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# Decision Notice

## Beaver Creek Landscape Restoration Project

Swan Lake Ranger District, Flathead National Forest, Missoula County, Montana



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<http://www.fs.usda.gov/projects/flathead/landmanagement/projects>

# Table of Contents

I.	Summary of Decision .....	1
II.	Purpose and Need for Action .....	3
III.	Public Involvement .....	3
	Project Development .....	3
	Proposed Action .....	3
	Alternative Development Process and Environmental Assessment .....	4
	Pre-decisional Administrative Review Process .....	4
IV.	Issues .....	5
V.	Alternatives Considered in Detail .....	5
	Alternative 1 .....	5
	Alternative 2 .....	5
	Alternative 3 .....	6
VI.	Alternatives Not Considered in Detail .....	6
VII.	Decision .....	8
VIII.	Rationale for the Decision .....	14
	Addressing the Purpose and Need .....	15
	Consideration of Issues .....	20
IX.	Findings Related to Laws, Regulations, and Policies .....	22
	The National Forest Management Act (NFMA) .....	22
	The National Forest Management Act (NFMA) Diversity .....	27
	The National Environmental Policy Act (NEPA) .....	28
	Best Available Scientific Information .....	28
	Clean Water Act and Montana State Water Quality Standards .....	28
	Clean Air Act .....	29
	National Historic Preservation Act, American Indian Religious Freedom Act, and Native American Graves Protection and Repatriation Act .....	29
	Government to Government Relations .....	29
	The Endangered Species Act (16 USC 1531 ET. SEQ.) .....	29
	Migratory Bird Treaty Act (MBTA) .....	35
	Environmental Justice .....	35
	Wilderness Act .....	35
	Collaborative Forest Landscape Restoration Act .....	36
X.	Finding of No Significant Impact .....	36
XI.	Pre-Decisional Administrative Review Process .....	45
XII.	Contact Person .....	46
	Appendix 1 - Details of the Selected Alternative .....	1
	Introduction .....	1
	Vegetation Restoration Treatments .....	5

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Slash Treatment Activities .....	9
Prescribed Fire Activities .....	9
Road Management .....	10
Aquatic Restoration Projects .....	15
Assign Management Areas to Acquired Lands .....	15
Appendix 2 - Project Design Criteria .....	1
Appendix 3 - Monitoring Plan .....	1
Introduction .....	1
Appendix 4 - Best Management Practices .....	1
Introduction .....	1
Road Maintenance Associated with the Beaver Creek Landscape Restoration Project.	1
State Requirements for Protection of Water Quality .....	2

## I. SUMMARY OF DECISION

The Beaver Creek Landscape Restoration Project includes different types of management activities to achieve restoration objectives on a portion of the Swan Lake Ranger District on the Flathead National Forest, Missoula County, Montana. The project area includes the eastern shore of Lindbergh Lake, the headwaters of the Swan River, portions of the Mission Mountain Wilderness, with a southern boundary defined by Sunset Ridge, adjacent to the Seeley Lake District of the Lolo National Forest (See Figure 1. Vicinity Map). The project area is approximately 34,962 acres in size and is part of the Southwest Crown of the Continent Collaborative, identified as a priority landscape under the Collaborative Forest Landscape Restoration Program. All project activities will occur on National Forest System lands.

After careful consideration of the potential impacts of the management and restoration activities analyzed and documented in the Beaver Creek Landscape Restoration Project Final Environmental Assessment (Beaver Creek EA), public comments received in response to the Beaver Creek EA, and objections received on the Beaver Creek Draft Decision Notice, I have decided to implement a selected alternative that combines elements of both Alternative 2 and Alternative 3, as analyzed in the Beaver Creek Final EA.

A summary of the actions in my decision include the following:

- Silviculture treatments on approximately 2,888 acres to reduce the risk of uncharacteristic wildfire, improve forest health and ecological resilience, improve fish and wildlife habitat, and benefit the local economy.
  - Approximately 1,865 acres of harvest is expected to produce a commercial product.
  - An estimated 1,023 acres of treatments will be non-commercial and includes activities such as daylighting, pre-commercial thinning, and fill planting.
  - Approximately 2,365 acres of fuels reduction activities will occur within the Wildland Urban Interface (WUI).
  - Approximately 29 acres of vegetation treatments will occur within Riparian Habitat Conservation Areas (RHCA) to reduce ladder fuels adjacent to large legacy trees and 1 acre of planting will occur within an RHCA to restore an old landing site.
- Harvest activities will require the construction of 5.5 miles of temporary road. Approximately 2.3 miles of road will use existing road templates and 3.2 miles will require new road construction. All temporary roads will be rehabilitated following the completion of project activities and will no longer function as roads.
- Conduct prescribed burning on approximately 1,777 acres to reduce fuel loads and restore fire to the landscape, with approximately 1,104 acres of prescribed burning occurring within the Mission Mountain Wilderness, 538 acres occurring in the WUI without other treatments, and 135 acres of prescribed burning following harvest activities.
- Aquatic restoration activities at five separate sites to protect 99 percent genetically pure westslope cutthroat, prevent wetland invasion of non-native fish species, and conduct soil remediation.
- Approximately 47.9 miles of road will be evaluated for best management practices (BMP) and applied as needed.
- Road decommissioning on 4.5 miles of system road and intermittent stored service on 12.6 miles of system road.

- Assign interim management direction to approximately 5,457 acres of land formerly owned by the Plum Creek Timber Company (PCTC) and acquired by the Forest Service.

This Decision Notice includes the details of the decision, the rationale behind the decision, and the Finding of No Significant Impact (FONSI) that allowed me to choose an EA as the appropriate level of analysis. This decision also includes four appendices and four maps to provide more information about the decision. A final EA, including errata and clarifications, has been prepared and posted to the project website

[www.fs.usda.gov/project/?project=43968](http://www.fs.usda.gov/project/?project=43968)

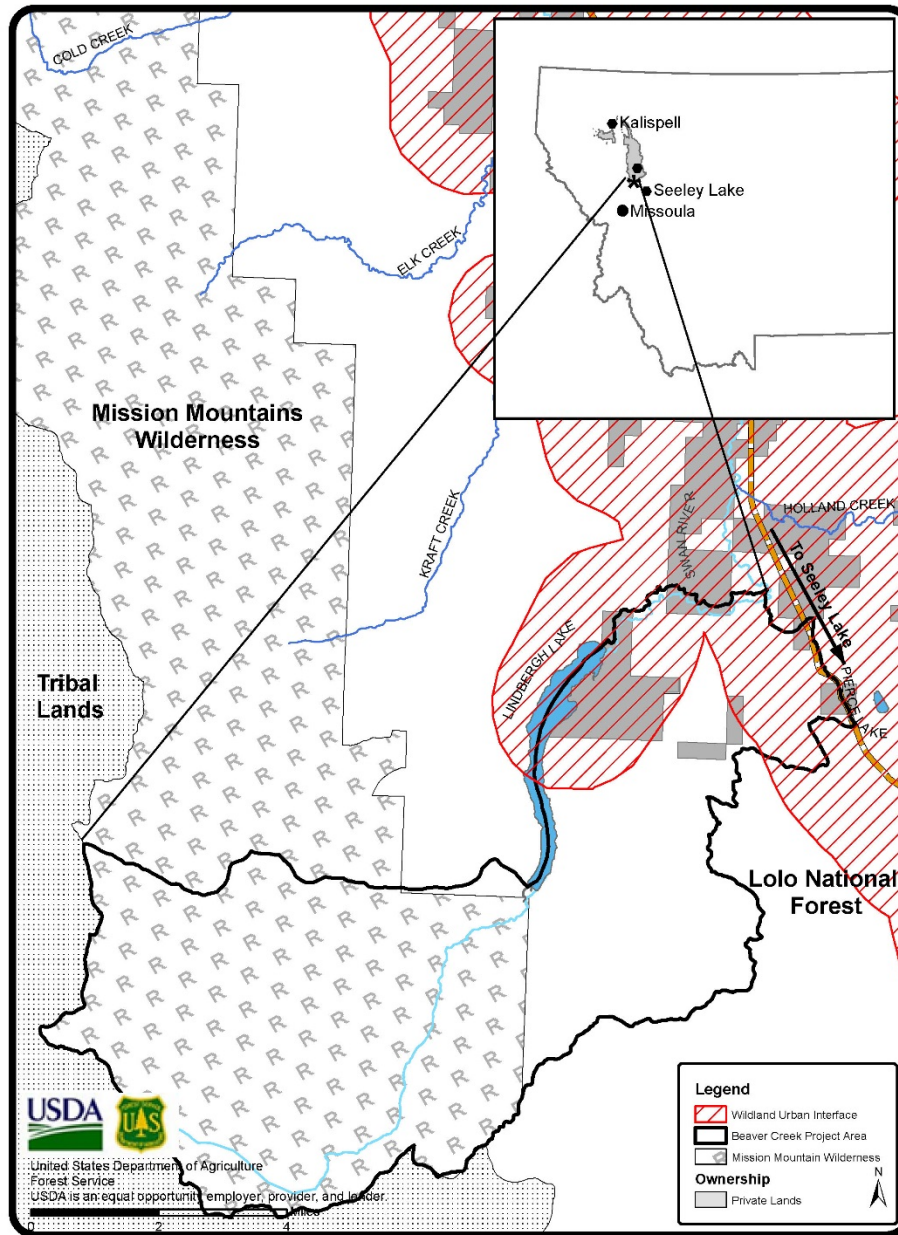


FIGURE 1. BEAVER CREEK PROJECT AREA VICINITY MAP

## **II. PURPOSE AND NEED FOR ACTION**

The need for the Beaver Creek Landscape Restoration Project was derived from the differences in particular aspects of the desired landscape condition and the existing condition. The Flathead National Forest Land and Resource Management Plan (Forest Plan) provides the primary management direction related to the goals/desired condition of these resources. The purpose and need for this project was designed to address the need for change identified in the Beaver Creek Final EA (p. 10-11) by proposing management activities to accomplish the following:

- Reduce the risk of uncharacteristic wildfire;
- Improve fish and wildlife habitat, including that for endangered, threatened, and sensitive species;
- Improve forest health, forest composition, spatial arrangement, structure, and ecological resilience;
- Maintain or improve water quality and watershed hydrologic function;
- Prevent and/or control invasions of non-native plants;
- Benefit the local economy;
- Assign interim management area direction to former PCTC lands recently acquired in the Beaver Creek Project Area (to accomplish the restoration needs on the landscape) until the revised Flathead Forest Plan takes effect, anticipated within the next 2 years.

The existing condition, desired condition, need for change, and purpose and need for the project area are discussed in depth in the Final EA on p. 5-13.

## **III. PUBLIC INVOLVEMENT**

### **PROJECT DEVELOPMENT**

The Swan Lake Ranger District invited the public to collaborate with the Interdisciplinary (ID) Team in the development of the Beaver Creek Landscape Restoration Project (Beaver Creek Project). The Beaver Creek Project is also located within a landscape designated under the Collaborative Forest Landscape Restoration Program (CFLRP) as part of the Southwest Crown of the Continent (SWCC). The ID Team worked with the public, including members of the SWCC, through public meetings, field trips, written comment, and conversation with specialists to identify restoration opportunities and the need for change in the project area.

The Forest Service held public meetings in 2012 and invited property owners and interested members of the public to provide input that would guide project development and potential management activities on NFS lands in the project area. In 2013, the Forest Service held another meeting and asked the public to help prioritize the need for change on the landscape. This feedback and additional field trips, personal conversations, and field review helped the ID Team develop a proposed action to address the purpose and need for the project.

### **PROPOSED ACTION**

On March 15, 2014, a packet of information containing maps, the Proposed Action, and a request for comments for the Beaver Creek Landscape Restoration Project was mailed to approximately 191 individuals, agencies, and groups (Project File Exhibit B-1). A "Request for Comments" on the Beaver Creek Landscape Restoration Project was published in the *Daily Inter Lake*, the newspaper of record, on March 17, 2014 (Project File Exhibit B-3). Notification of this project proposal appeared in the USDA Forest Service's Schedule of Proposed Actions (SOPA) on

April 1, 2014, and quarterly since that time (Project File Exhibit B-4). The Swan Lake Ranger District received 38 responses on the Beaver Creek Proposed Action, either in the form of letters, e-mails, telephone contacts, or personal communication.

## **ALTERNATIVE DEVELOPMENT PROCESS AND ENVIRONMENTAL ASSESSMENT**

During the summer of 2014, ID Team members attended field trips at the request of the SWCC Collaborative and the Lindbergh Lake Homeowners Association to review portions of the Beaver Creek Project. In October 2014, the ID Team invited the public to a working meeting at the Swan Lake Ranger Station in Bigfork, Montana, to identify the key issues that could drive the development of alternatives to the Proposed Action and discuss some of these potential alternatives as a group, 14 people were in attendance.

The EA was released to the public in December 2015. People who had previously commented on the project, attended a meeting, or expressed interest in the project were sent notification that the document was available with a link to the Flathead National Forest website to view the EA electronically. The public was also notified that hard copies were available upon request and 8 hard copies were requested. A legal notice notifying the availability of the EA was published in the *Daily Inter Lake* (December 23, 2015) requesting that public comment on the project be received by February 1, 2016. We received 19 letters and emails commenting on the EA.

On January 14, 2014, the Forest Service was asked to give a presentation to the Southwest Crown of the Continent on the Beaver Creek EA. Later that evening, the Forest Service held a public meeting at the Condon Work Center to answer questions about the EA. Some members of the meeting attended in person and other participate via live streaming service and conference call. A total of 11 people attended the evening meeting.

A summary of the written comment received on the project and the Forest Service responses to these comments are in Appendix 5 of the Beaver Creek Draft Decision notice released in August 2016 and located in Project File Exhibit F-1. All comments received were fully considered in my decision.

## **PRE-DECISIONAL ADMINISTRATIVE REVIEW PROCESS**

The Beaver Creek Draft Decision Notice and Finding of No Significant Impact was issued on August 16, 2016, which was subject to the pre-decisional administrative review process pursuant to 36 CFR 218. The 45-day objection period commenced with the publication of a legal notice in the *Daily Inter Lake* on August 17, 2016.

Following the release of the Draft Decision Notice, Forest Service personnel attended a field trip organized by local residents to answer questions and look at some of the units included in the Draft Decision Notice. The district received six letters of support for the project from individuals and organizations that had participated in the project development and the public comment periods.

Five objections to the project were received from the following organizations and individuals: Dick Artley, Swan View Coalition, Friends of the Wild Swan, Alliance for the Wild Rockies, and Native Ecosystem Council. One instruction was received and is discussed later in this document. A final EA was issued to provide clarification on issues raised in objections and has been posted to the project website with the release of this Decision Notice.



## **IV. ISSUES**

Based upon the issues identified during public scoping, the ID Team and I identified the following key issues, for which an action alternative was developed:

- Wildlife habitat connectivity;
- Visual effects of vegetation treatments to the users of Lindbergh Lake;
- Vegetation management within Riparian Habitat Conservation Areas (RHCAs);

These issues were used to develop Alternative 3. All of these issues are described in detail in the Beaver Creek Final EA on p. 19-20.

## **V. ALTERNATIVES CONSIDERED IN DETAIL**

### **ALTERNATIVE 1**

This alternative represents the existing condition in the Beaver Creek Project Area. Under this alternative, none of the activities proposed for the Beaver Creek Project would occur and management direction for acquired lands would not be assigned. No fuels reduction or forest health activities would occur under this alternative. No access management activities would occur to reclaim roads in the project area. This alternative does not include thinning or planting activities to aid in vegetation recovery on lands acquired from PCTC. This alternative also does not propose a forest plan amendment to assign management areas to acquired lands in the project area. Ongoing activities, such as recreation, public firewood gathering, fire suppression, and normal road maintenance would continue in this alternative. Ongoing processes, such as the spread of invasive species, fire, and forest insect and disease pathogens would continue to impact the project area over time. Activities identified in Chapter 3 of the Beaver Creek Final EA as current and foreseeable actions would continue to occur. Alternative 1, the no action alternative, serves as a point of comparison between the existing condition and the potential effects of the two action alternatives.

### **ALTERNATIVE 2**

Alternative 2 was designed to meet the purpose and need for the project and is similar to the proposed action, with some modifications made to address public comment and information provided by additional field review. This alternative proposes several different types of restoration activities, including vegetation restoration, aquatic restoration activities, and road management. Alternative 2 proposed approximately 3,644 acres of silvicultural treatments, with 2,351 acres of harvest that could produce a commercial product through 1,574 acres of intermediate treatments and 777 acres of regeneration treatments. This alternative proposed seven openings greater than 40 acres in size. Alternative 2 proposed 1,293 acres of treatments that are not expected to produce commercial products and include daylighting, fill planting, and pre-commercial thinning on lands formerly owned by PCTC. This alternative includes 1,808 acres of prescribed burning, 1,104 acres of which are proposed in the MMW. Refer to pp. 25-47 of the Final EA to read the full text of this alternative and descriptions and photos of the types of silviculture treatments proposed and Appendix A where silviculture treatments are described for each unit.

Alternative 2 also includes five aquatic restoration activities. These activities include a free standing concrete fish barrier on Sunset Creek, to protect a genetically pure westslope cutthroat trout population in the project area. This alternative also proposed 7.5 miles of temporary road construction to conduct harvest activities and proposed to evaluate 49.7 miles of road for BMPs, which would be applied as needed. Approximately 12.6 miles of road were proposed for intermittent stored service, 4.5 miles of road decommissioning, and 0.15 miles of road

realignment. Alternative 2 also proposed to assign management areas to approximately 5,457 acres of former PCTC lands in the project area acquired by the Forest Service between 1998 and 2014. The management area designations are described in the Beaver Creek Final EA on pp. 55-58 and displayed on Map 2-6.

### **ALTERNATIVE 3**

Alternative 3 was developed to address the key issues of wildlife habitat connectivity, visual effects of vegetation treatments to the users of Lindbergh Lake, and proposed vegetation management within RHCAs. Alternative 3 responded to the wildlife connectivity issue by removing vegetation treatments that reduce hiding cover. Alternative 3 also addressed the concerns about visual effects by dropping Unit 83, which would be visible to users of Lindbergh Lake. Alternative 3 responded to the issue of vegetation management in RHCAs by eliminating proposed vegetation removal from most RHCA buffers. Alternative 3 proposed a culvert replacement to serve as a fish barrier on Sunset Creek, not the free standing fish barrier proposed in Alternative 2. Alternative 3 also proposed different management areas assignments on acquired lands in the project area.

More specifically, this alternative proposed approximately 2,538 acres of silvicultural treatments. Approximately 1,586 acres of these proposed silvicultural treatments have potential to produce a commercial product through 1,366 acres of intermediate treatments and 220 acres of regeneration treatments. This alternative proposed one opening over 40 acres in size. Alternative 3 proposed 952 acres of silvicultural treatments that are not expected to produce commercial products. The types of silviculture treatment are the same between Alternative 2 and Alternative 3 and are described in detail in the EA on p. 27-37. The full text of Alternative 3 can be found on pp. 47-55 of the EA.

## **VI. ALTERNATIVES NOT CONSIDERED IN DETAIL**

This section discusses alternatives that were considered, but not given detailed study. These alternatives were initially proposed to address issues identified during the public scoping and the ID Team process, but were not considered in further detail for the reasons explained in the following narratives.

### **NO TEMPORARY ROAD CONSTRUCTION**

Some public comments received asked that no temporary roads be constructed to conduct management activities. These commenters felt that temporary roads could have long-term effects to watersheds and aquatic resources (Project File Exhibits C-9, C-13, and C-15). They were also concerned that temporary roads would contribute to soil erosion and compaction and felt that the impacts of building temporary roads are the same as building permanent roads. These commenters asked that an alternative be developed that would not construct any temporary roads.

The ID Team developed a potential alternative that would not construct any temporary roads or use existing templates as temporary roads (Project File Exhibit A-34). This alternative would significantly reduce the management activities that could be conducted and would reduce the alternative's ability to respond to the purpose and need identified for the project. The inability of this alternative to meet the purpose and need for the project made it unlikely that this alternative would be implemented, and the ID Team looked for other opportunities to address the concerns about soil compaction and aquatic resources.

The ID Team realizes that forest vegetation treatments and road building have the potential to affect water and soil resources. Effects to water resources can be minimized with appropriate, site-specific application of project Design Criteria and Best Management Practices (BMPs). To

address the concerns that the commenters expressed about the effects of temporary roads, the ID Team developed Design Criteria to rehabilitate all temporary roads that are constructed for management activities. These rehabilitation activities for temporary roads, in combination with BMPs, would minimize sediment-producing disturbance and minimize the potential for sediment to reach a water body. These rehabilitation activities would also reduce soil compaction in areas where temporary roads are constructed and assist in the restoration of soil productivity on these sites.

By implementing rehabilitation activities on all temporary roads as a Design Criteria for both Alternative 2 and 3, the ID Team was able to address the public comments received regarding the effects of temporary roads and decided that it was not necessary to study this alternative in detail. Alternative 3 also reduces the miles of temporary road proposed to conduct project activities.

### **NO MANAGEMENT ACTIVITIES WITHIN THE LINDBERGH LAKE WATERSHED**

Some property owners expressed concerns that the management activities proposed within the Lindbergh Lake watershed could have potential impacts on the water quality of Lindbergh Lake where many residents get their drinking water (Project File Exhibits C-13, C-16, and C-18). The ID Team discussed this at great length and drafted a potential alternative to address this issue (Project File Exhibit A-43). The ID Team determined that the environmental analysis found in the EA in Chapter 3 – Aquatics Resources adequately displayed that the proposed activities would not have potential effects to water quality in Lindbergh Lake watershed and that another alternative did not need to be studied in detail. Public concerns about the viewshed of Lindbergh Lake were addressed in Alternative 3.

### **INCREASED ACREAGE OF HAZARDOUS FUELS REDUCTION ACTIVITIES ON THE EAST SHORE OF LINDBERGH LAKE**

Based on both public and internal input, an alternative was considered that would increase the acres treated for hazardous fuels reduction along the east side of Lindbergh Lake to modify fire behavior and potentially reduce the risk that a wildfire would pose to residences on the lake. Fire managers and some Lindbergh Lake property owners expressed concern that the management activities in the Proposed Action would not adequately reduce the risk of wildfire and that additional management was needed on the east side of the lake to create a more effective fuel break (Project File Exhibits C-19 and C-29).

The ID Team considered additional treatments in a number of forest stands above the lake that could modify fire behavior and potentially reduce the intensity and severity of a wildfire in this area. Additional management activities in this area were limited by access and public concerns regarding the visual impacts of management on a slope within the Lindbergh Lake viewshed. Management activities would have required the use of helicopters for timber harvest, which would not be economically feasible at this time. The conversations that ID Team members had with residents of the Lindbergh Lake area also indicated that some members of the public were very concerned about visual impacts to the viewshed from the lake and indicated that additional activities would be concerning to them. The ID Team determined that the activities put forth in the Proposed Action would modify fire behavior and would have less visual impact to users of Lindbergh Lake and decided that an alternative that would increase the acres of fuels reduction activities did not need to be studied in detail.

### **COHEN ALTERNATIVE**

One member of the public suggested that the ID Team develop and consider an alternative based upon research conducted by Jack D. Cohen that asserts that effective residential fire loss mitigation must focus on the home and its immediate surroundings (Project File Exhibit C-1).

Dr. Cohen's methods of fine fuel reduction are to be applied on private property immediately adjacent to structures and Forest Service is only authorized to analyze and treat NFS lands. Some landowners in the project area have participated in the National Fire Protection Association's Firewise communities program. This program was co-sponsored by the USDA Forest Service, the US Department of the Interior, and the National Association of State Foresters to educate homeowners on how to protect their home and property from the risks of wildland fire. The district has encouraged landowners near Lindbergh Lake and in other parts of the project area to participate in the program or otherwise address hazardous fuel conditions on their private land.

Vegetation treatments within the WUI are designed to increase the likelihood of success for initial attack by providing a safe, defensible environment for firefighters. Fuel treatments in and near the WUI also serve to protect NFS lands from the risk of wildland fire spreading from private property. When fire enters the WUI, there remains the potential for loss of life, property, and other values even if homes have been made fire safe. Many homeowners would likely find it undesirable to live in an intensely or severely burned-over forest, even if their home has survived the passage of fire. Not only are aesthetic values decreased for most people, but the risk of flooding and land-slides can put homes, lives, and water quality at risk during subsequent precipitation events.

Highly ignitable homes can ignite during a wildland fire without the fire spreading near the structure. This occurs when firebrands are lofted downwind from fires. The firebrands subsequently settle on and ignite flammable home materials (such as roofs) and adjacent flammables (such as woodpiles, decking, or landscaped vegetation). Firebrands that result in ignitions can originate from wildland fires that are a distance of one mile or more (Cohen 2000).

An alternative based solely on Dr. Cohen's fine fuel reduction method would also not reduce ladder fuels and open up crown spacing, reduce the threat of beetle killed and diseased trees, or break up fuel continuity in a way that would reduce the risk of high-severity stand-replacement wildland fire. Therefore, an alternative based on Dr. Jack Cohen's method of fine fuel reduction would not meet the purpose and need to reduce the risk of uncharacteristic wildfire, improve fish and wildlife habitat, improve forest health and resiliency, and maintain water quality. The ID Team decided to not analyze this alternative in detail.

## **ANALYZE THE PROPOSED ACTION AS SCOPED WITH THE PUBLIC IN MARCH 2014**

As the ID Team reviewed public comment and completed additional field reconnaissance, the team identified modifications to the Proposed Action that would better achieve the purpose and need for the project and improve the economic feasibility of vegetation restoration treatments. These modifications include dropping prescribed burn and vegetation treatment units, modifying unit boundaries and changing prescriptions to better address stand conditions. Therefore, the original proposed action was dropped from detailed analysis and Alternative 2 was analyzed in detail.

## **VII. DECISION**

As the responsible official for this project, I am authorizing the Selected Alternative which combines elements of both Alternative 2 and Alternative 3 to best address public comment received on the EA and to balance the needs of different resources across the project area. Vegetation restoration treatments such as commercial thin, improvement cut, seed tree with reserves, clearcut with reserves, group selection, pre-commercial thin, daylight, and fill plant would occur under this alternative. Associated temporary road building to access harvest units would be included in this decision, as would road decommissioning, road storage, road realignment, and BMPs. This decision includes aquatic restoration activities and prescribed burning. This decision also includes a forest plan amendment to assign interim management area direction to acquired lands in the project area.

A summary of the activities in my decision will involve the following activities:

<b>Vegetation Restoration Activities</b>	<b>4,530</b>	<b>acres</b>
<b>Total Silviculture Treatment</b>	<b>2,888</b>	<b>acres</b>
<b>Silviculture Treatments with Commercial Component</b>	<b>1,865</b>	<b>acres</b>
<b>Intermediate Type Treatments</b>	<b>1,246</b>	<b>acres</b>
Improvement Cut	463	acres
Commercial Thin	783	acres
<b>Regeneration Type Treatments</b>	<b>619</b>	<b>acres</b>
Clearcut with Reserve Trees	16	acres
Seed Tree with Reserve Trees	330	acres
Group Select, with thinning in the matrix	138	acres
Group Select, without thinning in the matrix	135	acres
<b>Silviculture Treatments without Commercial Component</b>	<b>1,023</b>	<b>acres</b>
Daylight	50	acres
Pre-Commercial Thin	644	acres
Fill Plant	329	acres
<b>Total Prescribed Burn</b>	<b>1,777</b>	<b>acres</b>
Prescribed burn in MMW	1,104	acres
Prescribed Burn in the WUI	538	acres
Prescribed burn following harvest activities	135	acres
<b>Aquatic Restoration Activities</b>	<b>5</b>	<b>activities</b>
<b>Road Management Activities</b>		
Best Management Practices	47.9	miles
Temporary road construction and rehabilitation	5.5	miles
New Temporary Road Construction	3.2	miles
Temporary Roads on Existing Template	2.3	miles
Road Realignment	0.15	miles
Road Intermittent Stored Service	12.6	miles
Road Decommissioning	4.5	miles
<b>Assign Management Area Direction to Acquired lands</b>	<b>5,457</b>	<b>acres</b>
<b>Commercial product produced from restoration activities (CCF)</b>	<b>13,225 (saw log)/</b>	
	<b>5,555 (non-saw)</b>	

The Selected Alternative was developed by making modifications to Alternative 3. These modifications to Alternative 3 include the addition of all or a portion of 12 units considered in Alternative 2, the elimination of all or a portion of 8 units, and modifying prescription on 10 units. These units, as well as the rationale behind their inclusion, elimination, or modification are indicated in Table 1.

TABLE 1. MODIFICATIONS MADE TO ALTERNATIVE 3 TO DEVELOP SELECTED ALTERNATIVE AND RATIONALE.			
UNIT #	ACTION TAKEN	ACRES	RATIONALE
25	Added portion	38	Keep unit boundaries as analyzed in Alternative 2 to better treat stand conditions. Treatment will be broken by untreated riparian areas.
28	Added portion	140	Keep unit boundaries as analyzed in Alternative 2 to reduce fuels around western larch stand.
31	Eliminate	1	Drop unit to provide wildlife connectivity.
37	Eliminate	5	Drop unit due to economic feasibility.
43	Eliminate	4	Drop unit to maintain wildlife connectivity
44	Added Unit	12	Modify unit boundary from how it was shown in Alternative 2 to only treat portion

BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

**TABLE 1. MODIFICATIONS MADE TO ALTERNATIVE 3 TO DEVELOP SELECTED ALTERNATIVE AND RATIONALE.**

UNIT #	ACTION TAKEN	ACRES	RATIONALE
			between road and private property. Will allow for wildlife movement and reduce fuels adjacent to private property
54	Eliminate	8	Dropped unit because of riparian habitat conservation area to improve habitat connectivity
57	Modify Prescription	3	Modify prescription to seedtree harvest as analyzed in Alternative 2. Stand is in poor condition and will benefit from regeneration harvest to favor western larch and ponderosa pine.
59	Added portion	6.5	Keep unit boundaries as analyzed in Alternative 2 to reduce fuels in the Primary Line of Defense.
76	Modify Prescription and include soil restoration	43	Modify prescription from commercial thin to improvement cut to better reflect the variability of the stand condition. Include soil restoration activities on abandoned road bed that extends from Temp Road Z based on public comment received.
83	Added unit	34	Added Unit 83 as analyzed in Alternative 2 to modify fire behavior to improve firefighter and public safety. Unit will be implemented to accommodate visual concerns.
89	Modify Prescription	39	Modify prescription to seedtree harvest as analyzed in Alternative 2. Stand is in poor condition and will benefit from regeneration harvest to favor western larch and ponderosa pine.
99	Modify Prescription	26	Modify prescription to seedtree harvest as analyzed in Alternative 2. Stand is in poor condition and will benefit from regeneration harvest to favor western larch and ponderosa pine. Large western larch will be retained.
100	Modify Prescription	14	Modify prescription to seedtree harvest as analyzed in Alternative 2. Stand is in poor condition and will benefit from regeneration harvest to favor western larch and ponderosa pine.
114	Modify Prescription	46	Modify prescription to group selection to better favor whitebark pine and overall forest stand health.
217	Added unit	113	Add unit to address forest health and fuels reduction, but modify boundary to provide habitat connectivity. Retain the portion of 217 adjacent to private land, drop portion in the middle to reduce activity near wetlands. Create 217a with 29 acres and 217b with 84 acres.
230	Eliminate	10	Drop to maintain habitat connectivity
251	Eliminate	37	Drop to maintain early stand initiation habitat for lynx
252	Modify Prescription	29	Modify prescription to seedtree harvest as analyzed in Alternative 2. Stand is in poor condition and will benefit from regeneration harvest to favor western larch and ponderosa pine.
254	Modify Prescription	25	Modify prescription to seedtree harvest as analyzed in Alternative 2. Stand is in poor condition and will benefit from regeneration harvest to favor western larch and ponderosa pine.
259	Added unit	22	Include units as analyzed in Alternative 2 to better treat poor stand conditions.
260	Added Unit	48	Include units as analyzed in Alternative 2 to better treat poor stand conditions.
262	Eliminate	20	Eliminate based on public comment received.
263	Modify Prescription	117	Modify prescription to Group Selection without thinning in the matrix based on public comment received.
266	Modify Prescription	18	Modify prescription to Group Selection without thinning in the matrix based on public comment received.
419	Added unit	4	Keep unit as analyzed in Alternative 2 to protect legacy trees in the RHCA
429	Added unit	11	Keep unit as analyzed in Alternative 2 to protect legacy trees in the RHCA
449	Added unit	2	Keep unit as analyzed in Alternative 2 to protect legacy trees in the RHCA
459	Added unit	5	Unit is above road and treatment will not affect riparian habitat values for Beaver Creek. Cannot treat adjacent unit 59 without crossing unit 459.
4262	Eliminate	5	Eliminate based on public comment received.

My decision authorizes the use of skyline and ground-based logging systems to conduct commercial harvest. Non-commercial harvest will use mechanized equipment in units where this was analyzed for and other work will occur by hand. I am also authorizing mechanical and hand piling to occur in units as methods of slash treatments. This decision includes Appendix 1, which details the prescription for each unit, the logging systems to be used, the slashing treatment, and whether or not broadcast burning will occur in conjunction with other treatments.

This decision authorizes a total of 1,642 acres of prescribed burning without any other management activities, including approximately 1,104 acres of burning to be conducted with helicopters in the MMW. My decision also authorizes a Maximum Management Area (MMA) for these burns identifying an area where burning will be allowed before suppression activities will occur, a map of the MMA is shown on p. 219 of the EA. This decision also authorizes 538 acres of prescribed burning within the WUI without other mechanical treatment that could use a combination of hand and aerial ignition. Ignition will not occur within riparian areas, but hand line will not be constructed to exclude fire from these areas. This decision also includes 135 acres of broadcast burning that will follow mechanical treatment to reduce activity fuels and return fire to fire adapted ecosystems.

In addition, my decision authorizes aquatic restoration activities. These activities include a free-standing concrete fish barrier on Sunset Creek, to protect a genetically pure westslope cutthroat trout population in the project area. The free-standing fish barrier will include a disturbed access route used to construct the barrier that will be rehabilitated following construction. The fish barrier and access route will be designated as an administrative site upon completion. In conjunction with the free-standing fish barrier, an old native log bridge will be upgraded to maintain access to the site. My decision also authorizes the removal of an undesirable fish barrier approximately 0.7 miles upstream on Sunset Creek by replacing a culvert on NFS Road # 9658 with an Aquatic Organism Passage (AOP) structure. My decision also authorizes a culvert replacement on NFS Road #906 at mile post 1.15 to reduce the possibility of inter-basin exchange of non-native species and to alleviate the ongoing road maintenance problems that the wetland and culvert clogging has created. I am also authorizing a culvert installation on NFS Road #11636 to prevent the non-native species invasion of a wetland that has not yet been invaded. My decision includes soil restoration work on an old road template found in unit 231, which will affect approximately 2.3 acres. Following the completion of project activities, this also includes the removal of a culvert identified on an existing road bed that will be used for temporary road access (Temporary Road A1) and rehabilitated following use.

My decision also authorizes several types of road management activities. I am authorizing the construction of 0.15 miles of system road to realign the road system to allow for road decommissioning activities on segments of unneeded road currently on the system. This decision authorizes 4.5 miles of road decommissioning of current system roads and 12.6 miles of intermittent store service of system roads in the project area. This decision includes 5.46 miles of temporary road to be constructed for project activities and rehabilitated upon completion.

