Middle and South Fork Mill Creek
A to Z Project
Recreation/Visual Specialist Report
For More Information Contact:

Rodney Smoldon
Colville National Forest
765 South Main Street
Colville, WA  99114
Phone: (509) 738-7000
Email: rsmoldon@fs.fed.us

Cover photo: Significant dispersed campsite at Bestrom meadows. Photo credit: Mark Teply, Cramer Fish Sciences.

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CHAPTER I INTRODUCTION

The Three Rivers Ranger District is proposing a project on a portion of the district northeast of Colville, WA. The proposed project is known as the Middle and South Fork Mill Creek A to Z Project (Project). The National Environmental Policy Act (NEPA) analysis is being performed by Cramer Fish Sciences of Lacey, WA. A scoping packet was provided to the public on July 31, 2015 to give the public an opportunity for early and meaningful participation on a proposed action prior to a decision being made by the responsible official. Since that time, comments were received expressing interests and concerns with the proposed action. Many included specific items with supporting facts. In response to these comments, the proposed action was revised and alternatives were developed to address concerns that could be reconciled in the proposed action or in a revised proposed action. Alternatives were submitted on November 25, 2015 and approved in concept by the responsible official on December 22, 2015. Since then, alternatives have been refined to address direction from the responsible official and to address findings of field surveys.

This Recreation/Visual specialist report describes existing recreation and visual quality within the Middle and South Fork Mill Creek A to Z Project area, and provides a detailed analysis and discussion of potential effects of the proposed action and alternatives related to two issues: 1) intensity and duration of impacts to recreation; and 2) departure from visual quality objectives (VQO). This analysis responds to several comments that were submitted during scoping, or were identified by the interdisciplinary team (IDT) during scoping, analysis, and field surveys—including concerns for reconstruction and maintenance of NFS roads in order to provide safe and efficient travel, fuels management around significant dispersed recreation sites, improved off-highway vehicle (OHV) recreation opportunities, potential impacts of OHV use, and potential impacts of project activities on all forms of recreation use in the project area. The analysis reported in this specialist report addresses the final project design of March 14, 2016. The effects analysis in this specialist report is based on implementation of this project design as described in Chapter II of the draft EA. A map of the Middle and South Fork Mill Creek A to Z Project area is displayed in Figure 1.
Figure 1. Middle and South Fork Mill Creek A to Z Project area
CHAPTER II PLANNING GUIDANCE

Action alternatives described in Chapter II of the draft EA were designed to be consistent with Forest Plan standards and guidelines and applicable laws and regulations regarding recreation and visual resource management. A summary of this planning guidance is provided below. The effects analysis demonstrates consistency with this direction.

2.1 Forest Plan Direction

2.1.1 Recreation

General management direction for recreation is supplied by the 1988 Colville Forest Plan Forestwide Standards and Guidelines on pages 4-35 through 4-37. Direction specific to management areas within the planning area can be found on pages 4-69 to 4-72 (MA 1), 4-77 to 4-79 (MA 3A), 4-93 to 4-96 (MA 5), 4-97 to 4-100 (MA 6), 4-101 to 4-104 (MA 7), and 4-105 to 4-108 (MA 8). The direction relevant to potential project impacts on dispersed recreation, trail, and OHV use is as follows:

- Recognize undeveloped campsites, outstanding scenic, geological, botanical areas or areas where concentrated recreation use occurs as being significant in providing dispersed recreation opportunities. Inventory, evaluate, and manage these sites.

- Limit regulation, constraint, and supervision of recreation use to the minimum necessary for resource protection, visitor satisfaction, and safety.

- Provide for a broad range of ROS settings and recreational opportunities such as hunting, fishing, gathering forest products, viewing scenery, camping, hiking, and floating.

- Immediate foreground areas (approximately 500 feet) around significant dispersed recreation sites will be managed to meet the retention visual quality objective.

- Sign all system trails outside wilderness to provide for user safety and convenience. Wilderness system trails will be signed for user safety only.

- Cooperate with state and counties on grooming snowmobile trails and on development of trail systems where appropriate.

- Protect trails and facilities during management activities with appropriate mitigation measures.

- Reconstruct and/or relocate trails and facilities during management activities.

- Trails interrupted by logging or road construction would be restored or substitute trails provided so the mileage of trails in a given area is not diminished. Trails may be closed during logging or construction activities for public safety. Clear directions for users would be provided during logging or construction activities on trails which will be kept open.

- Designate areas for off-road vehicle (ORV) use through the Forest Travel Implementation Schedule and in conformance with ROS designations for specific areas. Manage ORV use to minimize resource damage and to promote public safety.
2.1.2 Visual Quality

General management direction for visual resources is supplied by the 1988 Colville Forest Plan Forestwide Standards and Guidelines on pages 4-35 through 4-60. Direction specific to management areas within the planning area can be found on pages 4-69 to 4-72 (MA 1), 4-77 to 4-79 (MA 3A), 4-93 to 4-96 (MA 5), 4-97 to 4-100 (MA 6), 4-101 to 4-104 (MA 7), and 4-105 to 4-108 (MA 8). The direction relevant to potential project impacts on visual resources is as follows:

- Recognize undeveloped campsites, outstanding scenic, geological, botanical areas or areas where concentrated recreation use occurs as being significant in providing dispersed recreation opportunities. Inventory, evaluate, and manage these sites.

- Provide for a broad range of ROS settings and recreational opportunities such as hunting, fishing, gathering forest products, viewing scenery, camping, hiking, and floating.

- Immediate foreground areas (approximately 500 feet) around significant dispersed recreation sites would be managed to meet the retention visual quality objective.

- Foreground retention areas are to be managed for at least 30 percent of the stand to be 21 inches dbh (diameter at breast height) or greater in size.

- Partial retention foreground areas are to be managed for at least 30 percent of the stand to be 16 inches dbh or greater in size.

- Cut blocks, patches, or strip cuts shall be shaped and blended to the extent practicable with the natural terrain.

- Uneven-age silvicultural systems would be favored in perennial riparian areas and foreground or middle-ground areas with a visual quality objective of Retention or Partial Retention. Generally, even-age silvicultural systems would be favored in areas with a visual quality objective of Modification or Maximum Modification.

2.2 Regulatory Framework

The National Forest Management Act (NFMA) includes provisions applicable to all projects and requires the following: (a) resource plans and permits, contracts and other instruments shall be consistent with the forest land management plan; (b) ensure consideration of the economic and environmental aspects of management, to provide for outdoor recreation, range, timber, watershed, wildlife, and fish; and (c) provide for diversity of plant and animal communities.

Improvement of existing sites and/or construction of new recreation facilities are outside the scope of the Project. Therefore, regulations that may apply to construction and operation of recreation facilities (e.g., Americans with Disability Act Standards for Accessible Design) do not apply.

Use of dispersed recreation sites by the public is presumed to be legal for the purposes of this analysis, and in accordance with all applicable federal, state, and local laws and Forest regulations. Illegal use of dispersed recreation sites is outside the scope of the Project.
CHAPTER III RECREATION

3.1 Overview of Recreation Use

The Middle and South Fork Mill Creek A to Z Project area consists of National Forest System (NFS) lands located northeast of Colville, WA. Most of the project area is within the Middle Fork Mill Creek and South Fork Mill Creek watersheds. Elevations range from 2,300 feet near the confluence of the two creeks to about 5,700 feet on Old Dominion Mountain. From Colville, recreationists travel the Aladdin Road (County road 9435) and enter the project area via County road 4954. County road 4954 is the major byway through the project area and several NFS roads and County road 4668 provide access to NFS lands within the project area.

A small portion of the project area is in the headwaters of the Camp Creek watershed. Little Twin Lakes campground is located on Little Twin Lakes (elevation 3,723 feet). From Colville, recreationists travel State Highway 20 and access the campground via County road 4920 and NFS 9413150. This developed NFS campground was temporarily closed during field surveys due to hazard trees, but three campsites remain open on the southern portion of the lake.

The project area contains activities, settings, and experience opportunities characteristic of Semi-Primitive Motorized, Roaded Natural and Roaded Modified classes in the Recreation Opportunity Spectrum (ROS) (Figure 2). Approximately 1,413 acres of Semi-Primitive Motorized ROS occurs within two large blocks of Management Area (MA) 1 on the west slope of Old Dominion Mountain and along Smith Creek. The management emphasis in MA 1 is old growth forest. Late and old structure stand conditions are more common in these areas than elsewhere in the project area. Motorized use is permitted in this ROS class, but no open roads or motorized trails exist in these areas. The natural setting may have subtle modifications that do not draw the attention of a forest user.

Roaded Natural and Roaded Modified areas are neither primitive nor highly developed. About 7,253 acres of the project area are Roaded Natural areas. These occur within MA 3A, MA 5 and MA 6. These areas emphasize scenic values. Recreation may occur along with other management activities, but landscape modifications harmonize with the natural setting and there is a high degree of user interaction with the natural environment. About 17,833 acres of the project area are Roaded Modified areas. These occur within MA 7 and MA 8 where wood/forage and big game winter range are primary management activities. The landscape setting may become substantially altered but, because these areas are farther from higher traffic roads, there is generally less use and interaction among users.
3.2 Road and Trail Use

The project area is popular among local recreationists and road and trail access has enhanced their enjoyment of the forest. Roads and trails are the backbone of recreation use. Roads developed as part of the homesteading, mining, and forest management history in the project area have created or enabled several recreation opportunities, including: driving for pleasure, camping, hunting, shooting, OHV use, and non-motorized use. The project area also contains a small segment of a larger designated OHV trail system which provides not only OHV riding opportunities, but they also provide access for hunting. Foraging (firewood gathering, berry picking, mushroom gathering) is also presumed to occur along roads and trails in the project area.

Designated road and trail access was determined from the following data sources:

- Groomed snowmobile trails recorded in the INFRA geodatabase\(^1\).
- The April 1, 2015 version of the CNF Motor Vehicle Use Map (MVUM).

Recreation use of roads and trails was characterized based on input provided during stakeholder collaboration, public input, review with Forest Service staff, and field observation. Using this information the following summary of road- and trail-based recreation was compiled.

3.2.1 Highway Vehicle Use

County roads provide the primary road access to the project area and are key for recreation use (see Figure 1). County roads are used by highway vehicles with no season restrictions; however, portions may not be plowed in winter when used for groomed snowmobile trails. County road 4954 is the major byway in the project area, tying Aladdin Road to the west to State Highway 20 to the east. County road 4668 provides tributary access to the Middle Fork Mill Creek drainage. County road 4920 provides access to Little Twin Lakes Campground from State Highway 20.

Numerous NFS roads throughout the planning area are designated for seasonal or year-round highway vehicle use according to the MVUM (Figure 3).

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\(^1\) Acquired from the Colville National Forest GIS specialist on November 26, 2013.
Figure 2. Recreation Opportunity Spectrum, Middle and South Fork Mill Creek A to Z Project area
Figure 3. MVUM travel routes, Middle and South Fork Mill Creek A to Z Project vicinity, along county roads (single solid line), NFS roads open for highway vehicles (double line), NFS roads open for highway vehicles and OHVs (double line with a dash), and OHV use only (single dashed line). Shaded lines indicate a seasonal restriction on motorized vehicle use.
Several NFS roads provide access into the project area from the adjoining Rocky Creek watershed to the north (NFS road 7018000) and Prouty Corners to the south (NFS road 9411000 and 9411175). NFS road 9413000, along with a right-of-way across a private inholding, provides road access for the more experienced highway vehicle traveler between Little Twin Lakes and County road 4954.

Driving for pleasure with highway vehicles occurs primarily along two travel loops and several out-and-back roads. NFS roads 7012000 and 7018000, along with County roads 4668 and 4954, form the major travel loop in the project area. Highway vehicle use is permitted along the entire loop. This travel loop is a major feature of the project area and coincides with MA 3A (Recreation). It is within the Roaded Natural ROS class. Road condition surveys conducted for the project found these roads passable by highway vehicles (see Roads Analysis Report). This loop has no seasonal restrictions; however, portions are used for groomed snowmobile trails.

A second, smaller travel loop is formed by County road 4954 and NFS roads 9411000 and 9411175. Most of this loop is within MA 7 (Wood/Forage) and the Roaded Modified ROS class. Road condition surveys found the county road and NFS road 9411175 to be passable by highway vehicles. However, NFS road 9411000 was found to be deeply rutted, impeding safe passage by highway vehicles and OHVs (Figure 4). More information on road conditions and proposed actions to restore highway vehicle traffic conditions is in the Roads Analysis Report. This loop has no seasonal restrictions; however, portions are used for groomed snowmobile trails.

Figure 4. Deeply rutted road conditions along NFS road 9411000 in the Middle and South Fork Mill Creek A to Z Project area
Most other MVUM designated access provides out-and-back travel opportunities. Notable travel destinations include the summit of Old Dominion Mountain (NFS road 9411130), Little Round Top (7012040), Longshot Mine (7005150), and Little Twin Lakes (9413150). Road condition surveys for the project found most of these roads to be passable to highway vehicles. However, a portion of the road to Old Dominion Mountain experienced a road fill failure and is impassable (Figure 5). More information on road conditions and proposed actions to restore highway vehicle traffic conditions is in the Roads Analysis Report. Seasonal restrictions exist where roads are within MA 6 (Scenic/Winter Range) and MA 8 (Winter Range).

Other out-and-back opportunities are found along the travel loops and County road 4954. Most of these are shorter and/or have less descriptive destinations. Many go to dispersed campsites or other dispersed recreation uses. Some are part of groomed snowmobile trail systems. Many are also needed for forest management. Recreation uses will be discussed later. Most of these other out-and-back opportunities are within MA 7 (Wood/Forage) and the Roaded Modified ROS class.

### 3.2.2 Off-Highway Vehicle Use

Both authorized and unauthorized OHV use occurs in the project area. Authorized use occurs along county roads, NFS roads designated for OHV traffic, and NFS trails designated for OHV-only traffic (see Figure 3). County roads, described above for highway vehicle access, are open to OHV traffic year round; however, portions may not be plowed in winter when used for groomed snowmobile trails. Only one NFS road provides OHV access from outside the project area. NFS road 9411000 provides OHV access from Prouty Corners to the south.

![Figure 5. Road fill failure along NFS road 9411130 in the Middle and South Fork Mill Creek A to Z Project area](image)
Driving for pleasure occurs along one travel loop and along several out-and-back opportunities. A small travel loop is formed by County road 4954 and NFS roads 9411000 and 9411175. Most of this loop is within MA 7 (Wood/Forage) and the Roaded Modified ROS class. Road condition surveys found the county road and NFS road 9411175 to be passable by highway vehicles. However, NFS road 9411175 was found to be deeply rutted, impeding safe passage by highway vehicles and OHVs (see Figure 4). See the Roads Analysis Report for more information. This loop has no seasonal restrictions; however, portions are used for groomed snowmobile trails.

Most other MVUM designated NFS road access provides out-and-back travel opportunities. Notable travel destinations include Little Round Top (7012040) and Longshot Mine (7005150). Road condition surveys for the project found most of these roads to be passable to OHVs. Other out-and-back opportunities are found along the travel loop and County roads. Most of these are shorter and/or have less descript destinations. Most of these out-and-back opportunities are within MA 7 (Wood/Forage) and the Roaded Modified ROS class. Seasonal restrictions exist where roads are within MA 6 (Scenic/Winter Range) and MA 8 (Winter Range).

