

# SCENERY

## ANALYSIS AREA

The analysis area for Scenery includes the project area as well as lands outside the project area, visible from a variety of viewpoints both inside and outside the National Forest. This report describes the current condition of the scenic resource.

## SCENERY MANAGEMENT DIRECTION

### Scenery Management System

The *Scenery Management System* (SMS) was adopted by the Forest Service in 1995 to replace the *Visual Management System* (VMS). The SMS provides a systematic approach for assigning scenery management objectives to the forest landscape and measuring impacts of forest management actions on the scenic resource. An advantage of SMS over VMS is the inclusion of positive cultural features as well as natural elements in describing the characteristic landscape.

*Scenic Integrity* as defined by the Scenery Management System is a measure of the degree to which the valued landscape character is perceived as complete, whole, or intact. Scenic integrity ratings can be used to describe a historic state of integrity, an existing condition, a short term minimum integrity level in moving toward a long term goal, or a long term sustainable integrity goal. When intended as goals, they are called *Scenic Integrity Objectives* (SIOs) and are generally developed as part of the forest planning process using SMS methods. Since the Deerlodge Forest Plan was adopted prior to the development and adoption of SMS, Scenic Integrity Objectives may be derived from the VMS Visual Quality Objectives described in the forest plan as follows:

Table 3.71

Visual Quality Objectives (VQOs)	Scenic Integrity Objectives (SIOs)
Preservation	Very High
Retention	High
Partial Retention	Moderate
Modification	Low
Maximum Modification	Very Low

The existing scenic integrity as well as the forest plan scenic integrity objectives are developed based on the public's concern for the landscape, landscape visibility, and scenic attractiveness within the characteristic landscape as provided in the Scenery Management System.

## Forest Plan Direction

The Deerlodge Forest Plan provides general direction for scenery management by management area, either directly or by referencing Figure II-4 of the plan (page II-16). In Figure II-4, a mix of VQOs (SIOs) is described according to ROS classification and visual resource sensitivity of the area. The mixes of VQOs should be met from any viewpoint. Figure II-4 as found in the forest plan is displayed below.

Table 3.72: Figure II-4 from Deerlodge Forest Plan

ROS Class	Resource Sensitivity	VQO (SIO) Mixes (Percent of Area)				
		<i>Preservation (Very High)</i>	<i>Retention (High)</i>	<i>Partial Retention (Moderate)</i>	<i>Modification (Low)</i>	<i>Maximum Modification (Very Low)</i>
Primitive	High	95	5	0	0	0
Semiprimitive Nonmotorized and Motorized	High	30	65	5	0	0
	Moderate	20	70	10	0	0
	Low	10	70	20	0	0
Roaded Natural	High	0	65	25	10	0
	Moderate	0	55	30	15	0
	Low	0	30	40	30	0
Rural	High	0	40	40	20	0
	Moderate	0	30	20	40	10
	Low	0	15	15	50	20

Management Areas E1 and ME1 states that the “VQO will tend toward modification (see Figure II-4).” The only ROS class associated with this management area within the project boundary is Roaded Natural. Therefore, utilizing Figure II-4, and using an ROS class of Roaded Natural and assigning a Resource Sensitivity of Low (based on the MA direction of tending toward modification), the resulting VQO mix as a percent of the area is 30 percent Retention, 40 percent Partial Retention, and 30 percent Modification.

Management Areas C3 and MC3 standards require that “The landscape will not be significantly altered,” and reference Figure II-4 to determine an appropriate VQO. The ROS classes associated with this management area are Semi-Primitive Motorized and Roaded Natural. Based on a High Resource Sensitivity, the VQO mix for the Semi-Primitive Motorized areas is 30 percent Preservation, 65 percent Retention, and 5 percent Partial Retention. For the Roaded Natural areas, the corresponding mix is 65 percent Retention, 25 percent Partial Retention, and 10 percent Modification.