My decision assigns interim management areas to approximately 5,457 acres of former PCTC lands as was presented to the public in Alternative 3 in the Beaver Creek EA. My decision assigns 55 acres to MA2, 510 acres to MA5, 2,312 acres to MA11C, 320 acres to MA12, 1,531 acres to MA15, 712 acres to MA15C, and 17 acres to MA17 (Table 3).

Table 2 summarizes the features of the decision as well as comparing the management activities in each of the alternatives analyzed in the EA. Table 3 displays the management area assignments analyzed and those for the selected alternative.

TABLE 2. COMPARISON OF ALTERNATIVES BY ACTIVITIES.				
PROPOSED ACTIVITIES	ALT. 1	ALT. 2	ALT. 3	SELECTED ALTERNATIVE
VEGETATION RESTORATION ACTIVITIES	ACRES	ACRES	ACRES	ACRES
Acres of Silviculture Treatments with Commercial Component	0	2,351	1,586	1,865
Acres of Silviculture Treatments without Commercial Component	0	1,293	952	1,023
Acres of Prescribed Burning without other Silviculture Treatments	0	1,642	1,642	1,642
AQUATIC RESTORATION ACTIVITIES	ACTIVITY	ACTIVITY	ACTIVITY	ACTIVITY
Concrete Fish Barrier off NFS Road #91202 (Barrier Installation)	0	1	0	1

**BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE**

**TABLE 2. COMPARISON OF ALTERNATIVES BY ACTIVITIES.**

<b>PROPOSED ACTIVITIES</b>	<b>ALT. 1</b>	<b>ALT. 2</b>	<b>ALT. 3</b>	<b>SELECTED ALTERNATIVE</b>
Culvert Replacement on NFS Road #9658 (Culvert Replacement to Serve as Fish Barrier)	0	1	1	1
Culvert Installation on NFS Road #11636 to Serve as Fish Barrier (Culvert Installation)	0	1	1	1
Culvert Replacement on NFS Road #906 to Address Inter-Basin Exchange and road maintenance (Culvert Replacement)	0	1	1	1
Soil Remediation of Old Road Template in Unit 231 (Acres)	0	0	0	2.3
<b>ROAD MANAGEMENT ACTIVITIES</b>	<b>MILES</b>	<b>MILES</b>	<b>MILES</b>	<b>MILES</b>
Miles of Haul Route	0	48.2	41.0	43.1
Miles to be evaluated for BMPs	0	49.7	42.4	47.9
Miles of Roads in ISS	0	12.6	12.6	12.6
Miles of Road Decommissioning	0	4.5	4.5	4.5
Miles of Temporary Road	0	7.5	5.0	5.5
Miles of Road System Realignment	0	0.15	0.15	0.15

**TABLE 3. MANAGEMENT AREA DESCRIPTIONS AND PROPOSED MANAGEMENT AREAS.<sup>1</sup>**

<b>MA</b>	<b>DESCRIPTION</b>	<b>MANAGEMENT EMPHASIS</b>	<b>ALT. 1 EXISTING CONDITION  (ACRES)</b>	<b>ALTERNATIVE 2 PROPOSED MANAGEMENT AREAS</b>		<b>ALTERNATIVE 3 PROPOSED MANAGEMENT AREAS</b>		<b>Selected Alternative</b>	
				<b>TOTAL (ACRES)</b>	<b>ACQUIRED LANDS (ACRES)</b>	<b>TOTAL (ACRES)</b>	<b>ACQUIRED LANDS (ACRES)</b>	<b>TOTAL (ACRES)</b>	<b>ACQUIRED LANDS (ACRES)</b>
1	Consists of non-forest lands and timberlands where timber management is uneconomical or currently technologically infeasible due to topographic features.	Maintain the present condition with minimal investment for resource activities, while protecting the basic soils, water, and wildlife resources. Generally, these areas will retain a natural appearance.	515	515	-	515	-	515	-
2	Consists of unroaded lands that offer a variety of dispersed recreation opportunities.	Provide a variety of primitive and semi-primitive recreation opportunities.	802	857	55	857	55	857	55

<sup>1</sup> Management area boundaries are not firm lines. The boundaries represent a transition from one set of opportunities and constraints to another with management direction established for each. The boundaries are flexible to assure that the values identified are protected. As such, these acres displayed in this table and in Maps 2-6 and Maps 2-7 should be considered approximations due to GIS discrepancies and rounding error. This table displays the acres as determined by GIS for ease of analysis. The recorded acres for each parcel are displayed in Chapter 3 – Recreation, Wilderness, Lands, and Range section.



BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

**TABLE 3. MANAGEMENT AREA DESCRIPTIONS AND PROPOSED MANAGEMENT AREAS.<sup>1</sup>**

MA	DESCRIPTION	MANAGEMENT EMPHASIS	ALT. 1 EXISTING CONDITION  (ACRES)	ALTERNATIVE 2 PROPOSED MANAGEMENT AREAS		ALTERNATIVE 3 PROPOSED MANAGEMENT AREAS		Selected Alternative	
				TOTAL (ACRES)	ACQUIRED LANDS (ACRES)	TOTAL (ACRES)	ACQUIRED LANDS (ACRES)	TOTAL (ACRES)	ACQUIRED LANDS (ACRES)
5	Roaded timberlands in areas of high scenic value.	Maintain a pleasing, natural appearing landscape in which management activities are not evident.	73	81	8	583	510	583	510
11C	Timberlands capable of providing grizzly bear habitat located on the southern portion of the Swan Lake Ranger District.	Manage the Swan/Clearwater Divide as an area that provides a security grizzly bear travel route between the Mission and Swan Mountain Ranges. Desired cover relationship is provided through vegetative manipulation including timber harvest and prescribed burning.	4,111	6,423	2,312	6,423	2,312	6,423	2,312
12	Includes riparian areas consisting of aquatic, riparian, and a portion of terrestrial ecosystems along most perennial streams, lakes, ponds, marshlands, bogs, and some important seasonal flow streams.	Manage riparian areas throughout the Forest to enhance vegetation and wildlife diversity and maintain or enhance water quality and fisheries. Emphasize water and soil protection and old growth habitat. Management of other resources must be compatible with the riparian habitat management standards.	302	622	320	622	320	622	320
15	Timberlands where timber management with roads is economical and feasible.	Emphasize cost-efficient production of timber while protecting the productive capacity of the land and timber resource.	636	2,669	2,033	2,167	1,531	2,167	1,531

BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

**TABLE 3. MANAGEMENT AREA DESCRIPTIONS AND PROPOSED MANAGEMENT AREAS.<sup>1</sup>**

MA	DESCRIPTION	MANAGEMENT EMPHASIS	ALT. 1 EXISTING CONDITION  (ACRES)	ALTERNATIVE 2 PROPOSED MANAGEMENT AREAS		ALTERNATIVE 3 PROPOSED MANAGEMENT AREAS		Selected Alternative	
				TOTAL (ACRES)	ACQUIRED LANDS (ACRES)	TOTAL (ACRES)	ACQUIRED LANDS (ACRES)	TOTAL (ACRES)	ACQUIRED LANDS (ACRES)
15C	Consists of timberlands where timber management with roads is economical and feasible, and is key white-tailed deer summer range.	Special consideration will be given to white-tailed deer summer range within this MA.	767	1,479	712	1,479	712	1,479	712
17	Includes riparian areas consisting of aquatic, riparian, and a portion of terrestrial ecosystems along perennial stream reaches, and some important streams with typically a seasonal flow.	Protect and maintain this riparian zone throughout the Forest, including fish and wildlife habitat, while maintaining a sustained yield of timber.	48	65	17	65	17	65	17
22	Mission Mountains Wilderness classified wilderness designated in 1975 by the US Congress.	Manage this area in accordance with the Wilderness Act of 1964 to maintain an enduring system of high quality wilderness representative of all National Forest ecotypes.	20,026	20,026	-	20,026	-	20,026	-
-	Former PCTC acquired by USFS	Management Area Unassigned, Forest-wide Standards and Guidelines apply	5,457	-	-	-	-	-	-
Non-NFS lands in the Beaver Creek Project Area							1,810		
NFS Lands in Beaver Creek Project Area							32,737		
Acres covered by Lindbergh Lake in Project Area							415		
Total Lands in Beaver Creek Project Area							34,962		

## VIII. RATIONALE FOR THE DECISION

I have made my decision based on the information in the Beaver Creek Final EA, the supporting project file, public comments received (including objections), and consideration of issues. I have determined my decision is consistent with all laws, regulations, and agency policies and I have considered the potential cumulative effects of other activities. My criteria for making a decision on this project was based on how well the management actions analyzed in the Beaver Creek Final

EA addressed the purpose and need of the project and considered the issues raised during the project development phase with the public and the comments received on the proposed action. I considered the public comments received on the EA and made adjustments to my decision based on these comments. The team has prepared responses to the comments received on the EA, which can be found in Appendix 5 of the *Draft* Decision Notice and in Project File Exhibit F-1.

## **ADDRESSING THE PURPOSE AND NEED**

The desired conditions for the Beaver Creek Landscape Restoration Area are based on Forest Plan goals, objectives, and standards. The difference between the existing condition and the desired condition in the project area generated the need for change. This need for change helped the ID Team work in collaboration with the public to identify a purpose and need for the project to identify what management actions could be taken to address the need for change.

## **REDUCE THE RISK OF UNCHARACTERISTIC WILDFIRE**

Uncharacteristic wildfire is extreme fire behavior resulting from the product of effective fire suppression during the last century, ingrowth of trees, and accumulation of dead woody fuels. Exclusion of fire and disruption of native fire regimes has caused dramatic changes in vegetation structure and fuels compared to conditions in the 19<sup>th</sup> century. These changes contribute to larger and more extreme fires and reduce the effectiveness of fire suppression efforts (Finney et al. 2003).

My decision to implement 2,365 acres of fuels reduction activities within the WUI through commercial harvest, non-commercial treatments and prescribed burning reduces the risk of uncharacteristic wildfire by reducing stocking in forest stands within the WUI and along strategic fuel breaks. I am authorizing Unit 83 specifically to serve as part of the primary line of defense on the heavily timbered slope east of Lindbergh Lake, where fire models have shown that the prevailing wind could push crown fires into the residential area on Lindbergh Lake. I recognize the concerns that residents have regarding the potential visual effects that these activities could have to users of Lindbergh Lake but I believe that we can implement these activities to maintain the scenic integrity, while still achieving our goal to provide for public and firefighter safety. This would include techniques, such as feathering the edges of treatments or spacing trees to mask evidence of the logging systems used.

The vegetation management and prescribed burning treatments that I am authorizing in this decision will modify fire behavior by reducing fuel loads and promoting fire-resistant tree species on a landscape currently dominated by stands of mature lodgepole pine stands affected by mountain pine beetle infestations. The Final EA discusses the history of fire in the project area on pp. 3-5, 111-112, and 208-210 and includes a recent fire history map (Map 3-2). The use of prescribed fire will contribute to restoring natural fire regimes in the project area and promoting fire adapted ecosystems. The vegetation treatments I am authorizing in this decision emphasize the retention of large fire-resistant legacy trees where they exist and the planting of fire-adapted species in areas where these species are not present because of past management activities or disturbance events. The activities that I am authorizing will also contribute towards meeting the desired conditions proposed in the Seeley-Swan Fire Plan (2013), of which the Flathead National Forest is a cooperator.

If these forest stands are not treated, the risk of a large, stand-replacing fire will not be mitigated within the project area and would threaten the values at risk located on private lands within the project area. This risk is demonstrated by the past history of fire in the project area and the surrounding area, where fire has been an influential disturbance factor (Beaver Creek Final EA, pp. 3-5, 78, 107-112, 173, 207-212, and Map 3-2). This risk is heightened by the high density of homes along the eastern shore of Lindbergh Lake, adjacent to NFS lands, where private property and residences are at risk due to high fuel loading (Beaver Creek Final EA, pp. 213-214 and Project File Exhibit K-14). The treatment of these forest stands in a timely manner is likely to reduce the severity and intensity of a potential wildfire and will allow firefighters to engage the fire

more safely to protect values at risk (Beaver Creek Final EA, pp. 215, 218, 223). Treatment of these stands will also allow for the stands to progress towards ecosystems that are adapted to disturbance from fire, insects and disease, and can retain habitat for a variety of fish and wildlife species following a disturbance event (Beaver Creek Final EA, pp. 131, 141-143, 369, 400, and 401). Additionally, the potential for a high-severity wildfire may also increase sedimentation and water temperature, which could potentially affect water quality (Beaver Creek Final EA, p. 268).

The 1,104 acres of prescribed burning that I am authorizing within the MMW will serve to reduce natural fuel loading to increase the probability that a future natural ignition would stay within the wilderness boundary and fire could play its natural role on the landscape. The team has identified the presence of cone-bearing whitebark pine trees within the burn boundary and the Design Criteria that I am including in this decision will reduce the potential for whitebark pine mortality during the implementation of the prescribed burn.

### **IMPROVE FISH AND WILDLIFE HABITAT**

My decision will create lynx habitat by treating 1,056 acres of stem exclusion stands to recruit dense patches of understory vegetation. Stem exclusion habitat structure is generally not progressing towards hare habitat. My decision authorizes treatment of these stands through intermediate harvest types that would open up the stands and encourage an increase in horizontal cover (understory regeneration) and increase the potential to become multistory forage and/or denning habitat once the overstory canopy closes and shade-tolerant trees regenerate in the understory. The Design Criteria I am authorizing would maintain patches of spruce and fir in the understory where available and would promote creation of future multistory foraging habitat. Some of these stem exclusion acres would be treated through regeneration harvest, which would remove most of the existing overstory structure. These stands would be expected to return to a lynx foraging seedling/sapling structure (stand initiation) within approximately 20 years if they are not pre-commercially thinned in a future decision. More importantly, my decision minimizes the effects to existing lynx foraging habitat in the project area and emphasizes the retention of dense understory where it currently exists.

The management activities that my decision authorizes, such as burning and thinning, also create the potential to increase natural regeneration of aspen. I am also authorizing up to 50 acres of aspen planting to occur in suitable sites following prescribed burning activities outside designated wilderness. These activities also have the potential to increase shrub and huckleberry production on approximately 975 acres to improve wildlife foraging opportunities for big game and grizzly bears.

The implementation of these activities will contribute to the development of a mosaic of habitats for different wildlife species that utilize the project area. The Beaver Creek Final EA on pp. 299-455 identifies the potential effects that project activities could have on different wildlife species and identifies the potential effects that not implementing activities could have on wildlife species through the analysis of Alternative 1, the no action alternative. I have reviewed this analysis and believe that the activities I am authorizing in this decision will reduce the harm to some wildlife species by reducing the probability of a large-scale, high severity wildfire that could eliminate habitat for some wildlife species (Beaver Creek Final EA pp. 375, 423, and 450).

I am authorizing 4.5 miles of road decommissioning for roads in the project area that were determined not to be needed for future management activities. I am also authorizing intermittent stored service of 12.6 miles of road that is not needed in the near future but are being retained on the system for future resource management. These roads will be rehabilitated in a variety of ways, from full recontouring of road templates where needed to the removal of stream-aligned culverts and ripping of road surfaces to allow for water filtration. The first portion of the road (200 to 600 feet) will be recontoured to the original hillslope, or where recontouring is not feasible rock barriers or berms and placement of natural debris will be used to make the road junction unattractive as a travel way and preclude motorized use (See Appendix 2 – Design Criteria). Following these rehabilitation activities, these roads will provide wildlife habitat security and meet

the minimum criteria for a “reclaimed road” as defined in Amendment 19 of the Flathead National Forest Plan. The road reclamation I am authorizing will allow the project area to achieve the numerical road density objectives for the Beaver Creek Grizzly Bear Subunit.

My decision also authorizes the construction of a free standing fish barrier on Sunset Creek to prevent brook trout invasion into a 99 percent genetically pure population. The implementation of this fish barrier is very important to the survival of this population of westlope cutthroat trout. If the implementation of this barrier is delayed the likelihood of population survival will decrease.

My decision also removes a partial barrier in the middle of this population on NFS Road #9658 to allow for improved movement of juvenile cutthroat trout. I have authorized the replacement of a culvert on NFS Road #11636 and the replacement of a culvert on NFS Road #906 to prevent further invasion of non-native fish into Cur Pond and the Willow Creek Beaver Ponds complex. The structure upgrade I have included in this decision on NFS Road #906 will also alleviate the road maintenance problems that have developed with the clogging of the culvert and reduce the likelihood that this roadway could fail in the future.

### **IMPROVE FOREST HEALTH, FOREST COMPOSITION, SPATIAL ARRANGEMENT, STRUCTURE, AND ECOLOGICAL RESILIENCE**

The vegetation management I am authorizing in this decision is designed to address forest health by reducing stocking in stands where density is high to promote tree vigor, alter species composition, and reduce susceptibility of loss due to white pine blister rust and mountain pine beetle. On 619 acres I am authorizing the regeneration of lodgepole pine dominated forest that have either existing mortality from mountain pine beetle or are at an age where they will be susceptible to future mountain pine beetle attacks. Lodgepole pine will be removed while leaving all of the western larch and Douglas-fir trees, unless they are in poor condition due to dwarf mistletoe or root rot. Regenerating these units will allow for the diversification of stand composition by replanting stands with western larch and rust-resistant western white pine. Both of these species are long-lived seral species, which were historically more prominent on this landscape than they are currently.

I am also authorizing approximately 1,246 acres of intermediate type treatments where stand densities will be reduced through commercial thinning and improvement cuts to favor fire-resistant species such as western larch, ponderosa pine, or Douglas fir. These stands will still retain lodgepole pine trees, which will continue to allow mountain pine beetle to play its natural role in the ecosystem. Intermediate harvest will also address forest health concerns while continuing to provide wildlife hiding cover and habitat connectivity.

All of the vegetation treatments favor the retention of large legacy trees where they exist, especially in Units 419, 429, and 449 which contain legacy trees within the Riparian Habitat Conservation Areas (RHCAs). The management activities conducted in these units will be implemented with Design Criteria (DN, Appendix 2) to minimize effects to RHCAs but allows us to protect these legacy trees from the effects of ingrowth and potential ladder fuels created by the dense lodgepole stands that surround them. I am also authorizing 50 acres daylighting to enhance western white pine and whitebark pine, and the 273 acres of group selection harvest I am including in this decision will create openings where rust-resistant whitebark pine stock can be planted.

The pre-commercial thinning and fill planting that I am authorizing with this decision will occur primarily on lands formerly owned by the PCTC and acquired by the Forest Service between 1998 and 2014. These lands have been actively managed for timber production prior to Forest Service ownership and have varying levels of tree density and species composition. I am authorizing 538 acres prescribed burning without other harvest activities to reduce fuels on some of these lands and prepare sites for planting of long-lived seral species such as western larch and rust-resistant whitepine. In higher elevations I am authorizing the planting of rust-resistant whitebark pine to contribute to the restoration of this species in suitable habitat. The 644 acres of

pre-commercial thinning activities that I am authorizing will reduce stand density to improve tree growth and vigor as well as reduce hazardous fuels in the WUI. The silviculturist has worked closely with the wildlife biologist to balance the forest health benefits of pre-commercial thinning with the need to provide for wildlife cover and habitat connectivity. My decision on where pre-commercial thinning will occur reflects the balance between these resources.

I believe that the timely implementation of these activities will increase the health, composition, and spatial heterogeneity of forest stands in the project area, thereby improving forest health through a reduction in insect and disease as well as reducing the potential for wildfire severity (Beaver Creek Final EA, pp. 137-148). If these vegetation treatment activities are delayed, the forest stand conditions will continue to deteriorate, increasing the likelihood that they will have greater effects from mountain pine beetle, root disease and the other insect and disease conditions identified in the Forest Vegetation report found in the Beaver Creek Final EA (pp. 103-156). Delayed implementation will also delay restoration activities to help western white pine and white bark pine persist, despite the effects of white pine blister rust (Final EA, pp. 135-136).

### **MAINTAIN OR IMPROVE WATER QUALITY AND WATERSHED HYDROLOGIC FUNCTION**

My decision includes the evaluation of 43.1 miles of haul route for BMPs which will be applied as needed to reduce sedimentation and benefit water quality in the project area. My decision also includes BMP work on 4.8 miles of road that will not be used for haul but has been identified as needing road work to reduce sedimentation. This work will provide for management access in the project area while reducing potential effects to water quality. My decision also includes placing 12.56 miles of road into intermittent stored service so that roads can be treated to reduce hydrological effects and prevent access to provide for wildlife habitat security, but will remain on the landscape if future management access is needed. My decision also includes decommissioning of 4.5 miles of road which will receive various types of rehabilitation to remove them from the landscape and from the National Forest Road System (Beaver Creek Final EA, pp. 46, 504-507).

The management activities that I am authorizing in this decision will all contribute to improving the Watershed Condition Framework rating for the Beaver Creek watershed, which is ranked Beaver Creek as Class 2 “functioning at risk” due to the following characteristics: degraded riparian vegetation in wetlands; invasive terrestrial weeds; high road density; forest health threatened by insect and disease; and non-native fish. The replacement of a culvert on NFS Road #11636 and the replacement of a culvert on NFS Road #906 would prevent further invasion of non-native fish into Cur Pond and the Willow Creek Beaver Ponds complex and help achieve restoration goals for the Beaver Creek watershed’s Watershed Condition Framework. The construction of a free-standing fish barrier on Sunset Creek will build a barrier to prevent brook trout invasion, and removes a partial barrier in the middle of the population that hinders juvenile cutthroat trout movement, which also moves the watershed to functioning appropriately as characterized with the Watershed Condition Framework. My decision to decommission roads will reduce the density of roads in the Beaver Creek watershed and contribute towards improvements in the ranking. This project will also address the concerns regarding forest health threatened by insect and disease as well as treating for invasive terrestrial weeds. The delay of these activities will result in delayed improvements to the watershed condition.

### **PREVENT AND/OR CONTROL INVASIONS OF NON-NATIVE PLANTS**

I am aware that the activities that I am authorizing have the potential to contribute to the spread of invasive plant species in the project area and have included Design Criteria (DN Appendix 2) to reduce the spread of invasive plant species in the project area, including but not limited to the following activities: equipment cleaning, seeding of disturbed areas with native seed mix, treatment of haul routes and disturbed areas, and treatment and seeding of decommissioned and stored roads.

## BENEFIT THE LOCAL ECONOMY

My decision will allow for a removal of about 13,225 CCF/6.4 MMBF of saw timber and 5,555 CCF/2.8 MMBF of non-saw timber. In addition to contributing to a supply of wood products to the community, removal of these trees will also help to address the other objectives of the project. The other restoration activities that I am authorizing also create employment opportunities to benefit the local and regional economy. The social and economic benefits of the project were analyzed on pp. 515-524 of the Beaver Creek Final EA.

## ASSIGN INTERIM MANAGEMENT AREAS TO ACQUIRED LANDS

The interim management areas that I am assigning to acquired lands in the project area will allow for management of these lands in a manner that is consistent with the management direction of surrounding lands and the characteristics of the parcel. This decision assigns the following management areas: MA2 – 55 acres; MA5 – 510 acres; MA11C – 2,312 acres; MA12 – 320 acres; MA15 – 1,531 acres; MA15C – 712 acres; and MA17 – 17 acres (See Table 3 of this DN, pp. 12-14) . Due to GIS precision variability these acreages should be considered approximations. These will be interim management area assignments until the Forest Plan Revision is completed.

I am assigning 502 acres of land on the east-shore of Lindbergh Lake as MA5 to allow for timber management while emphasizing the high scenic value of these lands, as analyzed in the Beaver Creek EA as Alternative 3, I made this decision based on the public comment received asking that these lands receive an MA5 designation to reflect the scenic value of these lands. My decision includes a forest plan amendment to assign interim management areas to acquired lands within the project area until the ongoing forest plan revision effort is completed for the Flathead National Forest, which will supersede this amendment.

Table 4 below shows each alternative's ability to meet the purpose and need, including the selected alternative that I have chosen for my decision.

TABLE 4. COMPARISON OF PURPOSE AND NEED OBJECTIVES BY ALTERNATIVE. <sup>2</sup>					
PURPOSE AND NEED OBJECTIVE	ACTIVITY	ALT. 1	ALT. 2	ALT. 3	SELECTED ALTERNATIVE
Reduce the Risk of Uncharacteristic Wildfire	Using fire for ecological restoration and to modify fire behavior	0 acres	1,808 acres	1,772 acres	1,642 acres
	Reduce fuels near private land and residences within the WUI. Reduce stocking in stands within the WUI and along strategic fuels breaks.	0 acres	2,783 acres	2,147 acres	2,524 acres
Improve fish and wildlife habitat	Creating lynx habitat by treating stem exclusion stands to recruit dense patches of understory vegetation. <sup>3</sup>	0 acres	1,103 acres	1,043 acres	1,056 acres
	Designing management activities, such as burning or thinning, to increase aspen presence on suitable sites.	0 acres	947 acres	806 acres	916 acres
	Designing management activities, such as thinning or burning, to increase shrub and huckleberry production.	0 acres	1,308 acres	936 acres	975 acres
	Achieving Amendment 19 numerical road density objectives in Beaver Creek Grizzly Bear Subunit <sup>4</sup>	6/26/66 ORD/TRD/Core	6/19/68 ORD/TRD/Core	6/19/68 ORD/TRD/Core	6/19/68 ORD/TRD/Core

<sup>2</sup> Some acres have been counted twice because they meet multiple purposes and need objectives.

<sup>3</sup> These acres reflect the forest stands treated as is analyzed in the Canada lynx analysis but because treatments units often include multiple stand or portions of stands, these acres may not match the totals in Beaver Creek EA, Appendix A – Treatment Summary

**TABLE 4. COMPARISON OF PURPOSE AND NEED OBJECTIVES BY ALTERNATIVE.<sup>2</sup>**

PURPOSE AND NEED OBJECTIVE	ACTIVITY	ALT. 1	ALT. 2	ALT. 3	SELECTED ALTERNATIVE
Activities to benefit native fish species	Probability of Westslope Cutthroat Trout persistence in Sunset Creek in 20 years.	10%	50%	20%	50%
	Number of wetlands protected from invasive species	0 wetlands	4 wetlands	4 wetlands	4 wetlands
Improve forest health, composition, spatial arrangement, structure, and ecological resilience	Reducing stocking in stands where densities are high to promote tree vigor, alter species composition, and reduce susceptibility of loss due to white pine blister rust and mountain pine beetle.	0 acres	3,110 acres	2,168 acres	2479 acres
	Replacing (regenerating) stands heavily affected by current and past mountain pine beetle infestations, root disease, and dwarf mistletoes and replace with fire-adapted early-seral species	0 acres	777 acres	220 acres	619 acres
	Reduce understory to maintain large legacy trees where they occur on the landscape and place them on a trajectory towards old growth	0 acres	1,719 acres	1,068 acres	1413 acres
	Restore health and vigor of western white pine and whitebark pine through stocking control	0 acres	1,461 acres	981 acres	1284 acres
Maintain or improve water quality and watershed hydrologic function	Reclaiming roads through ISS and Decommissioning	0 acres	17 miles	17 miles	17 miles
	Maintaining roads through Best Management Practices	0 acres	49.69 miles	42.42 miles	48.04 miles
	Watershed Condition Framework Rating	Functioning At Risk	Functioning Appropriately	Functioning Appropriately	Functioning Appropriately
Benefit local economy	Utilizing woody biomass and small-diameter trees produced from the project	0 acres	1,585 acres	999 acres	1264 acres
	Capture value of restoration activities through commercial product	0 CCF (saw) 0 CCF (non-saw)	14,296 CCF 6,147 CCF	9,099 CCF 3,913 CCF	13,225 CCF 5,555 CCF
	Provide local employment through training and use of local contractors	0 acres	2,013 acres	1,428 acres	1640 acres

## CONSIDERATION OF ISSUES

In addition to evaluating the purpose and need, I also carefully considered the issues identified following development of the proposed action. These issues were presented earlier in this document on p. 4. The first issue is related to increasing wildlife habitat connectivity by reducing fragmentation and edge effects created by the past management activities and increasing patch size and core areas to benefit bird and wildlife species. The second issue is the potential visual effects of vegetation treatments to the users of Lindbergh Lake, specifically those effects potentially created by Unit 83. The third issue is the potential effect of implementing vegetation management treatments in RHCA's.

Table 5 compares the alternatives and my decision for these three key issues.

<sup>4</sup> Please see the Beaver Creek EA, Chapter 3 – Threatened and Endangered Species Section for more information about Amendment 19 to the Flathead National Forest Plan and road densities in the Buck Holland Grizzly Bear Subunit.



**TABLE 5. COMPARISON OF MEASUREMENT INDICATORS BY ALTERNATIVE.**

KEY ISSUE	MANAGEMENT INDICATOR	ALT. 1	ALT. 2	ALT. 3	SELECTED ALTERNATIVE
Wildlife Habitat Connectivity	% High/Med Quality Marten Habitat	59%	58%	58%	58%
Wildlife Habitat Connectivity	Radius of Habitat Distance	123 meters	118 meters	122 meters	121 meters
Wildlife Habitat Connectivity	Nearest Neighbor Distance	124 meters	110 meters	111 meters	110 meters
Visual Effects of Proposed Treatments to the Lindbergh Lake Users	Unit 83	0	Yes	No	Yes
Vegetation Management with RHCAs	Acres of Vegetation Management in RHCAs	0	110 acres	6 acres	29 acres

The following section summarizes how I believe my decision responds to the issues identified in the Beaver Creek EA.

### **WILDLIFE HABITAT CONNECTIVITY**

The team received comments from members of the public expressing concern that the proposed activities could create fragmentation of habitat and asked that the team consider utilizing a methodology known as Fragstats to quantify fragmentation and patch size, which was only one part of the information used to evaluate the effects of project activities on the American Marten (pp. 406-417). The team developed Alternative 3 to increase habitat connectivity for American marten and maintain a diversity of seral stages across adjacent 4 mi<sup>2</sup> quadrants for the project area. Table 5, shown above, displays the different metrics used to evaluate habitat connectivity for each of the alternatives, including the selected alternatives.

The Beaver Creek Final EA explains on p. 412 that “Overall, there is very little difference in Fragstats metrics across the project area for the existing condition or after implementation of Alternatives 2 or 3. The results suggest that the project area retains similar proportions of habitat, habitat patch sizes, habitat patch isolation and connectedness with the implementation of either Alternative 2 or 3 relative to the existing condition of habitat in the project area.” In consideration of these results and the other information that was used to evaluate the potential effects to American Marten, I believe that the Selected Alternative adequately addresses the issue of habitat connectivity while effectively accomplishing the other project purpose and need statements.

### **VISUAL EFFECTS OF PROPOSED TREATMENTS TO THE LINDBERGH LAKE USERS**

Throughout the project development and environmental analysis process, I have heard from users of Lindbergh Lake that they are concerned about the possibility that they might see project activities while using Lindbergh Lake. I asked the team to look at this in the development of Alternative 3 and in the Scenery Analysis conducted for the project (Beaver Creek Final EA, pp. 469-493). I carefully considered this issue when making my decision. To address this issue, I have decided to select Management Area assignments as presented in Alternative 3, which assigns Management Area 5 (MA5), roaded timberlands in areas of high scenic value, to 502 acres of acquired lands on the east shore of Lindbergh Lake. I have also decided to include Unit 83 in my decision, which will be visible to people recreating on Lindbergh Lake, but will not be visible from residences on the lake or the Lindbergh Lake campground. I have reviewed the forest plan standards for MA5 believe that this unit can be implemented to meet the “Retention” Visual Quality Objective assigned to this MA. While I recognize the concerns that residents have expressed regarding visual effects and believe that these concerns can be addressed while still implementing management that provides for public and firefighter safety in the event of a wildfire.

## **VEGETATION MANAGEMENT WITHIN RIPARIAN HABITAT CONSERVATION AREAS**

The team received comments from the public asking that the Forest Service consider conducting vegetation management activities within the Riparian Habitat Conservation Areas to reduce ladder fuels and ingrowth adjacent to legacy western larch trees growing in these areas. The team also received comments from members of the public asking that all vegetation management be removed from RHCAs and other comments asking that any such activities be implemented with great care.

I have considered this issue and have identified approximately 29 acres where I believe it is appropriate to remove vegetation from within RHCA buffers to protect legacy trees from potential mortality during a wildfire event or from resource competition from ingrowth. I have included Units 459 and 491 in my decision because they are located above an existing road and the environmental analysis has determined that they will not contribute sediment to Beaver Creek. I have also decided to include Unit 4222, which will restore an RHCA adjacent to a wetland by planting trees in an area affected by past management activities. My decision also includes units 419, 429, 449, and 4225, which will remove vegetation adjacent to wetlands to reduce ladder fuels and ingrowth competition from legacy western larch trees. The Design Criteria that I am including with this decision identifies how activities will be conducted to reduce potential effects to riparian habitat conservation areas by requiring that little to no ground disturbance will occur within the RHCA buffer and that no harvest activity will occur within 50 feet of the wetland (DN, Appendix 2).

## **IX. FINDINGS RELATED TO LAWS, REGULATIONS, AND POLICIES**

Numerous laws, regulations, and agency directives require that my decision be consistent with their provisions. I have determined that my decision is consistent with the laws, regulations, and agency policies related to this project. The following summarizes this decision's compliance with major environmental laws:

### **THE NATIONAL FOREST MANAGEMENT ACT (NFMA)**

The National Forest Management Act (NFMA) and accompanying regulations require that several specific findings be documented at the project level. These are:

### **CONSISTENCY WITH FOREST PLAN STANDARDS, GOALS, AND OBJECTIVES**

The Flathead National Forest Land and Management Plan of 1986 (Forest Plan) established management direction for the Flathead National Forest. This management direction is achieved through the establishment of Forest-wide goals and objectives, standards, and guidelines. The desired conditions for the project area, comes from the desired conditions found in the forest plan and are identified on pp. 6-8 of the Beaver Creek Final EA. Additional goals and accompanying standards and guidelines have been established for specific management areas across the forest. Project implementation consistent with this direction is the process in which desired conditions described by the Forest Plan are achieved. The NFMA requires that all project-level resource plans, such as this Decision Notice, are to be consistent with the Forest Plan (16 USC 1604(i)). The EA displays the Forest Plan and management desired conditions, goals, and objectives, as well as the standards and guidelines applicable to the Beaver Creek Project Area (EA, Chapters 1, 2, and 3). The alternative development process is detailed in Chapter 2 of the EA and the in the project file, while the management goals and the environmental consequences of the alternatives in relation to the Forest Plan standards and guidelines are displayed in Chapter 3 of the EA. After reviewing the Final EA, I find that my decision is consistent with Forest-wide goals, objectives, and standards, and specific MA goals and standards.

On April 9, 2012, the USDA issued a final planning rule for National Forest System land management planning (2012 Planning Rule) 77 FR 68 [21162-21276]. The Flathead National Forest is undergoing the forest plan revision process but a decision on a revised forest plan has not yet been made and does not apply to this project-level decision. This project includes a forest plan amendment to assign management areas to acquired lands and in accordance with 36 CFR 217(b)(1) plan amendments started after May 9, 2015, must conform to the 2012 Planning Rule requirements.

### **FOREST PLAN AMENDMENT TO ASSIGN INTERIM MANAGEMENT AREAS TO ACQUIRED LANDS**

With this decision, I am authorizing an amendment to the Flathead Forest Plan to assign interim management areas to lands formerly owned by the PCTC within the Project Area that were acquired by the Forest Service between 1998-2014. These management areas will remain in place until the Forest Plan Revision process has been completed to assign new management areas to all lands on the Flathead National Forest. This decision will implement the management area assignments displayed in the Beaver Creek EA as Alternative 3 based on the public comment that I received on the EA.

