or Motorized Vehicle – Any vehicle which is self-propelled or any vehicle which is propelled by electric power obtained from batteries.
Motorized Mixed Use – A Forest Road for use by both highway legal vehicles and any non-highway legal vehicle or ATV Class I, II, III, vehicles.
OHV, (Off Highway Vehicle) – Term used to describe all vehicles designed for off-road use and classified in Oregon as; ATV Class I, II, or III.
ORV, (Off Road Vehicle) – Term used to describe any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland or other natural terrain.
Operation Permit – Sticker placed on an OHV that allows access to public lands in designated areas.

User-Created Track – A track or route of exposed soil created by any motorized vehicle and is not included in the Forest Transportation Plan or Atlas (a term used for this project only).
Vehicle – Any device in, upon, or by which any person or property is or may be transported, including any frame, chassis, or body of any motor vehicle.

Definitions Used on Alternative Maps (Figures 7 through 9).

Forest Roads Open to Motorized Mixed-Use – A Forest Road open to both highway legal vehicles and sticker permitted, ATV Class I, II, III vehicles.
Forest Roads Open to Highway Legal Vehicles – A Forest Road open only to vehicles equipped, registered, and licensed to operate on public highways.
Forest Roads Open to ATV Class I and III – A Forest Road open only to sticker permitted, ATV Class I and III vehicles. Administrative and emergency vehicle use permitted.
Forest Roads Closed to all Motorized Use – A Forest Road closed to both highway legal vehiclesand sticker permitted, ATV Class I, II, III vehicles. Administrative and emergency vehicle use permitted.
Forest Road Closed to Highway Legal Vehicles and ATV Class II Vehicles – A Forest Road closed to both highway legal and ATV Class II vehicles. Administrative and emergency vehicle use permitted.
User Created Tracks – A track or route of exposed soil, created by any motorized vehicle.
Proposed Forest Motorized Trail – Construction of a 50-inch or less motorized trail, open only to ATV Class I and III vehicles.

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