Management Area D2 and MD2 standards direct the reader to Figure II-4 for appropriate VQOs. The three ROS classes associated with these MAs are Semi-Primitive Motorized, Roaded Natural, and Rural. Assigning a Moderate Resource Sensitivity, the mix for the Semi-Primitive Motorized areas is 20 percent Preservation, 70 percent Retention, and 10 percent Partial Retention. For Roaded Natural areas, the corresponding mix is 55 percent Retention, 30 percent Partial Retention, and 15 percent Modification. In

addition, MA D2 includes portions of the Rural ROS class, which assigning a Moderate Resource Sensitivity, would result in a VQO mix of 30 percent Retention, 20 percent Partial Retention, 40 percent Modification, and 10 percent Maximum Modification.

Standards for Management Area A5 state that “Using the ROS system classify the area generally as semiprimitive motorized (SPM). VQOs will generally range from preservation to partial retention (see Figure II-4).” Therefore, given a Moderate Resource Sensitivity, the corresponding VQO mix is 20 percent Preservation, 70 percent Retention, and 10 percent Partial Retention.

Management Area J3 standards specifically directs a visual quality objective of Retention.

The following table summarizes the VQO mix for each Management Area and associated ROS setting with which it occurs within the project area.

**Table 3.73: Summary of VQO mixes for MAs within the project area.**

Management Area(s)	ROS Setting	VQO (SIO) Mix (Percent of Area)				
		<i>Preservation (Very High)</i>	<i>Retention (High)</i>	<i>Partial Retention (Moderate)</i>	<i>Modification (Low)</i>	<i>Maximum Modification (Very Low)</i>
ME1 and E1	RN	0	30	40	30	0
MC3 and C3	SPM	30	65	5	0	0
	RN	0	65	25	10	0
MD2 and D2	SPM	20	70	10	0	0
	RN	0	55	30	15	0
	R	0	30	20	40	10
A5	SPM	20	70	10	0	0
J3	Retention by specific MA direction					

## EXISTING CONDITION

### Landscape Character

The landscape character of the project area is *natural appearing*, with conifer forested foothills and mountains rising above the city of Butte. The mostly lodgepole pine forests are the result of extensive logging during the late 1800s and early 1900s. Fire suppression over the last century may have contributed to this condition, though the lodgepole forest is generally fire resistant until it is mature. Dead and dying lodgepole pine is visible in the eastern portion of the project area as a result of mountain pine beetle infestation.

The landform includes narrow bottoms below steep hillsides and gentle upland hills. Fire dependent vegetation covers the area. Lodgepole pine and mixed conifer forests are the most common vegetation. Sagebrush, grasses, lodgepole pine, and Douglas-fir trees are found in varying densities and sizes on the hilltops. Topsoil layers are thin with deposits of organic duff and varied sizes of rock, including boulders and large rock formations protruding through the ground surface. The area supports a variety of wildlife within

the natural setting. Human uses include prehistoric passage and hunting, a few historic mining sites, and municipal water collection and storage in Basin Reservoir. People hunt, pleasure drive, horse pack, hike, snowmobile, and cross-country ski within the area. The east perimeter of the area includes the homes along Roosevelt Drive. Homes also border National Forest lands north of the project area.



Figure 3.33: Photograph taken from Highland Road looking south; Upper Reservoir is right of center.

Fire is an important natural disturbance that renews this high elevation landscape. Over the last century the landscape changes have resulted from natural processes as well as from fire suppression and from other management activities. As viewed from the key viewpoints (see Landscape Visibility section), the landscape character is mostly a *natural appearing* and *natural evolving* on national forest system lands; bordered by pastoral, rural, and urban areas.

## Scenic Attractiveness

"Scenic Attractiveness is the primary indicator of the intrinsic beauty of a landscape and of the positive responses it evokes in people. It helps determine landscapes that are important for scenic beauty, based on commonly held perceptions of the beauty of landform, vegetation pattern, composition, surface water characteristics, and land use patterns and cultural features" (*Landscape Aesthetics*, p 1-14).

With the mostly conifer covered hills and roadsides, the project area may be described as *Class B – Typical*, where landform, vegetation patterns, water characteristics, and cultural features combine to provide ordinary or common scenic quality. Distant views reveal a continuous forest cover mixed with occasional openings. In middle- and foreground views, a dense forest cover is occasionally broken by rocky formations and peaks.