The Little Pend Oreille (LPO) Motorized Trail System traverses the western edge of the project area using NFS Trail 142 (see Figure 3). This trail segment is part of a larger system that includes about 70 miles of loop trails in and around the Little Pend Oreille Lakes area. Two small spurs access the Green Mountain summit (NFS Trail 140) and DNR lands to the south (NFS Trail 143). All of these trails are open to motorcycle use. Only a small portion of NFS Trail 142, south of County road 4954, is also open to wider track OHVs. In the project area, these trails are within MA 5 (Scenic/Timber) and the Roaded Natural ROS class. There are no seasonal restrictions.

Reconnaissance level surveys were conducted along the portion of the LPO within the project area to ascertain trail conditions. Generally, the trail surface is not rutted, the width is consistent with designated vehicle use, and there is little sign of erosion. Problem areas do occur along steeper (e.g., greater than 10 percent grade) sections where surface loss can be 6 inches or more, widths can be wider, and rutting associated with tread wear and/or erosion is evident (see Figure 6). Trail damage appeared more severe along the portion of NFS Trail 142 supporting wider track vehicles. In total, about 250 yards of trail was found to be in need of repair.

A concern with permitting OHV use along roads and trails is that it provides access to unauthorized “cross-country” use (i.e., off of the designated route). Reconnaissance was conducted along all county roads and designated NFS roads and trails to locate unauthorized OHV use. In many cases, unauthorized use of NFS roads is occurring along open and closed NFS roads not designated for OHV use. While not authorized, such OHV use does not appear to cause additional disturbance (see the Roads Analysis Report). The Forest has placed barriers on some closed NFS roads to discourage OHV use where it has the potential to be problematic.

In many other instances, user-created trails are evident off of the county and NFS road systems. In most cases, such unauthorized OHV use had already been identified by the Forest, barriers put in place to discourage further use, and restoration measures implemented to revegetate the disturbed area, where needed (see Figure 7). In some other cases, unauthorized OHV use was occurring in borrow pits, already disturbed by mining activity (see Figure 8). The Forest has not actively discouraged OHV use of borrow pits, but has placed barriers when needed to discourage unauthorized trail creation in the adjacent forest.

Our reconnaissance found only one site in the project area where Forest attempts to control unauthorized OHV use and limit associated disturbance was proving ineffective. This site occurs
on approximately 3 acres of hillslope along County road 4668 with devegetation and erosion due to off-road vehicle use (see Figure 9). The area is near significant dispersed campsites along Smith Creek and is located between upper and lower road segments of a switchback on the road. Tire tracks indicate the area has been used as a switchback cutoff and for access to a dispersed campsite between the road segments. Approximately 20,000 square feet within the area shows signs of devegetation and associated soil erosion.

Figure 6. Surface loss, trail widening, and erosion along NFS trail 142 in the Middle and South Fork Mill Creek A to Z Project area
Figure 7. Example of unauthorized OHV use along county and NFS roads in the Middle and South Fork Mill Creek A to Z Project area.
Figure 8. Example of unauthorized OHV use in borrow pits in the Middle and South Fork Mill Creek A to Z Project area
3.2.3 Snowmobile Use

The INFRA database identifies snowmobile travel on several NFS roads within the project area (Figure 10). Most of these are part of a larger groomed snowmobile trail network administered by Washington State Parks within the Gillette Recreation Area. These routes are used for riding for pleasure. Key routes include north-south travel between a Sno-Park site near Prouty Corners to the (via NFS road 9411000) Rocky Creek watershed to the north (via NFS road 7018000) and east-west travel from a Sno-Park on State Highway 20 east of the project area (via County road 4954) to its junction with NFS road 7018000. Several bypasses and spurs, groomed and ungroomed, exist along these routes. The most notable out-and-back snowmobile destination is to the summit of Old Dominion Mountain (via NFS road 9411130).
Snowmobile Routes
Middle and South Fork Mill Creek A to Z Project

To State Hwy 20
To Rocky Creek Watershed
To Prouty Corners
To State Hwy 20

Figure 10. Snowmobile Routes, Middle and South Fork Mill Creek A to Z Project vicinity

Scale: 3/4 inch = 1 mile
1:64,480

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3.3 Other Recreation Use

3.3.1 Little Twin Lakes Campground

Little Twin Lakes Campground is a developed NFS campground located on Little Twin Lakes in the southeast corner of the project area (see Figure 1). The campground consists of two campsite areas—north and south—each with a boat launch and vault toilet. The north area consists of eight pull-in campsites. Each campsite has a fire ring, picnic table, and tent camping area (see example in Figure 11). All campsites are in good condition and improvements are not in need of repair. There was little evidence of garbage or waste outside the fire rings. Tree scarring was evident as was small and large tree removal, presumably for firewood. There is very little dead wood in the immediate campsite vicinity. All campsites are adjacent to the riparian habitat conservation area associated with the lake and wet soils and hydrophytic vegetation is evident adjacent to most campsites areas.

![Campsite 6, Little Twin Lakes Campground, north area](image)

As indicated earlier in this report, this portion of Little Twin Lakes campground was temporarily closed during field surveys due to hazard trees. Windthrow activity is evident around campsites and along NFS road 9413150 accessing the campsites (Figure 12). Wet soil is one factor likely contributing to increased windthrow activity. All windthrow observed during our survey was of uprooted dominant and codominant trees that appeared to be shallow-rooted. There were no stem breaks. Most windthrow occurred east of the access road and the campsites, between the campground and the lakes. Several of these areas are mapped wetlands (see Vegetation specialist...
Most trees fell to the west, toward the campsites and the road, presumably due to high winds fetched across the open lake during intense windstorms.

Figure 12. Recent windthrow at the Little Twin Lakes Campground, north area

The south area consists of three pull-in campsites. Each campsite has a fire ring, picnic table, and tent camping area (see example in Figure 13). All campsites are in good condition and improvements are not in need of repair. As in the north area, there was little evidence of garbage or waste outside the fire rings. There was no evidence of windthrow in the area and all campsites were open for recreational use. Stand conditions were similar to those found throughout the project area where, through fire suppression, trees have become overstocked and small trees have created ladder fuels that increase susceptibility to insects, disease, and wildfire. However, firewood gathering has limited the buildup of dead wood.

In addition to the campsites, Little Twin Lakes Campground also has a wildlife viewing area along NFS road 9413150. This area has limited parking and a short trail to a rocky promontory overlooking the lake. However, views of the lake are becoming obscured by trees (see Figure 14). There was no resource or trail damage evident associated with this recreation use.

The lake itself is fishable for westslope cutthroat trout fry planted by Washington Department of Fish and Wildlife. No fishing was observed during field reconnaissance; however, the fishing is
rated as excellent May through October\textsuperscript{2}. The northern boat launch supports trailered boats while the southern boat launch requires launching boats by hand.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure13.png}
\caption{Campsite 2 at the Little Twin Lakes Campground, south area}
\end{figure}

\textsuperscript{2}http://wdfw.wa.gov/fishing/washington/465/
Figure 14. View from wildlife viewing area on Little Twin Lakes near Little Twin Lakes Campground.

3.3.2 Dispersed Campsites

Surveys were conducted to locate dispersed campsites along roads and fish-bearing streams and within proposed treatment units. Road-based campsites were surveyed by crews staffed by Cramer Fish Sciences and Western Watershed Analysts in association with recreation surveys and road condition surveys, respectively. Stream-based campsites were surveyed by crews staffed by Cramer Fish Sciences in association with stream habitat surveys. Unit-based campsites were surveyed by crews staffed by Northwest Management, Inc. and Williamson Consulting in association with stand exams. Survey protocols were adapted from procedures at: www.wilderness.net/index.cfm?fuse=toolboxes&sec=recremonitor. Protocols involved geo-location of dispersed campsites and description of site type, intensity of use, and condition:

- Size and intensity of use of the recreation site
- Any facilities built/placed at the site (e.g., fire rings)
- Any barriers or obstacles to trail use (e.g., gates)
- Impacts to vegetation, downed wood, soils, and water
- Sensitive features (e.g., wetlands) impacted by the site
- Type and amount of waste associated with the site
“Significance” of the site was determined in the field, based on the surveyor’s judgement. If the site appeared to have improvements (e.g., fire rings) and disturbance area that indicated consistent repeat use over several seasons, the site was considered to be “significant” for interpretation relative to the Forest Plan standards and guidelines presented above.

Forty significant dispersed campsites were located in the project area (see Appendix A). All occurred along county and open NFS roads (Figure 15). All campsites are open to highway vehicles via county roads or via NFS roads based on their designation on the MVUM. No sites were located along closed NFS road or along unauthorized roads. No campsites were located off-road along streams or within proposed treatment units. Thirty-four sites are clustered, as follows:

- **Smith Creek** – Consists of two sites along Smith Creek, one site within the area disturbed by unauthorized OHV use (see above), and two sites near an existing borrow pit. Campsites are open to highway vehicles and OHVs via County road 4668.

- **Jacobson Creek** – Two sites along Jacobson Creek accessible from County road 4668 and NFS road 7015350. Campsites are open to highway vehicles and OHVs via the county road and based on the designation of NFS road 7015350 on the MVUM.

- **Bestrom Creek North** – Six sites, five within a large meadow accessible from NFS road 7018000 and one near the southern edge of the meadow accessible from NFS road 7018000 via NFS road 7018040. Campsites are open to highway vehicles only based on the designations of these roads on the MVUM.

- **Bestrom Creek South** – Consists of two sites adjacent to a large meadow accessible via NFS road 7005270. Campsites are open to highway vehicles only based on the designations of this road on the MVUM.

- **Upper South Fork Mill** – Five sites in the South Fork Mill Creek headwaters accessible via NFS roads 7005370 and 7005460. Campsites are open to highway vehicles only based on the designations of these roads on the MVUM.

- **Hanson Creek** – Seven sites along NFS road 9411175 along Hanson Creek. Campsites are open to highway vehicles and OHVs based on the designations of this road on the MVUM.

- **Old Dominion Mountain** – Consists of seven sites, four at the summit of Old Dominion Mountain and three along the NFS road 9411130 that accesses the summit. Campsites are open to highway vehicles only based on the designations of this road on the MVUM. However, a road fill failure precludes access to five of these sites.

The other six significant dispersed campsites are relatively isolated, located along county roads or NFS roads. All are open to highway vehicles and OHVs based on the designations of these roads on the MVUM.
Figure 15. Significant dispersed campsites in the Middle and South Fork Mill Creek A to Z Project area
All dispersed campsites are accessible in spring through fall. Peak use occurs on summer weekends and during hunting season. Nearly all campsites can be full during gun season. Most sites accommodate large parties, as is evident from high parking availability, larger core areas, and large and/or multiple fire rings. Some have game hangs, tables, and seats. Despite the size of the parties, site impacts are relatively low. Litter and garbage is evident at most sites, but at low levels and concentrated in and around the fire ring. Tree skinning is common and some poaching of live trees has occurred; but impacts appear to be limited to the site. Human waste is infrequent.

The greatest management concern at these sites is their location within forest stand conditions that are at increased risk for stand-replacing fire (see Unit Design Specialist Report). There are two reasons for this concern. The first reason is the potential ignition sources that could exist with dispersed campsite use during fire season. Although the Forest can put restrictions on open flames, we observed on several occasions where such bans were violated. The second reason is the potential for entrapment in the event of a wildfire event. Although all sites are along county and open NFS roads, all roads travel through areas susceptible to extreme fire behavior.

3.3.3 Non-motorized Use

Non-motorized use of roads and trails includes mountain biking, hiking, skiing, and horseback riding. All roads and trails designated for OHV use on the MVUM are suitable for this use. Non-motorized use also occurs on closed NFS roads. Closed, brushed-in roads can be used for hiking, especially for hunting as described above. Nordic skiing is possible at higher elevations within the project area during the winter, but access to prime areas is limited and rarely occurs.

Concentrated non-motorized access is known to occur along open and closed NFS roads and along user-created trails on non-system roadbeds in the area generally depicted in Figure 16. The following specific areas that support a user-created non-motorized route system were identified by the Northeast Washington Trailblazers (NEWT) (personal communication Bill Way August 11, 2015):

- **Little Round Top** – One-way up-and-back hiking and mountain biking on NFS road 7102055 (open), non-system roadbed, and user-created trail along the western project area boundary. It is accessed from NFS road 7012040 (open seasonally).

- **Cattle Trail** – Mountain biking along NFS road 7012045. NFS road 7012045 has both open and closed sections. This road is used, along with cross country travel and NFS road 7012040 (open seasonally) and County road 4668, to create a bike loop.

- **Two Mile/Big Willow** – Extensive hiking and mountain biking access tying into County road 4668 and located on closed NFS roads and non-system roadbed between County roads 4668 and 4954 in Sections 1, 2, 10, 11, 12, 13, 14, and 15 of T 36N, R 40 E.

- **Smith Creek** – Hiking-only out-and-back access on non-system roadbed along upper Smith Creek in T 36N, R 40 E Sec. 2. This opportunity is accessed from County Road 4668.

Although intermixed with NFS road, none of these opportunities exist on designated NFS trail.

3.3.4 Other Dispersed Recreation

In addition to driving for pleasure, highway vehicle and OHV access supports hunting, shooting, and forest products gathering activities (see Figure 17). Hunting activities occur throughout the
project area where open roads provide vehicle access and closed NFS roads facilitate access on foot. Recreational shooting occurs at five borrow pits located along county and NFS roads. Firewood cutting is limited to the opportunities on the current year Colville National Forest Firewood Cutting and Removal Map. No areas are closed to firewood cutting within the project area year-round. All roads open to vehicle traffic on the MVUM are open to firewood cutting. Berry gathering and mushroom gathering occurs along all NFS roads. Berry-picking peaks during mid to late summer, depending on elevation, and is centered on the huckleberry season. Mushroom gathering occurs from about April 1 to November 1.

A mix of dispersed recreation use occurs elsewhere through the project area, including:

- **Old Dominion Mountain** – In addition to significant dispersed campsites, the summit of Old Dominion Mountain is a destination in itself, offering views of the Colville River valley and beyond and providing access to cultural resources at the summit associated with historic mining activity. This site is accessed via NFS road 9411130, which is currently impassible due to a road fill failure.

- **Fishing Access Sites** – Two fishing access sites were identified by Forest Service corporate databases\(^3\). One occurs along Middle Fork Mill Creek accessible by highway vehicle from County road 4668 via NFS road 7012150. The other occurs along South Fork Mill Creek accessible by highway vehicle and OHV from County road 4954 via NFS road 9411175. Parking is available. Fishing season is April through October. Fishing was never observed during all project surveys.

- **Longshot Mine** – An abandoned mine site was identified by Forest Service corporate databases\(^4\). This site is accessible by highway vehicle and OHV from County road 4954 via NFS road 7005150. Limited parking is available at this site. A closed NFS road exists beyond this cultural feature for non-motorized recreation use. This closed road can be used, in conjunction with other NFS roads, as a cutoff to County road 4668.

- **Party Spot** – Field reconnaissance of a borrow pit, shown in Figure 17 in T 36 N, R 40 E, Section 10, has been used repeatedly as a “party spot.” There is abundant litter and garbage and human waste is common. Bonfire spots show evidence of consuming very large wood and large trash (e.g., tires). Alcohol and firearm use is evident as are used prophylactics. Timing and frequency of the use of this site are unknown.

