Appendix H - Visual Resources Assessment

Ski Back Trail Visual Resources Analysis/Assessment

Mammoth Mountain Ski Back Trail

Mammoth Ranger Station, Inyo National Forest
Inyo County, California

Submitted to:

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INTRODUCTION

This visual analysis has been prepared to identify the scenic context and evaluate the potential visual impacts and mitigation measures associated with the proposed Ski Back Trail from the top of chair 7 at the Mammoth Mountain Ski Area (MMSA) (near the garage facility) to the North Village complex in the Town of Mammoth Lakes (Town), California. Figure 1 illustrates the regional and specific locations of the proposed Ski Back Trail project. This report is intended to satisfy the requirements of Inyo National Forest (INF) for a project-specific visual impact analysis by examining the potential impacts in the project vicinity and evaluating the effectiveness of mitigation measures incorporated as part of proposed project design features.

The need for alternative trails, including this Ski Back Trail, has been included in several planning documents and publications. This trail was included in the approved ski area Master Development Plan in 1981, as well as the Transportation Systems Management and Air Quality Mitigation Plan for State Highway 203 in the Vicinity of Mammoth Lakes in Mono County that was adopted by the Mono County Board of Supervisors in 1980. Additionally, the North Village Specific Plan (adopted in 2000) proposes improved circulation partly based on construction of this Ski Back Trail.

PROJECT DESCRIPTION

No Project Alternative

In this scenario, the Ski Back Trail is not constructed and all other transportation features remain constant with the exception of the proposed modern roundabout at the Minaret Road/Forest Trail intersection.

No Action Plus Enhanced Transit Alternative

In this scenario, the Ski Back Trail is not constructed, but there is an increased emphasis on transit provisions focused on returning skiers from Main Lodge, Chair 2/10, and Chair 4/20 to The Village and other destinations in Town.

The increased transit emphasis is roughly equivalent to the projected level of skiers carried on the trail originating from Main Lodge and associated parking areas. This would require four additional buses in the peak hour running only from Main Lodge to The Village. These buses would have a capacity of 240 skiers. In context, this represents about 10 percent of the total skiers coming down via private auto from Main Lodge and associated parking areas in the peak afternoon hour.

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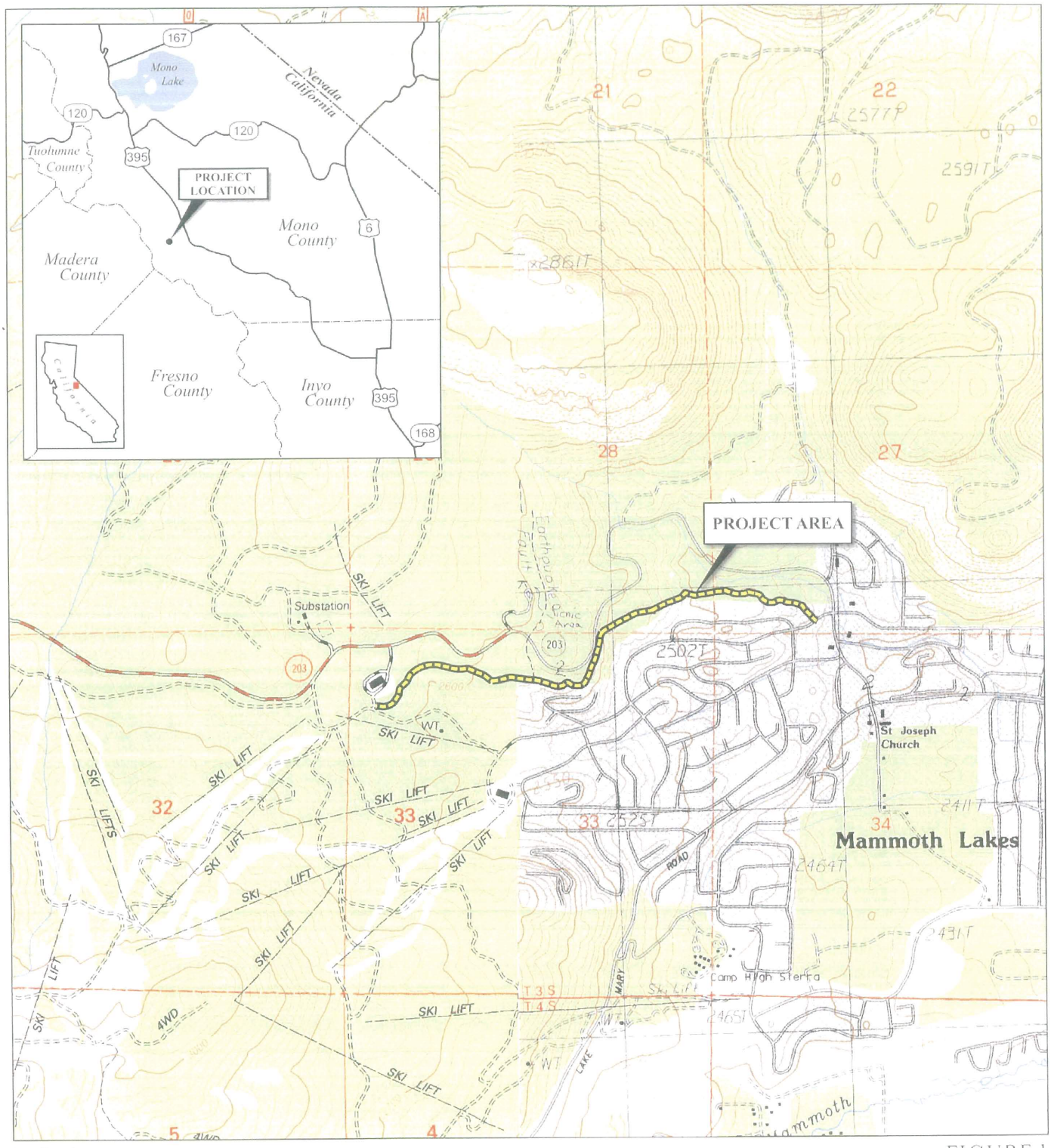

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PROJECT AREA

FIGURE 1

0 1000 2000
FEET

SOURCE: USGS 7.5' Quads - *Mammoth Mt. & Old Mammoth, CA.*

E:MMS431G Location.cdr (8/7/07)

Mammoth Mountain Ski Back Trail

Project Location

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If all this increase to transit came from private vehicles, a reduction of about 96 vehicles[1] in the peak hour would occur, again equivalent to about 10 percent of the total vehicular traffic in the peak hour. In terms of potential traffic impacts, a reduction of this level would be a measurable improvement.

It is not likely, however, that this level of traffic reduction would occur. This is because the demand for this additional transit would primarily come from latent transit demand of other transit riders riding before or after the peak hour. Latent transit demand in this case are transit riders who desire to ride the bus between 3:30 and 5:00 p.m. but because the buses are all full they either go on an earlier bus or wait in line until a later (after 5:00 p.m.) bus comes. If more buses are added between 4:00 and 5:00 p.m., the line of transit riders is reduced, but no change in traffic congestion occurs.

In order to divert vehicular traffic into the transit mode it would be necessary to develop another strategy (e.g., parking removal) to physically limit the number of vehicles accessing Main Lodge and associated roadway parking areas. Even with reduced parking, the congestion levels would not necessarily be reduced by the volumes noted. It is more likely that a combination of volume reduction and the duration of congestion (length of time) would be reduced.

Original Project Alignment

Specifically, the original project alignment alternative coincides with the proposed alignment for approximately 1,600 feet at the upper reach and then deviates to the north approximately at Station 60. At this point, the original project proceeds approximately 400 feet upslope in a southeast to northwest direction. The original project roughly parallels the proposed alignment for approximately 1,100 feet between SR-203 and the proposed project alignment.

The original project alternative continues to parallel and even coincides with the proposed alignment as it turns northward until approximately Station 37, where the original alignment suddenly turns north, cutting across a downslope, and turns south again, intersecting the proposed project alignment at approximately Station 30. At this point, the original project alignment extends in a general west to east direction, again parallel to and south of the proposed alignment. It continues in this manner until the trail's terminus near the intersection of Forest Trail and Minaret Road.

Although it would not be visible from many public vantage points, the original project alignment would require a greater degree of grading, and accompanying retaining walls, throughout its entire length when compared to the proposed project alignment.

Proposed Project Alignment

The proposed Ski Back Trail will provide primarily skiers (not snowboarders) an alternative modal choice to reach The Village without the use of private autos, transit, or the gondola.

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[1] Assumed 2.5 skiers/car Mammoth Mountain Master Plan, Table II.20, page II–58.