## Existing Scenic Integrity

The present scenic integrity level of the affected environment was analyzed using site visits, photographs, and maps. Although scenic integrity (condition) within the project varies depending on viewpoint and viewing distance, most of the area is considered to have a High to Moderate Scenic Integrity Level. A large portion of the project area includes inventoried roadless lands and appears natural to most visitors. As noted in the Roadless Section of this DEIS, a scattering of old skidding trails and rotting tree stumps are evident in the northeast and northwest portions of the project area. Much of the vegetation character and condition of this landscape is a result of long-term fire suppression. Some areas, particularly on the east

side of the project area are beginning to show the effects of mountain pine beetle infestation with dead and dying lodgepole pine. In addition, private lands in the southeastern portion of the project area have been logged in the past and represent a disturbance in the landscape.

## Landscape Visibility

"Landscape visibility addresses the relative importance and sensitivity of what is seen and perceived in the landscape" (*Landscape Aesthetics*, p 4-2). For analysis purposes, viewpoints were established in and along the following locations and routes which were considered important for discussing changes in the scenic quality in the Basin Creek Hazardous Fuels Reduction Project area. It is from these key viewpoints that the effects of the proposed action and alternatives will be measured. The table below lists the key viewpoints used in this analysis and the distance zone where each viewpoint is located.

**Table 3.74: Key Viewpoints and Distance Zones**

Viewpoint	Distance Zone
1. Uptown Butte	Background
2. Interstate 15	Background
3. Interstate 90	Middleground, Background
4. Harrison Avenue	Middleground, Background
5. Pipestone Highway	Middleground, Background
6. Pipestone Highway	Middleground, Background
7. Roosevelt Drive	Foreground, Middleground
8. Roosevelt Drive	Foreground, Middleground
9. Roosevelt Drive	Foreground, Middleground
10. Highland Road	Foreground, Middleground
11. Highland Road	Foreground, Middleground
12. Basin Creek County Park	Foreground, Middleground
13. Basin Creek Road	Foreground, Middleground

**Note:** Distance Zones are measured as follows:

- Foreground:** Up to ½ mile
- Middleground:** ½ mile to 4 miles
- Background:** 4 miles +

A map showing the location of these viewpoints is contained in the project file.

# SCENERY - ENVIRONMENTAL EFFECTS

## INTRODUCTION

The environmental effects of the proposed project on the scenery resource were evaluated for each of the five alternatives. The visual quality/scenery of the Basin Creek Hazardous Fuels Reduction project area may be affected by actions proposed by this project.

## ANALYSIS METHODS

Proposed activities in the Basin Creek Hazardous Fuels Reduction project area may impact visual/scenic quality by introducing colors, lines, textures, and patterns that contrast with the existing landscape character of the project area. The measurement indicator for these effects will be the visible effect of proposed activities as seen from the viewpoints identified in this analysis (see Landscape Visibility, Affected Environment – Scenery).

Analyzing the impacts to the scenery resource involved identifying the key viewpoints listed in Chapter 3 through map and aerial photography reviews as well as field visits. Seen area maps were created for each of the identified viewpoints using a GIS and subsequently checked during field visits. (See the project file for seen area mapping.) The various treatment descriptions were analyzed to determine which VQO each treatment type met. The table below displays the various treatment types and the VQO the treatment will meet. (For description of the various treatments and effects on scenery, see the next section, *Effects Common to All Action Alternatives*.)

**Table 3.75: Expected Visual Quality Objective of proposed treatments**

Type of Treatment	Expected Visual Quality Objective
Colonized Park	Retention (w/ Enhancement applied as short term VQO)
Mature Douglas-fir	Partial Retention
Douglas-fir pole	Partial Retention
Lodgepole Pine pole	Partial Retention
Mature Lodgepole Pine	Modification

The different treatment types were compared to the seen areas to determine the visibility of treated areas. The visible portions of treated areas were compared to the total area seen of the project area to arrive at an approximate treated area seen percentage. This percent seen was compared to the percent area allotted to the VQO under the corresponding VQO mix described in Figure II-4. This process was completed for each alternative from the key viewpoints.

For example, the Mature Lodgepole treatments (which will meet a Modification VQO) proposed under Alternative 3 were laid over the seen area map for viewpoint 1 (Uptown Butte). The Mature Lodgepole treatments proposed under Alternative 3 that were located within MAs D2 and MD2 and the Roaded Natural ROS class which were seen from viewpoint 1 were compared to the entire seen area within the project boundary. An approximate visible treated area percentage was determined. This percentage was

compared to the percent area allotted to the Modification VQO (15 percent), to determine whether it was exceeded. In this case, it was determined that the visibility of the treated areas did not exceed the 15 percent percent allotted to the Modification VQO.