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\(^3\) Acquired from the Colville National Forest GIS specialist on November 26, 2013.

\(^4\) Acquired from the Colville National Forest GIS specialist on November 26, 2013.
Figure 16. Sections with non-motorized access identified by the Northeast Washington Trailblazers, Middle and South Fork Mill Creek A to Z Project vicinity
Figure 17. Other road-based recreation use, Middle and South Fork Mill Creek A to Z Project.
3.4 Management Prescriptions

Working in collaboration with other resource specialists on the IDT, the following management prescriptions were developed pursuant to the planning guidance outlined above and based on findings of current conditions in order to maintain, restore, or improve the recreational setting within the project area and to minimize impacts of the proposed project on recreation use. The effects analysis presented in the next section is based on the implementation of these management prescriptions and other design elements described in Chapter II of the draft EA.

3.4.1 Highway Vehicle Use

Two NFS road reconstruction activities are proposed in order to restore highway vehicle access:

- **NFS road 9411130**: Approximately 250 feet of the road would be moved into the existing cutslope to reestablish the road prism lost to a prior road fill failure. The new road section would maintain the same general location as the failed road, but would be shifted up to 14 feet into the existing cutslope to ensure full bench construction is achieved. This would move the full width of the road onto natural ground and produce a stable road prism. The excavated material would be end-hauled to a stable location lower on NFS road 9411130. This would restore highway vehicle access to the summit of Old Dominion Mountain.

- **NFS road 9411000**: Approximately 2.5 miles of the road is severely rutted (depths well into the subgrade), effectively reducing the traffic service level. Proposed road improvements would reestablish the traffic service level. Activities would include completely rebuilding the subgrade in some sections, heavy grading some sections, reestablishing a crowned typical road section, ditch cleaning, applying and compacting base rock and surfaced rock, replacing drainage culverts, and adding riprap energy dissipaters to culvert outlets. This would restore safe highway vehicle passage.

3.4.2 Off-Highway Vehicle Use

Travel use designations are proposed for two NFS roads within the project area in order to improve the quality of dispersed recreation use:

- Designate NFS road 7018000 open to all vehicles to create—in combination with authorized OHV use along County roads 4668 and 4954 and NFS road 7012000—an OHV travel loop within MA 3A which has a recreation emphasis; and

- Designate NFS road 9411130 open to all vehicles in order to permit OHV access to the summit of Old Dominion Mountain, a popular recreation destination.

With these road designations, authorized OHV access would then exist to nearly all of the significant dispersed campsites that were located in the project area during field surveys.

Slope stabilization and revegetation would be conducted on approximately 3 acres of hillslope along County road 4668 in order to restore disturbed soil conditions in an area that has been subject to off-road vehicle use. The area is near significant dispersed campsites along Smith Creek and is located between upper and lower road segments of a switchback. Rehabilitation measures would include mechanical ripping to alleviate soil compaction; raking to erase tire tracks; revegetation with native grasses, shrubs, and trees to stabilize the slope, restore cover, and create vegetation barriers to discourage future use; planting of trees and shrubs and placement of...
large woody debris and large rocks throughout the area in order to discourage future use; removal of one significant dispersed campsite in order to discourage vehicle access into the area; and installation of signage along the county road that discourages unauthorized use of the area.

3.4.3 Non-motorized Recreation

Many comments were received asking for consideration of hiking and biking trails as part of the Project. Some requested that areas that support a user-created non-motorized route system not be logged and/or the route system not be damaged. Use of NFS lands and roads for non-motorized recreation is currently permitted. Designation of NFS trails is outside the purpose and need for the Project. Effects of the action alternatives on areas that support a user-created non-motorized route system are disclosed in the Environmental Consequences section below.

3.4.4 Dispersed Campsites

Approximately 462 acres of shaded fuel breaks would be created along major travel routes (County roads 4954, 4668, and 4920, and NFS roads 7012 and 7018) and around significant dispersed campsites, and around rural residential properties within the project area. These roads are within MA 3A where there is a recreation emphasis and where there is the greatest recreation use. Most significant dispersed campsites occur along these roads. Shaded fuel breaks would create conditions where fire drops to the ground and reduces intensity and/or does not easily move from the surface into the overhead tree canopy. Shaded fuel breaks within this treatment area would improve safer access to and from areas with heavy recreation use in the event of a wildfire emergency and would improve success during fire suppression activities.

Creation of shaded fuel breaks consists of thinning overstory trees, removing snags, and removing understory and midstory fuels. All trees up to 6 inches dbh would be removed. Trees greater than 6 inches dbh would be removed to create horizontal distances up to 8 to 15 feet between crowns. Preferred leave tree species are western larch, Douglas-fir, and ponderosa pine. Branches of residual trees would be pruned from 8 to 15 feet off the forest floor, depending on slope. Snags capable of reaching a roadway, dispersed campsite, or private property or greater than 30 feet in height would be removed. Understory fuels over 2 to 3 feet in height would be removed with remaining vegetation spaced about 5 feet apart, and not within the dripline of an overstory tree. Design elements would be implemented within shaded fuel breaks in order to retain standing and dead wood to achieve habitat objectives.

Preferred width of shaded fuel breaks would be up to 300 feet horizontal distance along roads and around dispersed campsites and rural residential properties. Some retention areas would be left within shaded fuel breaks to provide resource protection. Shaded fuel breaks would not be created in old growth stands or in late and old stand structure. In addition, screening would be maintained up to 500 feet between dispersed campsites and roads and other dispersed campsites in order to achieve visual quality objectives and to minimize dust associated with nearby roads. All work would be accomplished with hand tools or mechanical equipment, supported by chippers and/or pile burning as determined appropriate on a case-by-case basis.

3.4.5 Design Elements

The following design elements would be adopted in order to minimize disruption of and facilitate access to dispersed recreation use in the project area:

1. No project activities would occur on the following holiday weekends: Memorial Day, Fourth of July, and Labor Day.
2. County and NFS road reconstruction and maintenance, temporary road construction, borrow pit development or use, creation of shaded fuel breaks along county and NFS roads, helicopter logging, and fish passage replacement and removal would not occur on weekends between July 1st and Labor Day in order to avoid weekend recreation, and would not occur between Labor Day and the end of October in order to avoid hunting season.

3. Road closures associated with fish passage replacement on County roads 4668, 4954, and 4920 and along NFS roads 7012000, 7018000, 9411000, and 9411175 would be sequenced in order to minimize overall disruption to any one route and sequenced replacements so as to ensure access to/from and within the project area, and associated significant dispersed campsites, via alternate routes at any one time.

4. Decommissioning of the portion of NFS road 9411175 along Hanson Creek would occur after the replacement segment of this road is constructed and opened to highway vehicle and OHV traffic in order to minimize disruption of access into, out of, and within the project area.

5. The portions of County roads 4668, 4920, and 4954 and NFS roads 7005085, 7005100, 7005150, 7005152, 7005270, 7005300, 7005310, 7005350, 7005355, 7005357, 7005360, 7005370, 7005374, 7005405, 70054607012, 7012040, 7012047, 7012050, 7012055, 7012060, 7012090, 7012100, 7012050, 7015350, 7018, 7018040, 7018057, 9411, 9411080, 9411130, 9411175, 9411220, 9411235, 9413, 9413010, 9413013, and 9413150 shown on the Motor Vehicle Use Map (MVUM) within and adjacent to the project area would need to have signs posted on both ends of project activities in order to warn recreationists of potential safety hazards during project implementation. Depending on the hazard level, roads may be temporarily closed to public traffic and/or haul traffic limited. Dust abatement measures would be implemented. Project-created tree hazards within two tree lengths of roads would be felled immediately. Damage to these roads caused by road reconstruction or maintenance, replacement or removal or fish passage barriers, felling, burning, or skidding operations would be corrected immediately. Slash that is visible from these roads would be removed or pulled back 50 ft. into the unit.

6. Project activities adjacent to NFS trails 140, 142, and 143 would not occur on weekends between July 1st and Labor Day in order to avoid peak OHV use. The use of trailheads as landings or equipment staging areas would be cleared by the district recreation specialist prior to their use. Project-created hazards (e.g., burnt snags, damaged trees) within two tree lengths of these sites would be felled immediately.

7. NFS trails 140, 142, and 143 along the boundary of treatment units would have signs posted on both ends of active units to warn recreationists of potential safety hazards during project implementation. Project-created hazards (e.g., burnt snags, damaged trees) within two tree lengths of these trails would be felled immediately. The trails would not be used to skid material. Damage caused by felling, burning, or skidding operations to one of these trails would be corrected immediately upon completion of a project activity.

8. Several harvest units have snowmobile routes along portions of County road 4954 and NFS roads 7005150, 7005152, 7005272, 7005275, 7005280, 7005283, 7005300, 7005310, 7005350, 7005370, 7005374, 7005405, 7005460, 7018, 9411, 9411080, 94111080, 9411175, and 9413020. Harvesting of these units would occur between May 1 and November 30, if possible. If there are winter logging or hauling requirements for these units, the snowmobile routes would be closed and signs would be posted at trailheads and noted on the CNF website.
prior to and during harvest activities to make users aware of route closures. Winter logging and associated road maintenance would be conducted during a single season in order to limit impacts to the use of the snowmobile trail. After harvesting activities are complete, the snowmobile route would be returned to the conditions prior to harvesting.

9. Project activities within and adjacent to significant dispersed campsites and Twin Lakes Campground would not occur on weekends between July 1st and Labor Day in order to avoid weekend recreation and would not occur between Labor Day and the end of October in order to avoid hunting season. Signs would be posted at significant dispersed campsites and Twin Lakes Campground before and while treatment activities take place so that users would know that the area may be impacted by treatment activities. Significant dispersed campsites proposed to be used as landings or equipment staging areas would be cleared by the district recreation specialist prior to their use. No landings or equipment staging areas would be sited within Twin Lakes Campground. Project-created hazards (e.g., burnt snags, damaged trees) within two tree lengths of these sites would be felled immediately. Vegetation screening of up to 500 feet would be maintained at significant dispersed recreation sites to maintain screening and limit noise and dust from adjacent roads and/or adjacent significant dispersed campsites. Post-harvest slash accumulation would be minimized within dispersed campsites. After harvest and fuel treatments are complete, basic cleanup—including restoration of the access route to the general pre-project condition, restoration of the integrity of the fire ring, and removal of slash from the area within 50 ft. of the core of the campsite—would occur.

10. Burn plans would include public notification (at a minimum, posting on the forest website and media releases and posted notices at the district offices, trailheads, local businesses, and dispersed recreation sites) of upcoming burn operations to inform hunters, trail users, and dispersed campers of the potential for smoke and active prescribed burning.

11. If a timber sale operator wanted to use a dispersed campsite for more than 14 days during project implementation, the district recreation specialist would be consulted and would approve the proposed site(s). A camping permit would spell out the conditions for the commercial use of a dispersed campsite. The permit would list restoration activities that would be required to return the occupied campsite to pre-occupancy conditions.

The following design elements would be adopted in order to limit impacts of unauthorized OHV use after the Project is implemented:

12. All temporary roads associated with this Project would be decommissioned immediately after the completion of management actions, and all NFS roads that would be re-opened during implementation would be closed immediately after the completion of project activities. Closure treatments would use the most effective practicable barriers available at each location.

13. The district recreation specialist and forest engineering staff would monitor all borrow pits, roads closed within the Project, and rehabilitation of areas impacted by user-created trails for five years following the project activity. If a given pit or closure is receiving unauthorized motorized use, actions necessary to improve the effectiveness of the closure would be implemented. This could include placing boulders or cement posts on the side of gates to block OHV access, replacing gates with earthen berms or boulders, seeding and planting berms, piling slash or root wads in the road entrance, etc.
14. The district recreation specialist and forest engineering staff would monitor NFS roads 7018000 and 9411130 for five years following their designation of open to all motorized vehicle access. If off-road areas are receiving unauthorized motorized use, actions necessary to limit off-road access would be implemented. This could include placing boulders or cement posts (along 9411130 only) on the side of roads to block OHV access, earthen berms or boulders, seeding and planting berms, piling slash or root wads in the road entrance, etc. Damage caused by user-created trails would be assessed by the forest or district recreation specialist and rehabilitation measures implemented as necessary to restore the site.

3.5 Environmental Consequences

This analysis addresses the effects of the proposed action and alternatives, summarized in Chapter II of the draft EA and described in detail in resource specialist reports. The analysis considers implementation of design elements described above that are intended to minimize disruption of the existing recreation use within the project area and limit impacts of unauthorized off-highway vehicle use after the Project is implemented.

3.5.1 Direct and Indirect Effects Analysis

3.5.1.1 Analysis Indicators

Change in dispersed recreation use is the only indicator for this effects analysis. Change can entail loss of dispersed recreation opportunities, disruption of dispersed recreation use, and alteration of the recreation setting associated with the use.

3.5.1.2 Alternative A – No Action

Under the No Action Alternative, no immediate change would occur to camping, hunting, shooting, firewood gathering, berry picking, mushroom gathering, driving for pleasure, non-motorized road and trail use (e.g., biking, hiking, skiing, and horse), and OHV use of NFS roads and trails. The availability of recreation opportunities would remain the same and the setting in which they exist would remain unaltered in the reasonably foreseeable future. Over time, lack of vegetation treatments and maintenance of NFS roads would lead to increasingly overstocked stands and continued deterioration of road conditions within the project area. This may reduce the availability and/or level of satisfaction of most recreation activities (e.g., camping, hunting, berry picking, mushroom gathering, driving for pleasure, non-motorized recreation, and OHV use). Opportunities for firewood gathering could improve over the mid- and long-term as overstocked trees die and increase the availability of firewood in the project area.

Over time, the likelihood of a large fire event would increase in the project area as canopies close, fuels build up on the forest floor, and ladder fuels continue to grow in the understory. Should a large fire event occur within the project area, the natural setting would change and the availability and/or level of satisfaction for some recreation activities would be reduced (e.g., camping, driving for pleasure, non-motorized recreation, and OHV use). It may take many years for the vegetation to recover sufficiently to provide scenic quality, shade, and adequate screening to meet the visual quality objectives (VQO) of the Colville Forest Plan. Some areas may be inaccessible due to hazard trees and other safety concerns. Conversely, large fires could improve production of shrubs, forbs, and grasses and fungi on dead wood. The availability and/or level of satisfaction of some recreation activities could improve over the short- to mid-term (e.g., hunting, berry picking, mushroom gathering). Opportunities for firewood gathering could also improve over the short- to mid-term as fire-damaged trees die and increase the availability of firewood in the project area.
3.5.1.3 Alternatives B and C – Action Alternatives

Project effects on recreation would mostly occur through commercial timber harvest and associated NFS road reconstruction and maintenance, temporary road construction, broadcast burning, pile and burning, and planting and would differ between Alternative B and Alternative C. These are addressed in the section Commercial Harvest Effects. Additional effects on recreation could occur through actions common to all alternatives not associated with commercial harvest. These are addressed in the section Effects Common to Both Action Alternatives.