Figure 2 illustrates the proposed alignment for the Ski Back Trail, as well as the original project alignment. This trail will enable skiers from the ski area to return to the lodging facilities or meeting places in The Village without the use of private or public motor vehicles or the gondola from Canyon Lodge. Generally paralleling the southerly side of State Highway 203, the ski back trail will be accessible from the top of chairs 4 and 17, Canyon Express, Goldrush Express, and from the top of chairs 5, 9, 20, 21, 22, 25, and Panorama Gondola.

The proposed trail will be at the upper-beginner/lower-intermediate level. It will be approximately 8,000 feet (ft) long with a width of approximately 22 ft (which will accommodate snowcat grooming). A 2:1 sideslope will be attainable for the majority of the trail; however, retaining walls will be necessary for some sections of trail for several hundred feet. All retaining walls will be of geotextile/native boulder construction, using rocks with colors representative of this area and will be approximately four feet high. It is expected that there will be sufficient numbers of rocks from trail excavation to construct the walls using all local material. The retaining wall covering the part of the trail from Stations 43–53 varies in height from 5 to12.5 ft and will use soil nail construction techniques. An additional retaining wall will range from 1 to 4 ft in height from Stations 56 to 63. The architectural wall treatment will visually reflect the existing, surrounding natural landscape.

Trail construction will utilize cut slopes rather than fill as much as possible in order to minimize the visual impact to residents in the adjacent Mammoth Slopes neighborhood. Both temporary and permanent erosion control measures are shown on the plans, including proposed revegetation using primarily grasses for the trail surface and a mix of native shrubs, wildflowers, and grasses for the disturbed slope areas.

Trail and retaining wall construction will be performed using existing access corridors (utility pole line and utility access road from State Highway 203) as feasible. However, establishment of additional corridors will be necessary. Proposed access corridors are approximately at Station 66 (single point-of-entry from State Highway 203 north of alignment); Station 58 (single point-of-entry from State Highway 203 north of alignment); Station 17 (access to State Highway 203 north of alignment); and Station 2 (north of power line to State Highway 203). These corridors will be approximately 10–15 ft wide, accommodating one-way traffic, and stabilized construction entry/exit measures will be installed at the access road/highway transition. Dust control will be accomplished through periodic watering of the access corridor and area of disturbance. Proposed staging areas are at the garage and/or Chair 4. Any new access corridors constructed will be eliminated upon project completion by regrading and revegetation.

The trail will terminate on an Intrawest-owned parcel on Forest Trail, immediately downhill of the Val d'Isere condominiums. Intrawest owns the parcel on which the trail terminates and will be responsible for the design and construction of a bridge over Forest Trail that will connect skiers from the Ski Back Trail to The Village.

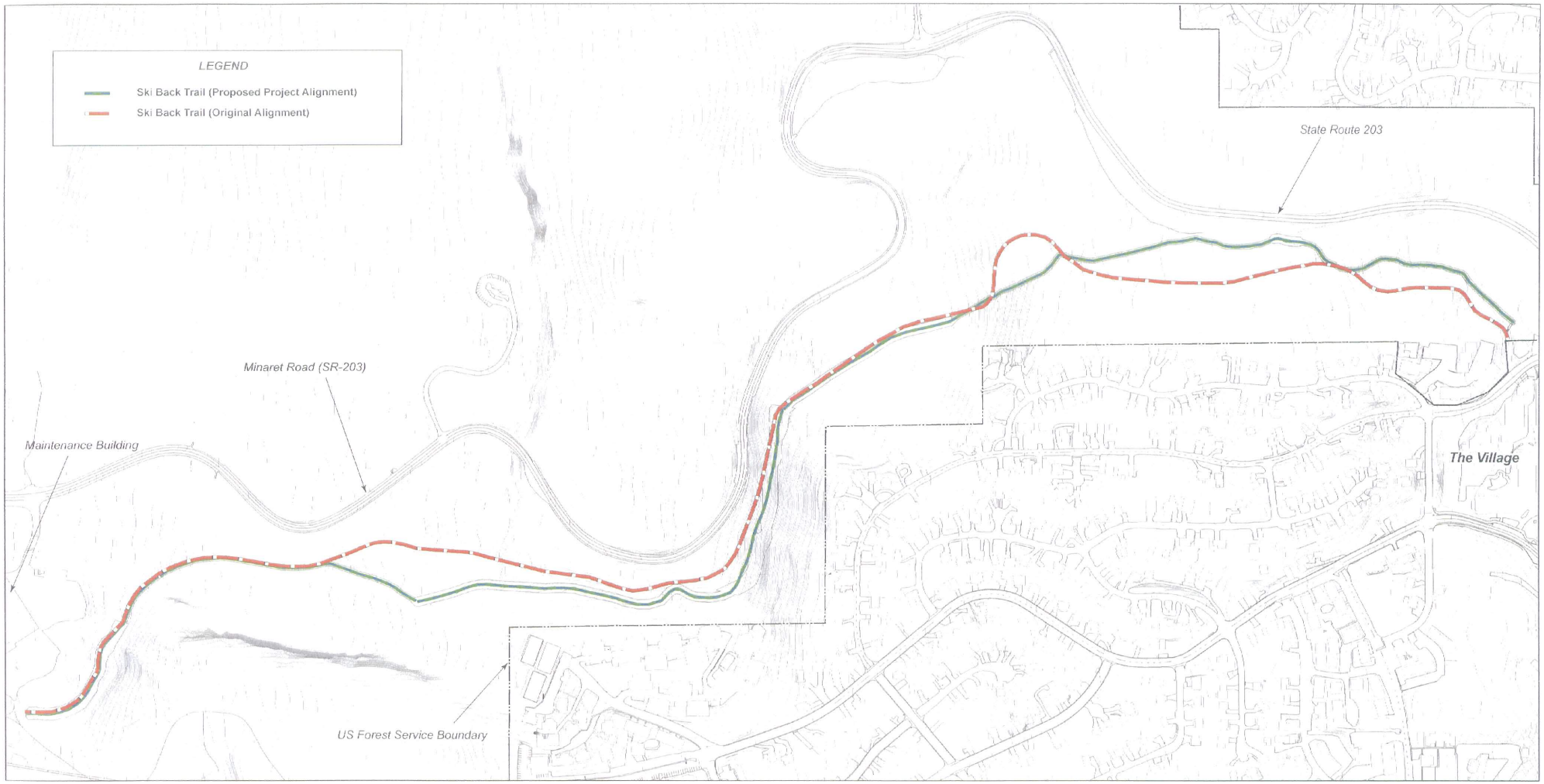

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FIGURE 2

0 200 400
FEET

SOURCE: Triad Holmes, Inc. 6/28/04

L:\MMS431\G\Trail alignments Rev2 ai (7-13-07)

Mammoth Mountain Ski Back Trail

Proposed Trail Alignments

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Snow-making is also proposed, but full implementation is not planned until snow-retention information on the trail has been collected over several snow seasons. In general, snow-making and grooming will not take place between the hours of 8 p.m. and 7 a.m. Snow-making generally only takes place early in the ski season (November–December). It is estimated that a total of 60 hours would be required for snow-making activities for the entire ski season. Times of day for snow-making vary and are dependent upon ambient temperatures around 32 degrees Fahrenheit (°F). In general, the trail will be groomed once daily, although on heavily trafficked days an additional grooming pass may be considered.

VISUAL CONTEXT

Mammoth is the most identifiable and largest Eastern Sierra Nevada alpine resort. Mammoth is located within a valley floor (actually within a portion of an ancient caldera[2]) surrounded by moderately to steeply rising slopes on the south, west, and north. Physical and visual access into Mammoth commences from the east at the State Highway 203 and U.S. 395 interchange. Traveling westerly directly into town, urbanization typical of a destination resort dominates the immediate horizontal view. State Highway 203 consistently rises as it proceeds west, which directs the eye upward toward the mountains. Mammoth Mountain, located directly to west of the Town provides a prominent visual backdrop. Again, mountains rise quickly to the south and north.

During all seasons it is apparent that Mammoth Mountain has been altered to accommodate skiing. Stands of Jeffrey pines are interspersed among large, extended open areas. Ski lifts and roadways are seen on the face of the mountain, particularly to the west. The mountains to the south and north do not have the degree of physical alteration apparent on Mammoth Mountain; however, several roadways can be seen on these slopes from the valley floor.

The proposed Ski Back Trail is located within a relatively localized and narrow area between State Highway 203 and existing residential development. The proposed trail alignment, State Highway 203 and residential development are oriented in general west to east direction. State Highway 203 is located to the north and at a higher elevation than the proposed trail alignment. The residential development is located to the south of and at a lower elevation than the proposed trail alignment.