My decision assigns interim management areas to approximately 5,457 acres of land in the project area based on the characteristics of the land, management areas of adjacent lands, and public comment received. I have also considered the Best Available Scientific Information to help determine the appropriate MA assignments. The proposed management area assignments were presented to the public in March 2014 as part of the proposed action. After receiving public comment regarding the proposed management area assignments, Alternative 3 was developed and proposes that approximately 502 acres of acquired land on the east shore of Lindbergh Lake be assigned MA5, to reflect the high scenic value of these lands. Based on the public comment received on the EA in December/January of 2014, I have decided to implement the management area assignments as presented in Alternative 3.

This decision assigns the following management areas: MA2 – 55 acres; MA5 – 510 acres; MA11C – 2,312 acres; MA12 – 320 acres; MA15 – 1,531 acres; MA15C – 712 acres; and MA17 – 17 acres (See Table 3 of this DN, pp. 12-14) . Due to GIS precision variability these acreages should be considered approximations. These will be interim management area assignments until the Forest Plan Revision is completed.

#### *How the Forest Plan Amendment Meets the 2012 Planning Rule Requirements*

The forest plan amendment to assign management areas to acquired lands on an interim basis, must demonstrate compliance with the applicable components of the 2012 Planning Rule (36 CFR 219) and consider best available scientific information.

#### **§ 219.8 Sustainability**

The forest plan amendment to assign management areas to acquired lands addresses the components of sustainability in the Beaver Creek EA, Chapter 3, including wildlife habitat connectivity, aquatic organism connectivity, and the risk of aquatic invasive species on these lands. The amendment will provide for ecological sustainability on these lands by applying forest plan components and state and federal protections that will improve and maintain fish and wildlife habitat. The plan amendment applies forest plan standards to maintain soil productivity, water quality, and air quality for prescribed burning activities. The forest plan amendment protects riparian areas by assigning MA12 and MA17 to lands with riparian habitat that outlines the restrictions to management activities that can occur in riparian areas. The forest plan amendment also applies BMPs to management activities that could occur on these lands. The forest plan amendment maintains the current social, cultural, and economic conditions of the area, including sustainable recreation for both non-motorized and motorized uses where authorized; ecosystem services such as drinking water and forest functions; multiple use opportunities for forest products which contribute to local and regional economies; and maintains

cultural uses as demonstrated through consultation with the Confederated Salish and Kootenai Tribes.

#### § 219.9 Diversity of Plant and Animal Communities

The forest plan amendment maintains the diversity of plant and animal communities on the acquired lands through the application of forest plan standards and guidelines, including but not limited to: Northern Rockies Lynx Management Direction; Interim Strategies for Managing Fish-producing watersheds (INFISH); IGBC Grizzly Bear Guidelines; Swan Valley Grizzly Bear Conservation Agreement; Flathead National Forest Plan Amendment 15: Sensitive Plants; Amendment 19: Objectives and Standards for Grizzly Bear Habitat Management; Amendment 20: Water Howellia; Amendment 21: Management Direction Related to Old Growth Forests; other forest and regional direction; and best available scientific information to provide for the diversity of plant and animal communities across all lands managed by the Flathead National Forest.

The forest plan amendment applies the forest wide direction, listed above, to these lands to maintain diversity of plant and animal communities, and includes, but is not limited to, management area specific direction, such as: MA2 - use prescribed fire to improve habitat, snag retention standards; MA5 – VQO standards, snag retention standards; MA11C – provide and maintain hiding cover over at least 70 percent of the area, snag retention standards; MA12 – maintain adequate tree and shrub vegetation to provide bank and instream thermal cover for fish, standards for thermal and hiding cover, standards for snags and down woody material; MA15 – snag retention standards; MA15C – manage to provide whitetailed deer summer habitat; and MA17 – snag retention standards, tree and shrub cover in stream areas, woody debris retention standards, and maintain stream flow. All management areas emphasize adherence to forest-wide grizzly bear standards and water quality standards which maintains a diversity of plant and animal communities. The Flathead National Forest evaluates its compliance with NFMA viability and diversity requirements and reports on them annually (Project File Index H-25).

#### §219.10 Multiple Use

The forest plan amendment includes components to address multiple uses of NFS lands when assigning management areas to acquired lands. The multiple uses include, but are not limited to: scenery, air quality, cultural and heritage resources, fish and wildlife species, habitat and habitat connectivity, grazing, recreation opportunities, riparian habitat, soil, water quality, timber, vegetation, and wilderness. In addition to the uses listed above, the responsible official considered the following multiple uses in the project area, such as: opportunities to coordinate activities with neighboring landowners; habitat conditions for fish and wildlife commonly enjoyed and used by the public and federally recognized Tribes; land ownership and access; reasonably foreseeable risks to ecological, social, and economic sustainability, such as uncharacteristic wildfire and the effects of insect and disease in forest stands; disturbance regimes and the ability of terrestrial and aquatic ecosystems to adapt to change; water supplies and water quality; and opportunities to connect people with nature. These multiple uses will continue to occur on acquired lands following site-specific review and following management area direction of the assigned management areas.

#### §219.11 Timber Requirements Based on the NFMA

In determining the need for a forest plan amendment to assign management areas on acquired lands formerly owned by the PCTC, the ID Team and the decision maker considered the suitability of lands for timber production in accordance with 219.11 (a)(i-vi): (i) there is no statute that prohibits timber production on the land; (ii) the lands have not been withdrawn from timber production; (iii) lands identified as riparian areas adjacent to lakes, ponds, wetlands, and streams, all of which were removed from suitability for timber production and assigned MA12 and MA17. Additional lands were identified as unroaded lands that provide semi primitive recreation opportunities adjacent to the Mission Mountain Wilderness, and these lands were removed from suitability for timber production and assigned MA2; (iv) there is no irreversible damage anticipated to soil slope, or watershed conditions; (v) given the evidence of natural regeneration on these

lands following timber harvest from former private timber company owners, there is a reasonable assurance that they can be restocked within 5 years after final regeneration harvest; and (vi) the land is forest land.

The remaining lands that did not meet any of the above criteria to classify them as unsuitable, were considered in relation to the management area of adjacent NFS lands and in consideration of their productivity and the past management activities that occurred on these lands.

Approximately 5,065 acres of land were assigned management areas indicating that they were suitable for timber production, while applying standards and guidelines that favor grizzly bear linkage (MA11C), white-tailed deer summer range (MA15C), and scenic integrity (MA5). Some lands adjacent to Lindbergh Lake and MT Highway 83 were identified as having high scenic value and were assigned as MA5, roaded timberlands of high scenic value.

The forest plan amendment to assign management areas to acquired lands in the Beaver Creek Project area appropriately meets the applicable provisions of 36 CFR 219.8 – 219.11 and does not preclude any of the other substantive provisions of the 2012 rule.

### **SUITABILITY FOR TIMBER PRODUCTION**

The NFMA directs that no timber harvest, other than salvage sales or sales to protect other multiple-use values, shall occur on lands not suited for timber production. Stands proposed for harvest treatment in the project area were examined for suitability in accordance with NFMA. Inclusions on non-suitable land were identified within stands proposed for harvest (such as wetlands), and no treatment would occur in these areas, except for the 29 acres of harvest that will occur within RHCA buffers and is described in greater detail on p. 21-22 of this document. All harvest units are located within management areas where lands are considered suitable for timber harvest per Forest Plan direction (MA5, MA11C, MA15, MA15C). Based on the analysis provided in the Beaver Creek EA and project file, the vegetation treatments identified in these areas meet these objectives/standards.

### **TIMBER HARVEST ON NATIONAL FOREST SYSTEM LANDS**

The NFMA directs that site-specific projects and activities to harvest timber on NFS lands can only occur where:

*a) Soil, slope, or other watershed conditions will not be irreversibly damaged.*

The ID Team fully assessed the potential effects of timber harvest on soil and aquatic resources. They documented the analysis within the Soil and Aquatics sections of the Beaver Creek Final EA and the project file. My decision will avoid impairment of site productivity and will result in long-term improvement to watershed conditions. This determination is supported in the Soil and Aquatics analyses of the Beaver Creek Final EA and the application of BMPs and other soil and aquatic design criteria to prevent the loss of soil or reduction in water quality.

*b) There is assurance that the lands can be adequately restocked within five years after final regeneration harvest.*

Previous regeneration harvests conducted by the USDA Forest Service on the Flathead National Forest have been successfully stocked within 5 years. Regional reforestation indices also support that reforestation techniques have been successful and 2005-2014 average 3-year survival of trees planted on the Flathead National Forest is 71.7 percent (Project File Exhibit U-12). Within the project area, the USDA Forest Service has acquired former industrial timber lands, this decision authorizes reforestation activities on these lands in areas where natural regeneration has not adequately stocked forest stands or to diversify species on these lands.

- c) Protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat.*

Upon review of the Beaver Creek Final EA, I find that the timber harvest activities associated with the decision will comply with applicable Clean Water Act and Montana State Water Quality standards and the standards and guidelines of the Flathead Forest Plan, including the activities that will occur within the RHCA buffers. As documented in Beaver Creek Final EA, Chapter 3 - Aquatics Section, timber harvest will not adversely affect water conditions or fish habitat. Application of BMPs and riparian buffers will protect water resources from harvest activities. In the units where harvest will occur within RHCA's, Design Criteria have been developed to minimize effects to riparian habitat and the Aquatic Resource Section of the EA analyzed the potential effects of these activities. I have reviewed this analysis and believe that my decision will maintain or improve the watershed condition. Several units will be monitored to determine if proposed activities exceed the Region One Soil Quality Standards. If after implementing the decision, there is more than 15 percent detrimental disturbance, then restoration activities described in Design Criteria, DN, Appendix 2, will occur to move the units back towards an improved condition.

- d) The harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber.*

I based my decision to implement the Beaver Creek Landscape Restoration Project on a variety of reasons discussed elsewhere in this decision. Although some of the timber harvest associated with this project will generate revenue, the activities that my decision authorizes were chosen based upon their ability to achieve the restoration purpose and needs for the project and interdisciplinary resources were considered at every stage of this project, including the project development, environmental analysis, and my decision making process.

## **CLEARCUTTING AND EVEN-AGED MANAGEMENT**

The NFMA directs that clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate and even-aged stand of timber will be used as a cutting method on NFS lands only where:

- a) For clearcutting, it is determined to be the optimum method, and for other such cuts it is determined to be appropriate, to meet the objectives and requirements of the relevant land management plan.*

Clearcuts with reserves will occur on 16 acres, seed tree harvest will occur on an estimated 330 acres, and group select harvest will occur on 273 acres with and without thinning the matrix. These methods have been determined to be the appropriate method to meet land management and project objectives. They provide the necessary site conditions for the conversion of existing stands into the target stands, composed of desired species composition, structure and health. Refer to the Forest Vegetation Analysis Section of the Beaver Creek Final EA, pp. 103-156 and the Forest Vegetation Section of the project file (Project File Section I).

- b) The interdisciplinary review as determined by the Secretary has been completed and the potential environmental, biological, esthetic, engineering, and economic impacts on each advertised sale area have been assessed, as well as the consistency of the sale with the multiple use of the general area.*

Please refer to the Beaver Creek Final EA and project file. Full interdisciplinary review has been completed for this project. All proposed treatments meet a portion of the multiple use goals and objectives in the Flathead Forest Plan for designated management areas.

- c) Cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain.*

After completing scenery analysis for the proposed Beaver Creek harvest units, treatments were adjusted as needed to meet visual quality objectives. Please see the Design Criteria in Appendix 2 of this decision for requirements to meet visual quality objectives.

- d) Cuts are carried out according to the maximum size limit requirements for areas to be cut during one harvest operation, provided that such limits shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm (FSM R1 supplement 2400-2001-2 2471.1, 16 USC 1604(g)(3)(F)(iv)).*

The Selected Alternative proposes three regeneration harvest units larger than 40 acres to improve forest health and resiliency and to reduce the number of entries to improve wildlife habitat security. These openings were identified to the public in the EA, and I received Regional Forester approval for these openings on May 18, 2016 (Project File Exhibit I-167).

- e) Such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource.*

Documentation of the effects on other resources can be viewed in the Beaver Creek Final EA. Protection of other resource values is maintained. All sites considered for treatment will use established harvesting and fuel reduction methods. In combination with resource protection standards in the Forest Plan and applicable BMPs, these methods will be sufficient to protect soil and water resource values (refer to Soils and Aquatics analysis).

### **STANDS OF TREES ARE HARVESTED ACCORDING TO REQUIREMENTS FOR CULMINATION OF MEAN ANNUAL INCREMENT OF GROWTH**

Regeneration harvests are occurring in forest stands that are mature and have achieved maximum mean annual increment. This includes both lodgepole pine greater than 70 years old and more mixed Douglas-fir/larch stands greater than 100 years old. Stand density, insects and disease have reduced the growth in many of these stands. My decision meets the requirements as stated.

### **ROADS**

The NFMA requires that the necessity for roads be documented, and that road construction be designed to standards "appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources" [16 USC 1608(c)].

The Beaver Creek Project includes a section of road realignment, which will include 0.15 miles of permanent system road construction to occur so that 0.38 miles of existing road can be decommissioned to make a more efficient road system. An estimated 5.5 miles of temporary road will be constructed to conduct project activities, approximately 3.2 miles of new temporary road will be constructed and 2.3 miles of temporary road will be on existing templates. All temporary roads will be fully rehabilitated according to design criteria, DN, Appendix 2. I have determined we met the requirements of 16 USC 1608(c).

### **THE NATIONAL FOREST MANAGEMENT ACT (NFMA) DIVERSITY**

The Forest Plan contains an array of components that contribute to the wildlife/fisheries habitat capability of the Flathead National Forest. Based upon consideration of these components of the Forest Plan, the monitoring plan (DN, Appendix 3) and Design Criteria (DN, Appendix 2) of the decision, an analysis of effects the Beaver Creek Project at the Forest and Regional scale (Project File Exhibit H-25) and the BAs/BEs (Project File Exhibits J-3, J-4, H-3, H-250, M-2, M-3),

and the analysis in the EA, I find this decision will continue to provide for a diversity of native species. In addition, my conclusion is based on a review of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgement of incomplete or unavailable information, scientific uncertainty, and risk.

## **THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)**

National Environmental Policy Act provisions have been followed as required by 40 CFR 1500. The Beaver Creek Landscape Restoration Project DN complies with the intent and requirements of NEPA.

Scoping for the project included public meetings, public field trips, mailings that provided information about the project and solicitation for comments, public notices (legal advertisements), and a public review period. Issues identified during the initial scoping for the Beaver Creek Project assisted the ID Team and me in project design and with the analysis process. Project File Exhibit Sections A, B, C, and D, contain public involvement documentation and news media articles, and Project File Exhibit Section E contains the comments received on this project. Appendix 5 of the Draft Decision Notice provides my responses to concerns identified during the review of the EA. This DN describes the decisions that I have made and my rationale for making the decisions.

## **BEST AVAILABLE SCIENTIFIC INFORMATION**

My decision is based on upon the consideration of the best available scientific information. This science is thoroughly discussed throughout the EA, in the Response to Comments, and in the project file documentation, where a review of the literature provided by commenters can be found (Project File Section T).

## **CLEAN WATER ACT AND MONTANA STATE WATER QUALITY STANDARDS**

The Beaver Creek Project area does not contain water quality impaired streams; however, the project area does include the Swan River and streams in the project area are tributary to the Swan River and Swan Lake, which are on Montana's Clean Water Act Section 303(4) list of impaired waters. A Total Maximum Daily Load (TMDL) and Water Quality Protection Plan for the Swan Lake River Watershed have been prepared by the Montana Department of Environmental Quality. The Beaver Creek Project includes specific Design Criteria and BMPs (DN, Appendix 2 and 4) to ensure beneficial uses are protected.

Upon review of the Beaver Creek Final EA and project file, I find that activities associated with my decision will comply with State water quality standards. My decision includes project Design Criteria and measures to protect the water resource (DN, Appendix 2) and applicable BMPs (DN, Appendix 4) to achieve water quality standards. Inland Native Fish Strategy (INFSH) RHCAs will be established along all wetlands and stream courses that are in or adjacent to treatment areas. The Selected Alternative has 29 acres of activity that will occur RHCAs which have been analyzed and have been determined to meet INFSH goals. Timber harvest activity is prohibited in the RHCA except in certain circumstances described in standard TM-1b.

*TM-1b. Apply silvicultural practices for Riparian Habitat Conservation Areas to acquire desired vegetation characteristics where needed to attain Riparian Management Objectives. Apply silvicultural practices in a manner that does not retard attainment of Riparian Habitat Objectives and that avoids adverse effects on inland native fish.*

I have reviewed the INFISH analysis prepared for the Beaver Creek Project (Project File Exhibit M-17) and have determined that my decision is consisted with INFISH.



## CLEAN AIR ACT

Upon review of Chapter 3 in the Beaver Creek EA, I find that the activities in my decision will be coordinated to meet the requirements of the State Implementation Plans, Smoke Management Plan, and Federal air quality requirements.

## NATIONAL HISTORIC PRESERVATION ACT, AMERICAN INDIAN RELIGIOUS FREEDOM ACT, AND NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT

Cultural resource reviews have been completed on all areas to be impacted by ground-disturbing activities. No cultural resources are expected to be affected by this action. Recognizing that the potential exists for unidentified sites to be encountered or disturbed during project activity, special provisions for their protection will be included in all contracts used to implement this project. These provisions will allow the Forest Service to unilaterally modify or cancel a contract to protect cultural resources, regardless of when they are identified. This provision will be used if a site is discovered after a harvest operation has begun. This project complies with the Region 1 programmatic agreement (1995) with the State Historic Preservation Office and the Advisory Council on Historic Preservation.

## GOVERNMENT TO GOVERNMENT RELATIONS

The Forest Service consulted with the Confederated Salish and Kootenai Tribes during the analysis process. The intent of this consultation has been to remain informed about the Tribal concerns regarding the American Indian Religious Freedom Act and other tribal issues. In addition, the Salish (Flathead), Kootenai and Upper Pend d'Oreilles reserved rights under the Hellgate Treaty of 1855 (July 16, 1855). These rights include the "right of taking fish at all usual and accustomed places, in common with the citizens of the Territory, and of erecting temporary buildings for curing; together with the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land." The Federal government has trust responsibilities to Tribes under a government-to-government relationship to insure that the Tribes reserved rights are protected. Consultation with the Tribes through the project planning helps insure that these trust responsibilities are met.

## THE ENDANGERED SPECIES ACT (16 USC 1531 ET. SEQ.)

Under the provisions of the Endangered Species Act (ESA), Federal agencies are directed to seek to conserve endangered and threatened species and to ensure that actions are not likely to jeopardize the continued existence of any of these species. Biological Assessments (BA), which disclose effects of the project on proposed, threatened, and endangered species, were prepared by our biologists with the following ESA determinations:

TABLE 6. PROPOSED, THREATENED, AND ENDANGERED SPECIES DETERMINATIONS.	
SPECIES	DETERMINATION
Wolverine	No Jeopardy
Grizzly Bear	May affect, likely to adversely affect
Canada Lynx	May affect, likely to adversely affect
Canada Lynx Critical Habitat	May affect, likely to adversely affect
Bull Trout	May affect, not likely to adversely affect
Bull Trout Critical Habitat	May affect, not likely to adversely affect
Spalding's Catchfly	No Effect
Water Howellia	May affect, not likely to adversely affect

## WILDLIFE

### *Grizzly Bears*

I have determined that the Beaver Creek Landscape Restoration Project is fully compatible with recovery of the grizzly bear and meets direction from the Flathead Forest Plan. In making this determination I considered the project as a whole and the overall impact on grizzly bears rather than parsing out the impacts of individual aspects of the project. The compatibility of the project with the grizzly bear recovery is further supported by recent estimates of grizzly bear populations in the Northern Continental Divide Ecosystem (NCDE).

The project lies within grizzly bear Management Situation 1 (MS1) lands, as designated by the Forest Plan and the Interagency Grizzly Bear Committee (IGBC) Guidelines. Management direction for these lands include:

“Grizzly habitat maintenance and improvement, and grizzly-human conflict minimizations will receive the highest management priority. Management decisions will favor the needs of the grizzly bear when grizzly habitat and other land use values compete. Land uses which can affect grizzlies and/or their habitat will be made compatible with grizzly needs or such uses will be disallowed or eliminated. Grizzly-human conflicts will be resolved in favor of grizzlies unless the bear involved is determined to be a nuisance.” (IGBC Guidelines, p. 6)

Management decisions and Design Criteria (DN, Appendix 2) for this project favor, and make this project compatible with, the needs of grizzly bear recovery and conservation by:

- Strict adherence to a grizzly bear subunit rotation by major landowners and cooperators (USDA Forest Service and Montana Department of Natural Resources and Conservation) that leaves every subunit in the Swan Valley inactive for a minimum of 7 years (Swan Valley Grizzly Bear Conservation Agreement [SVGBCA]);
- Compliance with the requirements for conducting activities within an inactive subunit. Beaver Creek Subunit will become inactive in 2017 and the Buck Holland subunit will be inactive again in 2021, which limits the displacement and disturbance of grizzly bears from Beaver Creek project activities;
- When the Beaver Creek Subunit becomes inactive, all commercial activities will be limited to the bear's denning period with the exception of commercial salvage and administrative use (limited to a maximum of 30 days in aggregate during the Restricted Period);
- Exclusion of activities from security core or grizzly bear denning habitat, during the denning season;
- Restriction of public use of roads used for project activities;
- Restriction of commercial activities in spring habitats during the spring period or in the fall when bears are hyperphagic;
- Retention of visual screening along open roads;
- Road decommissioning of 4.5 miles will increase security core 2 percent upon completion of project activities, achieving 68 percent security core in the Beaver Creek Subunit.
- Road decommissioning of 4.5 miles and road storage of 12.6 miles will meet the definition of a reclaimed road under Amendment 19 and will reduce total motorized road density (TMRD) 7 percent, achieving 19 percent TMRD in the Beaver Creek Subunit upon completion of project activities;
- Maintaining a minimum of 70 percent hiding cover in MA11C lands and is well distributed to allow for secure travel and foraging in the affected subunits;

- Contributing to security in linkage zones by rehabilitating temporary roads, and reclaiming stored and decommissioned roads. Rehabilitated and reclaimed roads would enhance use of Preferred Habitat or other high quality habitat areas, and complement adjacent areas of secure habitat;
- Inclusion of a contract clause for the temporary suspension or cessation of activities, if needed, to resolve any grizzly bear/human conflict; and
- A Special Order (2010) is in effect that requires all users of NFS lands in the Swan Valley, and throughout the Flathead National Forest, to store food, garbage and other bear attractants in a bear-resistant manner. This special order is included in all contracts associated with the project (Project File Exhibit H-230).

Further strategies to manage the lands encompassing the Beaver Creek Project in a manner that favors the grizzly bear include active participation in Bear Smart Community Programs and a District Bear Ranger Program.

For grizzly bears, a determination of “may affect, likely to adversely affect” was made for the grizzly bear. The Beaver Creek Project activities, including harvest and road use, would not likely result in adverse effects to the grizzly bear; however, the baseline condition in the Beaver Creek and Buck Holland Subunits would continue to be adverse to grizzly bears as the subunits do not meet 19/19/68 road density objectives set forth in Amendment 19 of the Flathead National Forest Plan (Project File Exhibit H-250). Due to this condition, the determination for grizzly bear was “may affect, likely to adversely affect.” This determination was based on the following rationale:

1. The proposed action would temporarily decrease hiding cover across the project area combined with cumulative effects; hiding cover would remain well distributed for grizzly bear travel and security after project implementation.
2. Guidelines for inactive subunits would only allow salvage activities for a maximum of 30 days during the bear’s active period and the remainder of activities would occur during the bear’s denning period. Based on the proposed project timelines, the majority of the proposed Beaver Creek activities would occur during the denning season in the Beaver Creek Project, minimizing overall displacement to the grizzly bear.
3. Spring timing restrictions would likely prevent displacement of grizzly bears when early season plant production is limited and cover and visual screening and cover guidelines would promote security for the bear.
4. Road decommissioning and ISS treatments would increase grizzly security in the long term in the Buck Holland Subunit and would meet Amendment 19 numerical objectives for ORD, TRD and Core in the Beaver Creek Subunit at project completion.
5. While the Beaver Creek Project may decrease some forage in the short term, however project activities would likely increase production of grizzly bear forage in the project area benefitting grizzly bears.
6. The proposed project would have a small temporary influence on security core in the Beaver Creek Subunit due to temporary road use within 500 meters of (but not inside) security core. Wilderness burning activities would result in short-term helicopter use over security core.
7. Restricted roads used for hauling and access would not be open for public motorized travel. Public access (open motorized road density) is far below the Amendment 19 objective resulting in a high level of existing grizzly bear security in the Beaver Creek subunit.
8. The project is consistent with the IGBC guidelines, Forest Plan direction, and the SVGBCA which includes vegetative screening along open roads, timing restrictions that

limit activity within spring and preferred habitat and retention of hiding cover throughout the subunit.

9. There is a food storage and sanitation order in effect. Contractors and others implementing the project would be required to comply with this order.

The USFWS agreed that “the existing access condition of the Beaver Creek and Buck Holland grizzly bear subunits and the road use associated with the proposed action are consistent with our analysis of effects on grizzly bears in both the 1995 and the 2014 programmatic biological opinions and the proposed action would be in compliance with the incidental take statements associated with those biological opinions. In fact, the motorized access route densities within the action area would decline as a result of the Beaver Creek Project (U.S. Forest Service 2015).” (Project File Exhibit G-12, p. 34). The USFWS provided Incidental Take for the Beaver Creek Project and determined that the project, as analyzed, adequately reduced the potential for, and minimizes the effect of, any incidental take that may result (Project File Exhibit G-12 p. 47). The USFWS determined the Beaver Creek Project would not result in jeopardy to the species and that “impacts on the grizzly bear population, including anticipated levels of incidental take, as a result of the Beaver Creek Project will not appreciably reduce survival or the recovery of the species” (Project File Exhibit G-12 p. 46).

#### *Canada Lynx*

On March 23, 2007, the USFWS issued a BO on the effects of the NRLMD on the Distinct Population Segment of Canada lynx (*lynx*) in the contiguous United States (Project File Exhibit H-138). The BO was identified as the first-tier of a tiered consultation framework, with the review of subsequent projects that may affect lynx as being the second-tier of consultation. Second-tier BOs would be issued as appropriate, where proposed actions would result in adverse effects to lynx that were not fully analyzed in the first-tier BO. In the lynx amendment (USDA Forest Service 2007), a limited range of fuel or vegetation management projects conducted within the WUI fell under exemptions and exceptions to amendment standards VEG S1, S2, S5, and S6. In this first-tier BO, the USFWS analyzed the effects of such projects on lynx and also provided an incidental take statement for these activities because the Forest Service provided explicit estimates on the number of acres that will be impacted under the exemptions and exceptions.

In the Beaver Creek Landscape Restoration Project BA (Project File Exhibit H-250) a determination of “may affect, likely to adversely affect” was made for the Canada lynx. The USFWS reviewed the BA prepared for the Beaver Creek Project and found that the effects of the project on Canada lynx were adequately analyzed in the first-tier BO and that the project conforms to the first-tier incidental take statement, because:

1. The Canada lynx and its habitat are expected to occur in the project area;
2. Approximately 590 acres of lynx feeding habitat would be affected by the proposed project. All of this is in the WUI. The project would affect approximately 6.8 percent of the existing winter foraging acres in the Lower Beaver LAU and approximately 0.2 percent of the winter foraging acres in the Upper Beaver LAU;
3. Vegetation management and temporary road construction would cause a short-term reduction in cover habitat and a reduction in availability of coarse woody debris for future denning habitat;
4. Design Criteria would retain patches of spruce/fir in intermediate treatment units throughout the project area encouraging the use of future multistory habitat development. The majority of harvest treatment would be focused in stem exclusion stands that are not lynx foraging habitat;
5. Landscape-level travel connections would be maintained and a mosaic of stand conditions would persist to allow for lynx travel corridors within the project area.

6. Lynx have been found to be tolerant of human activities during proposed vegetation management, road construction, and other motorized activities;
7. The impacts to winter lynx foraging habitat would occur in the lower elevations of the project area and not in the Sunset Ridge area where lynx are known to most frequently occur;
8. The project would reduce the risk of a large-scale, high-severity wildfire that would have the potential to reduce large amounts of lynx foraging habitat across the project area;
9. Far less than the Flathead National Forest's 103,800-acre (6 percent) allowance for fuel treatment projects within the WUI would be used;
10. Proposed management is consistent with all standards and guidelines of the Northern Rockies Lynx Management Direction (USDA Forest Service 2007).

#### *Canada Lynx Critical Habitat*

The conservation role of lynx Critical Habitat is to support viable core area lynx populations (USDI Fish and Wildlife Service 2009). In 2008, Critical Habitat was proposed for Canada lynx. A Final Rule for Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx was effective on March 27, 2009. On September 12, 2014, the USFWS published notice in the Federal Register regarding revised Critical Habitat in the contiguous United States, which became effective October 14, 2014. Northwest Montana is in Critical Habitat Unit 3: Northern Rocky Mountains.

As of the 2014 revision, on the Flathead National Forest, there are approximately 2,273,340 acres of designated Critical Habitat for lynx. The majority (approximately 99 percent) of the project's two LAUs representing the spatial bounds of this analysis are designated as Canada Lynx Critical Habitat. All of the proposed activities are located in Critical Habitat.

The USFWS provided the Forest Service with a BO on effects of the Beaver Creek Landscape Restoration Project to Canada Lynx Critical Habitat. The USFWS determined that the project is not likely to result in destruction or adverse modification of designated Canada Lynx Critical Habitat (Project File Exhibit G-12, p. 68).

In the Beaver Creek Project BA, a determination of "may affect, likely to adversely affect" was made for Canada Lynx Critical Habitat (Project File Exhibit H-250). The determination for Canada Lynx Critical Habitat is based on the following rationale:

1. Winter foraging habitat has been identified as the most critical component dictating lynx population size and distribution. The proposed project would decrease snowshoe hare habitat (PCE1a) in designated lynx habitat and in Canada Lynx Critical Habitat by 590 acres which is approximately 4 percent of the estimated PCE1a habitat within the two project LAUs.
2. The proposed project would temporarily decrease lynx denning habitat (PCE1c) by 811 acres.
3. The Project would not result in destruction of critical lynx habitat.
4. The Project would not alter physical or biological features that would appreciably reduce the conservation value of Critical Habitat for lynx.
5. All PCEs would remain abundant and well distributed across the project LAUs and across Critical Habitat Unit 3 before, during, and after implementation.
6. PCE1d (matrix habitat) would still support the ability of lynx to travel within their home range.
7. PCE1b (deep fluffy snows) would not be affected by this proposal.

In summary, the project is judged to affect minimal lynx PCE1a and PCE1c habitat in relation to the habitat available within the project LAUs. The determination for the proposed project is “may affect, likely to adversely affect” Canada lynx.

In their BO on the Beaver Creek Project, the USFWS concluded that although the proposed action would adversely affect areas of critical habitat within the Lower Beaver LAU, we do not expect the physical and biological features to be altered to an extent that will diminish the capacity of the Lower Beaver LAU to produce adequate densities of snowshoe hares and further support continual lynx presence. Thus, Lower Beaver LAU would continue to serve their intended conservation roles for lynx. (Project File Exhibit G-12, p. 67)

In summary, the project will not have significant adverse effects on grizzly bears, Canada lynx, or Canada Lynx Critical Habitat.

### *Wolverine*

In February 2013, the USFWS published a proposed rule to list the North American Wolverine as a Threatened Distinct Population Segment (DPS) in the contiguous United States (Federal Register / Vol. 78, No. 23 / Monday, February 4, 2013 / Proposed Rules). The proposed rule to list the North American Wolverine as a DPS in the contiguous United States. In the proposed listing rule, the USFWS assessed a variety of impacts to wolverine habitat including: 1) Climate change, 2) human use and disturbance, 3) dispersed recreational activities, 4) infrastructure development, 5) transportation corridors, and 6) land management. They stated that many of these impact categories overlap or act in concert with each other to affect wolverine habitat, but determined that the primary threat to the wolverine is climate change and its effects on populations as well as changes to the availability and distribution of wolverine habitat due to changing snow and temperature conditions.

On August 13, 2014, the USFWS withdrew its previous proposal (Federal Register / Vol. 79, No. 156 / Wednesday, August 13, 2014 / Proposed Rules). On April 14, 2016, the Court remanded the matter to the USFWS for further consideration consistent with order CV 14-246-M-DLC (Consolidated with Case Nos. 14-247-M-DLC and 14-250-M-DLC). On May 24, 2016, the USFWS again listed wolverine as a proposed species on the Flathead National Forest.

On May 20, 2014, the USDA Forest Service submitted a BA to the USFWS analyzing routine forest projects and the impacts to wolverine. The assessment determined that forest management and fuels reduction were not a threat to the species (Project File Exhibit H-22). On May 23, 2014, the USFWS concurred with the analysis and determined that routine USDA Forest Service projects would not jeopardize wolverine (Project File Exhibit H-22). In addition to analyzing wolverine as a sensitive species, the programmatic consultation was reviewed and the project was determined to be consistent with the effects considered by this consultation (Project File Exhibit H-22). The Beaver Creek Project would not jeopardize wolverine.

### **BULL TROUT AND BULL TROUT CRITICAL HABITAT**

A BA was prepared for bull trout and Bull Trout Critical Habitat for the Beaver Creek Landscape Restoration Project with a determination of “may affect, not likely to adversely affect” bull trout and Bull Trout Designated Critical Habitat (Project File Exhibit M-2). The “may affect, not likely to adversely affect” determination is due “potential impacts to bull trout and Bull Trout Critical Habitat through sediment transport and direct disturbance from helicopter-based burning efforts. Activities within the Lindbergh Lake watershed will comply with all INFISH standards set in place with the intent of recovering native fish species. Despite following these standards, the project may still impact Bull Trout Critical Habitat Primary Constituent Element Number 4 (substrate size/composition). These impacts are not expected to be measurable or detectable. The BA also indicates that helicopter operations will follow protocols put in place to minimize impacts to migrating and/or spawning bull trout upstream of Lindbergh Lake. “... Given the minimization measures and conclusions presented in the biological assessment, we expect effects of the

project on bull trout or bull trout critical habitat to be insignificant or discountable.” (Project File Exhibit G-12, pp. 1-2)

### **WATER HOWELLIA OR SPALDING’S CATCHFLY**

A BA was prepared for water howellia for the Beaver Creek Landscape Restoration Project with a determination of “may affect, not likely to adversely affect” for water howellia, all occupied and unoccupied ponds with suitable habitat have been buffered by 300 feet in accordance with Amendment 20 of the Flathead Forest Plan. This determination is also based on the implementation of BMP activities for occupied and unoccupied suitable ponds near existing roads as outlined in the project design features to prevent sediment from reaching the ponds. If there were to be any effects from road activities and associated best management practices, they would be insignificant as they would be immeasurable and not detectable. In addition, any effects are discountable as they are extremely unlikely to occur. Harvest activities would remain 300 feet from ponds (except in those cases where a road bisects the buffer). There would not be any effects to water howellia from harvesting.

On November 15, 2016, I received a letter from the USFWS (Project File Exhibit J-97) stating that “the Service is initiating the process to decide whether to delist the water howellia (*Howellia aquatilis*).” This decision is consistent with the recovery goals for water howellia and implements the recommended buffers to conserve the species.

A BA was prepared for Spalding’s catchfly with a “no effect” determination” because neither the species nor suitable habitat exists in the project area (Project File Exhibit J-3). The USFWS concurred with both of these determinations in their August 10, 2016, letter (Project File Exhibit G-12).