3.5.1.3.1 Commercial Harvest Effects

Methods and Assumptions
Change in dispersed recreation use was determined via a two-step process. The first step entailed determining the intersection or proximity of proposed commercial harvest treatments with recreation use described above. The second step was to determine the nature of the change, if proposed commercial harvest treatments were proximal to dispersed recreation use. Change was assessed qualitatively in determining whether opportunities would be lost, disrupted, or altered.

Alternative B – Proposed Action
Prior to harvest activities, all county roads and open NFS roads in the project area would be maintained and/or reconstructed. Direct and indirect effects of road maintenance and reconstruction are addressed in Effects Common to Both Alternatives. During and after harvest, the following direct and indirect effects would occur from commercial harvest activities:

- **Reopening of Maintenance Level 1 Roads** – Approximately 51 miles of Maintenance Level 1 NFS road would be reopened for timber haul and closed after completion of harvest. None of these roads are currently open for highway vehicle or OHV use on the MVUM and, therefore, no loss or alteration of authorized highway vehicle or OHV use would occur. Minor temporary disruptions could occur from moving equipment to these roads along roads open for highway vehicle or OHV use on the MVUM; however, disruptions would be mitigated by avoiding high-use time periods and using signage.

  NFS roads 7005275, 7005272, 7005283, 7005280, 7005405, and 7005460 would be reopened for harvest activities. Some of these roads are a key linkage between groomed snowmobile trails in the western and eastern portions of the Gillette Recreation Area. Reopening these roads would not result in loss of these routes; however, major disruptions could occur if these roads were used for long durations. Disruptions would be mitigated by limiting road use to one season, avoiding high-use time periods, and using signage when possible. Roads would be returned to conditions that existed prior to harvesting.

  None of the Maintenance Level 1 roads reopened for harvest would provide access to Little Twin Lakes Campground or to dispersed recreation sites and, therefore no loss or alteration of recreation use would occur. Minor temporary disruptions could occur from moving equipment to these roads along roads open for highway vehicle or OHV; however, disruptions would be mitigated by avoiding high-use time periods and using signage.

  Several Maintenance Level 1 roads reopened for harvest activities would coincide with concentrated areas of non-motorized use in the Two Mile/Willow and Cattle Trail areas identified by NEWT. Roads used for mountain biking and hiking would not be lost and
would be returned to conditions that existed prior to harvesting. Temporary disruption of non-motorized use would occur during construction and use of these roads.

Reopening of the Maintenance Level 1 roads for harvest would increase the potential for their unauthorized use by highway vehicles and OHVs. Access to Maintenance Level 1 NFS roads would be managed with gates during harvest activities. After harvest, these roads would be closed and monitored and, if there was unauthorized use, corrective measures would be applied to discourage further use.

- **Temporary Road Construction** – About 19 miles of temporary road would be constructed to provide access to proposed commercial harvest units. None of these roads are currently open for highway vehicle or OHV use on the MVUM. None of these roads are used for groomed snowmobile trails. None of these roads provide access to Little Twin Lakes Campground or to dispersed recreation sites. None of these roads coincide with concentrated areas of non-motorized use. Therefore, there would be no loss or alteration of these recreation uses. Minor temporary disruptions could occur from moving equipment to these roads along roads open for highway vehicle or OHV use; however, disruptions would be mitigated by avoiding high-use time periods and using signage.

Construction of temporary roads for harvest would create the potential for their unauthorized use by highway vehicles and OHVs. Access to temporary roads would be managed with gates during harvest activities. All temporary roads associated with this project would be decommissioned immediately after the completion of management actions. Closure treatments would use the most effective practicable barriers available at each location. Closure would occur as soon as possible after use of road for project activities. After harvest, these roads would be monitored and, if there were unauthorized use, corrective measures would be applied to discourage further use.

Construction of temporary roads could increase availability of dispersed campsites where they intersect with NFS roads open for highway vehicle or OHV use on the MVUM.

- **Harvest Activities** – All county roads and all NFS roads currently open for highway vehicle and OHV use on the MVUM would be used for haul traffic. Harvest activities (e.g., timber felling, yarding, etc.) may occur along some of the roads. These activities would lead to temporary disruptions, potential safety concerns, and potential road damage. Since not all roads would be used at the same time, highway vehicle and OHV access should be available within the project area throughout implementation of the Project. Disruptions would be mitigated by avoiding high-use time periods and using signage. Hazard trees would be felled immediately. Road damage would be corrected.

Harvest activities (e.g., timber felling, yarding, etc.) would occur along portions of NFS Trails 142 and 143. Trails would not be used for skidding. These activities would lead to temporary disruptions in trail access, potential safety concerns, and potential trail damage. Disruptions would be mitigated by avoiding high-use time periods and using signage. Hazards trees would be felled immediately. Trail damage would be corrected.

Harvest activities would also occur along portions of NFS roads used for groomed snowmobile trails. These activities would lead to temporary disruptions in trail access, noise, potential safety concerns, and potential trail damage. Disruptions and noise would be
mitigated by avoiding high-use time periods and using signage when possible. Hazard trees would be felled immediately. Trail damage would be corrected.

With the exception of those on the summit of Old Dominion Mountain, harvest activities would take place adjacent to or in the near vicinity of all dispersed recreation sites. Use of dispersed campsites as landings would be cleared by the District Recreation Specialist prior to use. Commercial harvest activities would not result in the loss of any of these sites long-term; however, due to temporary road closures access could be lost for short durations. Since not all units would be treated at the same time, access to dispersed campsites should be available throughout project implementation.

Commercial timber harvest would not occur within the Little Twin Lakes Campground. Harvest activities would not occur within 500 feet of significant dispersed campsites, although shaded fuel breaks would be created at these sites (see Effects Common to Both Alternatives). Temporary increases in noise and dust could occur as a result of harvest activities and haul traffic, affecting the recreational setting. Impacts from noise and dust would be mitigated by avoiding high-use time periods and by dust abatement.

Harvest activities would coincide with concentrated areas of non-motorized use in the Two Mile/Willow and Cattle Trail areas identified by NEWT. These activities would lead to temporary disruptions in access to these areas. Disruptions in access to these areas would be mitigated by avoiding high-use time periods.

- **Post-harvest activities** – Burning activities would occur in commercial harvest units in order to reduce natural and activity fuels. Burning would occur along all NFS roads currently open for highway vehicle and OHV use on the MVUM, near Little Twin Lakes Campground, near dispersed recreation sites, and in areas of concentrated non-motorized use. Most burning would occur prior to or after the peak summer use season, but could coincide with hunting season. Burning activity would also occur along NFS roads used for groomed snowmobile trails; however, the burning season would not coincide with snowmobile season. Burning activities could cause temporary disruption of dispersed recreation use. The public would be notified of burn plans.

Planting activities would also occur in some commercial harvest units where supplementation of natural regeneration is needed. Planting would not occur on NFS roads currently open for highway vehicle and OHV use on the MVUM, on groomed snowmobile trails, in the Little Twin Lakes Campground, or in significant dispersed campsites. Therefore, there would be no impacts to these recreation uses from planting. Planting activities may coincide with concentrated areas of non-motorized use in the Two Mile/Big Willow and Cattle Trail areas identified by NEWT. Loss, disruption, or alteration of non-motorized use is not anticipated due to planting activities.

Impacts to other dispersed recreation activities such as hunting, shooting, and forest products gathering, would be limited to the immediate area around vegetation treatments and associated road activities, be of short duration, and should not result in long-term adverse impacts to those recreation opportunities. Short-term impacts would include dust, noise, smoke, increased traffic, and possible loss of access. After the Project, there would be an increase in the production of shrubs, forbs, and grasses and fungi on dead wood. The availability of firewood may be limited following commercial harvest activities and post-harvest activities to reduce fuel loading. The
availability and/or level of satisfaction of some recreation activities could improve over a short
time frame (e.g., hunting, berry picking, mushroom gathering).

Overall, no significant direct or indirect adverse impacts are anticipated from commercial harvest
activities under Alternative B.

**Alternative C – Commercial Harvest without New Road Construction**

Impacts from commercial harvest activities to recreation use would be similar to those described
for Alternative B. Key similarities and differences are summarized as follows:

- Slightly fewer miles of Maintenance Level 1 NFS road would be reopened under Alternative
  C for harvest activities (50 miles compared to 51 miles under Alternative B). Therefore,
  impacts to recreation use would be only slightly less than under Alternative B.

- Temporary roads would not be constructed under Alternative C. However, because impacts to
  recreation use under Alternative B due to temporary roads were limited, the impacts under
  Alternative B would be only slightly greater than under Alternative C.

- Alternative C would have less harvest and post-harvest activity than under Alternative B.
  Therefore, there would be less short-term noise, dust, smoke, and traffic disruptions than with
  the proposed action. However, there would be the same level of timber harvesting along NFS
  roads and trails open to highway vehicle and OHV use on the MVUM. Furthermore, even
  though there may be less haul traffic, the same NFS roads and trails open to highway vehicle
  and OHV use on the MVUM would be used under Alternative C. Because most recreation
  opportunities in the project area occur along roads open to motorized vehicles on the MVUM,
  impacts from Alternative C would therefore be slightly lower to those that would occur under
  Alternative B.

- Under Alternative C, there would also be fewer improvements to some recreation
  opportunities such as hunting, berry picking, and mushroom gathering which would have
  greater benefit from the more openings and thinning under the proposed action.

As under the proposed action with implementation of the design elements identified above, no
significant direct or indirect adverse impacts are anticipated from commercial harvest activities
under Alternative C.

**3.5.1.3.2 Effects Common to Both Action Alternatives**

**Methods and Assumptions**

Change in dispersed recreation use was determined via a two-step process. The first step entailed
determining the intersection or proximity of proposed commercial harvest treatments with
recreation use described above. The second step was to determine the nature of the change, if
proposed commercial harvest treatments were proximal to dispersed recreation use. Change was
assessed qualitatively in determining whether opportunities would be lost, disrupted, or altered.

**Direct and Indirect Effects**

The following direct and indirect effects would occur from actions common to both alternatives:

- **Road Reconstruction/Maintenance** - Approximately 18 miles of existing county road would
  be maintained and all NFS roads open for highway vehicle and OHV use on the MVUM
would be maintained. Maintenance activities would lead to temporary disruptions in highway vehicle and OHV use. Since not all roads would be maintained at the same time, highway vehicle and OHV access should be available within the project area throughout implementation of the Project. Disruptions would be mitigated by avoiding high-use time periods and using signage. Some roads are also used as groomed snowmobile trails. However, reconstruction/maintenance activities would not occur during the snowmobile season so there would be no impact to snowmobile opportunities resulting from these activities.

Reconstruction of NFS road 9411175 would change the road alignment of this road designated for highway vehicle use, OHV use, and groomed snowmobile trails. These uses would not be lost, but the alignment would be altered. The new alignment would occur in a similar forested setting, but would no longer follow Hanson Creek. Disruption of recreation vehicle use would be avoided by timing decommissioning of the current alignment to follow after construction of the new alignment.

Other reconstruction activities would restore vehicle access. Reconstruction of NFS road 9411130 would restore highway vehicle and snowmobile access to the dispersed recreation opportunities on the summit of Old Dominion Mountain. Reconstruction of NFS road 9411000 would improve travel conditions for highway vehicle and OHV use. Overall, roads currently open to highway vehicle and OHV use in the project area would be brought up to Forest standards, improving the quality of recreation access on these roads.

Road reconstruction and maintenance would take place adjacent to or in the near vicinity of all significant dispersed recreation sites. Realignment of NFS road 9411175 would result in the long-term loss of vehicle access to one significant dispersed campsite along Hanson Creek. Otherwise, road reconstruction and maintenance would not result in the long-term loss of recreation sites; however, access could be lost for short durations due to temporary road closures. Since not all roads would be maintained or reconstructed at the same time, access should be available throughout project implementation.

Temporary increases in noise and dust at dispersed recreation sites could occur as a result of road reconstruction and maintenance, affecting the recreational setting. Impacts from noise and dust would be mitigated by avoiding high-use periods and by dust abatement.

Road maintenance would coincide with areas of concentrated areas of non-motorized use in the Two Mile/Willow and Cattle Trail areas identified by NEWTs. Open NFS roads used for mountain biking and hiking would not be lost and would be returned to same or better conditions. Temporary disruption would be mitigated by avoiding high-use time periods.

- **Borrow Pits** – Borrow pit development would occur along County roads 4668 and 4954 and NFS roads 9411175, 7012050, 7005085, and 7005370 open to highway vehicle or OHV use on the MVUM. Borrow pit development and use would lead to temporary disruptions in highway vehicle, OHV use, and target practice. Since not all pits would be used at the same time, highway vehicle, OHV access, and target practice should be available within the project area throughout implementation of the Project. Disruptions would be mitigated by avoiding high-use time periods and using signage. Some roads are also used for groomed snowmobile trails. However, pit use would not occur during snowmobile season.

Four borrow pits would be developed within and adjacent to several significant dispersed campsites. Development of the existing borrow pit on County road 4954 near Hanson Creek.
would result in the short-term loss of one significant dispersed campsite in the borrow pit. Long-term, camping use of the pit could occur after the project. Otherwise, this pit and three other pits would be developed near clusters of significant dispersed campsites at Smith Creek, Hanson Creek, and Upper South Fork Mill Creek. Pit development would not result in the long-term loss of these sites; however, there could be temporary increases in noise and dust. Temporary disruptions and effects to the recreation setting would be mitigated by avoiding high-use time periods and using signage.

Borrow pits would be developed near all areas of concentrated non-motorized use as identified by NEWT. Loss of non-motorized opportunities from borrow pits is not anticipated; however, temporary disruption due to noise and dust could occur.

Development of all proposed borrow pits would create the potential for their unauthorized use by highway vehicles and OHVs. Borrow pits that become no longer active would be reclaimed to limit the disturbed footprint that would be desirable for unauthorized use. After use, these borrow pits would be monitored and, if there were unauthorized use, corrective measures would be applied to discourage further use.

- **NFS Road Decommissioning** – Approximately 8 miles of existing NFS roads would be decommissioned and placed back into resource production through barrier placement, removal of drainage structures, drainage modifications to disconnect the road from the stream, and/or seeding the road bed. Additional decommissioning, including obliteration of all or part of the road (e.g., ripping roads, pulling roads back to contour), may be conducted as resources allow. Six of the NFS roads proposed for decommissioning were identified in the CNF Transportation Analysis Plan and confirmed in the field and through collaboration with project stakeholders. Six NFS roads are proposed for decommissioning based on field surveys to address roads that are already reforested and back in resource production and/or roads that are a resource risk. See the Roads Analysis Report prepared in conjunction with the draft EA for a detailed assessment of road decommissioning on this Project.

Decommissioning of approximately 1.45 miles of NFS road 9411175 would occur along Hanson Creek in conjunction with construction of a replacement route. This route is open to highway vehicle and OHV use and is also used as a groomed snowmobile trail. These uses would not be lost, but the alignment would be altered. The new alignment would occur in a similar forested setting, but would no longer follow Hanson Creek. Disruption of vehicle use would be avoided by timing decommissioning of the current alignment to follow after construction of the new alignment. Decommissioning of this road would also result in the long-term loss of vehicle access to one significant dispersed recreation site along Hanson Creek. This site could be potentially replaced by new sites established by recreationists along the new route.