This area has a moderately dense cover of Jeffrey pines *(Pinus jeffreyi),* with trees ranging from several inches to nearly 80 ft above the ground surface. In addition, red fir *(Albies magnifica)* populates the proposed ski back trail area. The understory is a mixture of manzanita type shrub, buff ground cover, and fallen woody debris.

The dominant cover in sunny, open areas consists of greenleaf manzanita *(Arctostaphylos patula),* pinemat manzanita *(Arctostaphylos nevadensis),* tobacco brush *(Ceanothus velutinus),* big sagebrush *(Artemisia tridentata),* and antelope bitterbrush *(Purshia*

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[2] A caldera is a large depression commonly formed by collapse of the ground following explosive eruption of a large body of stored magma (Wright and Pierson, 1992, Living with Volcanoes, The U.S. Geological Survey's Volcano Hazards Program: U.S. Geological Survey Circular, 1973).

tridentata). The dominant cover on shaded slopes consists of less common shrubs; understory is comprised mainly of herbaceous perennials and grasses, including nude buckwheat *(Eriogonim nudum)* and bottlebrush squirreltail *(Sitanion hystrix).* Although State Highway 203 and the residential areas are relatively close to each other, there are only a few areas along this entire proposed alignment where these facilities are visible to each other due to the elevation differences and existing stands of trees.

POLICY CONTEXT

The Inyo National Forest Land and Resources Management Plan (INFLRMP 1988) was developed to provide an "integrated, multiple resource management direction for all Forest resources" and thereby contributes to defining the area's land use and visual policy context.

Chapter 2 of the INFLRMP describes the issues and concerns of this unit. For visual resources, the following list of concerns is provided:

- Maintain and manage for visual quality
- Resolve conflicts between visual quality and other resources
- Maintain or enhance current visual resources and scenic attractions

The following response is provided for these concerns: The Forest Standards and Guidelines set the stage for management of visual resources. Each management prescription includes an assigned Visual Quality Objective (VQO).

Chapter 3 of the INFLRMP provides a summary analysis of the management situation for each of the resources within this region. It is noted in this chapter that the "Mammoth and June Lake communities and associated winter sports development represent the most significant visual impacts within the Forest boundary." This section further notes that "additional winter sports development . . . could cause major visual resource disruptions during the planning period" and that there is a need to establish direction for applying VQOs to such developments.

Chapter 3 also emphasizes the need to maintain the visual resources values of the INF, particularly as it is viewed from Highway 395. Finally, this chapter recognizes the following:

> The Plan emphasizes a continued high level of visual quality for its economic and social benefits to local communities and to millions of annual recreation visitors. This emphasis is expressed by assigning VQOs to specific acres of land that are consistent with the overall management direction for that land.

Applicable Management Direction statements are provided in Chapter 4 of the INFLRMP. The following Management Direction applies to the proposed project:

- Maintain foregrounds and middlegrounds of the (scenic) corridors of the following travel routes to Retention and/or Partial Retention VQOs as inventoried, but not (lower) than Partial Retention:
  1. Highways officially designated by the State as California State and County Scenic Highways.

2. California State Scenic Highway System reroutes as designated in the September 1970 Master Plan. [These] highways include:
   - State Highway 120, west of U.S. 395 to Tioga Pass;
   - U.S. 395;
   - State Highway 158;
   - State Highway 203; and
   - State Highway 168.

The Mammoth area can be partially viewed from U.S. 395 and State Highway 203. Although the specific proposed project will not be visible from U.S. 395, it is within the immediate foreground and foreground view distances of State Highway 203. (It will be noted in the following site-specific visual analysis that although the proposed project is within immediate foreground and foreground distances, the majority of it cannot be seen from State Highway 203 due to elevation differences and existing tree cover.)

In Chapter 4 of the INFLRMP, the management direction for visual resources within this area is described as meeting or exceeding "the Partial Retention [VQO] for runs, lifts, and base areas as seen at middleground distances from Sensitivity Level 1 routes and occupancy sites."

It appears that the Management Direction of maintaining the Partial Retention VQO would therefore apply to the proposed project.

METHODOLOGY

In order to accurately assess the potential visual impacts of the proposed project, two methodologies were employed: a regional approach and a site-specific approach.

Scenery Management System

The Scenery Management System (SMS) is a regional approach to understanding and classifying the visual context of an area as established by the United States Department of Agriculture, Forest Service Division (*Agricultural Handbook No. 701,* December 1995). The SMS creates an inventory and analysis of aesthetic values while attempting to determine the relative value and importance of scenery in a national forest.

The SMS establishes a series of components to analyze in a rational sequential format in order to arrive at a set of visual goals and objectives for Forest Service lands. The initial component is the Ecological Unit Description, which describes the basic physical and biological elements of the study area. The Landscape Character Description is developed by characterizing the existing landscape and describing its unique, natural elements. Once this general description is established, Scenic Attractiveness Classes are developed: Class A (Distinctive), Class B (Typical), and Class C (Indistinctive). Scenic Attractiveness Classes attempt to further describe the existing landscape in terms of line, color, form, texture, and the combined context. Scenic Integrity is also described, mapped, and categorized in qualitative rankings ranging from Very High to Unacceptably Low.

Landscape Visibility rates the viewing constituency in terms of vantage points and distance to the area in question. This is further developed into a Constituent Analysis, which connects the relative importance of the viewed landscape to the public, resulting in Concern Levels ranging from High to Low. Seen Areas and Distance Zones are mapped to indicate the distance of the public viewers from the viewed landscape, with general categories of Foreground, Middleground, and Background.

Figure 3 depicts the interactive relationship of these components. Further, the SMS applies to all Forest Service property when developing an inventory, database, and management objectives, as well as in considering potential changes to the landscape.

Pursuant to the aforementioned publication, the SMS should identify the following:

- Landscape Character
- Visual Sensitivity
- Scenic Integrity

Overall, the SMS communicates the importance of the natural landscape of the national forest in both its intrinsic state and as viewed by constituents. Being a "system," several sequential phases of analysis characterize the SMS process. First, the Landscape Character is defined by identifying the Existing Land Uses within the Ecological Unit. Then Scenic Attractiveness values, Distinctive, Typical, and Indistinctive, are established for subunits within the study area. The SMS then sets forth the Scenic Integrity (e.g., degree of intactness vs. disruption and/or alteration) for these areas. Landscape Visibility is based upon public vantage points in terms of the uniqueness of and distance from the viewed area. Scenic Attractiveness and Landscape Visibility are combined to determine a numerically ranked Scenic Class. These Scenic Classes are ranked in an order identifying relative scenic importance, or value, of discrete landscape areas.

Site-Specific

Although the SMS is employed as a planning and assessment tool, it is intended for application on a regional, subregional, and community scale. It can be used at a project-level scale; however, in order to assess the potential visual impacts of the proposed project, a more detailed, direct sight line analysis is warranted due to its remoteness, size, and relatively limited potential area of impact and visibility.

This site-specific approach identifies key public and private vantage points and pre- and postproject views from these vantage points.