Two visual landscape management systems were used to evaluate the proposed project. The Visual Management System (National Forest Landscape Management System, Volume 2: Chapter 1, *The Visual Management System*, Agriculture Handbook #462 1974) and the Scenery Management System (*Landscape Aesthetics: A Handbook for Scenery Management*, Agriculture Handbook #701). Terminology used in this report is defined in these two handbooks.

## EFFECTS COMMON TO ALL ACTION ALTERNATIVES

The purpose and need of the actions proposed in the Basin Creek Hazardous Fuels Reduction project are 1) minimize the risks to water quality in the event of wildland fire, 2) reduce the potential public and private property damage from wildland fire, and 3) increase firefighter and public safety by modifying vegetative conditions. Vegetative treatments such as thinning, clearcutting, and burning will be used to accomplish these goals.

The Mature Douglas-fir, Douglas-fir Pole, and Lodgepole Pine Pole treatments will involve thinning. The Mature Douglas-fir treatment consists of thinning stands to approximately 80-120 trees per acre. Following treatment, these stands would be more open and consist mainly of larger diameter Douglas-fir. The arrangement of the remaining trees would be fairly patchy in nature. The Douglas-fir Pole treatment includes removing lodgepole pine and thinning the Douglas-fir to approximately 200-300 trees per acre, resulting in more open canopy conditions. The Lodgepole Pine Pole treatments will involve removing dead trees and smaller diameter trees, creating a more open condition of larger diameter trees. The canopy conditions will become more open and openings of 2 acres or less will be created where pockets of dead trees are removed and for landings. The effects of these three treatments on scenery will amount to a textural change in the landscape as seen from middleground and background viewpoints, such as Highland Road, Harrison Avenue, Interstates 15 and 90, and Uptown Butte. These treatments will result in a reduced number of stems per acre and a less dense, more open stand conditions, resulting in increased viewing distances into the stands as seen from the foreground, such as from Roosevelt Drive and Highland Road viewpoints. With prescribed mitigation, these treatments will meet at least a Partial Retention Visual Quality Objective as seen from the key viewpoints identified in Chapter 3.

The Mature Lodgepole Pine treatment will consist of clearcutting stands, removing larger trees and leaving patches of small diameter trees that are not significantly affected by mountain pine beetle. The stand characteristics following treatment will consist of open seedling and sapling sized stands with reserve patches of fairly dense pole-sized material. Canopy characteristics will change from dense continuous canopies to open conditions with small patches of dense canopy. The effect of this treatment on the scenic resource will be the creation of openings, with units ranging in size up to 167 acres, resulting in an overall mosaic of canopy cover and openings. These openings would be broken up with patches of small diameter trees (ranging in size up to 5 acres), which through sensitive unit design and layout may help to mitigate the effects on scenery. Regardless of mitigation, it is anticipated that this treatment will meet a Modification Visual Quality Objective from all viewing distances (fore-, middle-, and background).

Open grass and sage parks dominated by sapling-sized Douglas-fir would be burned. Low intensity fire would kill most of the trees while leaving some of the old, large-diameter trees. Historic openings would be restored within stands. Open park conditions would also be restored along edges of stands and in parks

that were dominated by sagebrush. Because of the proposed vegetation variety and patterns, this treatment will meet a Retention Visual Quality Objective, and likely will result in an enhanced visual condition.

All of the action alternatives include the construction of temporary roads and landings for the transportation and processing of removed materials. Slash piles will also be a part of each of the action alternatives. These aspects of the action alternatives may affect visual quality if not properly mitigated. Minimizing cuts and fills associated with temporary road and landing construction, and locating temporary roads, landings and slash piles out of sight from key viewpoints and roads by utilizing topography and vegetation screening will help to reduce the visual impact of these activities. Also, recontouring temporary roads and landings and reseeding such roads, landings and slash piles following logging activity will reduce visual impacts in the long term.