Decommissioning of approximately 1.22 miles of NFS roads 7012055 and 7005105 would occur in areas of concentrated non-motorized use in the Little Round Top and Two Mile/Big Willow areas identified by NEWT. NFS road 7012055 (0.14 miles) is open to highway vehicle and OHV use based on designations on the MVUM; however, the road is reforested and not drivable. NFS road 7005105 is not open to highway vehicle or OHV use based on designations on the MVUM. These roads would be closed and left to recover naturally. No loss, disruption, or alteration of the non-motorized use would be anticipated.
Decommissioning of NFS road 7018057 (0.22 miles) would occur on a road designated for highway vehicle access on the MVUM. However, this road could not be located during field surveys. Therefore, there would be no effective loss, disruption, or alteration of recreational use.

Otherwise, all other proposed NFS road decommissioning does not intersect with known recreation use and therefore would have no further impact on recreation use.

- **Shaded Fuel Breaks** – Shaded fuel breaks would be created along County roads 4668, 4954 and 4920 and along NFS roads 7012000 and 7018000. These routes form the major highway vehicle travel loop in the project area, most are also designated for OHV use, and some are also used as groomed snowmobile trails. Treatment activities would lead to temporary disruptions, potential safety concerns, and potential road damage. Disruptions would be mitigated by avoiding high-use time periods, where possible, and using signage. Hazard trees would be felled immediately. Road damage would be corrected.

Shaded fuel breaks would not be created within the Little Twin Lakes Campground. Treatment would occur within 500 feet of significant dispersed campsites. In order to maintain visual retention objectives at these sites, vegetation would be retained in order to screen sites from adjacent roads and neighboring campsites. Temporary increases in noise and dust could occur as a result of treatment activities, affecting the recreational setting. Impacts from noise and dust would be mitigated by avoiding high-use time periods, by dust abatement, and by maintenance of vegetation screening.

Shaded fuel breaks would be created near all areas of concentrated non-motorized use at Smith Creek and Two Mile/Big Willow areas identified by NEWTs. Loss of non-motorized opportunities from shaded fuel breaks is not anticipated; however, temporary disruption due to treatment activity, noise and dust could occur.

Creation of shaded fuel breaks would create the potential for their unauthorized use by highway vehicles and OHVs from adjoining roads. However, their width would be less than 300 feet, bisected by the road, and discontinuous. Off-road use would not be attractive. Therefore, impacts from unauthorized OHV use are not anticipated.

Overall, creation of shaded fuel breaks would benefit recreation use in two ways. Shaded fuel breaks would lower the risk of spread of open fires and improve chances of suppression. They would also improve safe access to and from the project area in the event of a wildfire emergency.

- **Precommercial thinning** – Precommercial thinning (PCT) is planned on about 863 acres in dense, younger conifer stands. PCT activities would occur along NFS roads open for highway or OHV use on the MVUM, significant dispersed recreation sites, and within areas of concentrated non-motorized recreation identified by NEWT. Temporary increases in noise could occur as a result of PCT activities, affecting the recreational setting. Impacts from dust would be mitigated by avoiding high-use time periods.

- **Redefinition of Pileated Woodpecker Core Area** – The affected area does not intersect with any known area of current recreation use in the project area. Therefore, no direct or indirect effects would be anticipated from this project activity.
• **Fish Passage Replacement/Removal** – Seventeen fish passage structures would be removed or replaced in order to improve passage of aquatic organisms along the stream. Nine would be replacements along the main highway vehicle travel loop formed by County roads 4668 and 4954 and NFS roads 7012000 and 7018000 and along the remainder of County road 4954 east of the travel loop. Replacement of fish passages on these major travel routes would lead to temporary road closures impeding access to/from and within the project area, indirectly affecting access to most significant dispersed campsites in the project area. Some are also used as groomed snowmobile trails. Disruptions to road access would be mitigated by avoiding high-use time periods, grouping replacements to minimize overall disruption to any one route, and sequencing replacements so as to ensure access to/from and within the project area, and associated significant dispersed campsites, via alternate routes at any one time.

Four fish passage structures would be replaced along County road 4920 and NFS roads 941175 and 9411000, all open to highway vehicle use and OHV use on the MVUM. Replacement of fish passage structures on these travel routes would also lead to temporary road closures impeding access to/from and within the project area, indirectly affecting access to significant dispersed campsites. Some are also used as groomed snowmobile trails. Travel impacts would not be as great as those that would occur along the major routes because they are less traveled. Disruptions to road access would be mitigated by avoiding high-use time periods and sequencing replacements along with those on the major travel routes so as to ensure access to/from and within the project area at any one time.

Four fish passage structures would be replaced or removed along Maintenance Level 1 NFS roads. Two are along groomed snowmobile routes and would be replaced during the summer in order to maintain snowmobile access without disruption. Otherwise, all four passage structures are along roads that are not open to highway vehicle or OHV use on the MVUM and these four passage sites would not coincide with any other recreation use.

• **Rehabilitation of Area Impacted by User-Created Trails** - Slope stabilization and revegetation would be conducted on approximately 3 acres of hillslope along County road 4668 in order to restore disturbed soil conditions in an area that has been subject to off-road vehicle use. Rehabilitation measures that include placement of natural barriers to discourage off-road use would effectively eliminate long-term vehicle access to one significant dispersed campsite. Rehabilitation activities would also lead to temporary disruption of access along County road 4668 and create noise and dust impacting use along the road and nearby significant dispersed campsites near Smith Creek. Disruptions and impacts from noise and dust would be mitigated by avoiding high-use periods and by dust abatement. Overall, this restoration activity would decrease soil disturbance and devegetation cause by unauthorized OHV use and prevent such further use of the site.

• **Designation of NFS Roads Open to All Vehicles** – Designation of NFS road 7018000 as open to all vehicles would improve recreation opportunities within a recreation management emphasis area under the Forest Plan. This route is already part of the primary vehicle traffic loop in the project area. Designation would create a major OHV travel loop in the project area and increase OHV access to significant dispersed campsites along Bestrom Creek. Safety planning would occur during project implementation to ensure OHV use meets Forest Service safety standards, including any potential conflicts with existing highway vehicle use and use as a groomed snowmobile trail.
Designation of NFS road 9411130 as open to all vehicles would improve recreation opportunities on Old Dominion Mountain. Prior to the road fill failure, this route was already a popular driving destination. Designation would create an OHV driving opportunity and increase OHV access to significant dispersed campsites on Old Dominion Mountain. Safety planning would occur during project implementation to ensure OHV use meets Forest Service safety standards, including any potential conflicts with existing highway vehicle use and use as a groomed snowmobile trail.

Designation of these roads would increase the potential for unauthorized use by highway vehicles and OHVs along the routes. Reconnaissance of these routes indicated that unauthorized use on the routes was common, but off-road use was not occurring. Road cuts and topography along NFS road 7018000 preclude a high quality off-road access. Steep terrain along NFS road 9411130 effectively precludes vehicle access. After designation, these roads would be monitored and, if there was unauthorized use, corrective measures would be applied to discourage further use.

Impacts to other dispersed recreation activities such as hunting, shooting, and forest products gathering, would be limited to the immediate area around activities common to both alternatives, be of short duration, and should not result in long-term adverse impacts to those recreation opportunities. Short-term impacts would include dust, noise, smoke, increased traffic, and possible loss of access.

3.5.2 Cumulative Effects

Cumulative effects related to disruption of dispersed recreation are the incremental impacts of an alternative when added to the effects of other past, present, and reasonably foreseeable future actions. See Appendix A of the draft EA for a summary of all past present and reasonably foreseeable future actions in the project area.

Geographic Scope – The cumulative effects analysis area includes National Forest System (NFS) lands east of the Columbia River, south of the border with Canada, west of the border with Idaho, and north of State Highway 20. This supports assessment of cumulative impacts to increased pressure for recreation use at a regional scale from other landscape vegetation management projects in the northeast portion of the Colville National Forest.

Temporal Scope – The cumulative effects period would be the overlap of other present and reasonably foreseeable actions in the cumulative effects analysis area with the proposed action (about 10 years).

Past Actions – Management activities over past years have generally created opportunities for greater access to the cumulative effects analysis area for recreational use. NFS roads created during past management activities have increased road densities, allowing the recreating public greater access to the forest for dispersed recreation, trails, and off-highway vehicles. Recreation opportunity settings throughout the cumulative effects analysis area are similar to those found in the project area.

Present and Reasonably Foreseeable Actions – Cumulative effects on recreation during this time frame would mostly occur through projects similar to the proposed action that would occur on National Forest System lands in the cumulative effects analysis area. Other present or reasonably foreseeable future actions on National Forest System lands that could impact dispersed recreation,
trail, and off-highway vehicle use in the cumulative effects analysis area include the Renshaw Vegetation Management Project area and North Fork Mill Creek A to Z Project area. The Renshaw Vegetation Management Project would occur near Ione, Washington, about 40 miles driving distance on county roads and state highways to the east of the Middle and South Fork Mill Creek A to Z Project. These projects would include commercial harvest, fuel hazard reduction, precommercial thinning, road reconstruction and maintenance, and habitat restoration at levels comparable to that under the proposed action, on a per-acre basis. Impacts on recreation resources within these project areas would be similar to those described for the proposed action and an increase in pressure on recreational sites and opportunities in the cumulative effects analysis area would be expected from simultaneous implementation of these projects.

3.5.2.1 Alternative A – No Action
Under the No Action alternative, there would be no disruption or displacement of recreation use in the project area. However, short-term disruption and displacement of dispersed recreation use would occur in the cumulative effects analysis area in conjunction with the Renshaw Vegetation Management Project and the North Fork Mill Creek A to Z Project. An increase in pressure on recreational sites and opportunities in the cumulative effects analysis area would be expected from simultaneous implementation of these projects; however, the increase would not be as great as under either action alternative.

Under the No Action alternative, fuel build-up and stand conditions would continue to develop on NFS lands in the project area that increase the likelihood of large, stand-replacing wildfire. Should a large wildfire occur within the project area—or in any other area within the cumulative effects analysis area—the availability and/or level of satisfaction for some recreation activities would be reduced while for others it may improve. However, the localized availability of recreation opportunities would likely decrease and shift from one area to another depending upon the severity and location of wildfire. This would lead to adverse cumulative effects to recreation opportunities within the cumulative effects area.

3.5.2.2 Alternative B – Proposed Action
Under the proposed action, there would be temporary displacement or disruption of dispersed recreation, off-highway vehicle, and trail use as described above in the discussion of direct and indirect effects to recreation use. Long-term effects would occur due to decommissioning of some unauthorized roads. Mitigation measures would be implemented to avoid or minimize adverse impacts for unauthorized recreation activities. Similar impacts would occur simultaneously as a result of the Renshaw Vegetation Management Project and the North Fork Mill Creek A to Z Project. An increase in pressure on recreational sites and opportunities in the cumulative effects analysis area would be expected from simultaneous implementation of these projects. However, since not all units or roads would be treated at the same time, access to dispersed recreation should be available within the project area throughout project implementation. Short-term, additional recreation use in those areas could lead to the perception of crowding and decreased user satisfaction. This cumulative effect would be limited to the duration of project activities and would not occur during peak user periods. Similar measures would be implemented as part of North Fork Mill Creek A to Z and Renshaw Vegetation Management projects. Although some short-term effects to recreation would likely occur during operations and long-term effects may occur due to closure of some unauthorized roads, there would be improvements and disadvantages depending on individual user preferences. Therefore, significant adverse cumulative impacts from displacement of recreation use would not occur under the proposed action, when combined with the effects of other past, present, and reasonably foreseeable future
actions that could also displace dispersed recreation use on National Forest System lands in the cumulative effects analysis area.

3.5.2.3 Alternative C – Commercial Harvest Without New Road Construction

The cumulative effects to recreation under Alternative C, when combined with other past, present, and reasonably foreseeable future actions, would be similar to those described for the proposed action; however, any cumulative effects would occur at a lower level than under the proposed action since the activity levels, and associated disruption of recreation use, would be lower under Alternative C.

3.6 Forest Plan Consistency

The proposed action and Alternative C are consistent with the Forest Plan standards and guidelines for recreation, visual resource management, and trails management area prescriptions for MA 3A, 5, 6, 7 and 8. The project area would continue to provide a spectrum of recreation experiences consistent with Semi-Primitive Motorized, Roaded Natural, and Roaded Modified ROS classes. Additional regulation of recreation use is limited to that necessary for resource protection, visitor satisfaction, and safety. Highway vehicle use would be protected and improved. OHV use would be protected and improved. Significant dispersed recreation opportunities would be protected and mitigated. While there would be long-term loss of vehicle access to two significant dispersed campsites, availability of dispersed recreation campsites would increase. Trail use would be protected and mitigated. Consistency with the Forest Plan is accomplished through the development of prescriptions pursuant to the Forest Plan and listed above, and the development of design elements and mitigation measures listed above and in Chapter II of the draft EA.

3.7 Unavoidable Adverse Impacts

Some extent of noise, smoke, and dust is an unavoidable short-term effect of this Project. Impacts would be minimized by design elements described above. Overall, the Forest Plan identifies specific recreational objectives across the Forest. These values would be maintained in the proposed project.

3.8 Irretrievable or Irreversible Commitment of Resources

There are no irretrievable or irreversible commitments of recreation resources that would result from implementation of the proposed action.

CHAPTER IV VISUAL QUALITY

4.1 Visual Quality Objectives

Visual Quality Objectives (VQO) were used in the Forest Plan to describe a desired level of scenic quality, and diversity of natural features, based on physical and sociological characteristics of a specific Management Area. The objective for each Management Area refers to the degree of acceptable alteration of its characteristic landscape. There are three VQOs in the project area as depicted in Figure X using information developed pursuant to the Forest Plan:

5 Downloaded from the Colville National Forest GIS website: www.fs.fed.us/r6/data-library/gis/colville/.
Three Rivers Ranger District, Colville National Forest

- Partial Retention – provides for management activities that remain visually subordinate to the characteristic landscape. It occurs in portions of MA1, and all of MA3A, MA5, and MA6.

- Modification – permits management activities to visually dominate the landscape. However, vegetation alteration must borrow from naturally established form, line, color, or texture. This VQO occurs within portions of MA1, most of MA7, and all of MA8.

- Maximum Modification – permits vegetation and land form altering management activities that dominate the landscape, but which have the same visual characteristics as the surrounding area when seen as background. This VQO occurs within a small portion of MA7.

Additionally, Forest Plan standards and guidelines stipulate that immediate foreground areas (approximately 500 feet) around significant dispersed recreation sites would be managed to meet the retention visual quality objective. Management activities would not be visually evident.

4.2 Sensitive Viewing Locations

Sensitive viewing locations are travel routes or other recreational use areas that have national, regional, or local importance. Sensitive viewing locations identified by the Forest Service within the project area pursuant to the Forest Plan include:

- Little Twin Lakes Campground – Sensitivity Level 1
- County road 4954 – Sensitivity Level 2

Sensitivity Level 1 covers primary travel routes and recreation use areas where large numbers of visitors are anticipated to have a high concern for visual quality. Sensitivity Level 2 covers areas where fewer numbers of visitors are anticipated to have a high concern for visual quality.