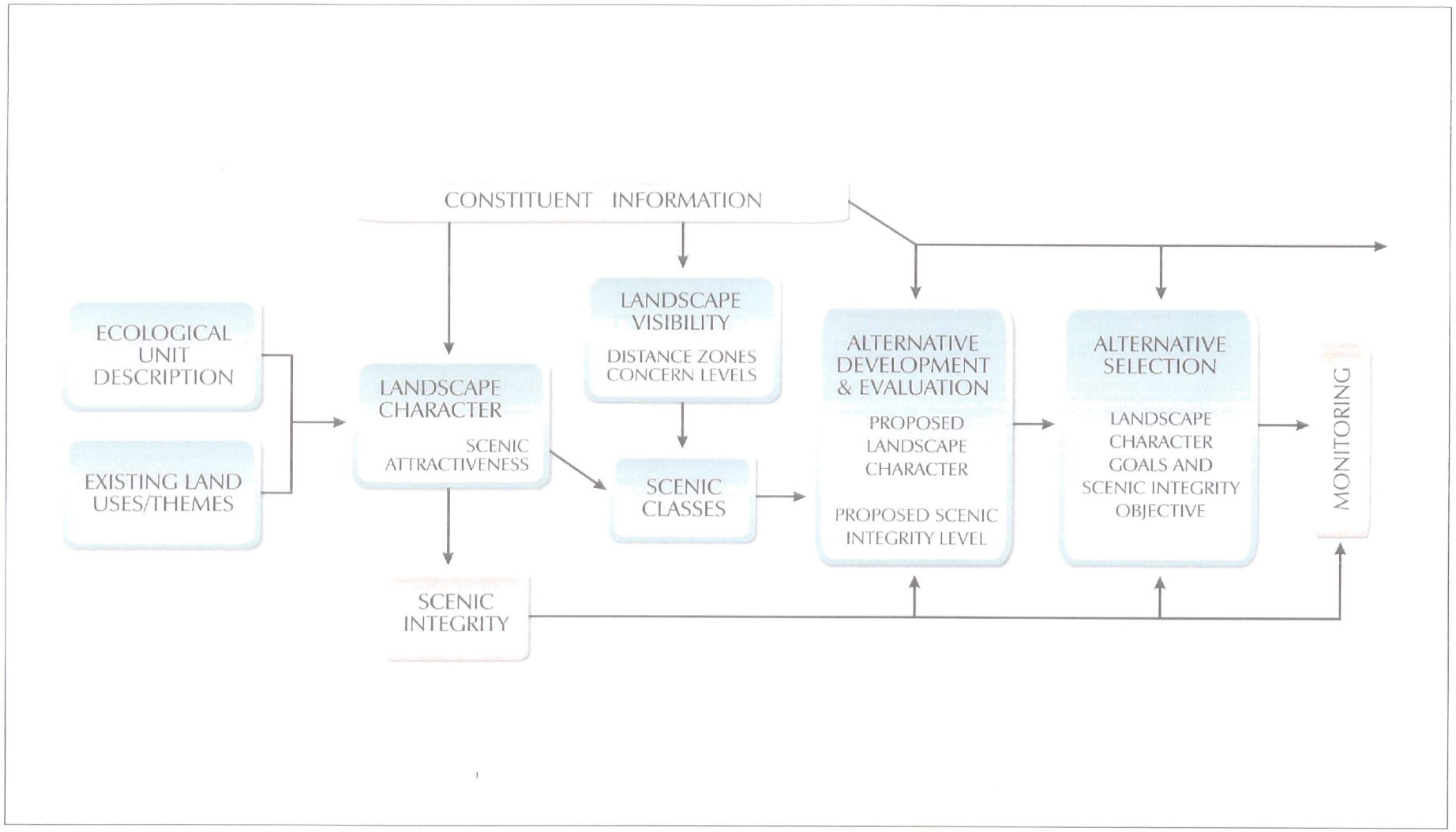

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FIGURE 3

Mammoth Mountain Ski Back Trail

SMS Process Flow Chart

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SCENERY MANAGEMENT SYSTEM

Background

At this time, no known scenic value inventory has been completed, pursuant to *Agricultural Handbook No. 701,* for the Mammoth region. The INFLRMP was developed in 1988, prior to the publication of *Agricultural Handbook No. 701.* The INFLRMP generally identified the region as Alpine Ski Area, Existing and Under Study (#13), which provided very broad management direction statements, including those for visual resources. Therefore, this analysis is being created for the sole purpose of identifying potential visual impacts associated with the Ski Back Trail. All future use of this analysis should carefully consider and cautiously proceed with this understanding.

Landscape Character

Ecological Units

The proposed project site lies within the Sierran Steppe-Mixed Forest-Coniferous Forest-Alpine Meadow Ecological Province, or Unit. This province covers an area of approximately 68,300 square miles and envelopes most of the Sierra Nevada range in California, extending northward into southern Oregon. Its landform description includes steeply sloping to precipitous mountains crossed by many valleys with steep gradients. The long west slope of the Sierra Nevada rises gradually from 2,000 ft (600 meters [m]) to more than 14,000 ft (4,300 m); the east slope drops abruptly to the floor of the Great Basin, about 4,000 ft (1,200 m). Much of this region has been glaciated. Figure 4 depicts the proposed project's location within this Ecological Province.

Climatic description of this Ecological Province includes temperature averages ranging from 35 to 52 degrees Fahrenheit (2 to 11 degrees Celsius), falling with rising elevation. The base of the west slope receives only about 10–15 inches (in) (250–380 millimeters [mm]) of rainfall per year and has a long, unbroken, dry summer season. At higher elevations, the dry summer season shortens, and precipitation rises to as much as 70 in (1,790 mm), with a larger portion falling as snow. Prevailing west winds influence climatic conditions for the whole region. East slopes are much drier than west slopes. Winter precipitation makes up 80–85 percent of the total; at high elevations, it is mostly snow. The greatest total precipitation reported is on slopes between 3,000 and 7,000 ft (900 and 2,100 m), which support the luxuriant mixed conifer forests of the montane zone. The subalpine zone coincides with the altitude of greatest snowfall, where precipitation is 40–50 in (1,020–1,280 mm) per year.

The combination of the land surface form, elevation differences, and climatic environment results in vegetation zones that are well defined. The lower slopes and foothills, from about 1,500 to 4,000 ft (460 to 1,200 m), are covered with coniferous and shrub associations. On higher slopes, digger pine and blue oak dominate, forming typical open or woodland stands. Most of the low hills are covered by close-growing evergreen

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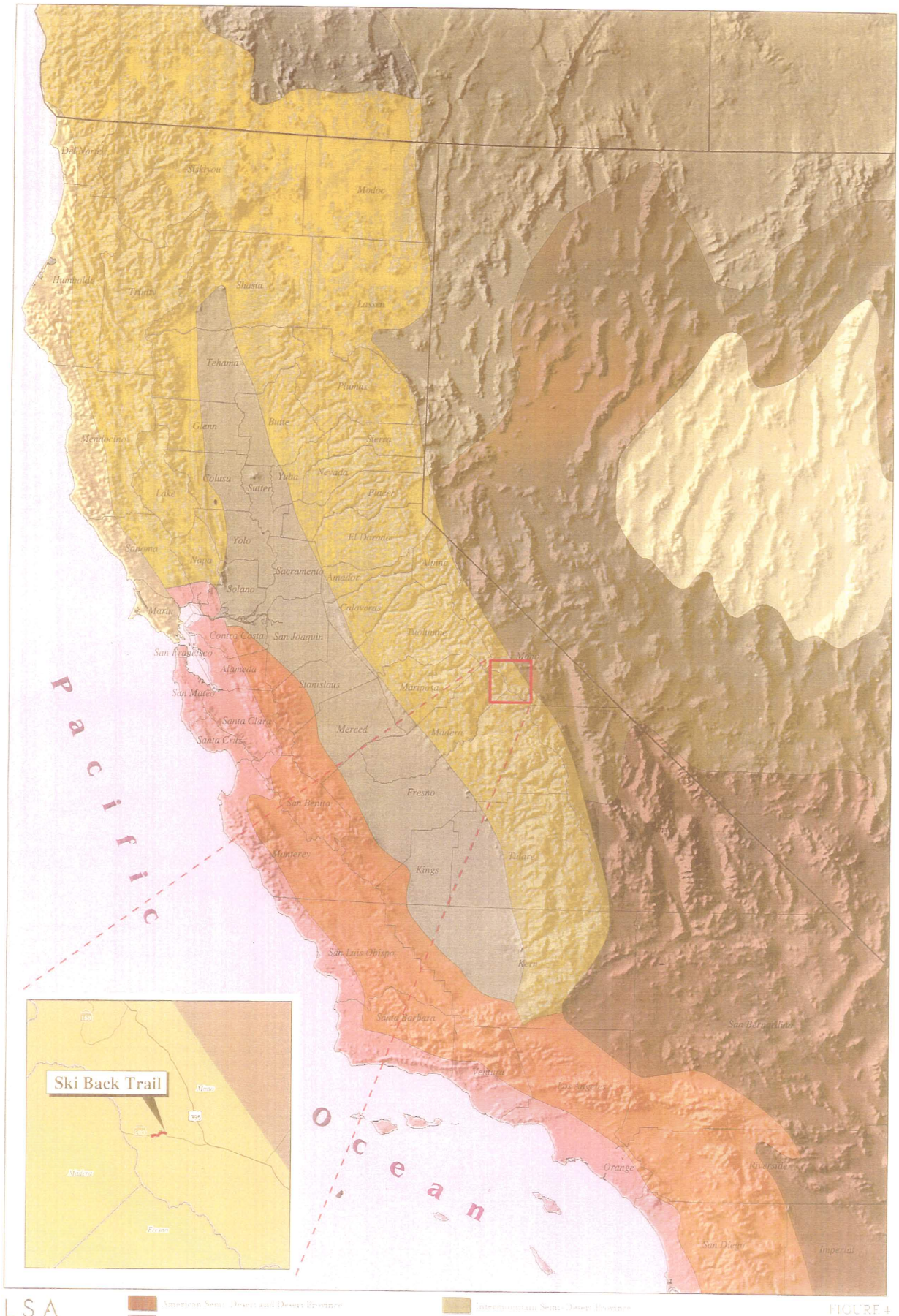

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American Semi-Desert and Desert Province

California Coastal Chaparral Forest and Shrub Province

California Coastal Range Open Woodland-Shrubs-Coniferous Forest-Meadow Province

California Coastal Steppe-Mixed Forest-Redwood Forest Province

California Dry Steppe Province

Cascade Mixed Forest-Coniferous Forest-Alpine Meadow Province

Intermountain Semi-Desert Province

Intermountain Semi-Desert and Desert Province

Nevada-Utah Mountains-Semi-Desert-Coniferous Forest-Alpine Meadow Province

Sierran Steppe-Mixed Forest-Coniferous Forest-Alpine Meadow Province

FIGURE 4

Mammoth Mountain Ski Back Trail

Eco-Provinces of California

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scrub, or chaparral, in which buckbrush and manzanita predominate. Several oaks are common associates.