### **MIGRATORY BIRD TREATY ACT (MBTA)**

In January 2001, an EO was signed outlining responsibilities of Federal agencies to protect migratory birds under the Migratory Bird Treaty Act (MBTA) (EO 13186). The report, “Birds of Conservation Concern 2002,” amended most recently in 2008, is the USFWS’ most recent effort to carry out this mandate and to meet their responsibilities under the 1988 amendment. The overall goal of this report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest conservation priority. In the report, the United States is broken down into Bird Conservation Regions (BCR), with bird species of conservation concern identified for each region. The Flathead National Forest is located in BCR 10. It is recommended that the Bird Conservation Regional lists, with bird species of conservation concern, be consulted in accordance with EO 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds.”

As a complimentary measure to EO 13186, the USDA Forest Service and the USFWS entered into an MOU in 2008. The purpose of this MOU is to strengthen migratory bird conservation through enhanced collaboration between the agencies, in coordination with State, Tribal, and local governments. While this MOU has since expired, I find that my decision for the Beaver Creek Project is consistent with the direction included in the MOU.

### **ENVIRONMENTAL JUSTICE**

The action alternatives were assessed to determine whether they will disproportionately impact minority or low-income populations, in accordance with EO 12898 (Beaver Creek EA, Chapter 3, p. 522). No impacts to minority or low-income populations were identified during scoping or the comment period.

### **WILDERNESS ACT**

As stated in the Wilderness Act of 1964, wilderness shall be managed following these purposes:

“A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain.” Additionally, “except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.”

Use of motorized equipment can be approved if needed “to meet minimum needs for protection and administration of the area as wilderness, only as follows: a delivery or application problem necessary to meet wilderness objectives cannot be resolved within reason through the use of non-motorized methods (FSM 2326.1).” Forest Service guidelines recommend a “Minimum Requirements Decision Guide” to assist in making decisions regarding administrative actions in the wilderness. Based upon the factors discussed above with respect to safety and the duration and impacts to solitude and primitive recreation experiences, the minimum tool to meet objectives with the least impact on wilderness character and values is through aerial ignition by means of helicopter.

I have reviewed the analysis of effects to wilderness in the Beaver Creek EA found on pp. 455-456 and the Minimum Requirements Decision Guide (Project File Exhibit 0-15) that was prepared to determine the appropriate tool for activities in the wilderness and believe that my decision is in compliance with the Wilderness Act of 1964.

## **COLLABORATIVE FOREST LANDSCAPE RESTORATION ACT**

Congress established the Collaborative Forest Landscape Restoration Program (CFLRP) with Title IV of the Omnibus Public Land Management Act of 2009 (“Title IV - Forest Landscape Restoration” 2009). The purpose of the CFLRP is to encourage the collaborative, science-based ecosystem restoration of priority forest landscapes. In 2010, SWCC was identified as a priority landscape and became eligible for funding through the CFLRP to fund activities on NFS lands within the target landscape that contribute to the Southwestern Crown of the Continent Landscape Restoration Strategy. Portions of the Swan Lake Ranger District on the Flathead National Forest are included in this targeted landscape.

Some of the components that are specific to the provisions of the CFLRA include: focusing on small diameter trees, thinning, strategic fuel breaks, and fire use to modify fire behavior, as measured by the projected reduction of uncharacteristically severe wildfire effects for the forest type (such as adverse soil impacts, tree mortality or other impacts); and maximizing the retention of large trees, as appropriate for the forest type, to the extent that the trees promote fire-resilient stands; and commit funding to decommission all temporary roads constructed to carry out the strategy. I have reviewed the collaborative development of the Beaver Creek Landscape Restoration Project, the project purpose and need, and the activities proposed in the project and have determined them to be in compliance with the components of the CFLRA in addition to NFMA and NEPA.

## **X. FINDING OF NO SIGNIFICANT IMPACT**

In accordance with CFR 1508.13 and direction provided in the Forest Service Handbook (FSH 1909.15, Chapter 40, Section 43.1), I have determined that the management actions included in the decision for the Beaver Creek Landscape Restoration Project do not constitute a major federal action, and that the implementation of the decision will not significantly affect the quality of the human environment. Accordingly, I have determined that an Environmental Impact Statement



does not need to be prepared for this project. I have followed the implementing regulations for NEPA (40 CFR 1508.27) and other criteria for determining the significance of effects.

Before making my determination, I carefully reviewed and considered the following information:

- The direct, indirect, and cumulative effects of these actions as documented in the Beaver Creek Landscape Restoration Final Environmental Assessment, issued December 2016.
- The analysis documentation in the project file of the Beaver Creek Landscape Restoration Project.
- Comments received during all scoping, and comments received after the EA was published for this project.
- Past experiences with similar activities and projects.

The ID Team and I have screened the management actions included in the Beaver Creek Landscape Restoration Project for significant impact. The results of this screen are summarized on the following pages.

**Significant**, as used in NEPA requires consideration of both **context** and **intensity**.

**Context** means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant (40 CFR 1508.27).

The effects of the proposed action are limited in context. The project includes tree harvest on 1,865 acres of mature stands; pre-commercial thin on 644 acres; daylight on 50 acres; fill plant on 329; and prescribed burn on 1,642 acres without harvest activities.

These activities occur within a 34,962 acre project area and are limited in duration. Effects are local in nature and significant impacts to regional or national resources are not likely.

On the Flathead National Forest and elsewhere across the Northern Region and the nation as a whole, similar projects have been occurring to address similar purposes; in this regard, this project will be a continuation of on-going efforts. Any short-term adverse effects will be avoided through implementation of the standards and guidelines in the Flathead National Forest Land and Resource Management Plan (Forest Plan), best management practices (BMPs), and the Design Criteria (DN, Appendix 2) developed specifically for this project.

The project Design Criteria minimize and avoid adverse impacts to the extent that such impacts are almost undetectable and immeasurable, even at the local level. Design Criteria for the Beaver Creek Landscape Restoration Project will include. But are not limited to the following:

- Protection of riparian areas through the establishment of riparian buffers or site-specific criteria to minimize ground disturbance if vegetation is being removed in riparian buffers to resort native vegetation patterns;
- Protection of sensitive and threatened plant species during project implementation;
- Retention of prescribed types of snags and downed wood to protect important wildlife habitat components and soil productivity;
- Retention of hiding cover in units to provide travel corridors and visual screening for wildlife species;
- Required winter logging in specified units to meet Region One soils disturbance standards;
- Restricting duration and timing of activities in order to limit the intensity of human-cause disturbance to wildlife (e.g., grizzly bears) caused by project activities;

- Rehabilitation of temporary roads and implementation of BMPs on haul routes or other roads in project area;
- Non-native invasive plant/noxious weed abatement;
- Requirements to reduce effects to trails and areas of high scenic integrity;

Within the **context** of the landscape as a whole, or at the stand level, the ecological consequences are not found to be significant in the short or long-term.

**Intensity** refers to the severity of impact. Responsible Officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following ten aspects are considered in the evaluation of intensity (40 CFR 1508.27):

- 1) *Impacts may be both beneficial and adverse. A significant effect may exist even if the balance of the effects will be beneficial.*

The Beaver Creek Project would have both beneficial and adverse effects and both have been taken into consideration when making a determination of significance. While there will be beneficial effects, in the short and the long term, this action does not rely on those effects to balance adverse environmental impacts. Detailed specialist reports included in the Beaver Creek Final EA and project file contain comprehensive effects analyses and the findings from these resource specific reports form the basis for my decision.

The project includes a range of activities, including timber harvest and associated temporary road construction, pre-commercial thinning, daylighting, fill planting, prescribed burning, fish barrier construction, culvert replacements and other BMPs, road realignment, road decommissioning, intermittent stored service of roads, and management area assignments to acquired lands. These activities have varying effects on the physical, biological, or social components of the affected environment. Some of these effects are more favorable to a particular resource component than to another resource component. Below is a synopsis of the effects of the activities and their references in the Beaver Creek EA; however, none of the effects, whether favorable or unfavorable, beneficial or adverse, are significant.

Beneficial Effects:

The Beaver Creek Landscape Restoration Project Final EA documents the following beneficial effects of implementing management actions:

- Harvest activities will emphasize the retention of long-lived, fire-tolerant, and shade-intolerant species such as western larch, western white pine, ponderosa pine, and whitebark pine (p. 137). The group selection harvest would be implemented specifically for regenerating whitebark pine in openings and would include thinning to provide a more favorable environment for existing whitebark pine in the matrix (p. 138). Intermediate harvest would modify existing forest structure through density reduction, which will increase the spacing between stems and crowns, and will result in larger average stand diameters (p. 141). Favoring fire-tolerant species and reducing stand density will also increase stand resilience to stand-replacing fire and insect and disease agents, such as mountain pine beetle (p. 142). The treatments proposed are designed to reduce the potential for crown fires, flame length, and spotting distance, thereby reducing the risk of losing forest structure and diversity which is likely in the case of a high intensity wildfire (p. 218).
- Pre-commercial thinning and daylighting is proposed on acquired lands, in stands primarily dominated by lodgepole pine and will favor long-lived, shade-intolerant, fire-resistant species to modify stand composition and reduce stand density. Daylighting treatments above 5,500 feet would generally focus on releasing whitebark pine by removing shade-tolerant species and lodgepole pine within approximately 20 to 30 feet of a whitebark pine. Daylighting treatments on other units would remove competition from around legacy trees, favoring western larch, ponderosa pine, western white pine, and Douglas-fir (p. 139).

- Prescribed fire within the Mission Mountains Wilderness would reduce crown fire potential, decrease flame length and spotting distances and, therefore, would increase the probability that a natural ignition would stay within the wilderness boundary and fire could play its natural role on the landscape (p. 219).
- The installation of a free-standing fish barrier on Sunset Creek will increase the likelihood that a 99 percent pure population of westslope cutthroat trout would have a 50 percent chance of population persistence (p. 278).
- The installation of two culverts will block the invasion of non-native aquatic species into the Clearwater drainage and a wetland in the project area (pp. 254-255).
- The restoration activities proposed for the Beaver Creek watershed will move the Watershed Condition Framework ranking from “functioning at risk” to “functioning appropriately” (p. 239).
- Reclamation of roads through road decommissioning and intermittent stored service in the long term will allow for increase in habitat security core for grizzly bears and a reduction in total motorized route density, allowing the Beaver Creek Subunit to achieve the numerical objectives for Amendment 19 and for the Buck Holland Subunit to improve numerical objectives (p. 345).
- While the project would affect a low proportion of the potential habitat [fisher], treatments would recruit large trees, larger patch sizes and maintain connectivity within the project area in the long term (p. 377).
- The proposed management areas will maintain consistent VQO (Visual Quality Objectives) for all of the high concern lands surrounding Lindbergh Lake (p. 491).
- The jobs and labor income associated with timber harvest, restoration, and reforestation activities in the action alternatives, would contribute to the stability of the local economy during the life of the project (p. 521).

#### Potential Adverse Effects

The Beaver Creek EA documents the following potential adverse effects from implementing management actions:

##### Soil Productivity

Management practices outlined in the Design Criteria would reduce the occurrence of displacement and erosion to within the Region 1 guideline. Loss of organic matter is a short-term change, lasting about 10 years once vegetation returns to the soil. Light and moderate severity burned areas have minor effects well within the natural range of variability for wildfire. Where there is a risk of soil erosion, it would be minimized by implementing soil erosion measures (p. 93).

##### Silviculture, Threatened and Endangered Plant Species, and Prescribed Fire

Where high-intensity fire is experienced, it is possible that all species would be killed by fire or that only the most resistant would survive. Under low or moderate intensities, more resistant species would survive and result in an associated shift in species composition (p. 140). Burning in whitebark pine habitat can impact individuals by burning them (whitebark pine has thinner bark than ponderosa pine and western larch) yet benefit habitat by removing subalpine fir that encroaches into and shades whitebark pine habitat. Implementation of the prescribed burn would minimize the effects of fire to cone-bearing trees, some individuals would likely be lost but is not likely to result in a loss of viability (pp. 188-189).

##### Invasive Plant Species

The risk of invasive species spread, introduction, establishment, and persistence as a result of project actions would be moderate to high. The Design Criteria developed for this project will work

to reduce the spread of invasive species but due to the ongoing vegetation management in the project area and inaccessible roads in the interim, there would be an ongoing invasive species problem in the project area. (p. 175)

#### Sensitive Plant Species

The Howell's gumweed population along MT Highway 83 may be affected by harvest activities, because of the harvest units directly off of the highway and in the occupied sensitive species site that could affect individuals through soil disturbance and increased light availability. Project Design Criteria would mitigate impacts to the population; however individual plants were not found during surveys (p. 188).

#### Wetlands

District Silviculturalists identified several areas where it would be desirable to expand upland vegetation restoration into RHCAs. This would better mimic natural disturbance patterns and offer an opportunity to protect large legacy trees within RHCAs from potentially high-severity wildfire. To ensure that there are no potential effects to wetland hydrology from management activities, project design of management activities in the RHCAs followed four recommendations: timber management would not take place within RHCAs of Groundwater Dependent Ecosystems (GDE) wetlands, the complete removal of timber would not occur within a wetland micro-watershed basin; previously degraded (ditched and drained) wetlands would not have timber management within the RHCA, to reduce the potential for additional impacts; temporary roads will not be constructed within the RHCA, to prevent potential soil compaction which could indirectly modify ground water input to wetlands (pp. 251-252).

#### Water Quality and Sedimentation

The Selected Alternative has several direct and indirect effects to stream sedimentation, both positive and negative. While the BMP work and culvert replacement would reduce sedimentation long-term, it is estimated that the proposed activities could cumulatively contribute a one-time pulse of approximately 12,850 pounds of sediment into Beaver Creek, while halting 950 pounds of chronic erosion and preventing 59,600 pounds of sediment in the case of a culvert failure. All of these figures are much smaller than Beaver Creek's estimated natural sediment load of 1,298,875 pounds per year (pp. 272-274).

#### Canada Lynx

The Northern Rockies Lynx Management Direction (NRLMD) (USDA Forest Service 2007) was incorporated into 18 Forest Service forest plan amendments in the Northern Region, including the Flathead National Forest Plan. The USFWS issued a BO on the effects of amending Forest Plans of 18 National Forests with the NRLMD. The USFWS determined in its BO that the NRLMD would substantially reduce or eliminate adverse effects to lynx from NFS management activities. (p. 317). Proposed commercial and non-commercial treatments in lynx habitat in the Beaver Creek Project LAUs would be conducted under exceptions to Standards Veg S5 and S6 (for treatments in the WUI). In the USFWS letter on the Beaver Creek Landscape Restoration Project, issued August 10, 2016, they stated that "we reviewed: the biological assessment regarding the environmental baseline for the action area, the effects of the action, and the cumulative effects within the action area; the 2007 programmatic biological opinion on the NRLMD; the information we relied upon to develop that opinion; and information in our files. After our review of the those documents and the status of Canada lynx, the environmental baseline, the effects of the action, and the cumulative effects, it is the Service's biological opinion that the Beaver Creek Project is **not likely to jeopardize** the continued existence of Canada lynx." (Project File Exhibit G-12, p. 5)

#### Canada Critical Lynx Habitat

The USFWS published a revised designation of critical habitat for the contiguous United States DPS of the Canada lynx. The final rule was published on September 12, 2014, and became effective on October 14, 2014 (79 FR 54782). Critical habitat has been designated for Canada lynx within the action area, which lies in critical habitat Unit 3 (p. 325).

The BA for Canada lynx habitat prepared for the Beaver Creek Project determined that project activities “may affect, are likely to adversely affect” which prompted the USFWS service to issue a BO on the project on August 10, 2016, which stated:

“Following implementation of the Beaver Creek Project, both the Upper and Lower Beaver LAUs are expected to provide conditions that are conducive to supporting female lynx. Although the proposed action would adversely affect areas of critical habitat, the critical habitat in both LAUs is expected to remain capable of producing adequate densities of snowshoe hares to support continual lynx presence.

“We conclude that the adverse effects of the proposed action on snowshoe hare habitat are limited in severity and in scale to the extent that upon completion of the proposed action, critical habitat would continue to produce adequate densities of snowshoe hares and adequate levels of cover to support persistent lynx populations across Unit 3. We conclude that the proposed action will not alter the physical and biological features of critical habitat to an extent that appreciably diminishes the value of critical habitat for the conservation of lynx. The alterations will not preclude or significantly delay development of such features. The unit would retain its current ability for the primary constituent element(s) to be functionally established. Therefore, the proposed action is **not likely to destroy or adversely modify designated Canada lynx critical habitat.**” (Project File Exhibit G-12, pp. 69-70)

#### Grizzly Bears

During project activities there could be a temporary decrease in forage, hiding cover, and habitat security and an increase in potential for displacement during the proposed implementation of the Beaver Creek Project. In the long term, the Beaver Creek Project would reduce TRD and increase security core, benefitting grizzly bear security. The treatments in the project subunits would also promote bear foods over time. The Flathead National Forest and the Swan Valley community have been very active in minimizing the risk of human-grizzly conflicts. The best current information suggests that the grizzly bear population on the Flathead National Forest and the NCDE is expanding its range beyond the recovery zone and has a population above recovery plan level estimates (p. 335).

In its BO issued for the Beaver Creek Project on August 10, 2016, the USFWS determined that “this level of anticipated take is not likely to result in jeopardy to the species. The amount of incidental take described above is low. Further, we anticipate no mortality of grizzly bears, but rather some low level of effect on the normal reproductive potential and/or feeding patterns of individual female grizzly bears in the area. The best information indicates the overall status of the NCDE grizzly bear population is stable to increasing. Impacts on the grizzly bear population, including anticipated levels of incidental take, as a result of the Beaver Creek Project will not appreciably reduce survival or the recovery of the species. Further, considering the grizzly bear recovery strategies (U.S. Fish and Wildlife Service et al. 2013; U.S. Fish and Wildlife Service 1993) and the size, status, and distribution of the NCDE grizzly bear population, incidental take of grizzly bears in the action area would not affect the recovery of the NCDE grizzly bear population...The proposed activity that may result in incidental take adequately reduces the potential for and minimizes the effect of any incidental take that may result by limiting implementation to five years and avoiding spring bear habitat. Therefore, no reasonable and prudent measures are necessary to minimize the incidental take anticipated.” (Project File Exhibit G-12, p. 46-47).

#### Wildlife Sensitive Species

Sensitive wildlife species would be minimally affected by proposed activities because they or their habitats would be protected by project design and Design Criteria. While some project activities may impact individuals or habitat, they will not likely result in a trend toward federal listing or reduced viability for the population or species (p. 357-394).

### Recreation

The recreation report determined that there would be short-term displacement of recreationists hiking these trails when logging and prescribed burning operations are conducted, due to temporary closures. Design Criteria would be implemented to minimize the impacts to the recreation users and the trails while still implementing management activities (p. 462-463)

### Wilderness

The Beaver Creek EA analyzed the potential effects to wilderness character as a result of the prescribed burning activities and determined that management-ignited prescribed fire would have a short-term negative effect on the untrammeled, natural, and undeveloped characteristics of the wilderness but would have a long-term benefit of reducing the need for further manipulation or trammeling of the wilderness character by trending the vegetative conditions and fire regime toward a more natural and historic condition (p. 464).

### Scenery

The implementation of Unit 83 would contribute negatively to lowering the landscape scenic integrity in the short-term, but would meet Forest Plan direction for the management areas. There would not be a change in long-term scenic integrity for the majority of the project area; and over time, the impacts would lessen and within 5 years would appear less evident (p. 489).

It is my determination based on review of these analysis and consultation with specialists, that activities I have included in my decision would not have a significant impact on the environment. All effects would be small or short-lived. None are deemed irreversible or irretrievable and do not set in motion further effects. All potential direct, indirect, and cumulative effects are evaluated in the EA, specialist reports, BAs, and BEs.

#### *2) The degree to which the proposed action affects public health or safety.*

All burning of logging slash and the prescribed burn units would comply with State Air Quality Standards and be coordinated through the Montana Airshed Group. Dust from timber hauling activities will be controlled using the dust abatement requirements within the stewardship/timber sale contract provisions. Herbicide treatments of weeds would comply with label directions and in accordance with and under decision authority of the Flathead National Forest Noxious and Invasive Weed control EA and Decision Notice (USDA 2001), to which the Beaver Creek Final EA references. Contractors would be required to post signs warning of activities and traffic associated with treatment. Use of open roads or trails by the public may be restricted for safety purposes during logging operations. Roads that currently have restrictions for public motorized use would remain closed during harvest operations.

I believe that the selected action is not likely to have any significant impact to public health or safety.

#### *3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.*

There are no parkland, prime farmlands, ecological critical areas, or wild and scenic rivers within the project area and, therefore, would not be impacted by the decision. The selected actions would not affect cultural resources because there are no sites in or near the proposed activities (p. 497).

There are seven activity units proposed within the RHCA of wetlands, totaling 29 acres, with all other wetlands having established RHCA buffer zones. The potential effects to wetlands were analyzed in the EA (pp. 244-256) and Design Criteria were developed to minimize potential effects to wetlands from harvest activities.

Based on this information, I conclude that my decision will protect RHCA values and the habitat that they provide to fish, wildlife, and plants that use them and have minimal effects on unique resources.

- 4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial.*

Based on the limited context of the project, my review of comments received during the scoping of this project, and the analysis documented in the EA and project file, I do not find any highly controversial effects to the human environment.

I conclude that the effects of the decision are not considered highly controversial by professionals, specialists, and scientists from associated fields of forestry, wildlife biology, soils, fisheries, and hydrology.

- 5) *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.*

Based on my review of comments received during the scoping of the project, the comments received after the publication of the EA, and the analysis documented in the EA and project file, I find the possible effects on the human environment that are uncertain or involve unique or unknown risks are minimal or non-existent.

The Beaver Creek Project is similar to other projects conducted across the Flathead National Forest. Analysis of this project considered the effects of these past projects as a frame of reference in conjunction with scientifically accepted analytical techniques, available information, and best professional experience and judgement to estimate effects to the human environment.

- 6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.*

The Beaver Creek Project represents a site-specific project that does not set precedence for future actions or present a decision in principle about future considerations. Any proposed future project must be evaluated on its own merits and effects. Management actions are compatible with the Forest Plan and the capabilities of the land. I believe they do not represent a decision in principle about a future consideration.

- 7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.*

Connected, cumulative, and similar actions have been considered and included in the scope of the analysis. The analysis accounts for past, present, and reasonably foreseeable actions. Based on my review of the analysis and disclosure of effects in the EA, specialist reports, BAs/BEs, and other analysis in the project file, I conclude that the Beaver Creek Landscape Restoration Project does not represent potential cumulative adverse impacts (please refer to Table 19 of the EA, Chapter 3 resource section for resource specific cumulative effects analysis, and individual resource sections in the project file).

- 8) *The degree to which the action may adversely affect districts, sites, highways, structure, or objects listed or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources.*

I am not aware of management actions that will have adverse effects on, nor cause the loss or destruction of, significant scientific, cultural or historic resources. Heritage surveys have been completed in the Beaver Creek Project area and no new historic or prehistoric properties are within the proposed treatment units (Project File, Section P and the Beaver Creek Final EA, pp. 495-499). The potential for influencing undiscovered sites is mitigated by compliance with Forest

Plan standards and guidelines. In the event such resources are discovered during project implementation, they will be evaluated and protected.

I believe that this action will not have a significant effect on scientific, cultural, or historical resources.

9) *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.*

This project will not significantly adversely affect threatened or endangered species or their habitat. Biological assessments were completed to assess potential impacts to threatened, endangered, and proposed species and their habitat. These BAs and supporting documentation led to the following determinations for listed species:

- Wolverine - Not jeopardize the species;
- Grizzly Bear - May affect, likely to adversely affect;
- Canada Lynx - May affect, likely to adversely affect;
- Canada Lynx Critical Habitat - May affect, likely to adversely affect;
- Bull Trout - May affect, not likely to adversely affect;
- Bull Trout Critical Habitat - May affect, not likely to adversely affect;
- Spalding's Catchfly - No Effect; and
- Water Howellia - May affect, not likely to adversely affect.

As has been described earlier in this document, for the grizzly bear, a determination of a "may affect, likely to adversely affect" was made because the baseline condition of the Beaver Creek and Buck Holland Subunits do not currently meet 19/19/68 road density objectives as identified in Amendment 19 of the Flathead National Forest Plan. In their review of the BA, the USFWS prepared a BO and determined that "we anticipate no mortality of grizzly bears, but rather some low level of effect on the normal reproductive potential and/or feeding patterns of individual female grizzly bears in the area. The best information indicates the overall status of the NCDE grizzly bear population is stable to increasing. Impacts on the grizzly bear population, including anticipated levels of incidental take, as a result of the Beaver Creek Project will not appreciably reduce survival or the recovery of the species." (Project File Exhibit G-12, p. 40)

A determination of "may affect, likely to adversely affect" Canada lynx was made due to the approximately 590 acres of lynx feeding habitat would be affected by the proposed project. All of this is in the WUI. The project would affect approximately 6.8 percent of the existing winter foraging acres in the Lower Beaver LAU and approximately 0.2 percent of the winter foraging acres in the Upper Beaver LAU. The USFWS reviewed the BA and concurred with the determinations stated above for lynx and found that the effects of the Beaver Creek Project on Canada lynx were adequately analyzed in the first-tier BO and that the project conforms to the first-tier incidental take statement (Project File Exhibit H-147).

A determination of "may affect, likely to adversely affect" Canada lynx critical habitat was made due to a 590 acre reduction in snowshoe hare habitat (PCE1a) in designated lynx habitat and in Canada lynx critical habitat by 590 acres, which is approximately 4 percent of the estimated PCE1a habitat within the two project LAUs, and a temporary decrease in 811 acres of lynx denning habitat (PCE1c). The USFWS stated in their BO that "Following implementation of the Beaver Creek Project, both the Upper and Lower Beaver LAUs are expected to provide conditions that are conducive to supporting female lynx. Although the proposed action would adversely affect areas of critical habitat, the critical habitat in both LAUs is expected to remain capable of producing adequate densities of snowshoe hares to support continual lynx presence." (Project File Exhibit G-12, p. 69)



A determination of “may affect, not likely to adversely affect” was made for bull trout and bull trout designated critical habitat (Project File Exhibit M-2). The “may affect, not likely to adversely affect” determination is due to a small amount of sediment that could reach the spawning area of the Lindbergh Lake core population but would not be measurable or detectable. The BA also considered that noise from project activities could disturb bull trout but is unlikely to disrupt spawning or migration. The BA also considered that a small amount of sediment could reach Swan River, but that the amount would be so small that it would not impact bull trout migration. The USFWS concurred with this determination and stated that “Given the minimization measures and conclusions presented in the biological assessment, we expect effects of the project on bull trout or bull trout critical habitat to be insignificant or discountable.” (Project File Exhibit G-12, p. 2)

A determination of “may affect, not likely to adversely affect” for water howellia, all occupied and unoccupied ponds with suitable habitat have been buffered by 300 feet in accordance with Amendment 20 of the Flathead Forest Plan. There would not be any effects to water howellia from harvesting. A determination of “no effect” was made for Spalding’s catchfly because neither the species nor suitable habitat exists in the project area. The USFWS concurred with this determination in their August 10, 2016, letter (p. 2).

*10) Whether the action threatens a violation of federal, state or local law or requirements imposed for the protection of the environment.*

As described in the EA (Regulatory Framework and Consistency sections for each resource area in Chapter 3), the selected actions are consistent with all applicable federal, state, or local laws or requirements imposed for the protection of the environment, including:

- The National Forest Management Act (NFMA);
- The National Environmental Policy Act (NEPA);
- The Endangered Species Act (ESA);
- The Clean Water Act and Montana State Water Quality Standards;
- The Clean Air Act;
- The Migratory Bird Treaty Act;
- The National Historic Preservation Act;
- The American Graves Protection and Repatriation Act;
- American Indian Religious Freedom Act;
- Wild and Scenic Rivers Act;
- The Environmental Justice Act; and
- The Collaborative Forest Landscape Restoration Act.

This decision is consistent with Forest Plan direction. I have concluded that the selected actions do not violate any federal state or local laws or requirements imposed for the protection of the environment.

## **XI. PRE-DECISIONAL ADMINISTRATIVE REVIEW PROCESS**

The Decision Notice and Finding of No Significant Impact was issued on August 16, 2016, which was subject to the pre-decisional administrative review process pursuant to 36 CFR 218. The 45 Day objection period commenced with the publication of a legal notice in the *Daily Inter Lake* on August 17, 2016. Five objections to the project were received from the following organizations or

individuals: Swan View Coalition, Friends of the Wild Swan, Alliance for the Wild Rockies, Native Ecosystem Council, and Dick Artley.

A panel was convened to review the objections, EA, Updated EA, Draft DN/FONSI, and the contents of the project file. On November 14, 2016, the Deputy Regional Forester determined the project to be in compliance with all laws, regulation, policies, and the Forest Plan, and that all of the Objector's concerns and suggested remedies did not require further discussion. In his determination, the Deputy Regional Forester instructed the Forest to address the following item prior to signing a final DN/FONSI:

1. An objector alleges that the cumulative effects analysis is in adequate.

**Instructions:** *Although I find the responsible official has adequately analyzed cumulative effects with consideration of Glacier Loon and Cold Jim projects, I am instructing the responsible official to speak directly to Cold Jim in the grizzly bear and lynx analysis. For the water howellia analysis, I am instructing that the EA clarify that the Glacier Loon and Cold Jim projects were considered as part of the timber harvest and road construction discussion. I find that the bull trout and bull trout critical habitat analysis adequately addressed the effects of the Glacier Loon and Cold Jim projects.*

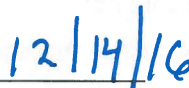
**Response:** A Final Environmental Assessment has been issued in conjunction with this Decision Notice that clarifies the cumulative effects analysis for grizzly bears and lynx by speaking directly to the Cold Jim project. This Final EA also includes clarification regarding the cumulative effects analysis for water howellia by speaking directly to the Glacier Loon and Cold Jim projects. A copy of the Final EA has been posted to the project webpage <http://www.fs.usda.gov/project/?project=43968>

## XII. CONTACT PERSON

For more information or to request a copy of the Decision Notice, please contact Sarah Canepa, Project Team Leader, Swan Lake Ranger District at (406) 837-7500 or by email at [scanepa@fs.fed.us](mailto:scanepa@fs.fed.us) with "Beaver Creek Project" in the subject line.