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6 Memorandum from Forest Supervisor to Colville National Forest District Rangers, September 11, 1992.
Figure 18. Visual Quality Objectives, Middle and South Fork Mill Creek A to Z Project area
4.3 Current Visual Quality

The project area has a mix of federal, state, and private land. NFS lands and state lands are predominantly forested; most of these lands have been disturbed in some manner (natural and human-caused) over the past century. In some cases these disturbances are recent (e.g., recent timber harvesting) or visually distinct (e.g., meadows near Bestrom Creek north of significant dispersed campsites) so as to be noticeable. Most other disturbance patterns blend into the landscape so as to resemble natural patterns. Private lands are owned by a mix of industrial private timber land owners and small private landowners. Industrial timber management activities are distinct on the landscape, as are large meadows maintained by smaller landowners. Rural residential and agricultural developments are localized and subordinate on the landscape.

Recreation users at Little Twin Lakes Campground are generally screened from middleground and background views by dense conifer forest in and around the campground areas (Figure 19). Views from the campground to the east include the lake in the foreground and middleground and mostly private lands in the middleground (Error! Reference source not found.). Background views from the campground do not exist because the topography drops from this perched lake location. Views to the west from the campground are generally limited to the foreground due to heavy vegetation screening (Figure 21). Views from the lake itself toward NFS lands to the west provide broader views of the middleground, but background views do not exist (Figure 22). Overall, management activities in the area remain visually subordinate to the characteristic landscape.

Figure 19. Example of screening of surrounding views at a campsite within the Little Twin Lakes Campground, Middle and South Fork Mill Creek A to Z Project
Figure 20. Views from the Little Twin Lakes Campground to the east, as viewed from the boat launch, Middle and South Fork Mill Creek A to Z Project
Figure 21. Views from the Little Twin Lakes Campground to the west, as viewed from the boat launch, Middle and South Fork Mill Creek A to Z Project
Recreation users along County road 4954 are generally screened from middleground and background views by dense conifer forest along the road which, when combined with frequent curves in the road, provide screening to both frontal and side views (Figure 23). Unscreened foreground and middleground views exist near the western “entrance” to the project area along County road 4954, where adjacent private land management has removed forest vegetation (Figure 24). Unscreened foreground and middleground views occur along the road where NFS land had been historically cleared during homesteading for meadows near Hanson Creek (Figure 25). Unscreened foreground and middleground views are also common across small private inholdings along County road 4964 near its junction with NFS road 9413000, where landowners maintain meadows (Figure 26). Background views are limited along the county road given its location along the stream and topographic blocking provided by the surrounding terrain that defines the watershed. Overall, management activities in the area are both visually subordinate and dominant relative to the characteristic landscape consistent with VQOs.
Figure 23. Example of screening provided by dense conifer stand conditions along County road 4954, Middle and South Fork Mill Creek A to Z Project
Figure 24. Example of unscreened views across private timberlands along County road 4954, Middle and South Fork Mill Creek A to Z Project
Figure 25. Example of unscreened views across meadows on NFS lands along County road 4954, Middle and South Fork Mill Creek A to Z Project
Figure 26. Example of unscreened views across small private inholdings along County road 4954, Middle and South Fork Mill Creek A to Z Project

4.4 Management Prescriptions

The following management prescriptions were developed pursuant to the planning guidance outlined above and based on findings of current conditions outlined above in order to avoid or minimize impacts to visual quality. The effects analysis presented in the next section is based on the implementation of these management prescriptions and other design elements described in Chapter II of the draft EA.

4.4.1 Silvicultural Prescriptions

Silviculture prescriptions were developed by the IDT to be consistent with visual quality objectives and minimize impacts to visual quality from sensitive viewing locations and from significant dispersed campsites.

4.4.1.1 Variable Density Thinning/Variable Retention Harvest

This treatment is primarily designed to achieve the following objectives: move forest stands to more closely reflect historical stand structure; improve tree vigor; reduce the threat of severe wildfire, and reduce susceptibility to insect and disease; and improve the resilience and resistance of the units to fire, insects, and disease and the potential effects of climate change. This prescription combines elements of thinning from below (thinning smaller trees) to address overstocking and species composition, creation of small openings (gaps) to address forest health concerns and create structural diversity, and retention of areas (skips) with sensitive and unique
features in order to protect resources and further create structural diversity.

Thinning treatments generally result in stands with approximately 40 to 120 square feet of basal area per acre of residual trees larger than 7 inches dbh (diameter at breast height). The average number of leave trees within a unit would depend on species composition, desirable trees present, plant association, Management Area direction, and the unit treatment objectives. This treatment would usually change the current structural stage in the short term but would increase the growing space for individual trees and accelerate the diameter growth in moving the stands towards a late structural stage. General leave tree criteria for thinning include:

- Leave all trees greater than 21 inches dbh, and retain all hardwoods of any size;
- Retain mostly high-vigor trees, but leave some moderate and low-vigor trees for clumps;
- Retain mostly the larger trees in the unit, spaced adequately to improve tree growth; and
- Favor early successional tree species (predominately wester larch, Douglas-fir, and ponderosa pine) to move forest stands to more closely reflect historical tree species.

Within thinned areas, small clumps of trees (about 1/10 acre) would be included for every two acres. Conditions desirable for clumps include large healthy-looking crowns which are greater than 35 percent to 40 percent of the total tree height, early seral tree species, and trees that are not being attacked by insects or pathogens. As noted above, some moderate and low-vigor trees may be retained in clumps to create structural diversity. Any live tree over 21 inches dbh would be retained, except as needed for safety or road construction. All hardwoods would be retained.

Slashing—cutting or felling of standing live nonmerchantable trees—may be employed in thinned areas in order to remove undesirable species and to reduce ladder fuels. Slashing would be used in portions of units that have an abundance of small diameter grand fir, red cedar, and/or western hemlock, or excessive ladder fuels that would not be removed commercially. Slashing would occur by hand, where access exists to support post-harvest burning (see below). Trees would be felled and limbed and left on the ground for post-harvest fuel treatment.

Within thinned areas, aspen clumps would be treated in order to reduce conifer competition with aspen and to create aspen clumps that are more vigorous and self-perpetuating, with multiple sizes of aspen stems and young regeneration around the edges. An aspen clump would include three or more live aspen trees greater than 5 inches dbh that are within 15 feet of one another. Several harvest units contain clumps covering large areas. Restoration would involve removal of all conifers less than 21 inches dbh and within 30 feet of an aspen stand. Aspen would be retained. Where aspen regeneration is limited, post-harvest treatment may include prescribed fire, mechanical disturbance of soil, or partial cutting of the aspen overstory to stimulate suckering.

Canopy openings of less than 3 acres may be located where thinning of undesirable trees would result in a less-than-fully-stocked stand, to address the most critical forest health needs within the unit (e.g., insect or disease outbreaks), and/or to create structural diversity. Canopy openings would be spaced at least 2 dominant or codominant tree heights apart, distributed variably throughout the unit and using irregularly-shaped treatment area boundaries. Residual stocking would be less than 40 square feet of basal area per acre of residual trees larger than 7 inches dbh. Existing long-lived, larger-diameter trees would be left for seed production, wildlife, structure, snag replacement, shelter, and visual quality. Species preferred for leave trees would include
western larch, Douglas-fir, and ponderosa pine. Any tree over 21 inches dbh would be retained.

Some untreated (retention) areas would be left within VDT/VRH units to provide resource protection and/or to create structural diversity. Priority areas for retention include: late or old structure, select trees, riparian habitat conservation areas, open water, wetlands, seeps, wet soils, unstable slopes, rare plant populations, big game cover, goshawk nesting areas, other unique habitats and features, range improvements, cultural resource sites, and inoperable areas otherwise needing treatment within the units. Old growth areas would not be harvested.

4.4.1.2 Seed Tree Harvests

This prescription would only be employed in lynx analysis units (LAU) 215 and 216 where there is a high likelihood of high-quality lynx foraging habitat resulting from the harvest. High-quality lynx foraging habitat (i.e., high-quality snowshoe hare habitat) is described as areas with young trees providing dense horizontal vegetation cover, minimal edge to reduce non-lynx predation, height to live crown less than 2-3 feet above snow level in winter, and small islands of mature trees, snags, shrubs, or slash. Lodgepole pine is the preferred species, but dense multi-species conifer stands are also appropriate. A variety of patch sizes is desirable, with most ranging from 15-40 acres.

Twenty seed tree patches would be created within LAU 215 and 216. Seventeen of the 20 proposed seed tree patches are less than 20 acres; one proposed patch is about 34 acres, and two are adjacent subunits with a combined area of nearly 36 acres. In seed tree patches, most of the current overstory and understory would be removed and about six to ten healthy, dominant trees per acre would be retained for seed sources and for “island” structure. Activity fuels would be treated; however, small slash piles would be left throughout the patch to provide for snowshoe hare cover and “island” structure. If, in implementation, the entire proposed patch area is not harvested using this method, the remaining area would be harvested using the VDT/VRH method. Some retention areas would be left within seed tree units to provide resource protection and/or to create structural diversity. Old growth areas would not be harvested.

4.4.1.3 Shaded Fuel Breaks

Approximately 462 acres of shaded fuel breaks would be created along major travel routes (County roads 4954, 4668, and 4920, and NFS roads 7012 and 7018), around significant dispersed campsites, and around rural residential properties within the project area. These roads are within MA 3A where there is a recreation emphasis and where there is the greatest recreation use. Most of the dispersed campsites in the project area occur along these roads. These roads also provide primary and alternate access to private residential inholdings. Shaded fuel breaks would create conditions where fire drops to the ground and reduces intensity and/or does not easily move from the surface into the overhead tree canopy. Shaded fuel breaks would improve safer access in the event of a wildfire emergency and would improve success during fire suppression activities.

Creation of shaded fuel breaks consists of thinning overstory trees, removing snags, and removing understory and midstory fuels. All trees up to 6 inches dbh would be removed. Trees greater than 6 inches dbh would be removed to create horizontal distances up to 8 to 15 feet between crowns. Preferred leave tree species are western larch, Douglas-fir, and ponderosa pine. Branches of residual trees would be pruned from 8 to 15 feet off the forest floor, depending on slope. Snags capable of reaching a roadway, dispersed campsite, or private property or greater than 30 feet in height would be removed. Understory fuels over 2 to 3 feet in height would be
removed with remaining vegetation spaced about 5 feet apart, and not within the dripline of an overstory tree. Design elements would be implemented within shaded fuel breaks in order to retain standing and dead wood to achieve habitat objectives.

Preferred width of shaded fuel breaks would be up to 300 feet horizontal distance along roads and around dispersed campsites and rural residential properties. Some retention areas would be left within shaded fuel breaks to provide resource protection. Shaded fuel breaks would not be created in old growth stands or in late and old stand structure. In addition, screening would be maintained between dispersed campsites and roads and other dispersed campsites in order to achieve visual quality objectives and to minimize dust associated with nearby road. Partial retention foreground areas along County road 4954 (South Fork Mill Creek Road) would be managed for at least 30 percent of the stand to be 16 inches dbh or greater in size for visual quality. All work would be accomplished with hand tools or mechanical equipment, supported by chippers and/or pile burning as determined appropriate on a case-by-case basis.

**4.4.1.4 Precommercial Thinning**

Precommercial thinning (PCT) would occur by hand on up to 836 acres to improve tree growth, increase resistance to insects and disease, decrease fuel loads, and encourage desired species composition while providing structural diversity. PCT would include the removal of small trees (generally less than 6 inches dbh for lodgepole pine and less than 7 inches dbh for all other conifers) within past commercial harvest units. Treatments would result in tree spacing ranging from about 12 feet to a maximum of 18 feet, depending upon tree size and site conditions. Variable spacing may be applied in order to favor desirable species.

Residual trees would be a mix of hardwoods and fire-resistant (early seral) conifers. Priority would be given to retaining the healthiest western larch, ponderosa pine, western white pine, and Douglas-fir trees, followed by other conifer species. Hardwoods would be retained to the greatest extent possible wherever they occur. Some units are infected with dwarf mistletoe that is spreading the parasite to the regenerated cohort. To decrease the rate of dwarf mistletoe spread, the infected overstory Douglas-fir and western larch trees less than 21 inches dbh within 30 feet of desirable leave trees would be girdled or felled.

Trees cut during PCT would be lopped and scattered by hand to decompose over time. Mastication or other mechanical methods of fuel treatment would not be used. In most units, created fuels would likely be light enough that additional treatment using jackpot burning or piling and burning would not be necessary.

**4.4.2 Design Elements**

The intent of the visual quality design elements is to minimize departure from visual quality objectives after the Project is implemented. Many recreation design elements address visual quality concerns along County road 4954 and from Twin Lakes Campground, both sensitive viewing locations in the project area. The following elements would be adopted to minimize the effects of the proposed action on visual quality at these locations:

15. In seed tree harvest units, cut blocks would be shaped and blended to the extent practicable with the natural terrain. Unit boundaries would not follow straight lines or corners. The intent is for seed tree harvest units to be visually subordinate. Units where this design element would be implemented include: 218, 221, 229, 240, 241, 243, 245, 254, 255, 262, 274, and 279.
16. When using cable logging systems, cabled corridors would be kept as narrow as possible in order to reduce contrasting line effects. Corridors would be oriented away from critical viewpoints when possible. Small clusters of trees would be left where possible to break up lines. The intent is for cable units to be visually subordinate. Units where these prescriptions would be implemented include: 105, 139, 220, 225, 226, 229, 238, 244, 260, 262, 263, 270, 272, 274, 276, and 277.

17. In created openings, irregular shaped openings (no straight lines or corners) would be used with grouped leave tree islands to reduce visual contrasts. The size of created openings would be limited in order to limit soil color contrasts. Natural density changes would be mimicked around created openings. The intent is for created openings to be visually subordinate. This prescription would apply to all VDT/VRH units.

18. Trees along boundary lines between private and NFS lands would be retained in an irregular, undulating pattern in order to reduce the impacts of the straight line effect along the boundary. The intent is for boundary units to be visually subordinate. Units where these prescriptions would be implemented include: 49, 50, 51, 57, 95, 97, 104, 105, 130, 218, 227, 246, 248, 250, 255, 256, and 276.

19. Existing vegetation below newly-constructed roads would be preserved as much as possible where needed for screening from sensitive viewing locations. Retention areas would be placed in and around new road construction to break up their visual impact to sensitive viewing locations. The intent is for newly-constructed roads to be visually subordinate. Units where these prescriptions would be implemented include: 20, 24, 25, 80, 105, 106, 111, 131, 133, 137, 220, 238, 240, 241, 242, 244, 245, 254, 248, 274, 276, 277, and 279.

20. In visual resource management areas, cut blocks, patches, or strip cuts would be shaped and blended to the extent practicable with the natural terrain. Partial retention foreground areas along County road 4954 would be managed for at least 30 percent of the stand to be 16 inches diameter at breast height or greater.

21. Any changes during implementation in new road or borrow pit locations from the mapped proposed action would be verified to ensure scenic integrity is maintained.

22. Landings would not be placed on or near critical viewpoints where they may impact scenic integrity.

23. Rocks and large woody debris from the surrounding area would be selected for placement within areas impacted by user-created trails in order to rehabilitate these areas with similar color and type of rocks and large woody debris as found in the area. The weathered side of the rocks and debris would be placed up.

24. Native tree, shrub, and grass species would be selected for planting within areas impacted by user-created trails in order to rehabilitate these areas with similar color and type of vegetation as found in the area. Plantings would be placed in a manner which mimics patterns in the surrounding area.
4.5 Environmental Consequences

This analysis addresses the effects of the proposed action and alternatives, summarized in Chapter II of the draft EA and described in detail in resource specialist reports. The analysis considers implementation of design elements described above that are intended to minimize departure from visual quality objectives after the Project is implemented.