The montane zone lies between approximately 2,000 and 6,000 ft (600 and 1,800 m) in the Cascades, 4,000 and 7,000 ft (1,200 and 2,100 m) in the Central Sierras, and 5,000 and 8,000 ft (1,500 and 2,400 m) or more in the south. The most important trees are ponderosa pine, Jeffrey pine, Douglas-fir, sugar pine, white fir, red fir, and incense cedar; however, several other conifers are also present. The giant Sequoia is one of the most spectacular species, but grows only in a few groves on the western slope. Dense chaparral communities of manzanita, buckbrush, and buckthorn may appear after fire, sometimes persisting for years. Within the Sierran rain shadow, on the dry eastern slopes, Jeffrey pine replaces ponderosa pine. At lower elevations, pine forests are replaced by sagebrush-pinyon forest, part of the Intermountain Desert Province.

The subalpine zone begins from 6,500 to 9,500 ft (1,980 to 2,900 m), depending on latitude and exposure, and extends upslope about 1,000 ft (300 m). Mountain hemlock, California red fir, lodgepole pine, western white pine, and whitebark pine are important. Conditions are severe, and timberline varies from about 7,000 ft (2,100 m) in the north to 10,000 ft (3,000 m) in the south. Lodgepole pine is said to have climax characteristics near the upper limits of this zone.

The alpine zone covers the treeless areas above timberline.

Eastern Sierra Climatic Characteristics

The Sierra ridgeline creates a distinct rain shadow, resulting in a progressively dry climate to the east. Within two horizontal miles, the climate will range from a moist mountain ecosystem to a semiarid desert. An example is Mono Lake lying at the foot of the Eastern Sierras. At its westerly shoreline, the average annual rainfall is approximately 12 inches, while the east side of the lake experiences approximately 6 inches of annual precipitation.[3]

Russell classifies this area as Boreal/Microthermal (cold) Climates characterized by severe winters and heavy snowfalls. The average temperature of the coldest month will be approximately 3 degrees Celcius (°C) (26 degrees Fahrenheit [°F]), and the average temperature of the warmest month will be 10°C (50°F). These climates occur at and above 6,500 feet in elevation above sea level.[4]

The Lower Boreal (6,000 feet to 9,000 feet) will have dry summers with cold, snowy winters. Average temperature of the four warmest months will be above 10°C (50°F). The Upper Boreal (9,000 feet to 12,000 feet) will have cool, dry summers and very cold, snowy winters. Average temperature of the warmest months will be less than 10°C (50°F).

Great Basin sagebrush steppe and bitterbrush vegetation exist at the base of the Eastern Sierra escarpment. These arid shrublands have much less species diversity than western

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[3] June 1996. Status of the Sierra Nevada, Wildland Resources Center Report No. 39, Centers for Water and Wildland Resources, University of California, Davis, Chapter One, Page 8.

[4] R. J. Russell, 1926 (reprinted 1938). Climates of California, University of California Press, 1926.

slope chaparrals. Depending on the latitude, the conifer zone initiates at elevations ranging from 3,000 to 5,000 feet above sea level. Pinon pine and juniper are at the lower elevations with Jeffrey and ponderosa pines emerging just above in moderate to higher elevations. As the elevation increases, white and red fir begin to appear. Above these zones, alpine vegetation adapted to cold, dry conditions of the highest elevations remain characterized by low shrubs and cushion plant communities that grow between rock crevices and survive wind and ice.[5]

Existing Land Use Patterns/Themes

Figure 5 illustrates the proposed project within the subregional area of the Town. Approximately 25 square miles are represented within this area. Using a United States Geological Survey (USGS) base and Digital Ortho Quad aerial photography provided by the USGS, existing land use patterns are described. The area is characterized by a centrally located developed area, with a mix of residential, commercial, and recreational uses/buildings and supporting infrastructure surrounded by rising topography; the surface area is covered with mixed stands of conifers and cleared areas accommodating recreational uses. As such, the evidence of alteration from the natural landscape can be seen from most public vantage points within this subregion.

Specifically, the proposed project is placed within a relatively narrow strip of USFS area between State Highway 203 to the north and a series of privately owned multistory residential units to the south. The proposed Ski Back Trail roughly parallels State Highway 203; however, it will be on a lower elevation than the road surface within an area of moderate slopes, and a mix of timber cover of conifers, with a range of heights and maturity that generally obscure views of development south of State Highway 203.

Three general land use patterns and themes exist for the Mammoth area. There is a central core (Urbanized/Developed) of the Town of Mammoth Lakes characterized by development and infrastructure. The ski area (Alpine Recreational) is located directly to the west on the higher elevations and is defined by open areas that accommodate ski runs interspersed with tree cover. Facilities in this area directly support the recreational skiing and include lifts, gondolas, huts, and maintenance buildings. The southwestern portion of this area has a mixture of open space, roadways, camping areas, and other recreational facilities and is termed as Mixed Open Space/Recreation. To the north and south of the Town are areas with a small amount of facilities and infrastructure characterized by steeper terrain and varied topography, termed as Open Space. Figure 6 depicts the existing land use patterns and themes.

Existing Landscape Character

In general, the Mammoth area is a combination of a developed, resort community in the valley floor flanked on the north, west, and south by moderately to steeply rising slopes accommodating conifer stands, residential units, and ski runs and associated facilities. Volcanic domes are apparent, particularly to the west and north, providing an undulating

[5] Status of the Sierra Nevada, Page 12.