CHIP WEBER  
Forest Supervisor  
Flathead National Forest



Date

# **Decision Notice**

## **Beaver Creek Landscape Restoration Project Maps**

**Swan Lake Ranger District, Flathead National Forest, Missoula County, Montana**





## Legend

- Project Area
- Wildland Urban Interface
- Lakes
- Streams
- Highway #83
- Other Roads
- Trails

## Lands

- Private
- Land & Water Conservation Fund Acquisitions
- Legacy Lands Acquisitions

## Vegetation Restoration Activities

- Commercial Thin
- Improvement Cut
- Seed Tree with Reserves
- Clearcut with Reserves
- Precommercial Thin
- Daylight
- Fill Plant
- Broadcast Burns

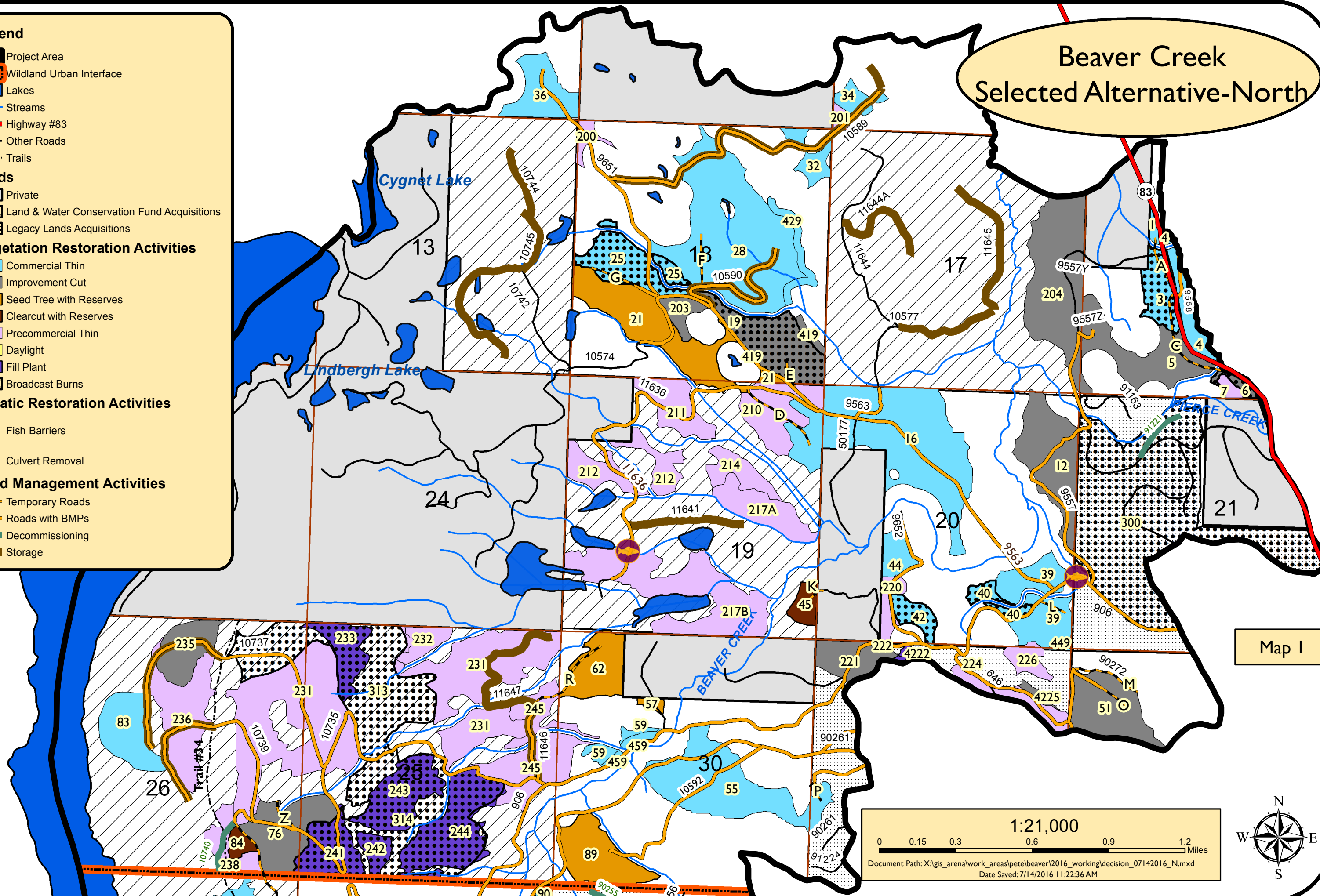
## Aquatic Restoration Activities

- Fish Barriers
- Culvert Removal

## Road Management Activities

- Temporary Roads
- Roads with BMPs
- Decommissioning
- Storage

# Beaver Creek Selected Alternative-North

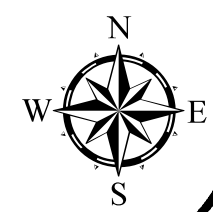


Map I

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# Beaver Creek Selected Alternative-South

**Legend**

- Project Area
- Wildland Urban Interface
- Lakes
- Streams
- Highway #83
- Other Roads
- Trails

**Lands**

- Private
- Land & Water Conservation Fund Acquisitions
- Legacy Lands Acquisitions
- Mission Mountain Wilderness

**Vegetation Restoration Activities**

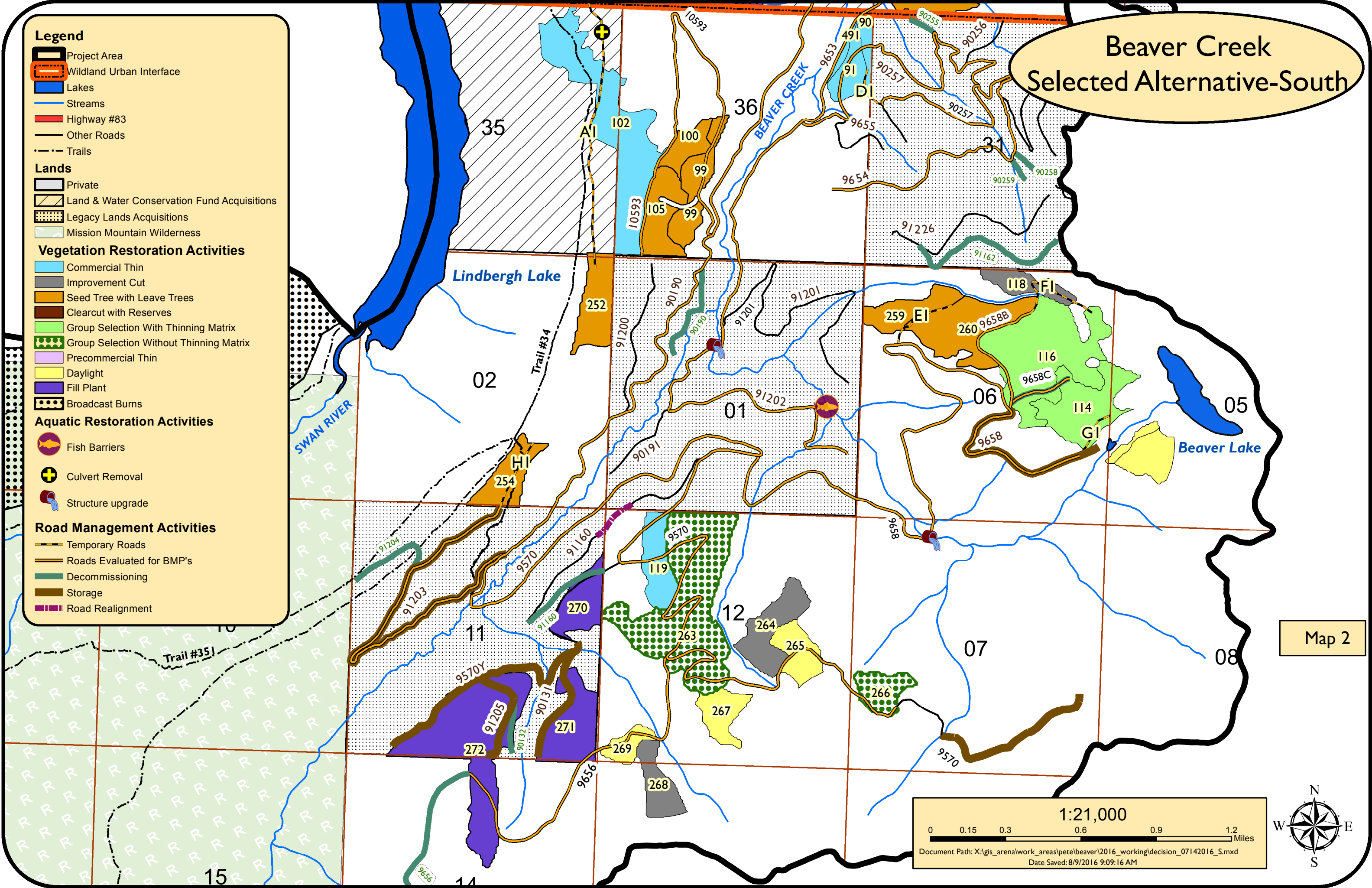
- Commercial Thin
- Improvement Cut
- Seed Tree with Leave Trees
- Clearcut with Reserves
- Group Selection With Thinning Matrix
- Group Selection Without Thinning Matrix
- Precommercial Thin
- Daylight
- Fill Plant
- Broadcast Burns

**Aquatic Restoration Activities**

- Fish Barriers
- Culvert Removal
- Structure upgrade

**Road Management Activities**

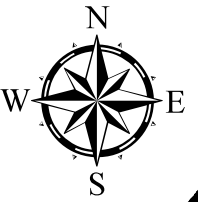
- Temporary Roads
- Roads Evaluated for BMP's
- Decommissioning
- Storage
- Road Realignment



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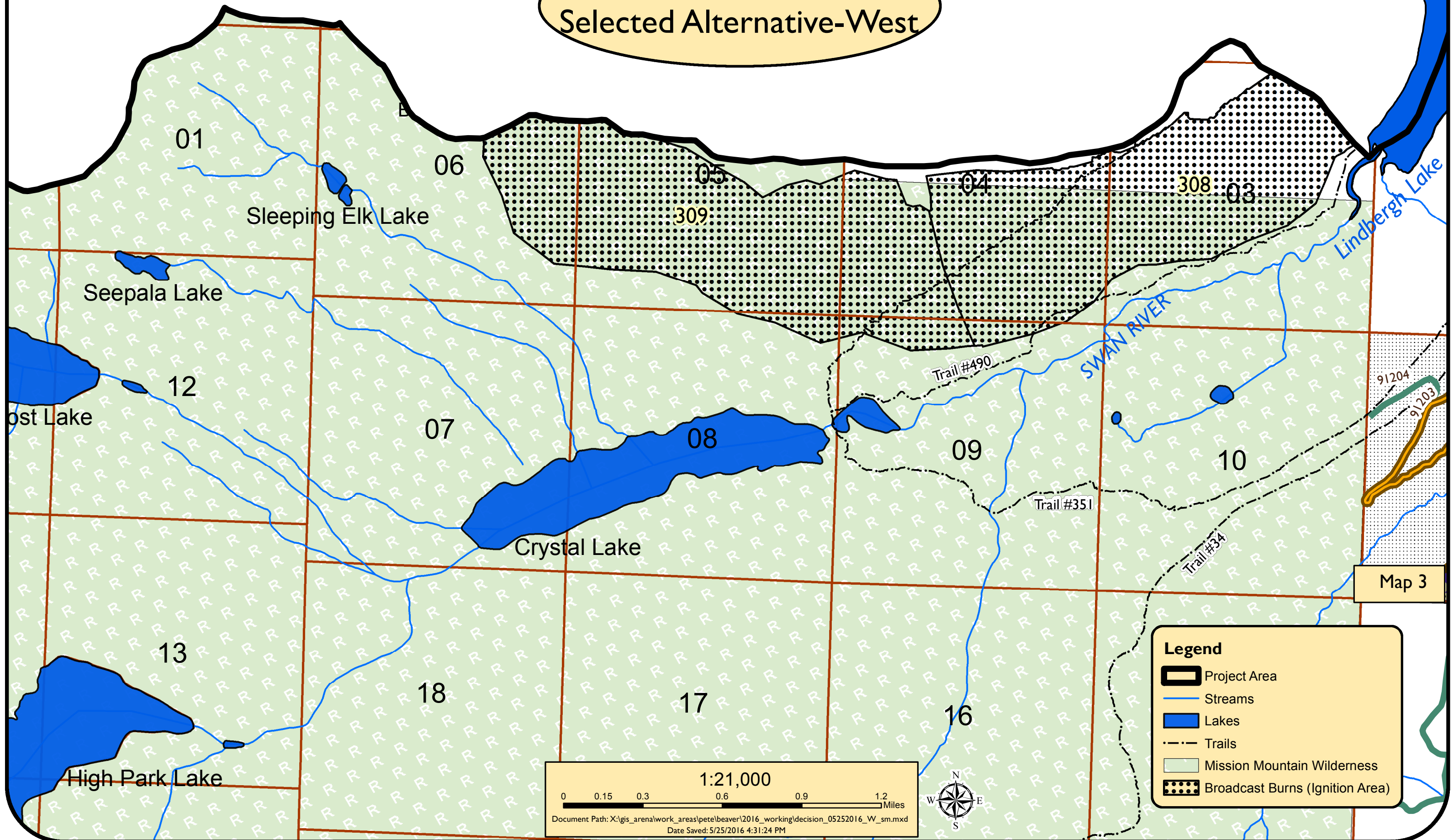
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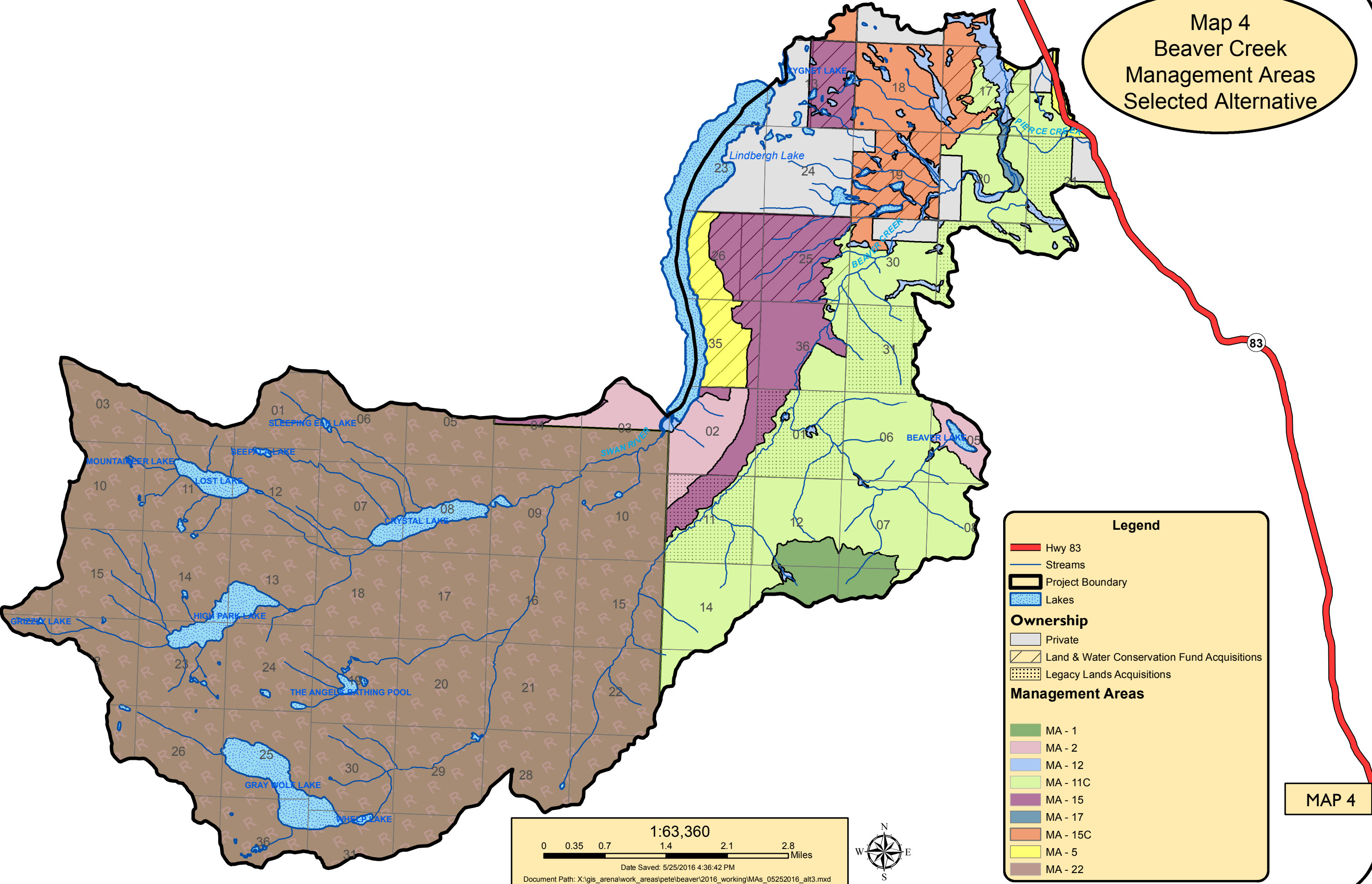




Beaver Creek  
Selected Alternative-West



Map 4  
Beaver Creek  
Management Areas  
Selected Alternative





# **Decision Notice**

## **Beaver Creek Landscape Restoration Project**

### **Appendices**

**Swan Lake Ranger District, Flathead National Forest, Missoula County, Montana**





## APPENDIX 1 - DETAILS OF THE SELECTED ALTERNATIVE

### INTRODUCTION

The Selected Alternative combines elements of both Alternative 2 and Alternative 3 to best address public comment received on the EA and to balance the needs of different resources across the project area. Vegetation restoration treatments such as commercial thin, improvement cut, seed tree with reserves, clearcut with reserves, group selection (with and without thinning in the matrix), pre-commercial thin, daylight, and fill plant would occur under this alternative. Associated temporary road building to access harvest units would be included in this decision, as would road decommissioning, road storage, road realignment, and BMPs. This decision includes prescribed burning, aquatic restoration activities and a forest plan amendment to assign management areas to acquired lands in the project area.

The Selected Alternative vegetation treatments and associated activities are summarized below in Table A1-1.

<b>TABLE A1 - 1. SUMMARY OF PROPOSED TREATMENT ACTIVITIES FOR THE SELECTED ALTERNATIVE.</b>	
<b>VEGETATION RESTORATION ACTIVITIES</b>	<b>ACRES</b>
Improvement Cut	463
Commercial Thin	783
Clearcut with Reserves	16
Seed Tree with Reserves	330
Group Select with thinning in the matrix	138
Group Select without thinning in the matrix	135
<b>Total Silviculture Treatments with Commercial Component (CC, IC, ST, CT, GS)</b>	<b>1,865 acres</b>
Daylight	50
Pre-Commercial Thin	644
Fill Plant	329
<b>Total Silviculture Treatments without Commercial Component (D, PCT, FP)</b>	<b>1,023 acres</b>
Prescribed Burn within the Mission Mountains Wilderness	1,104
Prescribed Burn within the WUI without other treatments	538
Prescribed Burn following harvest activities	135
<b>Total Prescribed Burn</b>	<b>1,777 acres</b>
<b>Total Vegetation Restoration Treatment</b>	<b>4,530 acres</b>
Commercial product produced from restoration activities	13,225 CCF (saw log)/ 5,555 CCF (non-saw log)
<b>LOGGING SYSTEM AND TREATMENT METHOD</b>	<b>ACRES</b>
Ground Based, Mechanized	2,211
Hand	1,098
Helicopter (Prescribed Burn in Mission Mountain Wilderness)	1,104
Skyline	117
<b>SLASH TREATMENT</b>	<b>ACRES</b>
Lop and Scatter	231
Mechanical	485
Mechanical/Pile	218
Whole Tree Yarding	313
Whole Tree yarding/Lop and Scatter	54
Whole Tree Yarding/Mechanical	146
Whole Tree Yarding, Pile	592
Whole Tree Yarding/Pile/Mechanical	520
<b>FUEL TREATMENT</b>	<b>ACRES</b>
Prescribed Burn Within the Wildlife Urban Interface without harvest	538
Mechanical Fuel Treatment Within the Wildland Urban Interface	1,827
<b>Total Acres of Fuel Treatments within the Wildlife Urban Interface</b>	<b>2,365</b>
<b>ROAD MANAGEMENT</b>	<b>MILES</b>
Haul Routes (BMPs) to be applied to meet Timber Sale Requirements	43.1
Non-Haul Routes (BMPs)	4.8
<b>Total Miles of Road Evaluated for BMPs</b>	<b>47.9 miles</b>
New Temporary Road Construction	3.2

BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

APPENDIX 1

DETAILS OF THE SELECTED ALTERNATIVE

<b>TABLE A1 - 1. SUMMARY OF PROPOSED TREATMENT ACTIVITIES FOR THE SELECTED ALTERNATIVE.</b>	
Temporary Road with Use of Existing Road Template	2.3
<b>Total Temporary Roads</b>	<b>5.5 miles</b>
Roads for Intermittent Stored Service (ISS)	12.6
Roads for Decommissioning	4.5
Road Realignment	0.15
<b>AQUATIC RESTORATION ACTIVITIES</b>	<b>ACTIVITIES</b>
Concrete Fish Barrier off Road #91202	1 barrier installation
Culvert Replacement on Road #9658 to provide fish passage	1 culvert replacement
Culvert Installation on Road #11636 to serve as Fish Barrier	1 culvert replacement
Culvert Replacement on Road #906 to serve as Fish Barrier	1 culvert replacement
Soil Remediation of Old Road Templates in Unit 231	2.3 acres of remediation

Table A1-2 displays each vegetative restoration unit in the selected alternative and identifies the acreage, the prescription, the treatment method, the slash treatment method, the prescribed fire activity that will occur and the management area the unit is located in, including the management areas assigned as part of this decision.

<b>TABLE A1 - 2. TREATMENT ACTIVITIES FOR THE SELECTED ALTERNATIVE.</b>						
<b>UNIT</b>	<b>ACRES</b>	<b>SELECTED ALTERNATIVE PRESCRIPTION</b>	<b>TREATMENT METHODS</b>	<b>PRESCRIBED FIRE ACTIVITY</b>	<b>SLASH TREATMENT</b>	<b>MA</b>
1	4	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding/Mechanical	5
3	24	Commercial Thin	Ground Based, Mechanized	Broadcast Burning	Whole Tree Yarding/Mechanical	5
4	19	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding/Mechanical	5
5	47	Improvement Cut	Ground Based, Mechanized		Whole Tree Yarding /Pile/Mechanical	11C
6	5	Improvement Cut	Ground Based, Mechanized	Broadcast Burning	Whole Tree Yarding	5
7	3	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	5
12	55	Improvement Cut	Ground Based, Mechanized		Whole Tree Yarding/Mechanical	11C
16	141	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding /Pile/Mechanical	11C
19	48	Improvement Cut	Ground Based, Mechanized	Broadcast Burning	Whole Tree Yarding /Pile/Mechanical	15C
21	66	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding	15C
25	38	Commercial Thin	Ground Based, Mechanized	Broadcast Burning	Whole Tree Yarding/Pile	15C
28	140	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding /Pile/Mechanical	15C
32	12	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding/Mechanical	15C
34	10	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding	15C
36	29	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding/Mechanical	15C
39	45	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding	11C
40	9	Commercial Thin	Ground Based, Mechanized	Broadcast Burning	Whole Tree Yarding/Pile	11C
42	11	Commercial Thin	Ground Based, Mechanized	Broadcast Burning	Whole Tree Yarding	11C
44	12	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding /Pile/Mechanical	11C
45	10	Clearcut with Reserves	Ground Based, Mechanized		Whole Tree Yarding/Pile	15C

**TABLE A1 - 2. TREATMENT ACTIVITIES FOR THE SELECTED ALTERNATIVE.**

UNIT	ACRES	SELECTED ALTERNATIVE PRESCRIPTION	TREATMENT METHODS	PRESCRIBED FIRE ACTIVITY	SLASH TREATMENT	MA
51	45	Improvement Cut	Ground Based, Mechanized		Whole Tree Yarding	11C
55	82	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding/Pile	11C
57	3	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding/Mechanical	15C
59	4	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding	11C
59	2	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding	11C
62	31	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding/Pile	15C
76	43	Improvement Cut	Ground Based, Mechanized		Mechanical	15
83	34	Commercial Thin	Skyline		Whole Tree Yarding/Pile	5
84	6	Clearcut with Reserves	Ground Based, Mechanized		Mechanical/Pile	15
89	39	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding/Pile	11C
90	8	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding	11C
91	16	Commercial Thin	Skyline		Whole Tree Yarding	11C
99	26	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding	15
100	14	Seed Tree	Skyline		Whole Tree Yarding	15
102	95	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding/Pile	15
105	27	Seed Tree	Skyline		Whole Tree Yarding/Pile	15
114	46	Group Select	Ground Based, Mechanized		Whole Tree Yarding/Pile	11C
116	92	Group Select	Ground Based, Mechanized		Whole Tree Yarding/Pile	11C
118	17	Improvement Cut	Ground Based, Mechanized		Whole Tree Yarding/Pile	11C
119	26	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding	11C
200	7	Pre-commercial Thin	Hand		Lop and Scatter	15C
201	4	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	15C
203	11	Improvement Cut	Ground Based, Mechanized		Mechanical/Pile	15C
204	83	Improvement Cut	Ground Based, Mechanized		Mechanical/Pile	11C
210	36	Pre-commercial Thin	Ground Based, Mechanized		Mechanical/Pile	15C
211	26	Pre-commercial Thin	Hand		Lop and Scatter	15C
212	36	Pre-commercial Thin	Ground Based, Mechanized		Mechanical/Pile	15C
214	17	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	15C
217a	29	Pre-commercial Thin	Hand		Lop and Scatter	15C
217b	84	Pre-commercial Thin	Hand		Lop and Scatter	15C
220	10	Pre-commercial Thin	Ground Based, Mechanized		Mechanical/Pile	11C
221	24	Improvement Cut	Ground Based, Mechanized		Mechanical	11C

BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

APPENDIX 1

DETAILS OF THE SELECTED ALTERNATIVE

**TABLE A1 - 2. TREATMENT ACTIVITIES FOR THE SELECTED ALTERNATIVE.**

UNIT	ACRES	SELECTED ALTERNATIVE PRESCRIPTION	TREATMENT METHODS	PRESCRIBED FIRE ACTIVITY	SLASH TREATMENT	MA
222	1	Fill Planting	Hand			11C
224	18	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	11C
226	10	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	11C
231	221	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	15
232	13	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	15
233	24	Fill Planting	Hand	Broadcast Burning		15
235	26	Improvement Cut	Ground Based, Mechanized		Whole Tree Yarding	15
236	52	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	15
238	18	Pre-commercial Thin	Ground Based, Mechanized		Mechanical/Pile	15
241	30	Fill Planting	Hand	Broadcast Burning		15
242	10	Fill Planting	Hand	Broadcast Burning		15
243	38	Fill Planting	Hand	Broadcast Burning		15
244	58	Fill Planting	Hand	Broadcast Burning		15
245	60	Pre-commercial Thin	Ground Based, Mechanized		Mechanical	11C
252	29	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding/Lop and Scatter	15
254	25	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding/Lop and Scatter	15
259	22	Seed Tree	Skyline		Whole Tree Yarding/Pile	11C
260	48	Seed Tree	Ground Based, Mechanized		Whole Tree Yarding/Pile	11C
263	117	Group Select without Thinning Matrix	Ground Based, Mechanized		Whole Tree Yarding /Pile/Mechanical	11C
264	32	Improvement Cut	Hand		Lop and Scatter	11C
265	20	Daylighting	Ground Based, Mechanized		Mechanical	11C
266	18	Group Select without Thinning Matrix	Ground Based, Mechanized		Mechanical/Pile	11C
267	19	Daylighting	Hand		Lop and Scatter	1
268	20	Improvement Cut	Hand		Lop and Scatter	11C
269	11	Daylighting	Hand		Lop and Scatter	11C
270	25	Fill Planting	Hand			11C
271	39	Fill Planting	Hand			11C
272	103	Fill Planting	Hand			11C
300	233		Hand	Broadcast Burning		11C
308	520		Helicopter	Broadcast Burning		22
309	584		Helicopter	Broadcast Burning		22
313	125			Broadcast Burning		15

**TABLE A1 - 2. TREATMENT ACTIVITIES FOR THE SELECTED ALTERNATIVE.**

UNIT	ACRES	SELECTED ALTERNATIVE PRESCRIPTION	TREATMENT METHODS	PRESCRIBED FIRE ACTIVITY	SLASH TREATMENT	MA
314	180			Broadcast Burning		15
419	4	Improvement Cut	Ground Based, Mechanized		Whole Tree Yarding /Pile/Mechanical	15C
429	11	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding /Pile/Mechanical	15C
449	2	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding/Pile	11C
459	5	Commercial Thin	Ground Based, Mechanized		Whole Tree Yarding	11C
491	4	Commercial Thin	Skyline		Whole Tree Yarding	11C
4222	1	Fill Planting	Hand			11C
4225	3	Improvement Cut	Hand		Lop and Scatter	11C
<b>Total</b>	<b>4,567</b>					

## VEGETATION RESTORATION TREATMENTS

Vegetation restoration activities in this decision include silvicultural treatments, prescribed burning within the Wildland Urban Interface (WUI), and prescribed burning within the Mission Mountains Wilderness. These activities are designed to reduce the risk of uncharacteristic wildfire, improve forest health, and improve wildlife habitat to achieve the project's purpose and need. Associated fuel treatments, site preparation, and reforestation treatments have been prescribed to follow harvest activities. The types of vegetative restoration activities are described below and the Beaver Creek Final EA provides example photos of each type of treatment on pp. 27-39.

Vegetation restoration treatments include 29 acres of vegetation treatments within Riparian Habitat Conservation Areas (RHCAs) to reduce ladder fuels adjacent to large legacy trees and 1 acre of planting will occur within an RHCA to restore an old landing site. Approximately 2,365 acres of fuels reduction activities will occur within the WUI. Harvest activities would be implemented using ground-based mechanized systems, skyline systems, and hand treatments in the summer and tractor and forwarder logging systems during the winter. Slash would be treated through a combination of lopping and scattering, mechanical treatments (including chipping or mastication; piling, and whole tree yarding). Fuel accumulations at landings would be addressed through burning, chipping/ masticating, and/or removal from NFS lands.

## SILVICULTURAL TREATMENTS WITH COMMERCIAL COMPONENT

### *Intermediate Treatments*

Intermediate treatments are designed to enhance growth, quality, vigor, and composition of the stand after establishment or regeneration and prior to final harvest. In this project the two types of intermediate treatments that will be used are improvement cut and commercial thin. The Selected Alternative authorizes a total 1,246 acres of intermediate treatments to meet the purpose and need.

#### Improvement Cut

Improvement cut treatments are intended to remove trees of undesirable species, form, age, or condition from the main canopy in a stand of poles or larger trees. Treatments remove the less desirable trees of any species with the primary purpose of improving composition and quality of the remaining stand. Stands subject to prior cutting, which retained poor phenotypes or trees injured by insect and disease, but which still have promising trees of desired species, are the main target of this treatment. The purpose is to find and release the best trees. Ponderosa pine, western white pine, western larch, and Douglas-fir would be favored for retention. Mechanical treatments would be used to reduce fuel loading, fuel

arrangement, and to recycle nutrients. Dead trees and pine trees currently infested with mountain pine beetle would be salvaged from these areas if encountered. Trees with significant dwarf mistletoe and apparent root disease would also be targeted for removal, as would late-seral, shade-tolerant species and poor phenotypes of any species.

The Selected Alternative includes 463 acres of improvement cuts, some of which would produce a commercial product and others will not. The commercial value of these stands would be determined during implementation; and for the purposes of this analysis, all improvement cuts are assumed to contain some commercial sized trees to be removed.

Treatments can capture the value of recent tree mortality, including but not limited to, lodgepole pine trees affected by mountain pine beetle and areas of significant root disease, especially in Douglas-fir. This would improve stand health, recover economic value, and manipulate fuel loadings and continuity. A secondary purpose is to prevent spread of damage agents within the stand and to adjacent healthy stands.

Treatments would preserve large, legacy trees of the early-seral, fire-resistant species where they are present. In these areas, smaller, younger trees are removed in a 20- to 30-foot radius surrounding large trees designated for retention in order to improve vigor, remove ladder fuels, and increase resistance to insect attack (e.g., bark beetles). Improvement cuts will also remove noncommercial (less than sawlog-size 7 inches DBH) trees from the understory in areas where stand densities exceed those desirable for optimal tree growth, vigor, and resilience to insect and disease. Target densities in these areas generally range from 150 to 300 trees per acre.

#### Commercial Thin

The purpose of a commercial thin treatment is to enlarge the growing space for desirable trees and reduce tree competition for limited site resources, thus promoting improved tree growth, vigor, and resilience to insect and disease. This treatment is also targeted to reduce fuel quantities and disrupt fuel continuity. Existing tree density would be reduced from current levels to a target residual density ranging from 60 to 120 square feet of basal area per acre. This equates to approximately 50 to 150 trees per acre depending on tree species and site variables. Long-lived, fire-resistant, shade-intolerant species (typically western larch, ponderosa pine, western white pine, and occasionally Douglas-fir) would be favored for retention. Mechanical treatments and/or prescribed fire would be used in some units to treat fuel loading, fuel arrangement, and to recycle nutrients. The Selected Alternative will commercial thin 783 acres.

Treatments can remove potential mortality in stands with lodgepole pine trees affected by mountain pine beetle and areas of significant root disease, especially in Douglas-fir. This would improve stand health, recover economic value, and manipulate fuel loadings and continuity. Treatments would focus on preserving large, old legacy trees of the early-seral, fire-resistant species where they are present. In these areas, smaller, younger trees are removed in a 20- to 30-foot radius surrounding large trees designated for retention in order to improve vigor, remove ladder fuels, and increase resistance to insect attack (e.g., bark beetles).

Commercial thinning treatments will also remove non-commercial trees (less than sawlog-size 7-inches DBH) from the understory in areas where stand densities exceed those desirable for optimal tree growth, vigor, and resilience to insect and disease. Target densities in these areas generally range from 150 to 300 trees per acre.

#### *Regeneration Treatments*

Regeneration treatments are proposed in forest stands where recent inventory data (2011, 2012, and 2013) and stand diagnoses indicate substantial current or potential mortality from insects and/or disease, or to create uneven-aged stands and promote the establishment and growth of desirable species. In the Beaver Creek Project, the regeneration treatments being proposed include seed tree with reserves, clearcut with reserves, and group selection with or without thinning in the matrix. Sites where these treatments occur must be regenerated, either through natural regeneration or by planting seedlings. The Selected Alternative proposes a total of 619 acres of regeneration treatments.



### Clearcut with Reserves

A clearcut with reserves will remove nearly all trees from the site to facilitate regeneration of a new age class and increase species diversity. Although limited, all long-lived, fire-resistant, shade-intolerant species (western larch, ponderosa pine, western white pine, and occasionally Douglas-fir) will be retained, where feasible and where not acting as an insect or disease vector. Reserve trees will be retained to provide long-term structural diversity. These treatment areas consist of even-aged lodgepole pine with little species or structural diversity that are either experiencing mountain pine beetle mortality or are at risk of being affected; stands substantially infected by dwarf mistletoe; and/or stands with significant root disease attack needing replacement with disease-resistant species. Regeneration of trees would result from natural seeding, planted seedlings, or a combination of both. Mechanical treatments and/or prescribed fire could be used to reduce fuels, recycle nutrients and prepare the site for regeneration. The Selected Alternative proposes approximately 16 acres of clearcut with reserves treatments.

### Seed Tree with Reserves

Under a two-aged stand seed tree with reserves treatment, a portion of the existing overstory is long-lived, fire-resistant, shade-intolerant species (western larch, ponderosa pine, western white pine, and occasionally Douglas-fir). This overstory would be retained and reserved at a density sufficient to facilitate regeneration of these desired species and create a two-aged stand structure (e.g. 5 to 15 trees per acre). This density is designed to provide seed sources and long-term structural diversity, while not interfering with the successful regeneration of desired species. The majority of these areas are dominated by lodgepole pine infested with mountain pine beetle or at risk of infestation. In addition, some proposed areas are affected by dwarf mistletoe and/or root diseases. Regeneration of trees would result from natural seeding, planted seedlings, or a combination of both. Mechanical treatments and/or prescribed fire could be used to reduce fuels, recycle nutrients and prepare the site for regeneration. Scarification may be used to provide a favorable mineral seedbed for early seral species such as western larch and ponderosa pine. The Selected Alternative proposes approximately 330 acres of seed tree with reserves.

### Regional Forester Approval for an Opening greater than 40 acres in size

The Selected Alternative received Regional Forester approval to create three openings greater than 40 acres in size on May 18, 2016. In some cases these openings are created as a result of the proposed treatment occurring in one unit and in other cases the openings are a result of several regeneration units located adjacent to each other. All of these units have been designed to meet the Flathead National Forest standards for hiding cover such that no point in the proposed openings is more than 600 feet to hiding cover.

### Group Selection

The principle purpose of the group selection treatments being proposed in the Beaver Creek Project is to create openings for establishment and/or increased stocking and vigor of whitebark pine seedlings using planted white pine blister rust-resistant stock, natural regeneration, or a combination of both. These treatments will be applied to stands at elevations greater than 5,500 feet, the elevation above which whitebark pine naturally occurs. Some treatments would be conducted in stands that contain older, more mature whitebark pine with the primary purpose of freeing growing space in the vicinity of these trees to improve growth and vigor.

This treatment would establish small openings (typically a few acres) in stands with the primary purpose of establishing new cohorts of trees, it is estimated that approximately 20 percent of the unit will have small openings. Uneven-aged stands result from this treatment and add structural and spatial heterogeneity to the existing stand. They typically result in increased biological diversity.

On approximately 138 acres of the Selected Alternative, the small openings would also be accompanied with thinning from below in the remaining matrix of the stand (the portion not designated for a group opening) to remove trees of undesirable species, form, age, or condition from the main canopy. The matrix thinning is estimated to occur on approximately 80 percent of the unit. Treatments will remove the

less desirable trees of any species with a secondary purpose of improving composition and quality of the remaining stand, ideally increasing the vigor of present whitebark pine.

On approximately 135 acres of the Selected Alternative, small openings would be created, but no thinning in the matrix would occur to maintain a dense understory for mid-sized carnivores and other wildlife species.

Treatments would focus on preserving large, old legacy trees of whitebark pine. In these areas, smaller, younger trees are removed in a 20- to 30-foot radius surrounding large trees designated for retention in order to improve vigor, remove ladder fuels, and increase resistance to insect attack (e.g., bark beetles or mountain pine beetle). Other sites would remove noncommercial trees (less than sawlog-size 7 inches DBH) in areas where stand densities exceed those desirable for optimal tree growth, vigor, and resilience to insect and disease. Target densities in these areas generally range from 150 to 300 trees per acre.

#### Reforestation Following Regeneration Treatment

Reforestation would occur following regeneration treatments, such as clearcut with reserves, seed tree with reserves, and group selection where the silviculture prescription determines that reforestation is necessary to accomplish objectives.

#### Site Preparation

Depending on existing vegetation and ground conditions, site preparation could be prescribed as part of other silvicultural treatments to create favorable conditions to help ensure adequate regeneration. These treatments are often prescribed in both artificial and natural regeneration situations and typically address competing vegetation, seed bed preparation, fuel accumulations, and duff reduction. Site preparation can be accomplished through hand, mechanical, or prescribed fire methods. Hand methods would usually involve scalping with a hoedad or mattock to create favorable conditions at the time of planting. Mechanical treatments would often be accomplished during harvest operations or shortly afterwards and involve scarification, using excavators or other mechanized equipment. Prescribed fire could also be used to recycle nutrients, consume excess fuels, reduce competing vegetation, and create a favorable seedbed.

### **SILVICULTURAL TREATMENTS WITHOUT COMMERCIAL COMPONENT**

These are treatments made to improve the composition, structure, condition, health, and growth of even- or uneven-aged stands. Although these treatments are currently not expected to produce a commercial product, it is possible that the residual slash generated from both commercial and non-commercial harvest could be utilized for higher value products.

#### *Pre-commercial Thin*

This treatment will be applied to young stands generally not past the sapling stage with the objective of accelerating growth, reducing densities, and/or improving species composition. Residual tree density would be reduced to a target of 150 to 300 trees per acre. The primary purpose is to adjust species composition and concentrate growth of fire-tolerant tree species, such as western larch and ponderosa pine trees where present, while reducing fuel continuity and modifying fuel arrangement. This treatment will focus on the removal of young trees generally less than 5 inches DBH. Mechanical treatments and/or pile burning will be used to reduce fuels and recycle nutrients. This treatment is typically accomplished by hand or by mechanized methods, such as chipping or mastication. Some stands have understocked areas that will be planted with desirable species to meet target stocking levels for the stand. The Selected Alternative proposes approximately 644 acres of pre-commercial thinning.