## **ADDITIONAL DIRECT AND INDIRECT EFFECTS BY ALTERNATIVE**

The effects of the proposed project are analyzed below by alternative. Alternative 1 is the no-action alternative and Alternative 3 is the Preferred Alternative.

### **Alternative 1: No Action Alternative**

Although this alternative will result in no direct effect to scenery, it can be expected that an indirect effect of no action would include additional lodgepole pine which would be infected with mountain pine beetle and more areas displaying the reddish-brown coloration of dead lodgepole pine. Another possible indirect effect of this alternative on scenery would result from fire, resulting in a blackened landscape, followed by dead standing and fallen trees.

### **Alternative 2**

This alternative was developed with the intention of buffering the Forest/private boundary by 1/8 to 1/4 mile depending on fuels and topography. As a result, the treatments are located in close proximity to the forest boundary.

In general, the visual impacts of the treatments proposed under this alternative are very limited, as most of the treatments are not seen from many of the key viewpoints. Portions of the proposed treatments will be visible from the viewpoints located north and east of the project area, but the greatest effects to scenery will be seen from Highland Road as it enters the project area from the east and winds through National Forest and private land. Units 14, 24, 30, 36, 38, 43, 53, 54, 59, 66, 68, 70, and 73 will be visible in the immediate foreground as the road winds through National Forest and private land. While the colonized park treatments adjacent to the road represent only a short term effect on scenery, mitigation measures for the mature lodgepole pine and lodgepole pine pole treatments (such as flush cutting stumps and leaving islands of trees adjacent to the road) will be necessary to reduce the visual impact as seen from the road.

In addition, small portions of treatment units will be visible from Roosevelt Drive; however, mitigation measures will help to minimize impacts as seen from residences located near the forest boundary.

Analysis of Alternative 2 was conducted as described in the Methods section of this report. Visibility analysis from all of the key viewpoints revealed that the treatments and the resulting mix of expected VQOs did not exceed the percentage allowed for each VQO within the various management areas. In comparison to the other action alternatives, the effect of this alternative on scenery will be minimal. This alternative complies with the Deerlodge Forest Plan standards for scenery as seen from all of the key viewpoints.

### **Alternative 3: Preferred Alternative**

This alternative will buffer the Forest/Private boundary the same as Alternative 2, and treat only those stands with a crown fire hazard rating of moderate and a crowning index below 19 mph and stands with a risk of future high intensity surface fire on the slope below Roosevelt Drive.

In general, only limited portions of the treatment units will be visible from the key viewpoints located north of the project area, including the Interstate 15, Uptown Butte, and Harrison Avenue viewpoints. Each type of treatment is seen on either side of Basin Creek Road and on the south side of Herman Gulch from these viewpoints. Portions of the Colonized Park treatment above Herman Gulch will also be visible. Portions of the Mature Lodgepole treatments will be visible, but none of the units will be visible in their entirety, but screened to a limited extent by vegetation and topography. The thinning treatments as seen from these viewpoints will appear as slight changes in texture, with visible portions of created openings interspersed. (See the project file for simulations of the proposed treatments.)

Additionally, only a small portion of the treatments as seen from Roosevelt Drive will be visible, mainly in the distant foreground and middleground, as the topography slopes downward west of the residences along Roosevelt Drive. Treatments visible from Roosevelt Drive include the Mature Lodgepole and Douglas-fir Mature, and will create a mosaic of openings and more open, park-like stands along the forest boundary.

Similar to Alternative 2, treatment units will be visible in the foreground to forest visitors as they approach the project area from the east on Highland Road. Units 14, 24, 30, 36, 38, 43, 53, 54, 59, 66, 68, 70, and 73 will be visible in the immediate foreground as the road winds through National Forest and private land. The colonized park treatments adjacent to the road represent only a short term effect on scenery. However, to reduce the impact associated with the removal of large numbers of trees in the mature lodgepole pine and lodgepole pine pole treatments, mitigation measures (as described for this area under Alternative 2 and in the Mitigation Measures section) will be necessary.

The proposed treatments are most visible from the Highland Road viewpoint, looking north across the project area. Mature Lodgepole pine treatments (including units 36, 58, 66, 73, and 75) will be visible from the Highland Road viewpoint in the middleground, though none of the units will be seen in their entirety as they will be partially screened from view by vegetation and topography. The view from this position following treatment will reveal a contrast between the modified landscape on the east side of the reservoir and the naturally appearing landscape to the west.