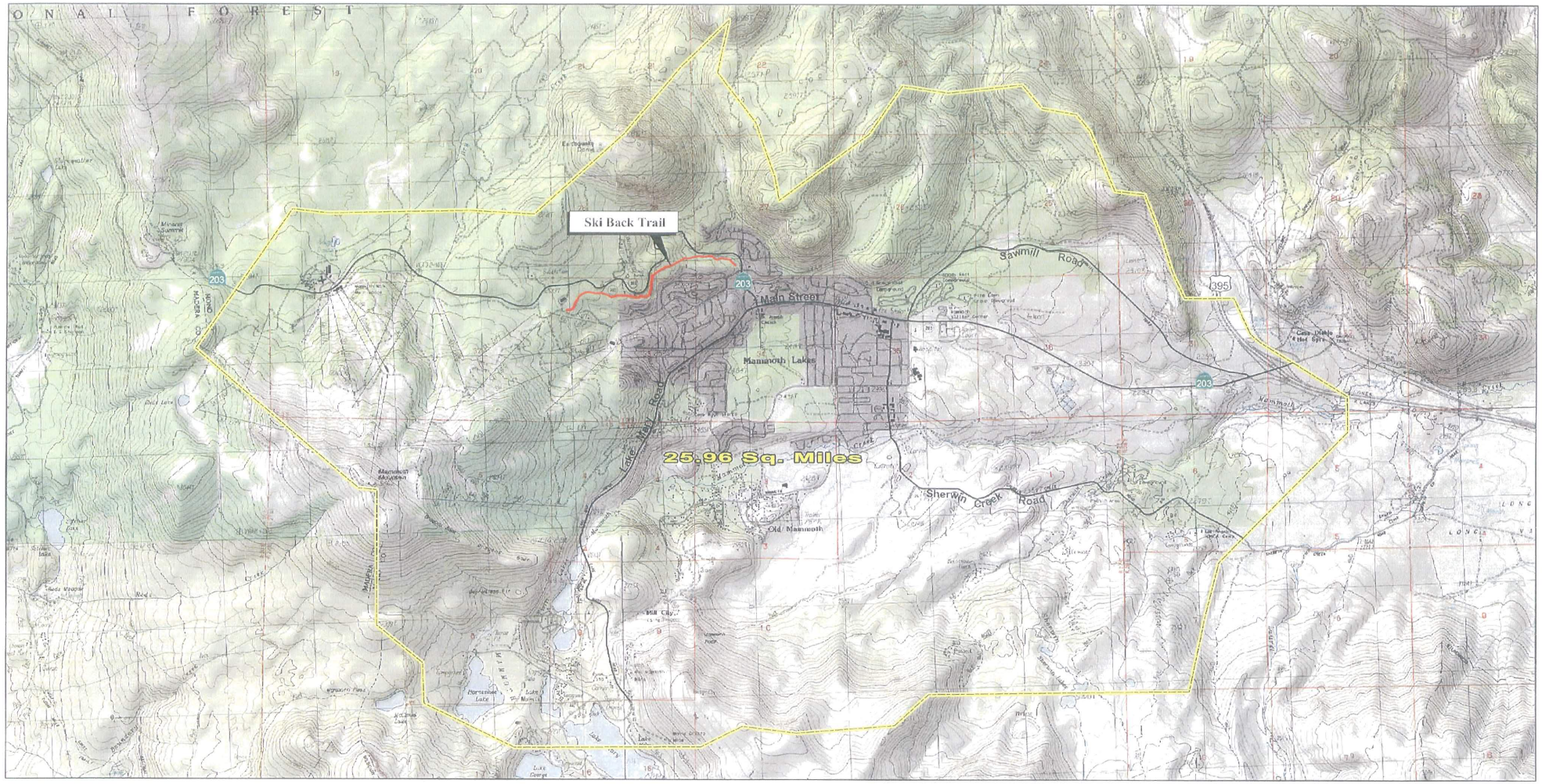

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FIGURE 5

0 1,750 3,500
Feet

Mammoth Mountain Ski Back Trail
Mammoth Subregion

SOURCE: USGS 7.5' QUAD - Mammoth Mtn., Old Mammoth, Crystal Crag, Bloody Mtn., Revision 1994
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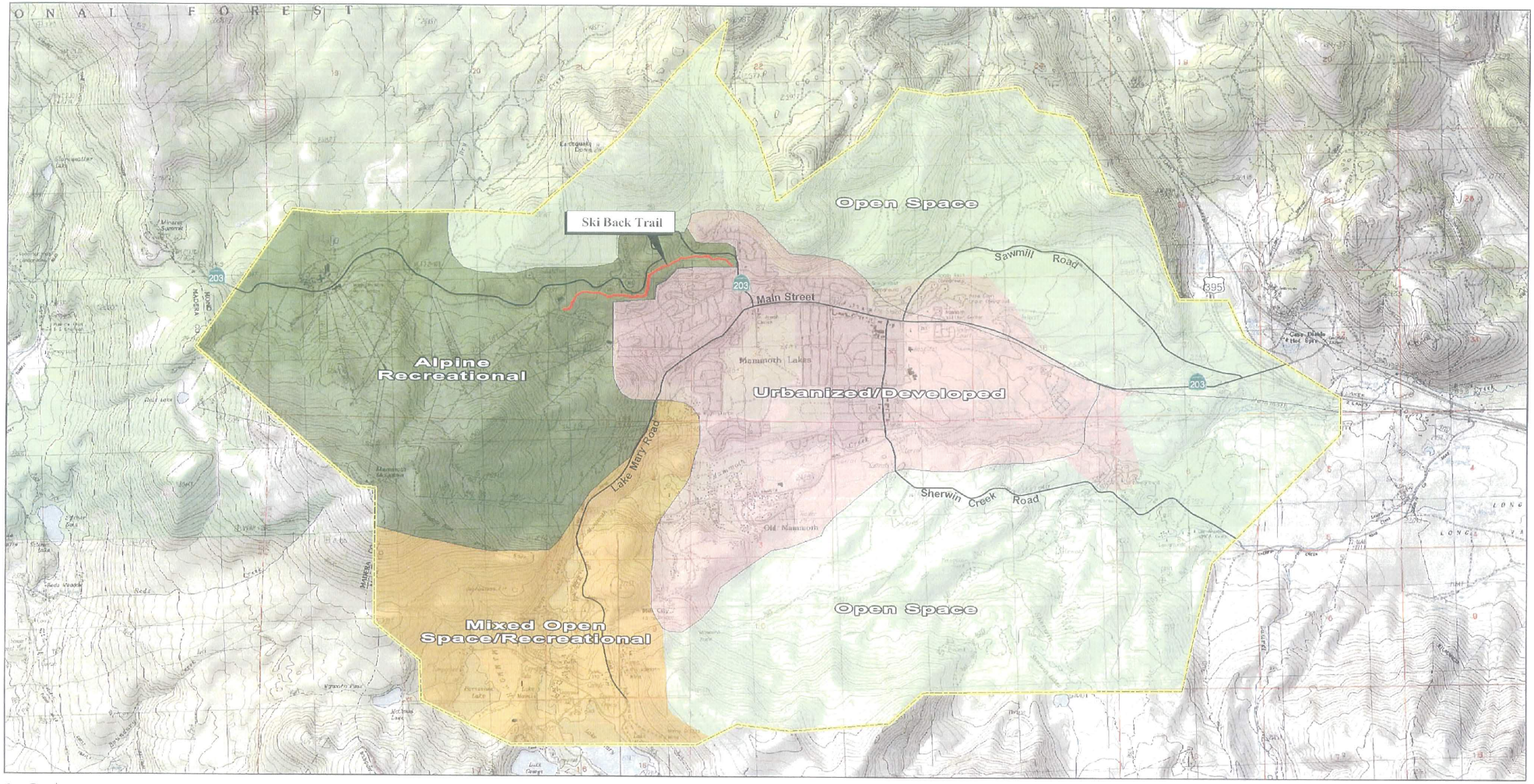

LSA

0 1,750 3,500
Feet

SOURCE: USGS 7.5' QUAD - Mammoth Mtn., Old Mammoth, Crystal Crag, Bloody Mtn., Revision 1994
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FIGURE 6

Mammoth Mountain Ski Back Trail
Existing Land Use Patterns/Themes

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skyline. Most foreground views are dominated by urbanization, with the middle ground view providing a mixture of structures and trees on moderate to steeply rising slopes. Distance views from the valley floor provide a view of the topographic shape resulting from combined volcanic and tectonic forces.

The vegetation cover type for the ski back trail is in the red fir series *(Abies magnifica* var. *magnifica).* The dominant cover in sunny, open areas consists of greenleaf manzanita *(Arctostaphylos patula),* pinemat manzanita *(Arctostaphylos nevadensis),* tobacco brush *(Ceanothus velutinus),* big sagebrush *(Artemisia tridentata),* and antelope bitterbrush *(Purshia tridentata).* The dominant cover on shaded slopes consists of less common shrubs; understory is comprised mainly of herbaceous perennials and grasses, including nude buckwheat *(Eriogonim nudum)* and bottlebrush squirreltail *(Sitanion hystrix).* Jeffrey pines *(Pinus jeffreyi)* are among the timber that reach heights of nearly 100 feet. The combined landscape palette ranges from relatively dense to moderate, not allowing views of the development south of State Highway 203 but allowing periodic penetrating views into the ski back trail area.

Scenic Attractiveness

Scenic Attractiveness is described in the Scenery Management System as a "primary indicator of the intrinsic scenic beauty of a landscape and of the positive responses it evokes in people."[6] Scenic Attractiveness usually involves the combined visual effect of the natural landscape and its stability. Three classes normally encompass the category of Scenic Attractiveness: Distinctive (Class A), Typical (Class B), and Indistinctive (Class C). The USDA publication, *Landscape Aesthetics, A Handbook for Scenery Management,* provides the following definitions for Scenic Attractiveness classes:

- Class A: Distinctive

  Areas where landform, vegetation patterns, water characteristics, and cultural features use combine to provide ordinary or common scenic quality. These landscapes have strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

- Class B: Typical

  Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality. These landscapes have generally positive, yet common, attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance. Normally, they would form the basic matrix within the ecological unit.

- Class C: Indistinctive

  Areas where landform, vegetation patterns, water characteristics, and cultural land use have low scenic quality. Often water and rockform of any consequence are missing in Class C landscapes. These landscapes have weak or missing attributes of

[6] *Landscape Aesthetics, A Handbook for Scenery Management,* USDA/Forest Service, Agricultural Handbook No. 701, 1995, p. 1–14.

variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

Figure 7 provides a illustration of these classes for this subregion.

Class A

In the general Mammoth subregion, distinctive landscapes are exemplified by the landforms resulting from the combined tectonic and volcanic forces, most notably the upper slopes and skyline. Specifically, this area appears to be unaltered and retains much of the natural landscape.