4.5.1 Direct and Indirect Effects

4.5.1.1 Analysis Indicators

Changes to visual quality relative to visual quality objectives are the analysis indicator used for this effects analysis. Impacts relative to VQOs are evaluated as follows:

- Retention – Impacts occur where management activities would be visually evident;
- Partial Retention – Impacts occur where management activities are not visually subordinate to the characteristic landscape;
- Modification – Impacts occur where vegetation alteration does not borrow from naturally established form, line, color, or texture; and
- Maximum Modification – Impacts occur where vegetation and land form do not have the same visual characteristics as the surrounding area when seen as background.

4.5.1.2 Alternative A – No Action

Selection of the no action alternative would have no immediate effect on the quality of the scenic resource. Without major disturbance, change in the landscape would be gradual over the short- to long-term. Without vegetation treatment, however, there would be an increasing risk for insect infestation and disease. Large areas of dead trees could become visible from sensitive viewing locations over the short- to long-term. The landscapes would gradually change from green to red during the insect or disease infestation, then to grey and brown as trees decay, and then back to green as stands regenerate over the short- to long-term.

Over time, the likelihood of a large fire event would increase in the project area as canopies close, fuels build up on the forest floor, and ladder fuels continue to grow in the understory. Should a large fire event occur within the project area, the natural setting would change immediately and the degree of change would depend on the severity of the wildfire. The location, size, and intensity of future wildfires are difficult to estimate. However, stand-replacing wildfires occurred previously within the analysis area in the 1920s, and are again possible under current and future conditions if fuels remain untreated and left to further accumulate. Large areas would be burned and visible from sensitive viewing locations.

4.5.1.3 Alternatives B and C – Action Alternatives

Project effects on visual quality would mostly occur through commercial timber harvest and associated NFS road reconstruction and maintenance, temporary road construction, broadcast burning, pile and burning, and planting and would differ between Alternative B and Alternative C. These are addressed in the section Commercial Harvest Effects. Additional effects on visual quality could occur through actions common to all alternatives not associated with commercial harvest. These are addressed in the section Effects Common to Both Action Alternatives.
4.5.1.3.1 Commercial Harvest Effects

Methods and Assumptions

Viewshed analysis was conducted to assess potential impacts in “seen” areas from sensitive viewing locations in the project area. Emphasis was placed on evaluating the middleground. “A middleground landscape having a steep topography is often the most critical of all distance zones for scenery management” (Landscape Aesthetics, A Handbook for Scenery Management, Forest Service Handbook 701, p. 4-12). Therefore, viewshed analysis focused on determining the seen areas in the middleground viewed from County road 4954 and Little Twin Lakes Campground.

ESRI© Spatial Analyst was used to determine “seen” areas in the middleground. This analysis took into account screening from existing trees that frequently prevent views of the middleground (see Current Visual Quality above). Therefore, viewshed analysis was limited to open areas along each travel route that could view the landscape ½ mile to 4 miles in the distance. These open viewing areas were located via aerial photo interpretation and confirmed in field. From these unscreened locations, a digital elevation model was used to simulate topography and determine areas that could be “seen” in the middleground (Figure 27).

Seen areas were then overlaid with the proposed commercial harvest units to evaluate which could be seen from the sensitive viewing locations. Depending on the visibility of project activities, project designs were modified to meet the Forest Plan Standards and Guidelines in an effort to minimize impacts to visual quality. Overall, this approach takes into account both topographic and vegetative screening in determining which project activities are viewable from County road 4954 and Little Twin Lakes Campground.

This analysis used the following data to establish a terrain model for viewshed analysis:

- Shuttle Radar Topography Mission digital terrain data7.

Locations of proposed project activities would be located spatially using:

- Spatial layer identifying harvest units and roads, by alternative (March 14, 2016 version).

Locations of sensitive viewing locations were located from available data sets:

- Location of County Road 4954 as recorded in the INFRA geodatabase8.
- Center of Little Twin Lakes digitized from Forest Service hydrography geodatabase9.

Topographic information used to define the terrain, locations of proposed project activities, and unscreened viewpoints are recorded in geodatabases found in the project record.

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7 Mill Creek slope and terrain data was generated from 1 arc second Shuttle Radar Topography Mission (SRTM) imagery compiled by the USDI Geologic Survey (www2.jpl.nasa.gov/srtm/). SRTM data was collected during an 11-day Space Shuttle Endeavour mission (STS-99), completed in February 2000, using LiDAR (Light Detection and Ranging) type imaging equipment. Accuracy of SRTM data is 10-meter root mean square error or less, as specified in the STS-99 mission specifications.

8 Acquired from the Colville National Forest GIS specialist on November 26, 2013.

9 Downloaded from the Colville National Forest GIS website: www.fs.fed.us/r6/data-library/gis/colville/.
Figure 27. Unscreened views from sensitive viewing locations, Middle and South Fork Mill Creek A to Z Project area.
Alternative B – Proposed Action

Prior to harvest activities, all county roads and open NFS roads in the project area would be maintained and/or reconstructed. Direct and indirect effects of road maintenance and reconstruction are addressed in Effects Common to Both Alternatives. During and after harvest, the following direct and indirect effects would occur from commercial harvest activities:

- Reopening of Maintenance Level 1 Roads – Approximately 51 miles of Maintenance Level 1 NFS road would be reopened for timber haul and closed after completion of harvest. These are existing roads. Activities to reopen them would involve activities below the existing canopy. None are adjacent to County road 4954. No Maintenance Level 1 roads would be reopened within the Little Twin Lakes Campground viewshed. Significant dispersed campsites do not exist along Maintenance Level 1 roads. Overall, there would be no change in scenery from them due to reopening these roads.

- Temporary Road Construction – About 19 miles of temporary road would be constructed to provide access to proposed commercial harvest units. Viewshed analysis and photo validation indicate that the following units would be accessed by temporary roads that would be visible in the middleground from the County road 4954: 20, 24, 25, 80, 105, 106, 111, 131, 133, 137, 220, 238, 240, 241, 242, 244, 245, 254, 274, 276, 277, and 279. Only one unit would be accessed by temporary roads that would be visible in the middleground from the Little Twin Lake: 248. Temporary roads would be screened by retained vegetation along the roads and the mosaic of treatment types would break up their appearance such that they remain visually subordinate.

Two temporary roads would join County road 4954 and be visible in the foreground from the County road. One would be adjacent to an existing borrow pit along County road 4954 near Hanson Creek. One would be adjacent to a junction with an existing NFS road. Short-term, these roads would be visually subordinate and, long-term, both temporary roads would be closed and placed back into resource production following project activities. Additional decommissioning could be conducted to restore the scenery.

Temporary road construction would occur within the foreground of one significant dispersed campsite within an existing borrow pit along County road 4954 near Hanson Creek. Short-term, this campsite would be lost due to development of the borrow pit (see Recreation above). However, camping use of the pit could resume after the project. The road would be closed and placed back into resource production following project activities. Additional decommissioning could be conducted to restore the scenery.

- Harvest Activities – Variable density thinning/variable retention harvest would retain cover of large trees with variable density, retain clumps, and create small openings scattered over the landscape. The resulting canopy would be mixed so no one type would dominate and therefore be visually subordinate to the characteristic landscape. Overall, treatments would move the landscape closer to the desired future condition of a mosaic of stand conditions which blend with the surrounding landscape. Short-term, treatments would result in stand conditions consistent with the Partial Retention VQO. Commercial harvest treatments would also promote development of healthy, mature stands over the mid- to long-term and moving it toward the desired future condition of the CFP. Most units planned within the South Fork Mill Creek drainage would have variable density thinning/variable retention harvest partially visible from County road 4954. Visibility would be limited to three 1 mile stretches of the
road. Most units planned within the Camp Creek drainage would be partially visible from Little Twin Lakes Campground. Visibility would be limited to boating on the lake.

Seedtree harvest would be limited to nineteen patches of less than 20 acres each and one patch of 34 acres. Seed tree units would be scattered across the project area and cut blocks would be shaped and blended to the extent practicable with the natural terrain and would not follow straight lines or corners such that units be visually subordinate on the landscape. Overall, treatments would move the landscape closer to the desired future condition of a mosaic of stand conditions which blend with the surrounding landscape. Most would be within the unscreened viewshed of County road 4954 visible from two stretches near Hanson Creek and small private inholdings. None would be visible from Little Twin Lakes Campground. None are immediately adjacent to significant dispersed campsites.

The following commercial harvest units would be visible from County road 4954 would require cable logging systems: 105, 139, 220, 225, 226, 229, 238, 244, 260, 262, 263, 270, 272, 274, 276, and 277. No unit visible from Little Twin Lakes would be cable logged. Cabled corridors would be kept as narrow as possible to reduce contrasting line effects, would be oriented away from unscreened views along the County road when possible, and small clusters of trees would be left where possible to break up lines such that these features would be visually subordinate on the landscape. Long term, vegetation would fill in cable corridors and would not be noticeable to drivers along the County road.

Commercial harvesting would only occur immediately adjacent to seven significant dispersed campsites. Most other sites are either within retention areas (i.e., areas needing treatment but not harvested for resource protection) that already provide a 500-foot buffer from harvest activities, not within areas needing treatment and are more than 500 feet from planned activities, or in one of several areas deferred from treatment for resource sensitivities (e.g., Semi-Primitive Motorized ROS Areas near Smith Creek). Where sites would be adjacent to commercial harvest activities, shaded fuel breaks would be created retaining vegetation screening such that adjacent harvest activities would not be visually evident. See shaded fuel breaks discussed in Effects Common to Both Alternatives.

- Post-harvest Treatment – Broadcast burning following treatment activities would blacken tree trunks, low branches, and the ground. Hand pile and machine pile effects are similar but concentrated around the pile areas. The effects of burning could be highly visible immediately after the burn and would decrease as the understory becomes re-established. By five years, visual effects would be minimal. As distance increases, the visual effects would decrease. Burn areas would not occur within 150 feet of County road 4954 as it would be treated using shaded fuel breaks (see discussion in Effects Common to Both Alternatives). Burn areas would occur in the middleground viewing area from the county road and from Little Twin Lakes Campground. Burn activities would not occur in the immediate foreground of significant dispersed recreation sites as they would be treated using shaded fuel breaks (see discussion in Effects Common to Both Alternatives).

Since commercial harvest treatments would lead to a scenic benefit by breaking up dense canopies over the short-term and promoting development of healthy, mature stands over the mid- to long-term along with the design elements identified in Chapter II of the draft EA for buffering and applying VQO for sensitive viewing sites, no significant adverse visual effects were identified for the proposed action.
Alternative C – Commercial Harvest without New Road Construction

Impacts from commercial harvest activities to visual quality would be similar to those described for Alternative B. Key similarities and differences are summarized as follows:

- Slightly fewer miles of Maintenance Level 1 NFS road would be reopened under Alternative C for harvest activities (50 miles compared to 51 miles under Alternative B). Activities to reopen them would involve activities below the existing canopy. None would be adjacent to County road 4954. No Maintenance Level 1 roads would be reopened within the Little Twin Lakes Campground viewshed. Significant dispersed campsites do not exist along Maintenance Level 1 roads. Overall, there would be no change in scenery from them due to reopening these roads.

- Temporary roads would not be constructed under Alternative C. Therefore, there would be no impacts to visual quality from temporary road construction.

- Alternative C would have less harvest and post-harvest activity than under Alternative B. Therefore, there would be less activity visible from County road 4954 and Little Twin Lakes. As under the proposed action, commercial harvest treatments implemented in these units would be consistent with the partial retention VQO in these areas.

As under the proposed action, commercial harvest treatments would lead to a scenic benefit by breaking up dense canopies and promoting development of healthy, mature stands; but to a lesser extent compared to Alternative B. Along with the design elements identified in Chapter II of the draft EA for buffering and applying VQO for sensitive viewing sites, no significant adverse visual impacts were identified for Alternative C.

4.5.1.3.2 Effects Common to Both Action Alternatives

Methods and Assumptions

The same viewshed developed to evaluate impacts from commercial harvest activities (above) was used to define unscreened views from County road 4954 and Little Twin Lakes Campground. Seen areas were then overlaid with location of treatment activities common to both alternatives to evaluate which could be seen from the sensitive viewing locations. Depending on the visibility of project activities, project designs were modified to meet the Forest Plan Standards and Guidelines in an effort to minimize impacts to visual quality. Overall, this approach takes into account both topographic and vegetative screening in determining which project activities are viewable from County road 4954 and Little Twin Lakes Campground.

Direct and Indirect Effects

The following direct and indirect effects would occur from actions common to both alternatives:

- Road Reconstruction/Maintenance - Approximately 18 miles of existing county road – including County road 4954 – would be maintained and all NFS roads open for highway vehicle and OHV use on the MVUM would be maintained. Little Twin Lakes Campground is accessed by County road 4920, which would be maintained. Significant dispersed campsites exist along all roads that would be maintained. These are existing roads. There may be short-term impacts to visual quality during maintenance. However, impacts would be minimized by avoiding high-use periods. Maintenance activities would be limited to the existing road alignment and improve road conditions. Therefore, there would be little to no change in scenery from maintaining county and NFS roads.
Reconstruction of NFS road 9411175 would change the road alignment of this road. The new alignment would occur in a similar forested setting, but would no longer follow Hanson Creek. The new road alignment would be partially visible from one stretch of County road 4954 near Hanson Creek. Most of the road would be on existing roadbed. Approximately 975 feet would involve clearing and construction of a new roadbed. The roads would be screened by retained vegetation along the road and the mosaic of treatment types would break up their appearance such that it would remain visually subordinate.

Reconstruction of NFS road 9411130 would restore highway vehicle and snowmobile access to the dispersed recreation opportunities on the summit of Old Dominion Mountain. Reconstruction would shift the existing road bed about 15 feet into the existing cutslope. Effectively, there would be no change in the scenery at this site. The road reconstruction of NFS road 9411130 would not be visible from County road 4954, Little Twin Lakes Campground, or any significant dispersed campsite.

Reconstruction of NFS road 9411000 would improve travel conditions for highway vehicle and OHV use. Maintenance activities would be limited to the existing road alignment and there would be little to no change in scenery. Only a small portion of the segment of NFS road 9411000 to be reconstructed is visible from County road 4954. Reconstruction activities would be visible from one dispersed recreation site.

- **Borrow Pits** – Fifteen rock sources would be developed within the project area in order to support road construction and maintenance activities. Generally, each source would be limited to a one acre maximum area of active mining, manufacturing, and storage. Areas that are no longer active, or have no future plans for additional rock extraction would be reclaimed to remain below the one-acre threshold. Given the size of these rock sources and the proposed reclamation, borrow pits would be a minor feature on the landscape.

Three borrow pits would be developed immediately adjacent to County road 4954. Two are existing pits and would be expanded and/or used for storage of aggregate. Though viewshed analysis indicates both would be visible, field reconnaissance found that only one (near Hanson Creek) is in fact visible. The other (near Robins Creek) is screened from view and not visible from the county road. The third pit, a new pit in upper South Fork Mill Creek, would also be screened from view.