Analysis of Alternative 3 was conducted as described in the Methods section of this report. Visibility analysis from all of the key viewpoints revealed that the treatments and the resulting mix of expected VQOs did not exceed the percentage allowed for each VQO according to Figure II-4. This alternative meets the forest plan standards for scenery as displayed in Figure II-4 and management area direction, as seen from the key viewpoints.

## Alternative 4

This alternative will buffer the Forest/private boundary the same as Alternative 2, and was developed using traditional methods for placement of fire suppression lines (upper slopes and ridge lines). The logic of this alternative is to create strategic locations which will offer a safer environment for firefighters to initiate direct attack.

In comparison to the other action alternatives, this alternative proposes the greatest number of treatments over the largest area. Consequently, this alternative will have the greatest impact on the scenery as many of the treatments are visible from several key viewpoints. From the north, portions of many treatment units, including Mature Lodgepole and Lodgepole Pine pole treatments, will be visible along the upper elevation ridgelines, as well as the Continental Divide. This includes the Mature Lodgepole and Lodgepole Pine pole treatments on the hillside in the southeast portion of the project area (units 70, 71, and 75). In addition, portions of these same types of treatments will be visible along lower elevation ridgelines in the western portion of the project area. The view from these locations will reveal a mix of treatments, with the most apparent being the Mature Lodgepole Pine treatments in higher elevation locations along the western and southern portions of the project area. (See the project file for simulations of proposed treatments.)

Views from Roosevelt Drive will be similar to those described under Alternative 3, but will also include possible views into treated areas on the west side of the project area.

Like alternatives 2 and 3, units in close proximity to Highland Road will require mitigation to reduce visual impacts. Under this alternative, these units include 58 through 69, 74, 75, 103, 104, and 105. See the Mitigation Measures section.

The greatest visibility of the treatments proposed by this alternative will be from Highland Road. In addition to portions of units seen on the east side of the project area (including units 16, 30, 31, 33, 34, 40, 46, 50, 69, 101, 102, 104, and 105), portions of the Mature Lodgepole and Lodgepole pole treatment units located on the west side of the project area will be visible in the middleground. In some cases, large portions of these units, including units 89, 90, and 95 through 99, will be visible from the northern Highland Road viewpoint. As a result, the landscape as seen from this viewpoint will appear heavily modified, with natural appearing areas broken by clearcut openings. From the Basin Creek County Park and Basin Creek Road viewpoints, portions of treatments located along the Continental Divide to the east and west will be visible.

Analysis of Alternative 4 was conducted as described in the Methods section of this report. Visibility analysis from the key viewpoints revealed that the expected VQO mix as a result of the proposed treatments exceeded the percentage allowed for one or more of the VQOs in particular management areas and ROS settings. Under this alternative, the Modification VQO allotted to the MAs MD2, D2, MC3, and C3 (0 percent) where they coincide with the SPM ROS settings, was exceeded from several of the key viewpoints. In addition, the Modification VQO allotted to these management areas within the RN ROS settings was also exceeded from at least one of the key viewpoints. The Partial Retention VQO allotted to MAs MC3 and C3 (5 percent) was also exceeded. Additionally, a portion of MA J3 includes a small area of a Lodgepole Pine pole treatment which will not meet the management area direction of Retention. As a result, this alternative does not meet Deerlodge Forest Plan standards for scenery and a forest plan amendment will be necessary if this alternative is selected.

An amendment to the forest plan standards for scenery will provide for an appropriate mix which allow for an increased percentage of this VQO to occur. The amount of the amended VQO will be based on the greatest amount of visible treated area from any of the key viewpoints. Upon determining the amount of

amended VQOs, the mix should be balanced by reducing the remaining VQOs in the mix. This amendment might read: *In response to the changes in condition of the project area between adoption of the forest plan and the current and anticipated future condition of the project area, and in order to decrease the probability of crown fire and high intensity surface fires, and to increase the probability of safely defending life and property from fire, changes in the landscape within the project boundaries are necessary. As a result, the VQO mixes identified for the management areas within the project area will not be met in the foreseeable future and will be amended. Under this amendment, the management areas would include the following mixes for the various ROS classes where they occur in the project area (amended percentages to increase a certain amount of VQO are shown in bold parentheses; those adjusted to balance the mix are shown in italics parentheses):*