#### *Daylight*

Daylight treatments are applied on an individual tree basis and involve removing smaller-diameter trees within a specified distance (approximately 20 to 30 feet) of a target tree. This treatment would be applied to:

- Release whitebark pine and improve microclimate with the objective of discouraging attack by mountain pine beetle;

- Reduce competition for water and nutrients for large, old legacy trees and change the microclimate surrounding these trees (especially important for ponderosa pine and Douglas-fir where bark beetle attack is encouraged by shaded boles); and
- Release western white pine and discourage attack by both mountain pine beetle and white pine blister rust.

Daylight would also remove hazardous ladder fuels from beneath the target trees. Ponderosa pine, western white pine, western larch, and Douglas-fir would be favored for this treatment. The Selected Alternative proposes approximately 50 acres of daylighting, which is typically accomplished by hand or by mechanized methods, such as chipping or mastication.

#### *Fill Plant*

Trees would be planted in areas previously subject to regeneration harvest where regeneration was not completely successful or to improve the diversity of tree species growing on the landscape to favor more fire-resilient species, such as western larch and ponderosa pine, as well as restoration of species such as western white pine and whitebark pine. The Selected Alternative proposes approximately 329 acres of fill planting.

## SLASH TREATMENT ACTIVITIES

To reduce hazardous fuel conditions that are created by harvest activity, slash reduction treatments would be implemented. Some tree boles, limbs, and foliage would have been deposited in the forest floor through both natural and harvest related actions, adding to both fine and coarse down woody material fuel loadings. In some areas, this material is scattered and in other areas it is concentrated in large amounts. These slash treatments would include the following types of activities applied in combination where appropriate to reduce fuel loading and achieve site preparation:

- Lop and scatter,
- Mechanical treatments (including chipping or mastication),
- Piling, and
- Whole tree yarding

If residual slash can be utilized by the purchaser for higher value products, this will be considered.

## PRESCRIBED FIRE ACTIVITIES

Prescribed fire activities have been proposed in the Selected Alternative of the Beaver Creek Project to reduce the risk of uncharacteristic wildfire within the WUI. The goal is to address fuels in the WUI and the Mission Mountain Wilderness to reduce the intensity and severity of wildfires to protect private property and firefighters engaged in suppression activities.

Table A1 - 3 shows the prescribed burning activities proposed in the Selected Alternative.

TABLE A1 - 3. SELECTED ALTERNATIVE PRESCRIBED BURNING ACTIVITIES.	
PRESCRIBED BURNING AND FUELS TREATMENT	SELECTED ALTERNATIVE (ACRES)
Prescribed Burning Acres following harvest	135
Prescribed Burning Acres without other treatments in the WUI	538
Prescribed Burning Acres within Mission Mountain Wilderness	1,104
<b>Total Acres of Prescribed Burning without other Treatments</b>	<b>1,642</b>
<b>Total Acres of Prescribed Burning</b>	<b>1,777</b>

## **BROADCAST BURNING IN THE WILDLAND URBAN INTERFACE AND FOLLOWING HARVEST ACTIVITIES**

Prescribed fire would be used to achieve restoration objectives and to allow fire to return to the landscape in a controlled manner on a total of 135 acres following harvest activities.

On approximately 538 acres, prescribed fire would be used within the WUI where no harvest is proposed to reduce dead and down fuels, as well as cause mortality in understory grass, trees, and shrubs. Due to the lighter fuels in the area, combined with previous fuels treatments, overstory and large tree mortality would be held to a minimum and would be expected to be less than 20 percent. Hand ignition would occur over most of the area. Aerial ignition could be used in areas that are favorable and would provide desirable results. Within these prescribed burns, areas have been identified as having potential for quaking aspen restoration, and where suitable habitat is identified, prescribed burning may be followed by planting aspen on up to 50 acres. Other areas within the prescribed burns that have been identified as being understocked with desirable tree species may have fill planting take place on 329 acres.

The use of fire in combination with other silvicultural activities is displayed in Table A1-2.

## **BROADCAST BURNING IN THE MISSION MOUNTAINS WILDERNESS**

The use of prescribed fire in the Mission Mountains Wilderness is being proposed to target and reduce dead and down fuels, as well as cause mortality in understory trees and patches of overstory trees. It would also kill the above-ground portion of shrubs and forbs. The resulting vegetation in the timber-dominated areas should be in a more open condition with fewer ladder fuels and surface fuels. While some scorching and mortality of larger trees could occur, large tree mortality would be minimized and would be expected to be between 20 and 30 percent. Mortality would vary due to the mosaic and variable nature typical of this type of vegetation. Ignition would be completed when conditions are favorable (likely late fall). The Selected Alternative proposes approximately 1,104 acres of prescribed burning in the Mission Mountains Wilderness.

The proposed wilderness burns would be mostly conducted using aerial ignition methods, which would consist of a helicopter equipped with a plastic sphere dispenser machine (dispenses plastic spheres containing potassium permanganate for remote ignition). Portions of the burn could be conducted by hand-ignition methods where deemed necessary. These areas would mostly consist of holding areas outside of the wilderness boundaries.

Associated with the wilderness burn area boundary is an area designated as the maximum management area (MMA). The MMA is not proposed for treatment; however, suppression actions would normally not be taken to keep prescribed fire from spreading into it from the burn area. The MMA is designated as an area bounded by topographic or fuel conditions that make fire leaving the MMA unlikely. The purpose of this is to allow for incidental fire spread outside the target burn unit without being required to take suppression actions (generally ground-disturbing actions, such as fire line, etc.). The MMA allows for flexibility to continue meeting the objectives of the prescribed burn in the project boundary area without placing firefighters at risk or causing impacts from suppression actions. The Fire/Fuels Section in Chapter 3 of the Final EA provides a more detailed description of the MMA, and a map displaying the acceptable boundary for fire to spread before suppression action would be taken.

## **ROAD MANAGEMENT**

The Selected Alternative includes several different types of road management activities. Temporary road construction is required to conduct vegetation restoration activities. System roads within the project area will be evaluated for BMPs and applied as necessary to both haul routes and roads not used for hauling forest products. Roads not needed for future management would be decommissioned and removed from the system, while other roads that are not needed for management in the short term, would be placed into intermittent stored service but stay on the NFS road system.

## ROAD MAINTENANCE (BMPs)

The Selected Alternative will implement road maintenance on portions of haul roads within the Beaver Creek Project Area. The maintenance will reduce the direct and indirect effects roads have on water quality and produce immediate and long-term benefits to streams in the analysis area.

The BMP work will be designed with an emphasis on restoring natural drainage patterns that were altered during road construction. The proposed work would not only reduce the effects of non-point source sediment problems to streams, but would also help reduce the risk of effects due to peak flow runoff events.

The table below displays the estimated miles of haul routes for the Selected Alternative that would be evaluated for BMPs to be applied where necessary prior to timber sale haul. Approximately 4.8 miles of road were also identified for BMP improvements and not associated with vegetation management haul routes. On NFS road # 9653 at mile point 3.23 there is an old deteriorating native log timber bridge that will be removed and replaced with a new bridge or structural bottomless arch culvert. The existing native log bridge was built in the 1980s by the PCTC. Native log bridges typically have a design life of about 20 years.

TABLE A1 - 4. ROAD MAINTENANCE BEST MANAGEMENT PRACTICES.	
TYPE	SELECTED ALTERNATIVE
Haul Routes to Receive BMPs	43.1
Other Proposed Road BMPs	4.8
<b>Total Best Management Practices</b>	<b>47.9</b>

## TEMPORARY ROAD CONSTRUCTION

The commercial harvest activities in the Selected Alternative will require the construction of temporary roads to access units. The Selected Action proposes approximately 5.5 miles of temporary road construction that includes 3.2 miles of new construction and 2.3 miles on existing template. The rehabilitation of all temporary roads would be rehabilitated by any site-appropriate combination of the following:

- Re-contouring the entire road template to the natural ground contour.
- Where re-contouring is unnecessary, scarify with excavator teeth to a depth equally sufficient to ameliorate the presence of detrimental soil compaction (usually between 2 and 12 inches)
- Removing any installed culverts or temporary bridges.
- Installing erosion control features.
- Revegetation with native shrubs or native seed mix (specified by the Forest Botanist) after soil is replaced as soon as feasible after disturbance to provide for site protection until native species are established.
- Placing woody material on the template.

Roads should be rehabilitated as soon as access is no longer required, before the close of the project, and will cease to function as roads following rehabilitation.

Table A1-4 displays the unit(s) that will be accessed with each road, the temporary road name displayed on the Selected Alternative Map, the access point where temporary road construction will begin, the miles of new temporary road construction that will occur, and the miles of existing template that will be used.

**TABLE A1 - 5. SELECTED ALTERNATIVE TEMPORARY ROADS**

UNIT	TEMPORARY ROAD NAME	ACCESS	NEW CONSTRUCTION (MI)	EXISTING TEMPLATE (MI)
1	A	Access via Private road #9557Y	0.07	
3	A	Access via HWY 83/Private road #9557Y		0.17
76, 84, 102, 238, 251, 252	A1	Access via NFS road #10735		1.18
251, 252	A1	Access via NFS road #10735	0.15	
3, 5, 6, 7	C	Access via HWY 83	0.45	
16, 210	D	Access via NFS road #11636		0.34
90, 91	D1	Access via NFS road #90257	0.18	
19, 419	E	Access via NFS road #9563	0.14	
259, 260	E1	Access via NFS road #9658	0.30	
25, 28	F	Access via NFS road #10590	0.21	
116, 118	F1	Access via NFS road #9658B	0.41	
21, 25	G	Access via NFS road #9563	0.20	
114	G1	Access via NFS road #9658	0.21	
254	H1	Access via NFS road #91203	0.29	
45	K	Access via Private road	0.06	
39, 449	L	Access via NFS road #906	0.11	
51	M	Access via PCTC road #90272		0.28
51	O	Access via PCTC road #90272		0.12
55	P	Access via PCTC road #90262	0.08	
62, 245	R	Access via NFS road #11647		0.08
62, 245	R	Access via NFS road #11647	0.29	
76	Z	Access via NFS road #10735		0.14
<b>Total Temporary Roads</b>			<b>3.15</b>	<b>2.31</b>

## ROAD DECOMMISSIONING

The Selected Alternative will decommission approximately 4.5 miles of road, which will remove these road segments from the National Forest Road System. Currently, all roads proposed for decommissioning are closed yearlong. The activities associated with decommissioning roads have the potential risk of exposing mineral soil and increasing short-term erosion. Sections of road proposed for decommissioning that parallel or cross streams within riparian areas total less than 0.1 miles. The only ground-disturbing work for these roads that are located in riparian areas are located at the beginning of NFS road #91221, where a barrier or partial re-contouring is recommended and #9656 where several stream-aligned culverts would be removed. All roads would be surveyed by an Engineering Crew prior to implementation. All areas of soil disturbance would be seeded and fertilized in a timely manner. The risk of any potential effects to water quality during ground-disturbing implementation of this work would be reduced with soil erosion control protection measures.

Table A1-5 below identifies the road where the work will occur, the beginning mile point (BMP) of the work, the end mile point (EMP) of the work, the existing condition of the road bed, what type of activities are expected, and how many miles of work are included in the selected alternative.

**TABLE A1 - 6. BEAVER CREEK PROJECT AREA ROAD DECOMMISSIONING ACTIVITIES.**

NFS ROAD #	BMP (MI)	EMP (MI)	EXISTING CONDITION	PASSIVE OR ACTIVE RESTORATION/TYPE OF WORK ANTICIPATED	SELECTED ALTERNATIVE (MI)
91221	0.000	0.238	Road begins to brush in at MP 0.10.	Active: Barrier/partial re-contouring needed at beginning of road. No work needed after MP 0.10	0.238
9658C	0.000	0.270	Road is brushed in and very rocky.	Active: Barrier/partial re-contouring needed at beginning of road. Water bars needed since road will be opened up for haul.	0.270

**TABLE A1 - 6. BEAVER CREEK PROJECT AREA ROAD DECOMMISSIONING ACTIVITIES.**

<b>NFS ROAD #</b>	<b>BMP (MI)</b>	<b>EMP (MI)</b>	<b>EXISTING CONDITION</b>	<b>PASSIVE OR ACTIVE RESTORATION/TYPE OF WORK ANTICIPATED</b>	<b>SELECTED ALTERNATIVE (MI)</b>
10740	0.000	0.230	Road is overgrown.	Active: Barrier/partial re-contouring needed at beginning of road. No work needed besides barrier.	0.230
91160	0.000	0.382	Road is open. Rutting and rilling present on roadway.	Active: Barrier/partial re-contouring needed at beginning of road. Water bars recommended.	0.382
90255	0.000	0.050	Road is overgrown with 3 – 4 inch diameter trees.	Passive: No ground disturbing work anticipated.	0.050
90258	0.000	0.100	No road template found.	Passive: No ground disturbing work anticipated.	0.100
90259	0.000	0.150	No road template found.	Passive: No ground disturbing work anticipated.	0.150
90132	0.185	0.400	Road is very overgrown.	Passive: No ground disturbing work anticipated.	0.215
90190	0.000	0.350	Road is moderately overgrown 2-inch minus trees and alder. Old slash pile is an effective barrier at beginning of road.	Passive: No ground disturbing work anticipated.	0.350
91204	0.000	0.550	End of road is overgrown	Active: Barrier/partial re-contouring needed at beginning of road. Construct water bars as needed. No stream aligned culverts present.	0.550
91162	0.000	0.716	Road fill slope is failing/slumping off beginning at MP .30. First half of road is stable.	Re-contour: Remove all stream aligned and ditch relief culverts.	0.716
9656	1.550	2.800	Road has several stream aligned culverts.	Re-contour: Remove all stream aligned and ditch relief culverts.	1.250
<b>Total</b>					<b>4.501</b>

## INTERMITTENT STORED SERVICE

The Selected Alternative will place approximately 12.6 miles of road into Intermittent Stored Service (ISS). Several roads were identified during project development for evaluation and placement into ISS, also known as road storage. These roads are system roads that are currently closed yearlong to motorized access. All roads were reviewed in the field to identify work items needed for placement into ISS. Some of the roads would require active work, such as removing stream-aligned culverts and constructing water bars, while others are already in a self-maintaining state and would not require any active work (passive). All roads placed into ISS will meet the definition of a reclaimed road as defined in Amendment 19 of the Flathead National Forest Plan.

All roads would be surveyed by an Engineering Crew prior to implementation. If additional ground-disturbing work is identified, these activities would have the potential risk of exposing mineral soil and increasing short-term erosion. All areas of soil disturbance would be seeded and fertilized in a timely manner. The risk of any potential effects to water quality during ground-disturbing implementation of this work would be reduced with BMPs. Table A1-5 below identifies the road where the work will occur, the beginning mile point (BMP) of the work, the end mile point (EMP) of the work, the existing condition of the road bed, what type of activities are expected, and how many miles of work are included in the selected alternative.

**TABLE A1 - 7. BEAVER CREEK PROJECT AREA ROAD INTERMITTENT STORED SERVICE ACTIVITIES.**

<b>NFS ROAD #</b>	<b>BMP (MI)</b>	<b>EMP (MI)</b>	<b>EXISTING CONDITION</b>	<b>PASSIVE OR ACTIVE RESTORATION / TYPE OF WORK ANTICIPATED</b>	<b>SELECTED ALTERNATIVE (MI)</b>
9570	5.335	6.05	18-inch diameter culverts are located at MP 5.332 and 5.536 that are to be removed.	Active: Remove stream-aligned culverts. Construct water bars as needed.	0.715

BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

APPENDIX 1

DETAILS OF THE SELECTED ALTERNATIVE

TABLE A1 - 7. BEAVER CREEK PROJECT AREA ROAD INTERMITTENT STORED SERVICE ACTIVITIES.					
NFS ROAD #	BMP (MI)	EMP (MI)	EXISTING CONDITION	PASSIVE OR ACTIVE RESTORATION / TYPE OF WORK ANTICIPATED	SELECTED ALTERNATIVE (MI)
9658	2.942	3.820	Road is moderately overgrown.	Active: Remove stream aligned culverts. Construct water bars as needed after haul.	0.878
10577	0.501	0.913	Road already in ISS. Stream-aligned culverts are removed, road is outsloped with rolling dips, and road bed is well vegetated with grass.	Active: Barrier needed at junction with NFS road #11644.	0.412
10589	0.000	1.450	Road currently has an effective barrier.	Active: Remove stream-aligned culverts. Construct water bars as needed after haul.	1.450
10590	0.000	0.900	Road is impassable due to vegetation.	Active: Remove 24-inch stream-aligned culvert at MP 0.160. Construct water bars as needed after haul.	0.900
10737	0.693	1.371	Road is impassable after junction with the Jocko Trail #34 due to vegetation.	Active: Barrier needed before junction with Jocko Trail #34. No existing stream-aligned culverts. Construct water bars as needed after haul.	0.678
10739	0.409	0.800	Road is impassable after junction with the Jocko Trail #34 due to vegetation.	Active: Barrier needed before junction with Jocko Trail #34. No existing stream-aligned culverts. Construct water bars as needed after haul.	0.391
10742	0.440	1.050	Stream-aligned culvert is removed at MP 0.839. Road is impassable/overgrown with vegetation starting just before removed culvert.	Active: Barrier needed at MP 0.440/Jct. with NFS road #10745. No work needed past culvert removal at MP 0.839. Construct water bars as needed.	0.610
10744	0.000	0.300	Road is impassable due to culvert removal on NFS road #10745 at MP 0.027.	Active: Barrier needed at junction with NFS road #10742. No other work anticipated.	0.300
10745	0.000	0.250	Road is impassable due to culvert removal at MP 0.027.	Active: Barrier needed at junction with NFS road #10742. No other work anticipated.	0.250
11641	0.000	0.500	Currently overgrown with 2 to 3-inch diameter trees.	Passive: No additional work anticipated.	0.500
11645	0.000	0.556	Road already in ISS. Stream aligned culverts are removed, road is outsloped with rolling dips, and road bed is well vegetated with grass.	Passive: Barrier needed at Jct. with NFS ROAD # 11644.	0.556
11646	0.000	0.250	Intermittent stream crossing at MP 0.123 has been removed.	Active: Barrier needed at junction with NFS road #10735. Install crossing at MP 0.123 and remove after haul.	0.250
11647	0.000	0.740	Intermittent stream crossing at MP 0.203 has been removed.	Active: Barrier needed at junction with NFS road #10735.	0.740
90131	0.000	0.450	Road is currently passable.	Active: Remove stream-aligned culverts. Construct water bars as needed.	0.450
90132	0.000	0.185	Road is very overgrown.	Passive: No ground disturbing work anticipated.	0.185
91203	0.000	1.558	Road is currently passable.	Active: Construct water bars as needed. No stream-aligned culverts present.	1.558
91205	0.000	0.268	Road is very overgrown.	Passive: No ground-disturbing work anticipated.	0.268
11644A	0.000	0.463	Road already in ISS. Stream-aligned culverts are removed, road is outsloped with rolling dips, and road bed is well vegetated with grass.	Passive: Barrier needed at junction with NFS road #11644.	0.463



TABLE A1 - 7. BEAVER CREEK PROJECT AREA ROAD INTERMITTENT STORED SERVICE ACTIVITIES.					
NFS ROAD #	BMP (MI)	EMP (MI)	EXISTING CONDITION	PASSIVE OR ACTIVE RESTORATION / TYPE OF WORK ANTICIPATED	SELECTED ALTERNATIVE (MI)
9570Y	0.544	1.570	MP 0.730 – 1.570 placed in ISS in 2010 as part of the Beaver Creek TMDL Project.	Active: Existing stream-aligned culvert at MP 0.580. Construct water bars as needed.	1.026
Total					12.58

## AQUATIC RESTORATION PROJECTS

The Selected Alternative authorizes construction of a free-standing fish barrier on a perennial stream of Beaver Creek, referred to as “Sunset Creek” off NFS road #91202 at mile post (MP) 0.67. Equipment access would be required to conduct instream construction and will likely pass through an old landing area on relatively flat topography. The access point would be rehabilitated shortly after construction is completed by ripping the roadbed to reduce compaction, seeding and mulching, and placing slash and woody debris over the road surface. The barrier will consist of a concrete dam approximately 3.5 to 6.5 feet in height and 16 to 24 feet in length. Water would flow through a notch onto a concrete splash pad and, then, drop again to the natural stream channel. This double-drop structure would block upstream passage for fish at all flow levels. In conjunction with the free-standing fish barrier, an old native log bridge will be upgraded to maintain access to the site.

Additionally, an aquatic organism passage (AOP) pipe will be installed approximately 0.7 miles upstream of the proposed fish barrier on NFS road #9658 at MP 1.12. The new structure would be designed to pass the 100-year flood event and would be either an oversized squash pipe with stream simulation material placed inside or a bottomless arch structure. The expected duration of this work would take 4 to 8 weeks.

The Selected Alternative also authorizes installation of a culvert on NFS road #11636 at MP 1.661 as a fish barrier to prevent non-native fish invasion into a wetland not currently invaded. Currently, the culvert at this location has been removed. The barrier will be provided by installing a new culvert with a drop of at least 3 inches at the outlet to prevent non-native fish from passing further upstream.

In addition, a culvert replacement is authorized on NFS road #906 at MP 1.15. The existing crossing has had ongoing maintenance problems with debris clogging the culvert inlet and has backed up the upstream wetland. Currently, the roadway is acting as a dam that has created voids in the road fill over time. Within the past 10 years, large cracks have been observed in the roadway. The new culvert will be designed to pass the 100-year flood event, and the inlet elevation lowered to its natural elevation. This will prevent the roadway from acting as a dam by lowering the water elevation and, therefore, alleviate the water pressure on the roadway fill. This culvert will also be designed to act as a barrier to prevent non-native fish from entering the inter-basin wetland, which is connected to the Clearwater Drainage. The barrier will be shot gunned with a drop of at least 4 inches.

The Selected Alternative also authorizes soil restoration work on an old road bed in Section 26 that extends beyond Temporary Road Z. The restoration work will affect approximately 2.3 acres of land and will involve a similar range of activities as those used for rehabilitating temporary roads.

## ASSIGN MANAGEMENT AREAS TO ACQUIRED LANDS

The Selected Alternative assigns interim management areas (MA) to 5,457 acres of land formerly owned by the PCTC within the project area that were acquired by the Forest Service between 1998 and 2014. These interim management areas will remain in place until the Forest Plan Revision process has been completed to assign new management areas to all lands on the Flathead National Forest. Table A1-8 below shows the management areas and approximate acreage for the project area including management areas assigned in this decision.

BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

APPENDIX 1

DETAILS OF THE SELECTED ALTERNATIVE

**TABLE A1 - 8. MANAGEMENT AREA DESCRIPTIONS AND ASSIGNED MANAGEMENT AREAS<sup>5</sup>**

MA	DESCRIPTION	MANAGEMENT EMPHASIS	SELECTED ALTERNATIVE	
			Total (Acres)	Acquired Lands (Acres)
1	Consists of non-forest lands and timberlands where timber management is uneconomical or currently technologically infeasible due to topographic features.	Maintain the present condition with minimal investment for resource activities, while protecting the basic soils, water, and wildlife resources. Generally, these areas will retain a natural appearance.	515	-
2	Consists of unroaded lands that offer a variety of dispersed recreation opportunities.	Provide a variety of primitive and semi-primitive recreation opportunities.	857	55
5	Roaded timberlands in areas of high scenic value.	Maintain a pleasing, natural appearing landscape in which management activities are not evident.	583	510
11C	Timberlands capable of providing grizzly bear habitat located on the southern portion of the Swan Lake Ranger District.	Manage the Swan/Clearwater Divide as an area that provides a security grizzly bear travel route between the Mission and Swan Mountain Ranges. Desired cover relationship is provided through vegetative manipulation including timber harvest and prescribed burning.	6,423	2,312
12	Includes riparian areas consisting of aquatic, riparian, and a portion of terrestrial ecosystems along most perennial streams, lakes, ponds, marshlands, bogs, and some important seasonal flow streams.	Manage riparian areas throughout the Forest to enhance vegetation and wildlife diversity and maintain or enhance water quality and fisheries. Emphasize water and soil protection and old growth habitat. Management of other resources must be compatible with the riparian habitat management standards.	622	320
15	Timberlands where timber management with roads is economical and feasible.	Emphasize cost-efficient production of timber while protecting the productive capacity of the land and timber resource.	2,167	1,531
15C	Consists of timberlands where timber management with roads is economical and feasible, and is key white-tailed deer summer range.	Special consideration will be given to white-tailed deer summer range within this MA.	1,479	712
17	Includes riparian areas consisting of aquatic, riparian, and a portion of terrestrial ecosystems along perennial stream reaches, and some important streams with typically a seasonal flow.	Protect and maintain this riparian zone throughout the Forest, including fish and wildlife habitat, while maintaining a sustained yield of timber.	65	17
22	Mission Mountains Wilderness classified wilderness designated in 1975 by the US Congress.	Manage this area in accordance with the Wilderness Act of 1964 to maintain an enduring system of high quality wilderness representative of all National Forest ecotypes.	20,026	-
-	Former PCTC acquired by USFS	Management Area Unassigned, Forest-wide Standards and Guidelines apply	5,457	-
<b>Non-NFS lands in the Beaver Creek Project Area</b>				<b>1,810</b>
<b>NFS Lands in Beaver Creek Project Area</b>				<b>32,737</b>
<b>Acres covered by Lindbergh Lake in Project Area</b>				<b>415</b>
<b>Total Lands in Beaver Creek Project Area</b>				<b>34,962</b>

<sup>5</sup> Management area boundaries are not firm lines. The boundaries represent a transition from one set of opportunities and constraints to another with management direction established for each. The Boundaries are flexible to assure that the values identified are protected. As such, these acres displayed in this table and in Map 4 should be considered approximations due to GIS discrepancies and rounding error.

## APPENDIX 2 - PROJECT DESIGN CRITERIA

The Design Criteria identified in the following table serve to further reduce impacts to the specific resources. Several abbreviations are used in the responsibility section of Table A2-1. The following explains those abbreviations:

ARCH	Archeologist	HYD	Hydrologist	SILV	Silviculturist
BT	Botanist	IDT	Interdisciplinary Team	SP	Sale Prep
DR	District Ranger	LA	Landscape Architect	SS	Soils Scientist
DRC	District Road Coordinator	LEO	Law Enforcement Officer	TMC	Timber Marking Crew
ENG	Engineer	NWM	Noxious Weed Manager	TP	Timber Sale Purchaser
AFMO	Assistant Fire Mgmt Officer	RA	Range Administrator	WB	Wildlife Biologist
FISH	Fisheries Biologist	RF	Resource Forester		
FMO	Fire Management Officer	SA	Sale Administrator		

**TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE**

<b>OBJECTIVE</b>	<b>TASK</b>	<b>RESPONSIBILITY</b>	<b>DUE DATE</b>
<b>Grizzly Bear Security and Swan Valley Grizzly Bear Conservation Agreement (SVGBCA) Compliance</b>	Harvest operations are expected to begin in 2016 and are anticipated to be completed within a 5-year time frame. The Beaver Creek Grizzly Bear Subunit is active in 2015-2017. The Buck Holland Subunit is active 2018-2020. The project would follow active subunit guidelines from 2015-2017 for the Beaver Creek subunit and active subunit guidelines from 2018-2020 for the Buck Holland subunit. Activities within inactive subunits will comply with inactive subunit guidelines. Commercial harvest activities may also occur during the denning season from November 15 through March 31 in the project subunits. No commercial activities (defined by the SVGBCA) would occur in the Beaver or Buck Holland subunits during the Restricted Period (April 1 – November 15) when the subunit is inactive. Salvage harvest activities are not considered commercial as per the SVGBCA. Commercial activities will include log hauling on restricted roads, commercial timber harvest, and road building. Administrative activities, as defined by the SVGBCA, such as pre-commercial thinning, road maintenance, tree planting, slash disposal and Salvage Harvest, may still occur when the subunit is inactive. Short-term Salvage activities for the harvest of dead and dying trees may occur in an inactive subunit between June 15 and August 31 and will not exceed 14 consecutive days and 30 days in aggregate when the unit is inactive (Project File I-10).	WB, SA, SP	Pre & Post Sale
<b>Grizzly Bear Security and SVGBCA Compliance</b>	Motorized use for administrative use activities including timber sale layout, road location, pre-commercial thinning, road maintenance, tree planting, slash disposal, and salvage harvest will not occur on restricted roads during the Spring Period (April 1 through June 15) in Spring Habitat with the exception for limited spring burning, planting, and non-motorized access. Log hauling may occur during the Spring Period in Spring Habitat on roads open to the public.	SP, SA, TMC, WB	Pre & Post Sale
<b>Grizzly Bear Security and SVGBCA Compliance</b>	In order to avoid the potential disturbance of grizzly bear in important Spring Habitat, management activities that are planned in Spring Habitat, which is defined as areas within designated Linkage Zones, below 5,200 feet, will not occur within the spring period (April 1 through June 15). This timing restriction would apply to all units except: 114, 116, 118, 119, 259, 260, 263, 264, 265, 266, 267, 268, 269, 270, 271, and 272. These units are not within a linkage zone and/or above 5,200 feet elevation. Planting and limited spring burning are permitted in the spring period per the SVGBA.	SP, SA, TMC, WB	Pre & Post Sale
<b>Grizzly Bear Security and SVGBCA Compliance</b>	Regeneration units will be designed so that no point in the unit is more than 600 feet from cover; in other words, a bear in the unit would be able to find cover anywhere in the unit within 600 feet or less. When harvest units are located adjacent to natural or manmade openings, hiding cover will be maintained on approximately 75 percent of the openings perimeter.	SP, WB	Pre & Post Sale
<b>Grizzly Bear Security SVGBCA Compliance - General Wildlife Security</b>	Visual screening (Project File H-9) will be retained adjacent to open roads in proposed cutting units.	SP, SA, TMC, WB	Pre & Post Sale
<b>Wildlife, Fish, and Plants– TES</b>	Provisions will be included in the contract to cease activity or otherwise protect populations and individuals of threatened, endangered or sensitive species. This allows for modification of the project should an unforeseen issue(s) be identified during operations. Standard contractual requirements used in all contracts provide for modification or termination of the contract to avoid impacts and protect TE and sensitive species.	WB, SA, SILV, BT, FISH	Contract Prep & During Harvest Activities
<b>Wildlife – TES</b>	Public motorized access will be prohibited on roads and skid trails currently closed to public motorized use.	WB, SA, DRC	Pre & Post Sale, During Harvest Activities

BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

SELECTED ALTERNATIVE DESIGN CRITERIA

APPENDIX 2

**TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE**

OBJECTIVE	TASK	RESPONSIBILITY	DUE DATE
<b>Wildlife– TES</b>	Contractors working under contract on Forest Service lands are prohibited from hunting, transporting hunters, or transporting game on roads closed to public motorized use.	SA, LEO, WB	Pre & Post Sale, During Harvest Activities
<b>Wildlife - TES</b>	In burn units 300, 313, and 314 ignition will be timed so that weather conditions result in low to moderate intensity burn that retains mature forest vegetation and large blocks or strips of regenerating forest vegetation in a mosaic pattern distributed across the burn area.	WB, AFMO	During Implementation
<b>Wildlife - Security</b>	Where available within commercial thinning and improvement cut units, retain and protect live sub-merchantable trees in patches/clumps on approximately 10% of unit acreage and all hardwoods. Favor subalpine fir, Engelmann spruce or Douglas fir. Patches should be evenly distributed across the unit.	WB, SA, TMC, SP	Pre & Post Sale
<b>Wildlife - Security</b>	Vegetation and/or rock barriers will be retained around berms and gates, where needed, to maintain closure effectiveness.	DRC, SA, WB	Pre & Post Sale, During Harvest Activities
<b>Wildlife – Security</b>	If berms are removed for access to treatment units, temporary gates will be installed. Berms will be re-installed at the conclusion of project activities.	SB, SA, DRC	Pre & Post Sale, During Harvest Activities
<b>Wildlife - Security</b>	<p>Stored roads (ISS) will be thoroughly treated so that they are completely impassable to motorized vehicles and meet the minimum criteria for a “reclaimed road” as defined by Forest Plan Amendment 19. The intent will be that ISS treatments will no longer function as roads, yet these roads will retain a road number and stay on the road system. ISS roads will continue to have a legal closure order. ISS roads will receive the following treatments: The entire road will receive treatment such that maintenance or entries to maintain road drainage is not needed. Culverts aligned with stream channels will be removed. Road related sediment sources will be repaired and road reworked to eliminate ditch water flow without the aid of cross drain culverts. Typically this is achieved by cutting waterbars into the ditch line every 200 feet. Waterbars can be placed closer or further apart depending on site specific conditions and are typically installed 50ft above grade or near existing cross drains.</p> <p>The first portion of the road (200 to 600 feet) will be recontoured to the original hillslope. In level topography where recontouring is not feasible rock barriers or berms and placement of natural debris will be used to make the road junction unattractive as a travel way and preclude motorized or non-motorized use on the remainder of the first portion of road (first 200 to 600 feet).</p> <p>Beyond the first portion of the road (200 to 600 feet), the roadway will be treated to discourage use including sporadic placement of natural debris where available and seeding or planting to encourage re-vegetation.</p>	WB, SA, DRC	Post Sale
<b>Wildlife - Security</b>	Whitebark pine restoration treatments in Unit 268 will be completed by hand work.	SA, DRC	Pre & Post Sale, During Harvest Activities

TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE

OBJECTIVE	TASK	RESPONSIBILITY	DUE DATE
<b>Snag Retention for Snag Associated Wildlife Species and for Forest Vegetation</b>	In treatment units, where available, a minimum average of 6 snags per acre that are 12-20 inches DBH would be left, and all snags greater than 20 inches would be left. If existing snag densities are below these densities, substitute live trees would be left. If existing large snag (>20" DBH) are below 2 per acre, substitute 5 live replacement trees (≥12" DBH) for each large snag. All standing dead western larch, ponderosa pine, and Douglas-fir trees 16 inches DBH or greater would be retained. Generally, snags to be left would be further than 150 feet from open roads and private land boundaries. Snags that pose a safety hazard to the Contractor's operation would be felled and left on site.	SILV, WB, SP, SA, TP	Pre & Post Sale, During Harvest Activities
<b>Retention of Down Woody Material for Down Woody Habitat Associated Wildlife Species and for Forest Vegetation</b>	The minimum retention for down woody material will be approximately 10 tons per acre, where available. To achieve the tonnage required, retain (where it exists) down woody material in the longest material available (e.g., 16 feet long or longer) and retain the woody debris in the largest diameters available (e.g., 15 inches DBH or greater), sufficient to achieve the tons per acre.	SILV, WB, SP, SA, TP	Pre & Post Sale, During Harvest Activities
<b>Hardwood Retention for Associated Wildlife Species and for Forest Vegetation</b>	All hardwood trees will be reserved where feasible.	SILV, SA, TP, SP	Pre & Post Sale, During Harvest Activities
<b>Protect Site and Soil Productivity</b>	All mechanized units that remove commercial products would be logged using designated skid trails. Equipment would occasionally leave the trails to access trees or accomplish other activities.	SA	During Harvest Activities
<b>Protect Site and Soil Productivity</b>	Skid trail spacing must average at least 75 feet in all tractor harvest units. If a cut-to-length system is used, with a harvester and forwarder, 50 feet spacing of skid trails will be specified. The goal is to occupy less than 15 percent of the treatment area including soil disturbance from skid trails, temporary roads and landings associated with past and proposed activities.	SA, SP, SS	Pre & Post Sale, During Harvest Activities
<b>Protect Site and Soil Productivity</b>	Winter harvest to protect sensitive soils and/or to meet the Region 1 soil quality standard is required in the following units: 3, 5, 12, 28, 32, 34, 51, 62, 204, 224, 263, 419, and 429.	SA, SP, SS	During Harvest Activities
<b>Protect Site and Soil Productivity</b>	Winter logging requires that there be enough snow to prevent muddy water from mixing into the snow where equipment operates. This would require about 10 inches of snow. The depth of snow varies with the snow conditions. It takes more dry powder snow than wet dense snow to protect the soil surface.	SA, SS	During Harvest Activities
<b>Improve soil condition, protect fish and wildlife habitat, reduce the spread of invasive plant species, and protect water quality</b>	All temporary roads constructed and used for project activities would be rehabilitated by any site-appropriate combination of the following: <ul style="list-style-type: none"> <li>▪ Treating for noxious weeds two weeks prior to road rehabilitation activities.</li> <li>▪ Removing any installed culverts or temporary bridges.</li> <li>▪ Recontouring the entire template to natural ground contour,</li> <li>▪ Where recontouring is not appropriate because of potential resource impacts, scarify with excavator teeth to a depth equal sufficient to ameliorate the presence of detrimental soil compaction (usually between 2 and 12 inches),</li> <li>▪ Seeding with the native plant mix as specified by the Forest Botanist,</li> <li>▪ Placing woody material and soil inoculum on template</li> <li>▪ Planting native shrubs/trees to augment natural vegetation.</li> </ul> Following rehabilitation activities these areas will cease to function as roads.	SA, SS, TP, BT, NWM	Post-Sale

**TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE**

<b>OBJECTIVE</b>	<b>TASK</b>	<b>RESPONSIBILITY</b>	<b>DUE DATE</b>
<b>Protect Site and Soil Productivity</b>	All existing roads and skid trails would be reused to the extent feasible unless doing so would adversely affect soil, water or other resources. If roads or trails cannot be reused, their extent and location must be considered when laying out additional skid trails.	SA, SP, SS	Pre & Post Sale, During Harvest Activities
<b>Protect Site and Soil Productivity</b>	Logging would occur when soils are dry as determined by the hand feel method (Project File Exhibit L-23).	SA	During Harvest Activities
<b>Protect Site and Soil Productivity</b>	Sale administrators would monitor soil moisture conditions prior to allowing equipment to begin operations in summer. This monitoring must be documented in the Timber Sale Daily Report.	SA	Pre-Sale
<b>Protect Site and Soil Productivity</b>	All mechanical fuel reduction will be accomplished with excavators or similar track based mastication equipment. Excavators will, to the extent feasible, remain on skid trails.	SA	During Harvest Activities
<b>Protect Site and Soil Productivity</b>	Prescribed burning prescriptions would be prepared and implemented to not exceed moderate burn severity conditions.	FMO, AFMO	Post Sale
<b>Forest Vegetation</b>	Prepare detailed site-specific silvicultural prescription for all treatment areas requiring vegetation manipulation	SILV	Prior to presale activities
<b>Forest Vegetation</b>	Consult with Project Silviculturist where treatment deviations are required during contract execution, as a result of changed or unidentified conditions that materially affect the intended treatment as described in the detailed site specific silvicultural prescription. As needed, the silvicultural prescription will be modified and re-approved by a certified silviculturist.	SILV, TSA, SP, FMO	Pre, During, and Post-Harvest Activities
<b>Forest Vegetation (Leave Tree Protection)</b>	Contractor will take all reasonable care to avoid damage to the roots, bole, and crown of trees to be reserved from cutting. No more than 5 percent of the trees designated to be reserved should be damaged beyond recovery by the Contractor's operations. Any tree damaged beyond recovery, (will die within 1 year due to damage), can be removed or otherwise treated by the Contractor as instructed by the Forest Service.	TP, TSA, SILV	Pre, During, and Post -Harvest Activities
<b>Preserve TES Plant Populations and Their Habitats</b>	Protect occupied and unoccupied howellia ponds located near haul routes and in treatment units by a 300-foot buffer. If ground-disturbing BMP-related activities occur within 300 feet of these ponds, natural filtration zones, sediment retention structures, or straw bales would be applied to ensure limited sediment deposition into these ponds. See Chapter 3 for occupied pond label and location, and see Project File Exhibit J-3 for a map of ponds.	SILV, SA, TP, SP, ENG, BT	Pre & Post Sale & During Harvest Activities
<b>Preserve TES Plant Populations and Their Habitats</b>	Howell's gumweed is documented in Units 1, 3, 4, 5 and 6 along Highway 83. Individual plants were not found during surveys. If plants are found, the sites would be flagged prior to implementation to be avoided during operations. Common camas occurs in Units 19, 419, 28, 32, 44, 201, 217, and 429. Sites will be flagged by the Forest Botanist or certified botany technicians ahead of pre-sale prior to implementation to be avoided by equipment and other disturbance.	SP, SA, BT	Pre & Post Sale & During Harvest Activities
<b>Preserve TES Plant Populations and Their Habitats</b>	All healthy and reproducing populations (cone-bearing or mature trees) of whitebark pine are to be avoided during vegetation management activities (daylighting and prescribed burning); unless it is to specifically benefit the species, such as the daylighting prescription. Burn plans will include specific implementation measures to minimize effects to cone-bearing and mature whitebark pine trees.	SILV, SP, TP, SP	Pre & Post Sale & During Harvest Activities

TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE

OBJECTIVE	TASK	RESPONSIBILITY	DUE DATE
<b>Preserve TES Plant Populations and Their Habitats</b>	Burn units 308 and 309 are higher elevation burns on south facing slopes that have missed several natural fire intervals. The upper elevation portions of these burns are historically and currently capable of supporting whitebark pine. Burn treatments will be of moderate intensity, with a goal of 40% to 60% mortality of existing conifer trees, 75% to 100% top kill of shrubs, and 100% duff consumption across >30% of the unit. This treatment will reduce fuel loads and vegetative competition and create the open conditions that could favor the germination and growth of whitebark pine.	AFMO, SILV	Pre and Post Prescribed Burning.
<b>Control Spread and Reduce Potential spread of Noxious Weeds</b>	Re-establish vegetation on bare ground created by road decommissioning or timber harvest activity. Seed landings, decommissioned roads and ISS roads, temporary roads, and disturbed roadsides with a certified grass ground cover (seed mix of native plants will be specified by the Forest Botanist), either in the spring or the late fall (to enable the best chance of success) after disturbance to provide for site protection until native species are established.	SA, BT, DRC	Post-Sale
<b>Control Spread and Reduce Potential spread of Noxious Weeds</b>	Intermittent stored service and decommissioned roads not used as haul routes will require treatment of noxious weeds two weeks prior to ground disturbing activities and disturbed areas will be seeded following active work.	ENG, BOT	Pre-ISS
<b>Control Spread and Reduce Potential spread of Noxious Weeds</b>	Intermittent stored service of impassible roads should be seeded with native mix prior to barrier installation if funding is available.	BOT	Pre-ISS
<b>Control Spread and Reduce Potential spread of Noxious Weeds</b>	Equipment use associated with timber harvest and road maintenance (excluding pickups and trucks used to remove forest products) would be power scrubbed or steam cleaned on the undercarriage and chassis before transport to the project area. This cleaning shall remove all soil, plant parts, seeds, vegetative matter, or other debris that could contain or hold seeds. All subsequent entries of equipment to the project area shall be treated in the same manner as the initial entry. "Off-road equipment" includes all logging and construction machinery, except for log trucks, chip vans, service vehicles, water trucks, pickup trucks, cars, and similar vehicles.	SA, TP	Pre-Harvest
<b>Control Spread and Reduce Potential spread of Noxious Weeds</b>	As funding allows, survey and monitor for weeds in all ground-disturbed areas in treatment units (slash piles, exposed soil from excavator tracks, skid trails), roads, and temporary roads. Monitoring would occur for at least 3 years following proposed action.	BT, NWM	Post-Sale
<b>Control Spread and Reduce Potential spread of Noxious Weeds</b>	Spray weeds along designated Forest Road haul routes (prism) and disturbed areas. Existing roads within the project boundary would be identified for noxious weed treatment. Specific roads and mileage to be treated would be prepared in consultation with the Forest Weeds Coordinator. Road prism is the road and associated toe of the fill to the top of the cut slope, including the running surface and turnouts. However, when a contiguous patch of weeds extends beyond the road prism, the area beyond the road prism shall be treated via force account or other means. Spraying of appropriate herbicides would occur pre- and post-haul, during the periods from June 1 to July 15 or September 1 to September 30. Roads would be monitored after initial treatment, and additional treatments would be the responsibility of the Forest. Treatment of invasive plants would be consistent with the strategy outlined in the Noxious and Invasive Weed Control Environmental Assessment (March 2001).	SA, TP	Post-Sale



BEAVER CREEK LANDSCAPE RESTORATION PROJECT DECISION NOTICE

SELECTED ALTERNATIVE DESIGN CRITERIA

APPENDIX 2

**TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE**

<b>OBJECTIVE</b>	<b>TASK</b>	<b>RESPONSIBILITY</b>	<b>DUE DATE</b>
<b>Control Spread and Reduce Potential Spread of Noxious Weeds</b>	The Noxious Weeds Manager or Forest Botanist will, if necessary, provide noxious weed material to sale administrators and contractors identifying the Forest's target species and recommended control measures.	NWM, BT	Post Sale
<b>Public Safety</b>	Appropriate signing or other cautionary measures will be implemented in conjunction with prescribed burning and commercial harvest operations to ensure public safety. Public notice will be given prior to prescribed burning and commercial harvest activities.	SA, FMO	
<b>Public Safety</b>	Temporary closure of Trail #351 from the Beaver Creek Trailhead to the junction with Trail #34 should be implemented during felling and skidding operations in Unit 252. Temporary closure encompassing Trail #351 would be implemented during road storage activities for NFS Road #91203 and decommissioning activities for NFS road #91204. Temporary closure encompassing Trail #351 would be implemented during construction of Temporary Road H1. Temporary closure of Trail #34 between the junction of Trail #351 and private land should be implemented during felling and skidding operations for Units 102 and 238. Temporary closure encompassing Trail #34 would be implemented during road storage activities for NFS Roads #10737 and 10739 and decommissioning activities for NFS Road #10740. Temporary area closures encompassing Trail #490 and the appropriate portion of Trail #351 would be implemented during prescribed burning operations and for the entire period in which fire activity may threaten public safety.	SA, TP, ENG, RF	During Project Implementation
<b>Protect Trail Integrity</b>	Non-motorized trails would be shown as protected improvements on timber sale maps. Project administrators would ensure protection of trails during project implementation. In Unit 102, skid trails crossing Trail #34 would be kept at a maximum of two and cross the trail in a perpendicular manner to the extent feasible. In all treatment units encompassing or adjacent to Trail #34 and Trail #351, all slash and debris would be removed from within 20 ft. of the trail tread post-operations. Any damage done to the trails would be repaired, thus returning the trails as near as possible to their original condition. The district recreation specialist shall assist the pre-sale forester with design and placement of Temp road H1 in and around Trail #35.	SA, RF, TP	During Project Implementation
<b>Minimize view of fire from Recreation Sites</b>	For prescribed burning operations, a 100-foot no ignition buffer would be applied adjacent to Lindbergh Trail # 490 and Crystal Lake Trail #351.	FMO	During Project Implementation

TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE

OBJECTIVE	TASK	RESPONSIBILITY	DUE DATE
<b>Reduce Immediate Foreground View Effects to Private Landowners Viewshed and From Highway 83</b>	<p>Units 1,3,4,5, 6, 16, 44, 57, 62 and 300. (Foreground residential and highway viewshed with high concern)</p> <p>Mask any boundary or otherwise reduce impacts of leave tree marking that is clearly visible from sensitive viewing locations (Highway 83, private driveway, and residential views). It would generally not be necessary to extend this treatment further than about 150 feet from the boundary edge.</p> <p>Site landing offset from private property edge and from Highway to reduce visual impact if feasible. Do not locate landings immediately adjacent to sensitive viewshed. Extend short "jump up" road spurs into unit to landings, with vegetative screening between road and landing location left where possible. If sited within the viewshed, landing clean up should be more thorough than may ordinarily occur, specifically the burning of the debris in landing piles should be nearly complete, with repiling/reburning occurring if it burned poorly the first time and left unsightly "bones". Slash piles visible from roadside shall be removed or burned upon unit completion. Maintain 12-inch or less stumps (flush cut if feasible) within 150 feet of boundary edge if visible from highway and residential views.</p> <p>Reduced slash impacts visible from Highway 83 and within 150 feet of driveway and residential views. Slash, root wads, and other debris will be removed, buried, burned, chipped or lopped to a height of 2 feet or less.</p> <p>If contrast can be seen from highway or private residences, apply transition zones that would be left along north and south edge of unit where tree retention would be modified to create a more gradual visual transition of the treated stand to the adjacent stand and soften unit edges. This may mean progressively decreasing the leave tree density in this zone (such as if next to an existing opening) or progressively increasing the leave tree density in this zone (such as if next to a dense uncut forest).</p>	SP, SA, LA, FMO	Post Sale
<b>Reduce Immediate Foreground View Effects to Recreational Lake Users</b>	<p>Unit 83 (Foreground viewshed of Lindbergh Lake)</p> <p>To reduce the visual contrast of skyline corridors align corridors so they are less visible, where feasible designate skyline corridors after felling trees (avoiding regular spaced widths between corridors) and/or avoid skyline corridors on alignment perpendicular to sensitive view, and/or use lateral yarding capabilities.</p> <p>During tree marking, if openings greater than a half-acre are created, soften the edges.</p> <p>If feasible, retain leave trees in denser groups where the crown of trees would screen the access road and landings as seen from below.</p>	SP, SA, LA	Pre and Post Sale, During Harvest Activities
<b>Reduce Immediate Foreground View Effects to Recreational Trail Users</b>	<p>Unit 102, 238, and 252 (Foreground viewshed of trails and trailhead)</p> <p>Maintain 12-inch or less stumps (flush cut if feasible) within 20 feet of trail.</p> <p>Where new access roads and skid trails meet a trail, the sale-prep forester and recreation forester will meet to discuss placement to reduce visual impacts.</p> <p>Mask any boundary or otherwise reduce the visual impacts of leave tree marking that is clearly visible from sensitive trail and trailheads. It would generally not be necessary to extend this treatment further than about 150 feet from the boundary edge.</p> <p>Landing offset from trail. Do not locate landings immediately adjacent to the trail. Extend short "jump up" road spurs (&lt;300 feet) into unit to landings, with vegetative screening between trail and landing location left where possible.</p>	SP, SA, LA	Pre and Post Sale, During Harvest Activities

**TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE**

<b>OBJECTIVE</b>	<b>TASK</b>	<b>RESPONSIBILITY</b>	<b>DUE DATE</b>
<b>Aquatics – Protect Fish Habitat, Water Quality and Sensitive plant species.</b>	Standard RHCA buffers will be applied to all units except 419, 429, 449, 459, 491, 4222, and 4225. The standard buffers are: <ul style="list-style-type: none"> <li>300 feet from either side of fish-bearing streams.</li> <li>150 feet from either side of perennial streams without fish.</li> <li>50 feet from intermittent streams.</li> <li>150 feet from edge of wetlands greater than 1 acre (edge is defined as ordinary high water mark).</li> <li>50 feet from edge of wetlands less than 1 acre.</li> </ul> Any water bodies that are not mapped but discovered during implementation shall have standard INFISH buffers.	SA, SP, FISH, AFMO	Pre & Post Sale, During Harvest Activities
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	Units 449, 459, and 491 will have no harvest activity within 50 feet of streams or wetlands. Harvest activity is permitted between the 50-foot no-cut zone and the standard RHCA boundary as long as it results in little to no ground disturbance within that zone.	SA, SP, FISH, AFMO	Pre & Post Sale, During Harvest Activities
<b>Aquatics – Protect Fish Habitat and Water Quality, Snag Retention</b>	In Units 419 and 429 where the slope adjacent to the wetland exceeds 20%, machinery is precluded from 50 feet of the wetland boundary. Where the slope is less than 20%, machinery may operate to the wetland boundary where feasible however all hardwoods and spruce greater than or equal to 16" DBH will be retained. Within Units 419 and 429, create an average of 3 high stumps per acre. High stump diameter shall be at least 9 inches DBH and 5 feet in height or greater. Slash generated by activity will be retained.	SA, SP, FISH, AFMO	Pre & Post Sale, During Harvest Activities
<b>Aquatics - Protect Fish Habitat, BMP Compliance, Protect Beneficial Uses</b>	All stream culvert installations or removals will secure a 124 permit from the State of Montana prior to work and comply with all requirements provided.	FISH, HYD, ENG, DRC	Pre-Sale
<b>Aquatics - Protect Fish Habitat, BMP Compliance, Protect Beneficial Uses</b>	Culvert installation, replacement or removals on intermittent streams will be completed when the stream is dry. For culvert removals, the newly exposed channels reshaped to match their historic shape. Road spoils would be placed outside of the floodplain. The area would be seeded and mulched.	FISH, HYD, ENG, DRC	Pre and Post Sale, During Harvest Activities
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	Culvert replacement on perennial streams will be done during low flow, typically July to November. Water will be diverted with a coffer dam into bypass channel/pipe during work. Upon completion, water will be re-introduced to the channel gradually over several hours.	FISH, HYD, ENG, DRC	Pre-Sale
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	Culvert removals done on perennial streams will be done during low flow, typically July to November. The newly exposed channels reshaped to match their historic shape. Road spoils would be placed outside of the floodplain. The area would be seeded and mulched. Straw bales or "sedimats" will be staked into the stream downstream of project area prior to work and then removed after the work is complete.	FISH, HYD, ENG, DRC	Pre-Sale
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	All new culverts on system roads shall be designed to pass 100-year flow events and shall be correctly aligned with natural channel. Furthermore, the new culvert on NFS road #9658 at Sunset Creek shall be designed to pass all aquatic organisms during most flow events.	FISH, HYD, ENG, DRC	Pre-Sale
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	Prescribed burn Units 308 and 309 will have the bull trout spawning patch identified in burn plans as an avoidance zone for helicopter flight paths. All flight paths will avoid flying straight down the inlet river, and a half-sphere shaped avoidance zone will be identified that is 500' tall at dead center and 0' tall when 500' away horizontally. No flights will take place from 1 hour before sunset to 1 hour after sunrise. No bucket work (water withdrawal) will take place in the inlet river.	FISH, HYD, FMO, AFMO	During Burning Activities

**TABLE A2-1 - MANAGEMENT REQUIREMENTS AND DESIGN CRITERIA FOR SELECTED ALTERNATIVE**

<b>OBJECTIVE</b>	<b>TASK</b>	<b>RESPONSIBILITY</b>	<b>DUE DATE</b>
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	The free-standing fish barrier on Sunset Creek will block upstream fish passage for all flows up to a 25 year return interval flood event. The structure shall withstand up to a 100 year return interval flood event. Any brook trout captured above the barrier shall be released downstream of the barrier.	FISH, HYD, ENG, DRC	Pre-Sale
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	Best Management Practices will be installed on all NFS roads identified for haul prior to timber harvest. Best management practices are defined by Soil & Water Conservation Practices in FSH 2509.22.	FISH, HYD, ENG, DRC	Pre-Sale
<b>Aquatics – Protect Fish Habitat and Protect Water Quality</b>	Best Management Practices for temporary roads shall follow the National Core BMP Technical Guide Volume 1: Standard Road-5. This does not require advanced engineering design prior to construction. Temporary roads shall be built with erosion and stormwater controls as necessary. Roads shall be regularly inspected to be sure erosion and stormwater controls are functional and properly maintained. Temporary stream crossings will be installed as needed. Unless otherwise approved by the designated soil scientist, engineer and/or hydrologist, construction activities shall avoid winter operations and periods of substantial precipitation.	FISH, HYD, ENG, DRC	Pre and Post Sale, During Harvest Activities
<b>Aquatics – Wetland Protection</b>	Monitoring will occur in Unit 300 following implementation of the prescribed burn to determine if cattle use is increasing in wetlands located within the Holland Grazing allotment. If cattle grazing appears to be adversely affecting the wetland, an exclusion fence will be constructed to protect the wetland.	FISH	Post Burning Activities
<b>Protect Air Quality</b>	Comply with burning restrictions issued by the Montana Airshed Group	AFMO, FMO	During Burning Activities

## APPENDIX 3 - MONITORING PLAN

### INTRODUCTION

The following monitoring matrix describes monitoring associated with the Beaver Creek Landscape Restoration Project and summarizes the purpose, methods, and expected results and uses of the proposed monitoring activities. The Forest Service is currently seeking opportunities for multi-party monitoring of post treatment conditions.

**TABLE 3-1. SUMMARY OF MONITORING ACTIVITIES FOR THE SELECTED ALTERNATIVE.**

WHAT	WHERE	WHEN/DURATION	WHY	WHO	EXPECTED RESULTS AND USE
<b>WILDLIFE</b>					
Monitor temporary road rehabilitation and potential post sale use of temporary roads and skid trails by the public.	Units	Post Sale	To determine if roads and skid trails are left in an adequate condition and to see if they are receiving post sale use.	Wildlife Biologist	Determine if temporary road closure expectations are correct.
Decommissioned and stored road activities will be monitored to evaluate when conditions meet the "reclaimed" road definition in Appendix D of Forest Plan Amendment 19.	Decommissioned and stored roads	Post Sale	To evaluate when conditions meet the "reclaimed" road definition in Appendix D of Forest Plan Amendment 19	Wildlife Biologist	To determine if decommissioned and stored road activities meet the "reclaimed" road definition in Appendix D of Forest Plan Amendment 19.
<b>INVASIVE PLANTS</b>					
Monitor the contracted spraying along roads after spraying is completed.	Roads in project area with identified infestations that can be treated with motorized access.	Post Sale	To ensure proper spraying techniques and compliance with the NIWC DN.	COR or Forest Weed Coordinator	Monitor for noxious weed acres of infestation, effectiveness of control, containment, and prevention measures, and spread and existence of new populations of noxious weeds.
Temporary and decommissioned road rehabilitation monitoring.	All temporary and decommissioned road templates with rehabilitation measures.	First, third and fifth year after harvest.	To determine the effectiveness of rehabilitation measures on the prevention of invasive plant spread and the effectiveness of revegetation by native plants and seeded grasses/forbs.	Forest Botanist, Forest Weed Coordinator, or COR	Substantial prevention of weed spread and revegetation of sites dependent on type of rehab methods, such as recontouring vs seeding only, and to determine which methods will be brought forward in other projects.

**TABLE 3-1. SUMMARY OF MONITORING ACTIVITIES FOR THE SELECTED ALTERNATIVE.**

WHAT	WHERE	WHEN/DURATION	WHY	WHO	EXPECTED RESULTS AND USE
Survey and monitor for weeds	All ground-disturbed areas in treatment units (slash piles, exposed soil from excavator tracks, skid trails), roads, and temporary roads	At least 3 years following implementation of activities	To determine the effectiveness of measures to reduce spread of invasive plant species	Forest Botanist, Forest Weed Coordinator	Monitor for noxious weed acres of infestation, effectiveness of control, containment, and prevention measures, and spread and existence of new populations of noxious weeds.
<b>Fire/Fuels</b>					
Monitor fire behavior	Broadcast burn units	During burn implementation	Determine if Silviculture prescriptions are being met	FMO, AFMO, Burn Boss or designated representative	Assure results meet project and silviculture objectives.
<b>Forest Roads</b>					
Monitor and oversee temporary road construction.	Temporary roads	Throughout duration of project implementation.	Insure road construction activities comply with contract specifications.	Contracting Officer, Forest Service Representative, and Timber Sale Administrator	Routinely determine compliance with contract specifications.
<b>Soils</b>					
Monitor soil moisture conditions prior to allowing equipment to begin operations in summer	Units	Prior to equipment moving on-site.	Ensure soil moisture conditions are adequate.	SA	Monitoring will be documented in the Timber Sale Daily Report.
Monitor all units during management activities.	Units	Throughout duration of project implementation.	Ensure compliance with Region 1 Soil Quality Standards	SA	Assure compliance with Region 1 Soil Quality Standards
Post implementation monitoring of harvest units	Randomly Selected Harvest Units	Post-Sale	To assure that skid trails meet specified spacing requirements and that operating conditions are adequate to minimize effects to the soil resource	Soil Scientist	Assure compliance with Region 1 Soil Quality Standards
<b>Forest Vegetation</b>					
Review and Document tree marking and prescription compliance.	All or a sample of treatment units	During Sale Preparation	Ensure compliance with NEPA and FS policy	Silviculturist	Assure project implementation complies with the NEPA decision
Develop NEPA to Implementation crosswalk.	SLRD	Prior to contract development	Ensure layout complies with NEPA decision	Presale Forester	Assure layout complies with NEPA decision

**TABLE 3-1. SUMMARY OF MONITORING ACTIVITIES FOR THE SELECTED ALTERNATIVE.**

WHAT	WHERE	WHEN/DURATION	WHY	WHO	EXPECTED RESULTS AND USE
Review contract prior to advertisement.	SLRD	Prior to contract advertisement	Ensure contract complies with NEPA decision	TMO, Presale Forester, IDT members, Line Officer, Contracting Officer, TSA, ER	Assure project implementation complies with the NEPA decision
Monitor and oversee vegetation treatments.	All treatment units	Throughout project implementation	Ensure treatment activities comply with contract specifications	CO, FSR, TSA, HI, and Silviculturist	Assure compliance with contract specifications.
Conduct post treatment surveys to monitor changes in forest structure, composition, and insect and disease conditions and to determine if the silvicultural prescription was met.	All treatment units	Immediately following treatment and periodically thereafter as specified in the silvicultural prescription	Determine how well objectives were met and gather data needed to assess possible follow-up treatments	Silviculturist, Culturist, or designated Representative	Determine the effectiveness of treatments, the need to conduct follow-up treatments, and to make future treatment decisions.
Conduct reforestation surveys to determine regeneration success and needs.	All regeneration units	First, third, and fifth year after harvest	Determine regeneration success and needs	Silviculturist, Culturist, or designated Representative	Assure adequate stocking of desired species occurs.
<b>Aquatics</b>					
Field inspect one potentially vulnerable wetland in burning Unit 300	Wetland in Unit 300	One year following project implementation	Assess if cattle are impacting wetland	Fisheries Biologist	Determine if mitigation is needed, e.g., a plan or fence, need to be developed to restrict cattle access to the area.
Establish Treatment and Control photo plots in RHCAs around wetlands	Photo plots in wetland RHCA proposed for treatment and not proposed for treatment.	Before implementation and 1, 2 and 5 years after implementation	Evaluate effectiveness of treatments in wetland RHCAs and identify any potential unforeseen effects.	Fisheries Biologist, Wildlife Biologist	Use monitoring photos to better evaluate potential effects in Wetland RHCAs in future projects.
Monitor cutthroat trout population health after installing a barrier	Sunset Creek, upstream of barrier	5 and 10 years after implementation (first and second population generation)	Evaluate effectiveness of fish barrier to maintain genetic purity and block brook trout	Fisheries Biologist	Determine effectiveness of fish barrier and evaluate potential for other, similar projects in the future.

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## APPENDIX 4 - BEST MANAGEMENT PRACTICES

### INTRODUCTION

Federal agency compliance with pollution control is addressed through Section 313 of the Clean Water Act, EO 12580 (January 23, 1987), National Nonpoint Source Policy (December 12, 1984), USDA Nonpoint Source Water Quality Policy (December 5, 1986) and the EPA in their guidance "Nonpoint Source Controls and Water Quality Standards" (August 19, 1987). In order to comply with State and local non-point pollution controls, the Forest Service will apply BMPs to all possible non-point sources resulting from management activities proposed in this EA. These BMPs are the Soil and Water Conservation Practices described in the FSH 2509.22.

Best Management Practices are the primary mechanism for achievement of water quality standards (EPA 1987). This appendix describes the Forest Service's BMP process in detail, and lists the key Soil and Water Conservation Practices that have been selected to be used in the action alternatives analyzed in this EA.

Best Management Practices include, but are not limited to, structural, and non-structural controls, operations, and maintenance procedures. Best Management Practices can be applied before, during, or after pollution-producing activities to reduce or eliminate the introduction of pollutants into the receiving watershed (40 CFR 130.2, EPA Water Quality Standards Regulation). Best Management Practices are usually applied as a system of practices rather than a single practice. They are selected based on site-specific conditions that reflect natural background conditions and political, social, economic, and technical feasibility.

The Flathead National Forest emphasizes the application of BMPs "to protect or improve the quality of the water resource" (Forest Plan, p. II-40). Practices compiled from the Flathead Drainage 208 Project (May 1980), Flathead National Forest Hydrologic Guidelines (1980), and other sources are listed in the Water and Soils Sections of Chapter II, Forest-Wide Standards portion of the Flathead Forest Plan (pp. II-40 through II-46). Additional BMPs are listed with the descriptions of individual management areas and in Appendix Q, Landtype Guidelines (pp. Q-1 through Q-9). The Water Standards Section further states: "Water quality limits listed in the State Water Quality Standards are coordinated with BMPs" (p. II-40).

### ROAD MAINTENANCE ASSOCIATED WITH THE BEAVER CREEK LANDSCAPE RESTORATION PROJECT

Approximately **47.9 miles** of NFS Roads would be evaluated for BMPs prior to project activities. Best Management Practices would be applied on **43.1 miles** of haul routes prior to the beginning of logging activities and **4.8 miles** of BMPs would be applied on NFS roads not being used for haul prior to the completion of project activities. Completion of BMPs would be required the first season during dry operating conditions. All BMPs required under the Timber Sale Contract would be met following completion of sale activities.

As summarized in the following table, road maintenance (application BMPs) would occur on specified road used for haul of commercial products.

**TABLE A4 - 1. ROAD MAINTENANCE ASSOCIATED WITH THE BEAVER CREEK LANDSCAPE RESTORATION PROJECT**

ROAD NUMBER	MILES
646	0.600
906	6.750
9557	1.350
9557Z	0.020
9558	0.115
9563	2.150
9570	5.060
9651	1.060
9652	0.621
9653	3.578
9654	3.300
9656	1.268
9658	3.820
9658B	0.580
9658C	0.270
10572	0.176
10574	0.318
10577	0.202
10589	1.337

**TABLE A4 - 1. ROAD MAINTENANCE ASSOCIATED WITH THE BEAVER CREEK LANDSCAPE RESTORATION PROJECT**

ROAD NUMBER	MILES
10590	0.900
10592	0.840
10593	2.050
10735	2.650
10737	1.371
10739	0.800
11636	1.848
11646	0.250
90257	0.623
90261	0.276
90262	0.321
90272	0.460
91201	.299
91202	1.030
91203	1.558
91222	0.050
<b>Total</b>	<b>47.9</b>

## STATE REQUIREMENTS FOR PROTECTION OF WATER QUALITY

Montana State Water Quality Standards require the use of reasonable land, soil, and water conservation practices (similar to BMPs) as the controlling mechanism for non-point pollution. The use of BMPs is also required in the MOU between the Forest Service and the State of Montana as part of the agency's responsibility as the designated water quality management agency on NFS lands.

## BEST MANAGEMENT PRACTICES IMPLEMENTATION PROCESS

In cooperation with the State, the Forest Service's primary strategy for the control of non-point sources of pollution is based on the implementation of preventive practices (i.e., BMPs). The BMPs have been designed and selected to protect the identified beneficial uses of the watershed.

The Forest Service non-point source management system consists of the following steps:

### *Best Management Practice Selection and Design*

Water quality goals are identified in the Forest Plan. These goals meet or exceed applicable legal requirements including State water quality regulations, the Clean Water Act, and the NEPA. Environmental assessments for projects are tiered to Forest Plans using the NEPA process. The appropriate BMPs are selected for each project by an ID Team. In each new location, there is flexibility to design different BMPs depending on local conditions and values and downstream beneficial uses of water. The BMP selection and design are dictated by the proposed activity, water quality objectives, soils, topography, geology, vegetation, and climate. Environmental impacts and water quality protection options are evaluated, and alternative mixes of practices are considered. A final collection of practices is selected that not only protect water quality, but also meet other resource needs. These final selected practices constitute the BMPs for the project.

### *BMP Application*

The BMPs are translated into contract provisions, special use permit requirements, project plan specifications, and so forth. This ensures that the operator or person responsible for applying the BMPs actually is required to do so. Site-specific BMP prescriptions are taken from plan-to-ground by a combination of project layout and Resource Specialists (hydrology, fisheries, soils, etc.). This is when final adjustments to fit BMP prescriptions to the site are made.

### *BMP Monitoring*

When the resource activity begins (e.g., timber harvest or road building), Timber Sale Administrators, Engineering Representatives, Resource Specialists, and others ensure the BMPs are implemented according to plan. Best Management Practices implementation monitoring is done before, during, and after resource activity implementation. This monitoring answers the question: Did we do what we said we were going to do?

Once BMPs have been implemented, further monitoring is done to evaluate if the BMPs are effective in meeting management objectives and protecting beneficial uses. If monitoring indicates that water quality standards are not being met or beneficial uses are not being protected, corrective action will consider the following:

1. Is the BMP technically sound? Is it really best or is there a better practice that is technically sound and feasible to implement?
2. Was the BMP applied entirely as designated? Was it only partially implemented? Were personnel, equipment, funds, or training lacking which resulted in inadequate or incomplete implementation?
3. Do the parameters and criteria that constitute water quality standards adequately reflect human-induced changes to water quality and beneficial uses?

### *Feedback*

Feedback on the results of BMP evaluation is both short and long term in nature. Where corrective action is needed, immediate response will be undertaken. This action may include modification of the BMP, modification of the activity, ceasing the activity, or possibly modification of the State Water Quality Standard. Cumulative effects over the long term may also lead to the need for possible corrective actions. Effectiveness of BMPs is based on audit results. Audit results specific to the Swan Lake Ranger District of the Flathead National Forest are on file at the District Office.

## **BEST MANAGEMENT PRACTICES EFFECTIVENESS**

In looking at the effectiveness of BMPs for the Flathead National Forest, it is reasonable to group BMP audit results for the Kootenai and Flathead National Forests together since they have similar soils. Both Forests are dominated by soils formed in the glacial till formed in material weathered from Belt rocks. This material is topped with wind blown volcanic ash from west coast eruptions up to 6,000 years ago.

Best Management Practices audits have occurred on the Flathead and Kootenai National Forests since 1988. Audits are done to determine if BMPs were properly applied and, if so, if they were effective at maintaining soil and water quality. Since 1988, individual BMPs have been audited or monitored 2,232 times on the Flathead and Kootenai National Forests. They were effective 2,211 times.

In order to analyze the results of the BMP audits, they were grouped according to the soil type on which they occurred. The simplest way is to group them by two classes:

1. Residual soils that formed from the underlying bedrock, or
2. Soils formed from glacial till.

Looking at these soil criteria, BMPs were effective when properly applied on glacial soils 1,585 times out of 1,596 applications. Best Management Practices were effective when properly applied on residual soils 154 out of 156 applications. An additional 480 BMPs were monitored without reference to the soil types on which they are applied. Of these, 472 were effective at protecting soil and water quality.

In summary, BMPs were effective 99.3 percent of the time they were properly applied on glacial till soils. Lumping the entire audit results together regardless of their soil types and including the earliest

audits that were not specific to soil type, BMPs were effective 99 percent of the time that they were properly applied on the Flathead and Kootenai National Forests.