Two borrow pits would be developed within 500 feet of significant dispersed campsites. Development of the existing borrow pit on County road 4954 near Hanson Creek would result in the short-term loss of one significant dispersed campsite in the borrow pit, though use may resume long-term. Development of the existing borrow pit on County road 4668 near Smith Creek is already partially visible from one significant dispersed campsite. There would be no change in the scenic quality at these campsites.

One new borrow pit would be developed along County road 4954 in upper South Fork Mill Creek within about 300 feet of one significant dispersed campsite. A shaded fuel break would be created at the sites and vegetation screening retained. However, given the proximity to a new disturbance, activities could be visually evident.

- **NFS Road Decommissioning** – Approximately 8 miles of existing NFS roads would be decommissioned and placed back into resource production. Several are within the viewshed of County road 4954. Of those within this viewshed, only NFS road 7005377 joins County road 4954 and is in the immediate foreground view. This road is already reforested and,
though there may be short-term impacts on scenic quality because the road is bermed, there would be no other change in scenic quality. Decommissioning of other roads within the viewshed of County road 4954 would be distant and screened from view by canopy along the roads and therefore have no short-term impact. None are within the viewshed of Little Twin Lakes Campground. Decommissioning of a portion of NFS road 9411175 would result in the long-term loss of vehicle access to one significant dispersed recreation. Overall, by restoring these roads to forest production, scenic quality would improve long-term.

- **Shaded Fuel Breaks** – Approximately 462 acres of shaded fuel breaks would be created along major travel routes (County roads 4954, 4668, and 4920, and NFS roads 7012 and 7018), around significant dispersed campsites, and around rural residential properties within the project area. Shaded fuel breaks would not be created within the Little Twin Lakes Campground. Creation of shaded fuel breaks consists of thinning overstory trees, removing snags, and removing understory and midstory fuels. All trees up to 6 inches dbh would be removed. Trees greater than 6 inches dbh would be removed to create horizontal distances up to 8 to 15 feet between crowns. Branches of residual trees would be pruned from 8 to 15 feet off the forest floor, depending on slope. Snags capable of reaching a roadway or private property or greater than 30 feet in height would be removed. Understory fuels over 2 to 3 feet in height would be removed with remaining vegetation spaced about 5 feet apart. The resulting overstory stand density would continue to provide shade cover while the horizontal visibility through the understory would increase. From a landscape perspective, the resulting canopy would be visually subordinate to the characteristic landscape. In combination with adjoining commercial harvest treatments and/or retention areas, the foreground areas would retain at least 30 percent of the stand to be 16 inches dbh or greater in size. Treatments would result in stand conditions consistent with the Partial Retention VQO. There may be short-term impacts to visual quality during implementation; however, these impacts would be minimized by avoiding high-use periods.

About half of significant dispersed campsites in the project area would have shaded fuel breaks created within about 500 feet of the site. The other half would not be treated because they are otherwise retained for resource protection (e.g., riparian habitat conservation areas) or within an area deferred from treatment for other reasons (e.g., Semi-Primitive Motorized ROS near Smith Creek). Some of those sites treated coincide with shaded fuel breaks along major travel routes. The same prescriptions employed along the travel routes would be employed. In addition, vegetation would be retained in order to screen sites from adjacent roads and neighboring campsites. No tree greater than 21 inches dbh would be removed, so foreground retention areas would retain as many large trees as possible. Treatments would not be visually evident to the casual forest visitor. There may be short-term impacts to visual quality during implementation; however, these impacts would be minimized by avoiding high-use periods.

Overall, creation of shaded fuel breaks would benefit visual quality. Shaded fuel breaks would lower the risk of spread of open fires at significant dispersed recreation sites and improve chances of suppression, reducing the chances for major changes in scenic quality associated with large wildfires. They would also promote development of healthy, mature stands over the mid- to long-term and move those stands toward the desired future condition.

- **Precommercial thinning** - Precommercial thinning (PCT) is planned on about 863 acres in dense, younger conifer stands. Less than 20 percent of this activity would be visible in the middleground from County road 4954. Only one is immediately adjacent to the road, but
would be screened by a shaded fuel break. No PCT activity would be visible from Little Twin Lakes Campground. PCT activity would be immediately adjacent to four significant dispersed recreation sites, but would be screened by a shaded fuel break. PCT would include the removal of small trees (generally less than 6 inches dbh for lodgepole pine and less than 7 inches dbh for all other conifers) within past commercial harvest units. Treatments would result in tree spacing ranging from about 14 by 14 feet to a maximum of 22 by 22 feet. The resulting overstory stand density would continue to provide shade cover while the horizontal visibility through the stand would increase. In combination with other treatments, the resulting canopy would be mixed so no one type would dominate and therefore be visually subordinate to the characteristic landscape. Overall, treatments would move the landscape closer to the desired future condition of a mosaic of stand conditions which blend with the surrounding landscape. Short-term, treatments would result in stand conditions consistent with the Partial Retention VQO. Commercial harvest treatments would also promote development of healthy, mature stands over the mid- to long-term and moving it toward the desired future condition.

- **Redefinition of Pileated Woodpecker Core Area** – The affected area is not visible from County road 4954, Little Twin Lakes Campground, or any significant dispersed recreation site. There would be no change in the scenery from this proposed activity. Therefore, no direct or indirect effects to visual quality would be anticipated from this project activity.

- **Fish Passage Replacement/Removal** – Seventeen fish passages would be removed or replaced in order to improve passage of aquatic organisms along the stream. Five of these would be replacements along County roads 4954 and one would be along County road 4920 near Little Twin Lakes Campground. Six are within view of significant dispersed campsites. These are existing stream crossings. Maintenance activities would be limited to the existing road alignment and improve fish passage while maintaining road conditions. There may be short-term impacts to visual quality during construction. However, impacts would be minimized by avoiding high-use periods. Therefore, there would be little to no change in visual quality resulting from the replacement/removal of culverts.

- **Rehabilitation of Areas Impacted by User-Created Trails** - Slope stabilization and revegetation would be conducted on approximately 3 acres of hillslope along County road 4668 in order to restore disturbed soil conditions in an area that has been subject to off-road vehicle use. This site is not visible from County road 4954 or Little Twin Lakes Campground. However, it is visible from several significant dispersed recreation sites near Smith Creek. This restoration activity would decrease soil disturbance and devegetation caused by unauthorized OHV use, improving long-term scenic quality in the area. There may be short-to mid-term impacts to visual quality during implementation caused by the presence of equipment and signage and by site recovery measures; however, short-term impacts would be minimized by avoiding high-use periods.

- **Designation of NFS Roads Open to All Vehicles** – Designation of NFS road 7018000 as open to all vehicles would improve recreation opportunities within a recreation management emphasis area under the Forest Plan. Designation of NFS road 9411130 as open to all vehicles would improve recreation opportunities on Old Dominion Mountain. Use of 7018000 would be visible from County road 4954 and several significant dispersed recreation sites. Modification of the roadbed would not occur. Increased OHV traffic would likely not change the visual qualities or visibility of the road. Both these roads are existing roads and the additional use on an existing open road would have no short-, mid-, or long-term effects.
on visual quality or the visibility of the roads to significant dispersed sites or County road 4954.

4.5.2 Cumulative Effects
Cumulative effects related to visual quality are the incremental impacts of an alternative when added to the effects of other past, present, and reasonably foreseeable future actions. See Appendix A of the draft EA for a summary of all past present and reasonably foreseeable future actions for the project area.

Geographic Scope - The cumulative effects analysis area is the viewshed visible from sensitive viewing locations within the project area and neighboring the project area. For the Middle and South Fork Mill Creek A to Z Project, this is the same as the viewshed analyzed for the direct and indirect effects analysis disclosed above. There are no sensitive viewing locations outside the project area, other than Aladdin Road (Schultz 1992), whose viewshed contains portions of the project area and portions of watersheds outside the project area.

Temporal Scope – The direct and indirect effects of the Project on visual quality would persist long-term in promoting healthy, mature stands; however, the timeframe for cumulative effects analysis is thirty years into the future, approximately the timeframe when reentry onto NFS lands in the project area is anticipated to address increases in forest stand density and fuel loading that would occur post-project.

Past Actions - Past activities occurring in the analysis area that have had the greatest effect on visual quality include road construction and use, timber harvest and other stand treatments, rural residential development, and transmission line corridors. The effects of past activities are reflected in the existing conditions for visual quality. Landscapes visible from County road 4954 and Little Twin Lakes Campground range from unaltered forest stands (generally on National Forest System lands) to altered meadows/pastures and rights of way with linear boundaries and structures—occurring mostly on private lands.

Present and Reasonably Foreseeable Future Actions - Nearly the entire cumulative effects analysis area was regenerated by stand-replacing fires in 1929. Wildfire since then has been actively suppressed and timber management, road construction, rural residential development, transmission line construction, and livestock grazing have altered vegetation patterns. Cumulative effects on visual quality would mostly occur through vegetation treatments in the project area. Actions in the project area are documented in Appendix A of the draft EA and detailed specifically below. Actions outside the project area are described below. While wildfire suppression would continue to occur, it is not possible to predict when and where these actions may overlap with the effects of the proposed project.

Inside the project area, a review of Washington Forest Practice Applications indicates plans for 274 acres of uneven-aged harvest, 288 acres of even-aged harvest, and less than 0.1 miles of new road construction. A review of Washington Forest Practice Applications indicates that timber harvest and road construction on state and private lands outside the project area are also anticipated to occur at levels comparable to those in the Middle and South Mill Creek A to Z project area. Because state and private forest practices do not adhere to Forest Plan guidelines, even-aged harvest and road construction could create linear features. Similar harvests outside the project area could be visible from County road 4954 (only at the eastern and western most points), from Little Twin Lakes Campground (looking east) and from Aladdin Road. Uneven-
aged harvests would occur on state and private lands that would not alter the scenic quality, but would promote the development of healthy, mature stands over the mid- to long-term.

Outside the project area, the Colville National Forest is beginning to plan for restoration activities in the North Fork Mill Creek A to Z project area that are anticipated to occur over the 2016-2023 timeframe. The North Fork Mill Creek A to Z Project would involve commercial harvest, fuel hazard reduction, precommercial thinning, road reconstruction and maintenance, and habitat restoration at levels comparable to those under the proposed action, on a per-acre basis. Commercial harvest treatments implemented under the North Fork Mill Creek A to Z Project are anticipated to be consistent with the partial retention visual quality objective. As in the proposed action, treatment types would be mixed so that no one type would dominate the landscape. The mosaic would blend with the surrounding landscape. New roads would be screened by retained vegetation and the mosaic of treatment types would break up their appearance. Commercial harvest treatments would also promote development of healthy, mature stands over the mid- to long-term. Harvest activities on non-NFS lands outside the project area are expected to occur at comparable levels to those within the project area. There are no other known planned major developments or land use changes that would alter disturbance patterns in the cumulative effects analysis area.

4.5.2.1 Alternative A – No Action

Under the No Action alternative, stand development would continue on NFS lands within the project area without major disturbance events. There would be no immediate changes in visual quality. Over time, there would be an increase in older forest stand structure, but a decrease in forest health as a result of unchecked and increased insect and disease infestations. Large areas of dead trees could become visible from sensitive viewing locations over the mid- to long-term. Forest practices on state and private lands would be visible from Aladdin Road, County road 4954, and Little Twin Lakes Campground, potentially affecting middleground and background views. Commercial harvest treatments implemented under the North Fork Mill Creek A to Z Project are anticipated to be consistent with the partial retention and modification visual quality objective and improve stand health. Cumulatively, visual quality within the cumulative effects analysis area would therefore be expected to decrease. Overall, effects of the No Action alternative without wildfire, combined with the effects of other past, present, or reasonably foreseeable future actions, would produce an adverse cumulative effect related to visual quality.

Under the No Action alternative, fuel build-up and stand conditions would continue to develop on NFS lands in the project area and increase the likelihood of large, stand-replacing wildfire. In the event of wildfire, attainment of historic range of variability would be delayed and departure from historic fire regimes would persist not meeting the identified need of moving the forest toward achieving the desired future condition described by the historic range of variability. Large areas burned would be visible from sensitive viewing locations. Overall, effects of the No Action alternative without wildfire, combined with the effects of other past, present, or reasonably foreseeable future actions, would produce an adverse cumulative effect related to visual quality.

4.5.2.2 Alternative B – Proposed Action

Under the proposed action, vegetation treatments on about 12,319 acres of NFS land in the project area (VDT/VRH, STH, PCT, and SFB) would lead to a scenic benefit by breaking up dense canopies over the short-term and promoting development of healthy, mature stands over the mid- to long-term—while meeting the visual quality objectives for sensitive viewing sites. Commercial harvest treatments implemented under the North Fork Mill Creek A to Z Project are
also anticipated to be consistent with visual quality objectives while promoting the development of healthy, mature stands. Additionally, about 274 acres of uneven-aged management on non-NFS lands in the project area, and comparable treatment levels on non-NFS lands outside the project area, would also lead to scenic benefits comparable to those on treated NFS lands. Even-aged management on about 288 acres of state and private lands within the project area, would be visible in the short-term from the middleground of sensitive viewing locations and similar harvests outside the project area could be visible short-term from County road 4954 (only at the eastern and westernmost points), from Little Twin Lakes Campground (looking east) and from Aladdin Road. Long-term, the contrast of these treatments with the surrounding landscape would diminish. Overall, the area on NFS and non-NFS lands that would have improved scenic quality from vegetation treatment exceeds the area treated on non-NFS lands that would have short term visual impact. Overall, there would be net cumulative benefits from promoting healthy, mature stands would occur under the proposed action, when combined with the effects of other past, present, and reasonably foreseeable future activities that affect visual quality in the cumulative effects analysis area.

4.5.2.3 Alternative C – Commercial Harvest Without New Road Construction
The cumulative effects to visual quality under Alternative C, when combined with other past, present, and reasonably foreseeable future actions, would be similar those described for the proposed action; however, any cumulative effects would occur at a lower level than under the proposed action since the activity levels, and associated improvements to visual quality, would be lower under Alternative C.

4.6 Forest Plan Consistency
The proposed action and Alternative C are consistent with the Forest Plan standards and guidelines for visual resource management for MA 3A, 5, 6, 7 and 8 and for Forest Plan directed VQO of Partial Retention, Modification, and Maximum Modification as described above. The proposed action and Alternative C are also consistent with the Forest Plan standards and guidelines for retention of visual quality in the immediate foreground of significant dispersed campsites.

Management prescriptions and design elements were based on findings of current conditions in order to avoid or minimize impacts to visual quality in accordance with the Forest Plan. Management prescriptions discussed above and the design elements and mitigation measures listed above and listed in Chapter II of the draft EA were developed pursuant to the Forest Plan standards and guidelines to accomplish consistency with the Forest Plan for the proposed action and Alternative C.

4.7 Unavoidable Adverse Impacts
Some evidence of harvest or fire use is an unavoidable effect of this Project. Impacts of these activities would be minimized by design elements described above. However, the Forest Plan identifies specific visual objectives across the Forest. These values would be maintained in the proposed Project.

4.8 Irretrievable or Irreversible Commitment of Resources
There are no unavoidable adverse impacts to visual resources that would result from implementation of the proposed action.
REFERENCES


APPENDICES

Appendix A – Dispersed Recreation Survey Forms

160722_MSFMC_RecreationVisualSpecialistReport_AppendixA.pdf