**Table 3.76: Modified VQO mixes by management area to achieve the fuels reduction proposed by Alternative 4**

Management Area(s)	ROS Setting	VQO (SIO) Mix (Percent of Area)				
		<i>Preservation (Very High)</i>	<i>Retention (High)</i>	<i>Partial Retention (Moderate)</i>	<i>Modification (Low)</i>	<i>Maximum Modification (Very Low)</i>
ME1 and E1	RN	0	30	40	30	0
MC3 and C3	SPM	30	65 <i>(45)</i>	5 <b>(10)</b>	0 <b>(15)</b>	0
	RN	0	65 <i>(60)</i>	25 <i>(20)</i>	10 <b>(20)</b>	0
MD2 and D2	SPM	20	70 <i>(55)</i>	10	0 <b>(15)</b>	0
	RN	0	55 <i>(50)</i>	30 <i>(25)</i>	15 <b>(25)</b>	0
	R	0	30	20	40	10
A5	SPM	20	70	10	0	0
J3	Retention by specific MA direction <b>(Partial Retention)</b>					

*In addition to amending the forest plan VQO mixes as shown above, the standard for MA J3, Retention, will need to be amended to allow for a limited amount of treatment meeting a Partial Retention VQO.*

## Alternative 5

This alternative will treat the project area the same as Alternative 4, excluding the Inventoried Roadless Area.

Alternative 5 is a subset of Alternative 4, and, in comparison to that alternative, will have the same effect on scenery as Alternative 4, less those impacts associated with units 77 – 98, which are generally located on the west side of the project area (in Inventoried Roadless Area).

Although the effects associated with the units located in the Inventoried Roadless Area are not associated with this alternative, units 70, 71, and 75 (located on the south and southwest portion of the project area) are part of this alternative and will be visible from the north. From the Harrison Avenue viewpoint, the clearcut portions of these units will be visible. In addition, from the Uptown Butte and Interstate 15 viewpoints, most of unit 99 will be visible. This Mature Lodgepole and Lodgepole Pine pole treatment unit is located in the SPM ROS area, which does not include Modification as part of the VQO mix.

Analysis was also conducted of Alternative 5 as described in the Methods section of this report. Visibility analysis from the key viewpoints revealed that the expected VQO mix resulting from the proposed treatments exceeded the percentage allowed for one or more of the VQOs in particular management areas and ROS settings. Within MAs MD2, D2, MC3, and C3 where they coincide with the RN ROS setting, the allotted Modification VQO was exceeded. In addition, within MAs MD2 and D2 where they coincide with a SPM ROS setting, the Modification VQO was exceeded from several key viewpoints; this can be related directly to Unit 99, the only treatment within the SPM ROS setting under this alternative.

As a result, an amendment to the forest plan standards for scenery (similar to that described above) will also be necessary if this alternative is selected, as it exceeds the VQO mixes for certain management areas. The management area VQO mixes modified to permit this alternative will look like this (*amended percentages to increase a certain amount of VQO are shown in bold parentheses; those adjusted to balance the mix are shown in italics parentheses*):

**Table 3.77: Modified VQO mixes by management area to achieve the fuels reduction proposed by Alternative 5**

		VQO (SIO) Mix (Percent of Area)				
Management Area(s)	ROS Setting	<i>Preservation (Very High)</i>	<i>Retention (High)</i>	<i>Partial Retention (Moderate)</i>	<i>Modification (Low)</i>	<i>Maximum Modification (Very Low)</i>
ME1 and E1	RN	0	30	40	30	0
MC3 and C3	SPM	30	65	5	0	0
	RN	0	65 <i>(55)</i>	25	10 <b>(20)</b>	0
MD2 and D2	SPM	20	70 <i>(65)</i>	10	0 <b>(5)</b>	0
	RN	0	55 <i>(45)</i>	30	15 <b>(25)</b>	0
	R	0	30	20	40	10
A5	SPM	20	70	10	0	0
J3	Retention by specific MA direction					

## Comparison of Alternatives

A comparison of the four action alternatives reveals that Alternative 4 would create the most change on scenery followed by Alternatives 3 and 5. Alternative 2 would have the least change. All alternatives would require mitigation measures to minimize impacts seen from foreground, middleground, and background viewing distances (see Mitigation Measures section).