## **ITEMS COMMON TO ALL SOIL AND WATER CONSERVATION PRACTICES**

### *Responsibility for Implementation*

The Swan Lake District Ranger is responsible for ensuring that all applicable Soil and Water Conservation Practices (SWCPs) are applied and implemented. The Timber Management Assistant is responsible for ensuring that the objectives of the SWCPs identified in this appendix are incorporated into the Timber Sale Contract by use of the appropriate Timber Sale Contract CT provisions. The Timber Sale Administrator and Engineering Representative/Contracting Officer's Representative is responsible for ensuring that contract provisions are properly administered on the ground.

### *Monitoring*

The Timber Sale Administrator, Engineering Representative/Contracting Officer's Representative, Forest Soil Scientist, and Forest Hydrologist, as needed, will monitor the effectiveness of the applied SWCPs. If the practice is not effective in meeting State or Forest Plan Standards, the practice or project activity will be redesigned, rescheduled, or dropped. Feedback of the results of the site-specific SWCP monitoring to the Forest Soil Scientist will ensure that the best practices are incorporated into all projects impacting water quality. This requirement conforms to the objectives of Practice 11.02 - Soil and Water Resource Monitoring and Evaluation.

## SITE-SPECIFIC BEST MANAGEMENT PRACTICES

Description of the soil and water conservation practices from the Forest Service Soil and Water Conservation Handbook (FSH 2509.22) will be applied in all alternatives. The location where the practices will be applied is specified in the table below. For a more detailed description of a specific BMP refer to the Soil and Water Conservation Handbook.

### Abbreviations used in this table:

#### ABBREVIATION - COMPLETE PHRASE

CO – Contracting Officer  
 COR = Contracting Officer's Representative  
 EA = Environmental Assessment  
 ER = Engineering Representative  
 FMO = Fire Management Officer  
 FNF = Flathead National Forest  
 IDT = Interdisciplinary Team  
 INFISH = Inland Native Fish Strategy

#### ABBREVIATION - COMPLETE PHRASE

PSF = Pre Sale Forester  
 RHCA = Riparian Habitat Conservation Area  
 SAM = Sale Area Map  
 SMZ = Streamside Management Zone  
 SPS = Special Project Specification  
 SWCP = Soil and Water Conservation Practice  
 TSA = Timber Sale Administrator  
 TSC = Timber Sale Contract

**TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.**

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
14.01	IV. A-C	TIMBER SALE PLANNING - To incorporate soil and water resource considerations into Timber Sale Planning	All Activities	1. Unit design, mitigation, and effects analysis was done by IDT. 2. TSC will be prepared by PSF that will include management constraints and Design Criteria from EA. 3. Use standard interim RHCA widths unless modified through watershed analysis. 4. Use exiting skid trails where feasible.	IDT has evaluated watershed characteristics and estimated response to proposed activities. The EA identifies Design Criteria to protect soil and water resources. Timber sale contracts will include provisions to meet water quality, soils, and other resources as directed by the Decision.	IDT, PSF	N/A	N/A

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
14.02	IV. A	TIMBER HARVEST UNIT DESIGN - To insure that timber harvest unit design will secure favorable conditions of water flow, maintain water quality and soil productivity, and reduce soil erosion and sedimentation.	All Activities	<ol style="list-style-type: none"> <li>1. Cumulative effects analysis and unit design were performed by the IDT.</li> <li>2. The prescriptions and unit design are consistent with direction outlined in the considerations for BMPs.</li> <li>3. Use standard interim RHCA widths unless modified through watershed analysis.</li> <li>4. Use exiting skid trails where feasible.</li> </ol>	Proposed activities were evaluated to estimate the potential watershed response. Prescriptions will be designed to assure an acceptable level of protection for soil and water resources. Management will protect soil/water values by avoiding sensitive areas, adjusting unit boundaries, adding specific BMPs to meet specific SWCPs, applying mitigation, and applying implementation/effectiveness monitoring.	IDT	N/A	N/A
14.03	N/A	USE OF SALE AREA MAPS (SAMs) FOR DESIGNATING SOIL AND WATER PROTECTION NEEDS - To delineate the location of protected areas and available water sources and insure their recognition, proper consideration, and protection on the ground.	All Activities	<ol style="list-style-type: none"> <li>1. Water courses identified and protected using SMZ buffers as a minimum.</li> <li>2. Skidding on soil when moisture is &lt;18%.</li> <li>3. Use designated skid trails agreed to by TSA.</li> <li>4. Use standard interim RHCA widths unless modified through watershed analysis.</li> </ol>	The IDT will identify water courses to be protected, unit boundaries, and other features. Ground verification and preparation of SAMs to be included in TSC will be done by PSF. TSA reviews areas of concern with purchaser before operations.	IDT, PSF, TSA	B(T)1.1 B(T)6.5 C(T)6.50# C(T)6.4#	B.1 G.5 K-G.5.0# K-G.4#

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPs	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
14.04	IV. A-2, B-1,2 VI. A	LIMITING THE OPERATION PERIOD OF TIMBER SALE ACTIVITIES - To minimize soil erosion, sedimentation, and a loss in soil productivity by insuring that the purchaser conducts his/her operations in a timely manner.	All Activities	<ol style="list-style-type: none"> <li>1. Units located on soils sensitive to compaction and/or displacement have been identified.</li> <li>2. Designate units needing harvest on frozen or snow-covered ground.</li> <li>3. All other ground disturbing activities will occur during dry, frozen, or snow-covered conditions.</li> <li>4. Be prepared to suspend operations if conditions change rapidly and when the erosion hazard becomes high.</li> <li>5. Consult with operators experienced with winter logging techniques.</li> <li>6. In wet unfrozen soil areas, use tractors or skidders to compact the snow for skid road locations only when adequate snow depth exists. Avoid steeper areas where frozen skid trails may be subject to erosion next spring.</li> </ol>	If limited operating periods are identified and recommended during the analysis by the IDT, the PSF will prepare a contract that includes appropriate provisions.	IDT, PSF, TSA	B(T)6.31 B(T)6.311 B(T)6.6 C(T)6.6 C(T)6.316# C(T)6.4#	G.3.1 G.3.1.1 G.6 K-G.6 K-G.3.1.6# K-G.4#
14.05	IV. A-B, III A-2-4	PROTECTION OF UNSTABLE AREAS - To protect unstable areas and avoid triggering mass movements of the soil mantle and resultant erosion and sedimentation.	All Activities	<ol style="list-style-type: none"> <li>1. Unstable landtypes will be identified during the planning process.</li> <li>2. Units found to need further protection will use alternative yarding techniques, seasonal restrictions, and/or unit boundary adjustments.</li> </ol>	If the NEPA analysis concluded that soils/geology in the area were unstable, BMPs would be designed to prevent irreversible soil and water effects.	IDT, PSF, TSA	C(T)6.316# C(T)6.4#	K-G.3.1.6# K-G.4#
14.06	II	RIPARIAN AREA DESIGNATION - To minimize the adverse effects on riparian areas with prescriptions that manage nearby logging and related land disturbance activities.	All Activities	<ol style="list-style-type: none"> <li>1. Identify areas with or adjacent to wet areas.</li> <li>2. Default RHCA widths will be adhered to unless described as design criteria and modified through site specific INFISH analysis. SMZ practices will be applied as normal, no alternative practices are needed.</li> <li>3. Previously unidentified wet areas found during sale layout will be reported to the Fisheries Biologist or Hydrologist and afforded the same protections as those identified earlier.</li> </ol>	All streams and wetlands in the project area will comply with the FNF Plan as amended by INFISH. The width of the riparian areas will be decided upon by the IDT. These widths will be included on the SAM, marked on the ground and included in the TSC.	IDT, PSF	B(T)1.1 B(T)6.5, C(T)6.4# C(T)6.41# C(T)6.50#	B.1 G.5 K-G.4# K-G.4.1# K-G.5.0#

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
14.07	IV. A-2, B-1	DETERMINING TRACTOR-LOGGABLE GROUND - To protect water quality from degradation caused by tractor logging ground disturbance.	All Activities	1. Tractor loggable units have been identified during the planning process. 2. Those areas found not to be tractor loggable were designated as alternative logging systems or were dropped from the unit.	IDT has identified tractor-loggable ground (in conjunction with personnel from timber operations) during transportation and timber sale planning process. The results have been used to determine intensity of and restrictions for land disturbance activities. TSC and SAM indicate areas and conditions under which tractors can operate.	IDT, PSF	B(T)1.1 B(T)6.42 C(T)6.4# C(T)6.316#	B.1 G.4.2 K-G.4# K-G.3.1.6#
14.08	IV. A-B	TRACTOR SKIDDING DESIGN - To minimize erosion and protect soil productivity by designing skidding patterns to best fit the terrain.	All Activities	1. Identify units with designated or dispersed skid trails. 2. TSA and purchaser agree on proposed locations before operation.	IDT has identified sensitive areas during the planning process. The TSA will execute the plan on the ground by locating the skid trails with the timber purchaser or by agreeing to the purchaser's proposed locations prior to operation.	IDT; TSA	B(T)6.422 C(T)6.4#	G.4.2 K-G.4#
14.09	IV. A-2	SUSPENDED LOG YARDING IN TIMBER HARVESTING - To protect the soil from excessive disturbance and accelerated erosion and maintain the integrity of the riparian areas and other sensitive areas.	Cable Logging Units	1. Units that have slopes that are unsuitable for or sensitive to ground-based skidding will be identified. 2. Units with sustained slopes >35% will be designated cable harvest units.	IDT recognizes the hazards associated with operating on steep and/or rocky slopes. Areas found to be of concern will use appropriate harvest systems that provide for a safe work environment and protect natural resources.	IDT, PSF	B(T)6.42 C(T)6.4# C(T)6.50#	G.4.2 K-G.4# K-G.5.0#
14.10	IV. A-5, B-4	LOG LANDING LOCATION AND DESIGN - To locate in such a way as to avoid soil erosion and water quality degradation.	All Activities	1. TSA and purchaser agree on landing locations before operation. 2. Use minimum size and least excavation needed. 3. No side-cast material into sensitive areas or waterways. 4. Install proper drainage.	The TSA must agree to landing locations proposed by the purchaser. Approved landing locations will meet the criteria of minimal size, least excavation needed, minimum skid roads necessary, no side-cast material into sensitive areas, and have proper drainage.	TSA	B(T)6.422 C(T)6.422	G.4.2.2 K-G.4.2.2



TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
14.11	IV. A-5,6 B-4	LOG LANDING EROSION PREVENTION AND CONTROL- To reduce erosion and subsequent sedimentation from log landing through the use of mitigating measures.	All Activities	1. Proper drainage will be installed and maintained during operation. 2. Landings will be scarified, seeded, and fertilized upon completion of harvest activities. 3. TSA will assess conditions and take necessary steps to ensure soil and water protection.	PSF and TSA assess what is necessary to prevent erosion from landings and to ensure stabilization. It is up to the TSA to request technical assistance as needed.	PSF, TSA	B(T)6.6 B(T)6.64 C(T)6.6 C(T)6.632# C(T)6.633#	G.6 G.6.4 K-G.6 K-G.6.3.2# K-G.6.3.3#
14.12	IV. A-C	EROSION PREVENTION AND CONTROL MEASURES DURING THE TIMBER SALE OPERATION - To ensure that the purchaser's operations shall be conducted reasonably to minimize soil erosion.	All Activities	1. Designate units with seasonal restrictions. 2. Do not operate during wet periods including spring snowmelt and/or intense or long-duration rain storms. 3. TSA ensures that erosion control is kept current and prevents operation when excessive impacts are possible.	PSF and TSA sets purchaser's responsibility to prevent soil/water resource damage in TSC. TSA ensures that erosion control is kept current and prevents operation when excessive impacts are possible.	PSF, TSA	A16 B(T)6.6 B(T)6.64 C(T)6.6 C(T)6.601# C(T)6.316#	A.16 G.6 G.6.4 K-G.6 K-G.6.6.1 K-G.3.1.6#
14.13	IV. B-5, 6	SPECIAL EROSION PREVENTION MEASURES ON AREAS DISTURBED BY HARVEST ACTIVITIES - To prevent erosion and sedimentation on disturbed areas.	All Activities	1. Waterbar, slash, seed, and/or fertilize skid trails and landings. 2. Rehabilitate constructed skid trails and temporary roads. 3. BMPs may be adjusted by the TSA to meet operational requirements.	IDT identifies locations needing special stabilization measures. If any such areas are identified, BMPs may be adjusted by the TSA to meet operational requirements.	IDT, TSA	C(T)6.601# C(T)6.32# C(T)6.633#	K-G.6.0.1# K-G.6.3.2# K-G.6.3.3#
14.14	IV. B-5	REVEGETATION OF AREAS DISTURBED BY HARVEST ACTIVITIES - To establish a vegetative cover on disturbed areas to prevent erosion and sedimentation.	All Activities	1. Seed and fertilize areas of exposed soil with FNF approved vegetative and fertilizer mix.	IDT has established vegetation and fertilizer mix to be used in the project area with outlines on the extent to which it should be used. TSA is responsible for seeing that revegetation work required by purchaser is done correctly and in a timely manner. The purchaser will be responsible for revegetation immediately after the completion of harvest. Funds will be collected for the District to do follow-up seeding/fertilizing in years 2 and 3 after harvest.	IDT, TSA	C(T)6.01# C(T)6.633#	K-G.6.0.1# K-G.6.3.3#

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
14.15	IV. A-4, 5 B-5, 6	EROSION CONTROL ON SKID TRAILS - To protect water quality by minimizing erosion and sedimentation derived from skid trails.	All Activities	<ol style="list-style-type: none"> <li>1. Ensure proper skid trail location.</li> <li>2. Ensure proper drainage on skid trails.</li> <li>3. Rehabilitate constructed skid trails and temporary roads.</li> <li>4. Ensure maintenance of erosion control structures by purchaser.</li> </ol>	Erosion control measures may be recommended by the IDT, but site specifically adjusted by the TSA. TSA will ensure erosion control measures are applied prior to expected hydrologic events (spring runoff, high-intensity storms, etc.). Maintenance of erosion control structures by the purchaser may be necessary and requested by the TSA.	TSA	B(T)6.6 B(T)6.65 B(T)6.66 C(T)6.6 C(T)6.633#	G.6 G.6.5 G.6.6 K-G.6 K-G.6.3.3#
14.16	IV. B-2	WET MEADOW PROTECTION DURING TIMBER HARVESTING - To avoid damage to the ground cover, soil, and water in meadows.	All Activities	<ol style="list-style-type: none"> <li>1. Identify units with or adjacent to wet meadows.</li> <li>2. Units with unmapped wet areas will be reported to Hydrologist and afforded the same protection as those identified during the planning process.</li> <li>3. Standard interim RHCA widths will be adhered to unless modification is in place.</li> <li>2. SMZ law will be met or exceeded.</li> </ol>	IDT has identified areas needing special protection. PSF will verify the areas needing protection and prepare the contract to prevent damage to meadows. TSA will be responsible for on-the-ground protection of meadows. If meadows are found by the TSA during operations, it is their responsibility to either afford them the proper protection or pursue a contract modification.	IDT, PSF, TSA	B(T)1.1 B(T)6.422 B(T)6.61 C(T)6.4# C(T)6.62#	B.1 G.4.2.2 G.6.1 K-G.4# K-G.6.2#
14.17	V. A-C	STREAM CHANNEL PROTECTION (IMPLEMENTATION AND ENFORCEMENT) - Protect natural stream flows; provide unobstructed passage of flows; reduce sediment input; and restore flow if diverted by timber sale activity.	All Activities	<ol style="list-style-type: none"> <li>1. Standard interim RHCA widths will be adhered to unless modification is in place.</li> <li>2. SMZ widths will be used at a minimum if modification in place.</li> <li>3. SMZ law will be met or exceeded.</li> </ol>	IDT has identified the location of channels in the decision area. PSF will prepare a SAM locating the channels needing protection. Layout crew marks boundaries and trees according to HB-731 and FP guidelines. TSA will see that TSC items are carried out on the ground. Technical assistance will be consulted as needed.	IDT, PSF, TSA	B(T)1.1 B(T)6.5 B(T)6.6 C(T)6.50# C(T)6.6	B.1 G.5 G.6 K-G.5.0# K-G.6
14.18	IV. A-C	EROSION CONTROL STRUCTURE MAINTENANCE - To insure that constructed erosion control structures are stabilized and working effectively.	All Activities	<ol style="list-style-type: none"> <li>1. During the period of the TSC, the purchaser is responsible for maintaining their erosion control features.</li> </ol>	During the period of the TSC, the purchaser is responsible for maintaining their erosion control features. If work is needed beyond this time, the District will pursue other sources of funding.	TSA	B(T)6.66 B(T)6.67	G.6.6 G.6.7

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
14.19	IV. A-C	ACCEPTANCE OF TIMBER SALE EROSION CONTROL MEASURES BEFORE SALE CLOSURE - To assure the adequacy of required erosion control work on timber sales.	All Activities	1. TSA reviews erosion prevention work before each harvest unit is considered complete. 2. The inspection will determine if the work is acceptable and will meet the objective of the erosion control feature.	A careful review of erosion prevention work will be made by the TSA before each harvest unit is considered complete. The inspection will determine if the work is acceptable and will meet the objective of the erosion control feature. A feature is considered not acceptable if it does not meet standards or is not expected to protect soil/water values. Technical assistance will be used as necessary.	TSA	B(T)6.36	G.3.6
14.20	IV. C	SLASH TREATMENT IN SENSITIVE AREAS - To protect water quality by protecting sensitive tributary areas from degradation that would result from using mechanized equipment for slash disposal.	All Activities	1. Where harvest is proposed within riparian areas, either slash should be removed with the tree or scattered and not treated. 2. Mechanical fuels treatments should not be used on sensitive land types.	All activities will comply with the FNF Plan as amended by INFISH. Where harvest within riparian areas is proposed, either the slash would be removed with the tree or scattered and not treated.	TSA, FMO	B(T)6.5 B(T)6.7 C(T)6.50# C(T)6.7 C(T)6.71 C(T)6.753	G.5 G.7 K-G.5.0# K-G.7# K-G.7.1 K-G.7.5.3
14.22	N/A	MODIFICATION OF THE TSC - To modify the TSC if new circumstances or conditions indicate the timber sale will cause irreversible damage to soil, water, or watershed values.	All Activities	1. Environmental modification procedure.	If TSC is not adequate to protect soil/water resources, the TSA and Contracting Officer are responsible for recommending modification of the TSC.	TSA	B(T)8.33	i.3.3
15.01	III. A-E	GENERAL GUIDELINES FOR TRANSPORTATION PLANNING - To introduce soil and water resource considerations into transportation planning.	All Roads	1. Complete a roads analysis. 2. Transportation plans include installation and maintaining proper drainage.	The IDT has evaluated watershed characteristics and estimated the response of soil and water resources to proposed transportation alternatives and activities.	IDT, ER	N/A	

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
15.02	III. A-B	GENERAL GUIDELINES FOR THE LOCATION AND DESIGN OF ROADS AND TRAILS - To locate and design roads and trails with minimal soil and water impact while considering all Design Criteria.	New Road and Trail Construction	<ol style="list-style-type: none"> <li>1. Follow INFISH Standards and Guidelines for road management.</li> <li>2. Identify sensitive land types, riparian areas, and wetlands during planning.</li> <li>3. Use the minimum amount of roads and trails necessary.</li> </ol>	The IDT has insured that the location and design of roads and trails are based on multiple resource objectives. Mitigation measures have been designed to protect the soil and water resources identified in the NEPA process. Contract provisions will be prepared by the ER that meets the soil and water resource protection requirements.	IDT, ER		
15.03	III. A-E	ROAD AND TRAIL EROSION CONTROL PLAN - To prevent, limit, and mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction by timely implementation of erosion control practices.	New Road and Trail Construction	<ol style="list-style-type: none"> <li>1. Seed and fertilize disturbed areas.</li> <li>2. Install proper ditching and road slope.</li> <li>3. Install proper drainage.</li> <li>4. Incorporate road grade breaks.</li> <li>5. Use minimum road or trail length/width necessary.</li> <li>6. Avoid wet areas or areas of sensitive soil types.</li> </ol>	IDT has established soil/water conservation objectives and mitigation measures. ER will then prepare a contract that reflects the objectives. ER will see that erosion control measures are approved and completed in a timely manner. IDT reviews projects to check effectiveness of erosion control features.	IDT, ER	B(T)6.31 B(T)6.312 B(T)6.6 C(T)6.601#	G.3.1 G.3.1.2 G.6 K-G.6.0.1#
15.04	III. D-1, 4	TIMING OF CONSTRUCTION ACTIVITIES - To minimize erosion by conducting operations during minimal runoff periods.	New Road and Trail Construction	Avoid construction during wet periods.	IDT has outlined detailed erosion control measures in NEPA process. ER puts these measures into contract provisions. Compliance is assured by Contracting Officer or ER.	IDT, ER	B(T)6.31 B(T)6.312 B(T)6.6 SPS 204	G.3.1 G.3.1.2 G.6
15.05	III. A-E	SLOPE STABILIZATION AND PREVENTION OF MASS FAILURES - To reduce sedimentation by minimizing the chances for road-related mass failures, including landslides and embankment slumps.	New Road and Trail Construction	<ol style="list-style-type: none"> <li>1. Avoid construction across unstable areas.</li> <li>2. Construct embankments following approved engineering practices.</li> <li>3. Use minimum road or trail length/width necessary.</li> </ol>	Road and trail construction in mountainous terrain requires cutting and loading natural slopes which may lead to landslides and/or embankment failures. In areas with intrinsic slope stability problems, appropriate technical resource personnel must be involved in an interdisciplinary approach to route location.	IDT, ER	N/A	

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
15.06	III. A-E	MITIGATION OF SURFACE EROSION AND STABILIZATION OF SLOPES - To minimize soil erosion from road cut slopes, fill slopes, and travel ways.	All Haul Roads	<ol style="list-style-type: none"> <li>1. Seed and fertilize cut and fill slopes.</li> <li>2. Install proper ditching and road slope.</li> <li>3. Install proper drainage.</li> <li>4. Incorporate road grade breaks.</li> <li>5. Install ditch relief culverts before/after stream crossings.</li> </ol>	IDT has outlined detailed erosion control measures in the NEPA process. Stabilization techniques are included in contract provisions. Compliance is assured by Contracting Officer or ER.	IDT, ER	SPS 203, 204, 206A 210, 412 619, 625, 626 630 B(T) 5.3 B(T)6.6 B(T)6.63 B(T)6.66 B(T)6.312 C(T)5.314# C(T)6.6 C(T)6.601#	F.3 G.6 G.6.3 G.6.6 G.3.1.2 K-F.3.1.4# K-G.6 K-G.6.0.1#
15.07	III. E-2	CONTROL OF PERMANENT ROAD DRAINAGE - To minimize the erosive effects of concentrated water and degradation of water quality by proper design and construction of road drainage systems and drainage control structures.	All Haul Roads	<ol style="list-style-type: none"> <li>1. Avoid long, steep grades.</li> <li>2. Maintain adequate surface drainage.</li> <li>3. Prevent erosion of culvert fills.</li> <li>4. Maintain ditches.</li> <li>5. Ditch relief culverts before/after stream crossings.</li> </ol>	IDT has identified locations, Design Criteria, drainage control features, and mitigation. Compliance will be assured by the ER/Contracting Officer.	ER	B(T)5.3 B(T)6.6 C(T)5.31# C(T)6.6	F.3 G.6 K-F.3.1# K-G.6
15.08	III. D	PIONEER ROAD CONSTRUCTION - To minimize sediment production and mass wasting associated with pioneer road construction.	New Road and Trail Construction	<ol style="list-style-type: none"> <li>1. Ensure stable slopes during construction.</li> <li>2. Seed and fertilize exposed soil.</li> <li>3. Avoid construction during wet periods.</li> <li>4. Use slash filter windrows.</li> </ol>	ER/Contracting Officer will be responsible for enforcing contract specifications. The purchaser is responsible for submitting an operating plan that includes erosion control measures.	ER	B(T)5.23 B(T)6.31 B(T)6.311 B(T)6.312 B(T)6.6 C(T)6.601# SPS 204	F.2.3 G.3.1 G.3.1.1 G.3.1.2 G.6 K-G.6.0.1#
15.09	III. E-7,8	TIMELY EROSION CONTROL MEASURES ON INCOMPLETE ROADS AND STREAM CROSSING PROJECTS - To minimize erosion of and sedimentation from disturbed ground on incomplete projects.	All Road Construction, Reconstruction, and Maintenance	<ol style="list-style-type: none"> <li>1. Avoid construction during wet periods.</li> <li>2. Use slash filter windrows or silt fence.</li> <li>3. Seed and fertilize disturbed areas.</li> </ol>	IDT has identified project location and mitigation measures in NEPA process. Protective measures will be kept current on all areas of disturbed, erosion-prone areas. TSA ensures contract compliance.	IDT, TSA	B(T)5.23 B(T)6.31 B(T)6.6 B(T)6.66 C(T)6.6 C(T)6.601#	F.2.3 G.3.1 G.6 G.6.6 K-G.6 K-G.6.0.1#

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
15.10	III. D-8	CONTROL OF ROAD CONSTRUCTION, EXCAVATION, AND SIDE-CAST MATERIAL - To reduce sedimentation from unconsolidated excavated and side-cast material caused by road construction, reconstruction, or maintenance.	All Road Construction, Reconstruction, and Maintenance	1. Do not side-cast into waterways or sensitive areas. 2. Use slash filter windrows or silt fence.	IDT has identified project location and mitigation measures in NEPA process. Protective measures will be kept current on all areas of disturbed, erosion-prone areas. TSA ensures contract compliance.	IDT, TSA	B(T)5.3 C(T)5.31# SPS 203 SPS 204	F.3 K-F.3.1#
15.11	VII. A-1,2	SERVICING AND REFUELING EQUIPMENT - To prevent contamination of waters from accidental spills of fuels, lubricants, bitumens, and other harmful materials.	All Activities	1. Ensure proper fuel storage and transportation. 2. Keep fuel from streams, wetlands, ponds, and lakes.	ER/TSA/Contracting Officer will designate the location, size, and uses of service refueling areas. All projects will adhere to the FNF Hazardous Substance Spill Plan in case of accidents.	ER, TSA	B(T)6.222 B(T)6.34 B(T)6.341	G.2.2.2 G.3.4 G.3.4.1
15.12	III A. 4	CONTROL OF CONSTRUCTION IN RIPARIAN AREAS - To minimize the adverse effects on riparian areas from roads.	New Road and Temporary Road Construction	1. Follow INFISH Standards and Guidelines for construction within riparian areas. 2. Use slash filter windrows or silt fence. 3. Install ditch relief culverts and surface water deflectors before/after stream crossings.	Proposed new and temporary roads will adhere to guidelines in the Montana Streamside Management Zone Law (HB-731). All road activities will follow INFISH Standards and Guidelines for road management.	ER, TSA	B(T)6.5 B(T)6.62 C(T)6.50# SPS 206 SPS 206A	G.5 G.6.2 K-G.5.0#
15.13	V. C-1	CONTROLLING IN-CHANNEL EXCAVATION - To minimize stream channel disturbances and related sediment production.	All Road Construction, Reconstruction, and Maintenance	1. Use silt fence to minimize introduced sediment. 2. Use minimum amount of road. 3. Construct minimum number of crossings.	BMP improvements at crossings would adhere to the guidelines in Montana Streamside Management Zone Law (HB-731) and the INFISH Standards and Guidelines for road management.	ER, TSA	B(T)6.5 SPS 204 SPS 206 206A	G.5
15.14	V. A, C	DIVERSION OF FLOWS AROUND CONSTRUCTION SITES - To minimize downstream sedimentation by insuring all stream diversions are carefully planned.	All Work at Stream Crossings	1. Divert stream flow around construction. 2. Use silt fence to minimize introduced sediment. 3. Construction during low-flow.	The IDT has determined, where stream crossings meet multiple resource objectives, the crossings would require a State 124 permit. This would require the State Fish, Wildlife, and Parks to review the adequacy of the proposed mitigation. Compliance with contract provisions would be done by the ER.	IDT, ER	B(T)6.5 B(T)6.31 C(T)6.50# C(T)6.6	G.5 G.3.1 K-G.5.0# K-G.6

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
15.15	V. A-C	STREAM CROSSINGS ON TEMPORARY ROADS - To keep temporary roads from unduly damaging streams, disturbing channels, or obstructing fish passage.	All Roads	1. Consult Hydrologist on placement of crossing. 2. Use minimum number of stream crossings. 3. Construction during low-flow. 4. Follow INFISH Standards and Guidelines for construction within riparian areas.	The IDT identifies areas in need of a temporary road during the NEPA process. Proposed stream crossings would adhere to the guidelines in Montana Streamside Management Zone Law (HB-731).	PSF, ER, TSA	N/A	
15.16	V. C-1-7	BRIDGE AND CULVERT INSTALLATION - To minimize sedimentation and turbidity resulting from excavation for in-channel structures.	All Road Construction, Reconstruction, and Maintenance	1. Installation should be done during periods of low flow. 2. In-stream sediment retention devices should be used throughout implementation.	IDT has identified project location and mitigation measures in NEPA process. Protective measures will be kept current on all areas of disturbed, erosion-prone areas. TSA ensures contract compliance.	IDT, TSA	C(T)5.31# (T-310) B(T)6.312	K-F.3.1# (T-618) G.3.1.2
15.17	III. D-9	REGULATION OF BORROW PITS, GRAVEL SOURCES, AND QUARRIES - To minimize sediment production from borrow pits, gravel sources, and quarries and limit channel disturbance in those gravel sources suitable for development in floodplains.	N/A			ER	B(T)6.5 C(T)6.50#	G.5 K-G.5.0#
15.18	III. D-8	DISPOSAL OF RIGHT-OF-WAY AND ROADSIDE DEBRIS - To insure that debris generated during road construction is kept out of streams and prevent slash and debris from subsequently obstructing channels.	All Road Construction, Reconstruction, and Maintenance	Debris and slash generated during road construction should not be side-cast into streams.	Proposed road construction will adhere to the guidelines in the Montana Streamside Management Zone Law (HB-731).	ER	Std Spec 201 SPS 201	
15.19	III. A	STREAM BANK PROTECTION - To minimize sediment production from stream banks and structural abutments in natural waterways.	All Road Construction, Reconstruction, and Maintenance	1. Take precautions to minimize or eliminate disturbance to stream banks. 2. Maintain in-stream structures.	IDT has identified project location and mitigation measures during NEPA process. Protective measures will be kept current on all areas of disturbed soils. TSA and ER ensure contract compliance.	IDT, ER, TSA	Std Spec 619	

TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
15.20	N/A	WATER SOURCE DEVELOPMENT CONSISTENT WITH WATER QUALITY PROTECTION - To supply water for road construction and maintenance and fire protection while maintaining water quality.	N/A			ER, FMO	Std Spec 207	
15.21	III. E	MAINTENANCE OF ROADS - To maintain all roads in a manner that provides for soil and water protection by minimizing rutting, failures, side-cast, and blockage of drainage facilities.	All Road Reconstruction and Maintenance	1. Maintain all roads in a manner that provides for soil and water protection.	Road maintenance associated with a timber sale is the responsibility of purchaser. The ER/TSA will ensure that the purchaser maintains roads according to the appropriate maintenance level.	ER, TSA	B(T)5.12 B(T)5.3 B(T)6.6 C(T)6.6 C(T)5.31#	F.1.2 F.3 G.6 K-G.6 K-F.3.1#
15.22	III. E-1	ROAD SURFACE TREATMENT TO PREVENT LOSS OF MATERIALS - To minimize the erosion of road surface materials and, consequently, reduce the likelihood of sediment production.	All Haul Roads	1. Maintenance of road surface should include proper blading and/or dust abatement. 2. Use crush-gravel where necessary.	Protective measures will be kept current on all areas of disturbed, erosion-prone areas. ER ensures contract compliance.	IDT, ER	B(T)5.3 C(T)5.31# C(T)5.314#	F.3 K-F.3.1# K-F.3.1.4#
15.23	III. E-6	TRAFFIC CONTROL DURING WET PERIODS - To reduce the potential for road surface disturbance during wet weather and reduce sedimentation.	All Haul Roads	1. Avoid hauling during wet periods.	Road restrictions and traffic control measures will be implemented on all haul roads when damage would occur during spring breakup. The decision to restrict a road is made by the ER. Hauling restrictions would be controlled by the TSA.	ER, TSA	B(T)6.6 C(T)6.6 C(T)5.316# C(T)5.41#	G.6 K-G.6 K-F.3.1.6# K-F.4.1#



TABLE 4 - 2. SITE SPECIFIC BEST MANAGEMENT PRACTICES.

SWCP	MT BMP	SWCP OBJECTIVE	APPLICABLE UNITS/ROADS	RECOMMENDED BMPs BY IDT/TSA	CONSIDERATIONS FOR BMPS	PERSON(S) RESPONSIBLE	STANDARD CONTRACT PROVISIONS	STEWARDSHIP CONTRACT PROVISIONS
15.24	III.E-4 VI. A-B	SNOW REMOVAL CONTROLS - To minimize the impact of snow melt on road surfaces and embankments and reduce the probability of sediment production resulting from snow removal operations.	All Winter Haul Roads	<ol style="list-style-type: none"> <li>1. Be careful not to leave snow berm at edge of road.</li> <li>2. Ensure proper drainage by opening sections of berm to allow water to leave road surface.</li> <li>3. Ensure no side cast material enters waterways.</li> <li>4. Consider hauling only during frozen periods. During cold weather, plow any snow cover off the roadway to facilitate deep freezing of the road prior to hauling.</li> <li>5. Before logging, mark existing culvert locations. During and after logging, make sure that all culverts and ditches are open and functional.</li> <li>6. Use compacted snow for roadbeds in unroaded, wet or sensitive areas. Construct snow roads for single-entry harvests or for temporary roads.</li> <li>7. Return the following summer and build erosion barriers on any trails that are steep enough to erode.</li> </ol>	Snow removal will be kept current on all roads associated with winter logging operations. TSA ensures compliance with contract provisions.	IDT, TSA	C(T)5.316# Std Spec 203.09	K-F.3.1.6#
15.25	III. E 7, 8	OBLITERATION OF TEMPORARY ROADS - To reduce sediment generated from temporary roads by obliterating them at the completion of their intended use.	All Temporary Roads	<ol style="list-style-type: none"> <li>1. Re-contour road fully where feasible.</li> <li>2. Seed and fertilize exposed soil.</li> <li>3. Pull slash and woody debris back onto rehabilitated road.</li> </ol>	This work will be done on all new temporary roads in the decision area. The work will be done by the purchaser with compliance by the TSA.	TSA	B(T)6.63 C(T)6.6 C(T)6.632# C(T)6.633# C(T)6.601#	G.6.3 K-G.6 K-G.6.3.2# K-G.6.3.3# K-G.6.0.1#
18.03	IV. C-8	PROTECTION OF SOIL AND WATER FROM PRESCRIBED BURNING EFFECTS - To maintain soil productivity, minimize erosion, and prevent ash, sediment, nutrients, and debris from entering surface water.	All Prescribed Burning	<ol style="list-style-type: none"> <li>1. Follow INFISH Standards and Guidelines for burning in RHCAs.</li> <li>2. Adhere to SMZ Law.</li> <li>3. Where harvest within riparian areas is proposed, either the slash should be removed with the tree or scattered and not treated.</li> </ol>	Prescribed burning adjacent to riparian areas will adhere to guidelines in the Montana SMZ Law (HB-731). Prescribed burn plans identify the conditions necessary to prevent soil damage and meet site preparation objectives.	FMO	N/A	