Class B

The green timber and other Eastern Sierra vegetation provide an aesthetically pleasing contrast to the abrupt topography, sheer rock faces, and blue sky. Again, it is apparent that the tree stands have been isolated by urban development on the lower slopes, recreational development (e.g., ski runs) on the upper slopes, and the network of roadways connecting these areas. The design, form, color, and massing of the ski-related structures and facilities attempt to acknowledge and complement the surrounding natural landscape. The residential development, while being influenced by and reflective of the surrounding alpine context, tends to be more intense and warrants a greater degree of infrastructure than the recreational facilities. Generally, a positive scenic quality has been maintained.

Class C

The majority of the valley floor and lower slopes is occupied by urban development that is distinct from the areas dedicated to public ski areas. The Town core is an intense development of residential, commercial, and institutional uses with supporting infrastructure. This development has changed the natural landscape character of much of the valley floor, resulting in a relatively low scenic value.

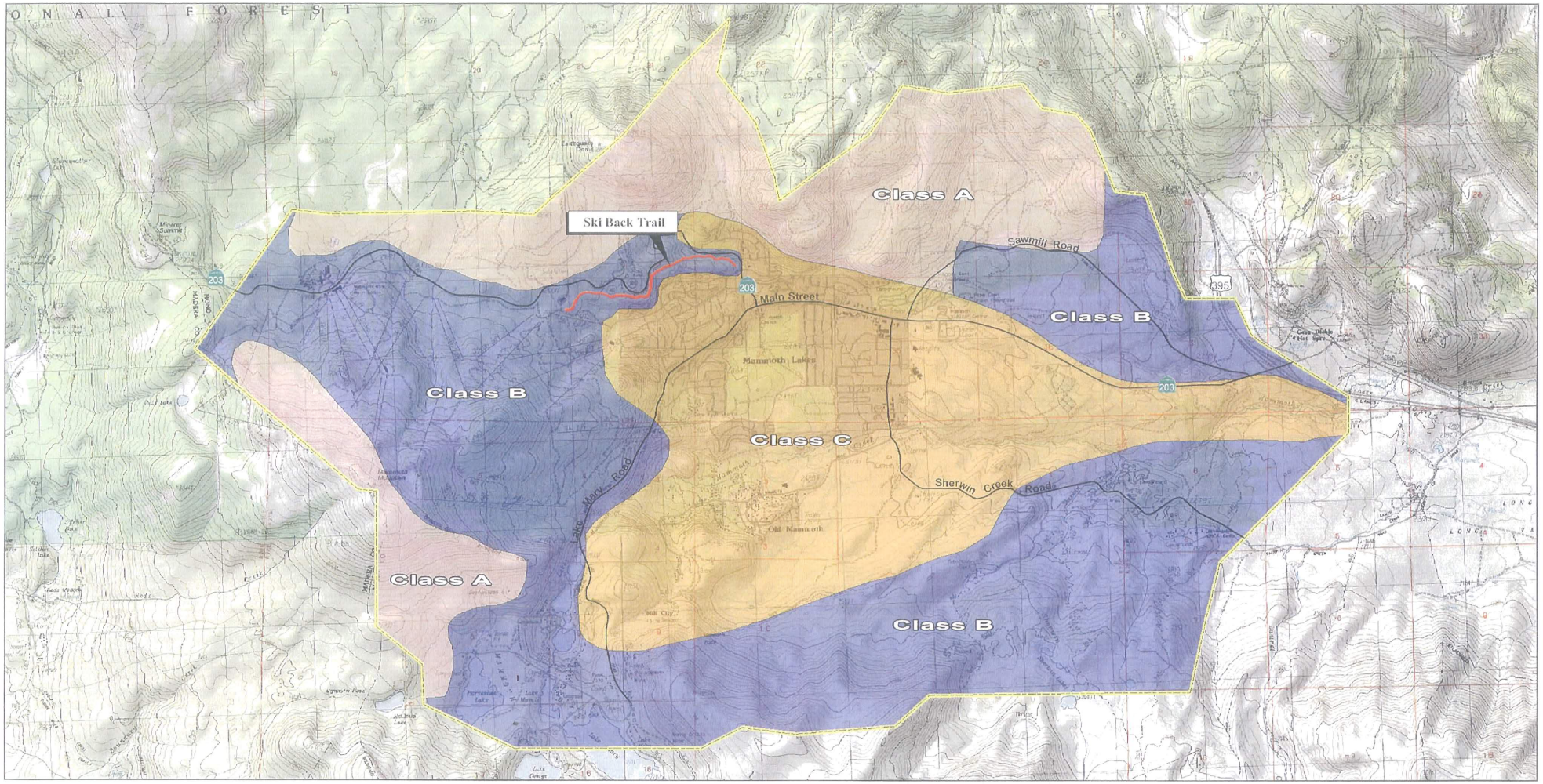
Scenic Integrity

Scenic Integrity speaks to an area's "completeness" or preservation within its natural state. In this project's case, Scenic Integrity will describe the existing condition as opposed to establishing a standard for management or preferred future condition. Alterations and changes in the natural landscape reduce the Scenic Integrity of an area.

The *USFS Agricultural Handbook 701* provides the following frame of reference for the various scales of Scenic Integrity.

Very High: These areas are unique and classic examples of outstanding natural landscape that has been completely unaltered over a large area. It have been preserved in its natural form.

High: These areas may have been altered in the past; however, they appear to have maintained their natural state and have retained their natural integrity.



LSA

FIGURE 7

Legend

Class A - Distinctive

Class B - Typical

Class C - Indistinctive

0 1,750 3,500
Feet

SOURCE: USGS 7.5' QUAD - Mammoth Mtn., Old Mammoth, Crystal Crag, Bloody Mtn., Revision 1994
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Mammoth Mountain Ski Back Trail

Scenic Attractiveness

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Moderate: These areas have been slightly, yet noticeably, altered and changed from their natural state. They are classified as having been partially retained.

Low: These areas have been altered and changed in a noticeable manner. These areas have been modified with potential remnants of the past natural landscape.

Very Low: These areas have been completely altered and changed and have experienced maximum modification.

Unacceptably Low: These areas' natural state cannot be recognized as it has been extremely altered.

The following table provides further assistance in understanding Scenic Integrity of a given area.

Scenic Integrity Summary

Criteria for Scenic Integrity of the Landscape Character Image/Sense of Place	Very High (VH)	High (H)	Moderate (M)	Low (L)	Very Low (VL)	Unacceptably Low (UL)
Dominance Landscape Character vs. Deviation	Landscape Character	Landscape Character	Landscape Character	Deviation	Deviation	Deviation
Degree of Deviation From the Landscape Character	None	Not Evident	Evident but not dominant	Dominant	Very Dominant	Extremely Dominant
Intactness of the Landscape Character	Landscape Character Fully Expressed	Landscape Character Largely Expressed	Slightly Altered and Character Expression Moderate	Altered and Low Expression of Character	Heavily Altered and Very Low Expression of Character	Extremely Altered

Upon reviewing the definitions in *Agricultural Handbook No. 701* for Scenic Integrity Classes, it appears that four classes are applicable to the study area within the relative aesthetics context. Further clarification of these classes follows.

High: The far upper reaches of the area retain the natural landscape character with no evidence from public vantage points of much, if any, deviation from this landscape character. The ridgeline form, rocky outcrops, and Eastern Sierra landscape appear to be intact.

Moderate: This class includes the mid slopes of the recreational ski area as well as the relatively unaltered topography to the west, south, and east of the Town. This area maintains a natural landscape dominance with a very minor degree (if noticeable at all) of deviation from this landscape character. This area has been slightly altered by recreational facilities on public land; however, these facilities have been designed to reflect the surrounding natural context with scale, massing, and materials. The natural landscape has generally remained intact.

Low: This class is assigned to the area immediately south of the Town and represents a combination of clustered residential development with open space recreational uses (e.g., golf courses). This development generally depicts a degree of deviation from the natural

landscape character. The landscape character has definitely been changed from its natural state.

Very Low: In relative terms, the Town core represents a Very Low Scenic Integrity class due to the intensity and dominance of the built environmental and accompanying infrastructure. The degree of deviation from the natural landscape context can be defined as dominant, with a small portion of the natural landscape remaining intact.

Due to its proximity to State Highway 203 and the residential areas, and due to the presence of overhead power lines, the proposed project area was assigned a level of "Moderate." Figure 8 illustrates the various Scenic Integrity classes assigned to the study area.