## CUMULATIVE EFFECTS

This section of the report will consider the cumulative effects of the proposed project and past, present, and reasonably foreseeable actions. Past actions which have resulted in impacts to scenery include the Wood Creek Helicopter Slash Burning project, the Thompson Park Hazard Tree Removals, logging by private landowners, and the Continental Divide National Scenic Trail construction/reconstruction. Reasonably foreseeable future actions include the Thompson Park Salvage project, the Lime Kiln Timber Sale, timber

harvest by the state of Montana and private landowners, and additional CDNST construction/reconstruction.

The cumulative effect of past actions as seen from the key viewpoints located north of the project area is a naturally appearing landscape where some management actions have occurred, including the Wood Creek Helicopter Slash Burning project and private landowner logging, the visual impacts of which are subordinate to the overall landscape. Future actions, including the Thompson Park Salvage project and the Lime Kiln Timber Sale could result in the removal of dead and dying lodgepole pine as well as mature lodgepole pine. The cumulative effect of these actions and management actions proposed under Alternatives 2 and 3 will be limited, as the majority of the landscape will remain unchanged, and management actions associated with this project and future projects will have limited visibility. Under Alternative 4, the cumulative effects of past and future actions combined with the visibility of the proposed treatments will have a much greater effect on scenery. Alternative 5, although it does not include the same number of treatments as Alternative 4, includes some high elevation treatments which will have a high degree of visibility from key viewpoints located north of the project area.

The cumulative effects of past and future actions, including the Wood Creek project and the Lime Kiln Timber Sale, as seen from key viewpoints located east of the project area include the existence of small, natural appearing openings which are subordinate to the overall landscape. The cumulative effects of these actions and those actions proposed by Alternatives 2 and 3 would be minimal due to the visibility of the treatment units being limited to those adjacent to the forest boundary. The cumulative effects of past and future actions and Alternatives 4 and 5 might be greater due to the visibility of units on the west side of the project area and/or the higher elevation, more visible treatments.

From the key viewpoints located south of the project area, the cumulative effects are generally limited to the direct and indirect effects as described for each alternative. This is because views from these viewpoints are generally confined to the project area and the adjacent urban fringe to the north.

The Continental Divide National Scenic Trail construction/reconstruction is a foreseeable future action. This trail and associated trailheads will most likely not be evident from background or middleground viewpoints, and sensitive layout and design of the trail and trailheads will be necessary to reduce impacts in the foreground.

## **MITIGATION MEASURES**

The activities listed below will serve as mitigation measures for scenery.

### **All Action Alternatives**

- Low cut stumps adjacent to travel corridors, and flush cut stumps within 50 feet of Highland Road, Roosevelt Drive, and Basin Creek Road and homes and recreation residences.
- Treatment units which lie on straight line boundaries or property lines shall not use those lines as boundaries for treatments. Treatments should be feathered to boundaries by gradually reducing the amount of trees removed over space.

- Log landings will be located a minimum of 200 feet from roads and screened by topography and/or vegetation from Highland Road, Roosevelt Drive, and Basin Creek Road, as well as from homes and recreation residences.
- In Mature Lodgepole (clearcut) treatments, create openings which mimic the details of natural openings in the surrounding area. This will include feathering edges to avoid abrupt changes in density of trees, creating natural-appearing edges, and including leave islands of trees. Field layout of these units will be reviewed by an agency landscape architect.
- In Mature Lodgepole (clearcut) treatments located along Highland Road and adjacent to the forest boundary, islands of leave trees should be used to break up the unit as it is seen from the road and residences. Viewers are expected to see a mosaic of openings and islands of leave trees as they pass by or from their residence.
- All temporary roads and landings will be constructed so as to minimize cuts and fills, and will be constructed so as to be screened from key viewpoints by topography and/or vegetation. Roads will also be constructed to limit views along them from other routes, and views of new road construction from the key viewpoints will be limited. Within 100 feet of intersections with public roads, temporary roads will be planted with shrubs to reduce visual impact in the immediate foreground.