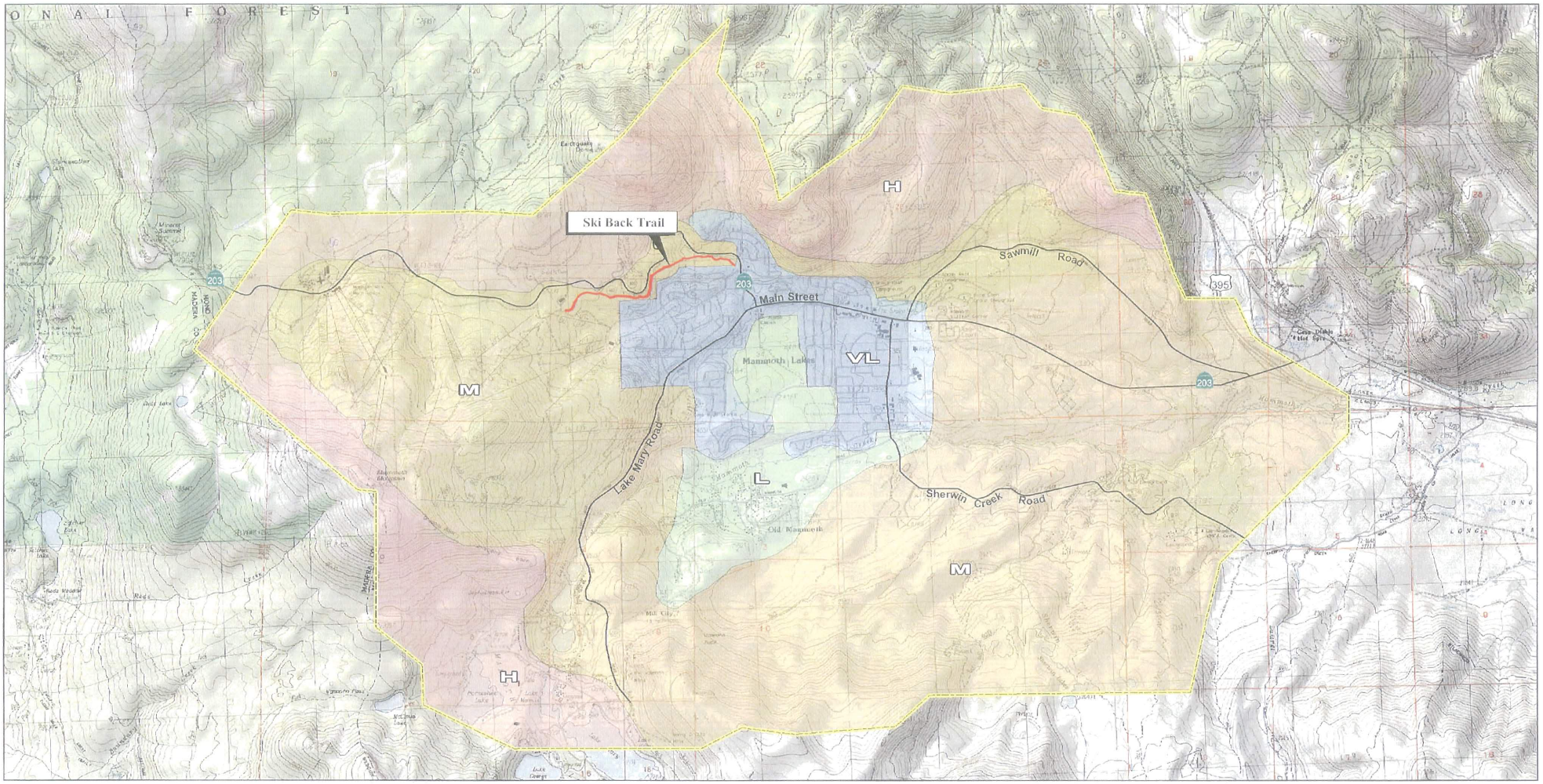
LANDSCAPE VISIBILITY

Landscape visibility is generally defined as the ability to view national forests from public spaces such as roadways and use areas. Landscape visibility is a function of several considerations: (1) context of viewers; (2) duration of views; (3) degree of discernable detail; (4) seasonal variation; and (5) number of viewers. *Agricultural Handbook No. 701* provides several general ranges of landscape visibility: Immediate Foreground visibility is typically defined as 0–300 ft from the vantage point; Foreground visibility range is 300–2,500 ft; Middleground visibility is from 2,500 ft to 4 miles; and Background views include 4 miles and beyond. Figures 9 and 10 illustrate these categories.

According to *Agricultural Handbook No. 701,* Immediate Foreground can be qualitatively defined as a distance where viewers can distinguish vegetation details such as leaves, grasses, and flowers along with small animals. Foreground is described as the distance where viewers can distinguish large tree branches, shrubs, moderately sized animals, and movement of plant material due to wind. Middleground is normally the distance zone where national forest landscapes can be viewed on a regional level. At this distance, viewers can determine vegetation forms, unique topographic formations and flower fields. Background usually includes mountain ranges, large expanses of wooded hillsides, and open spaces.

Figure 10 depicts three landscape visibility ranges, primarily due to limited visual range within the study area. Visibility ranges were determined from the major roadways, which provide the greatest range and variation of views. In addition, the proposed project will be seasonably visible from existing off-road bike trails (e.g., Uptown/Downtown bike trails) that are in the same area. These bike trails could be classified as secondary travelways experiencing seasonal moderate use.

Existing travelways and use areas are used by the SMS to prioritize the observer positions; which is then combined with the distance component of the SMS. Travelways, as defined by *Agricultural Handbook No. 701* are "linear concentrations of public-viewing, including freeways, highways, roads, railroads, trails, commercial flight paths,



LSA

FIGURE 8

Legend

H - High | M - Moderate | L - Low | VL - Very Low

0 1,750 3,500
Feet

SOURCE: USGS 7.5' QUAD - Mammoth Mtn., Old Mammoth, Crystal Crag, Bloody Mtn., Revision 1994
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Mammoth Mountain Ski Back Trail
Scenic Integrity

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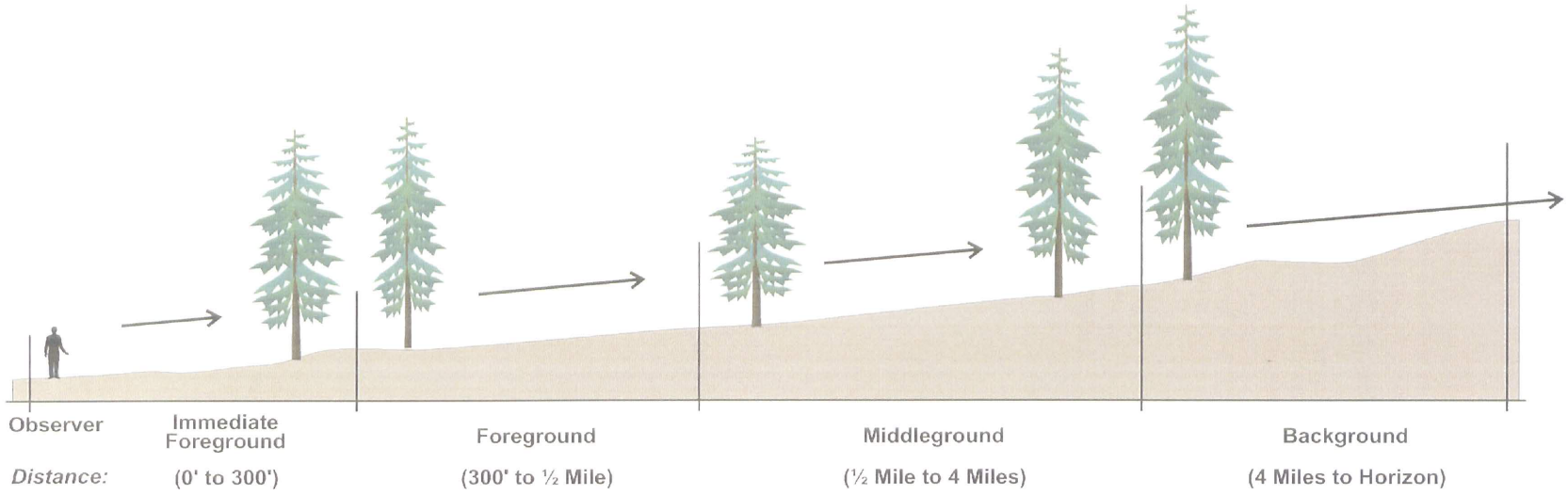

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FIGURE 9

Mammoth Mountain Ski Back Trail

Landscape Visibility (Typical Cross Section)

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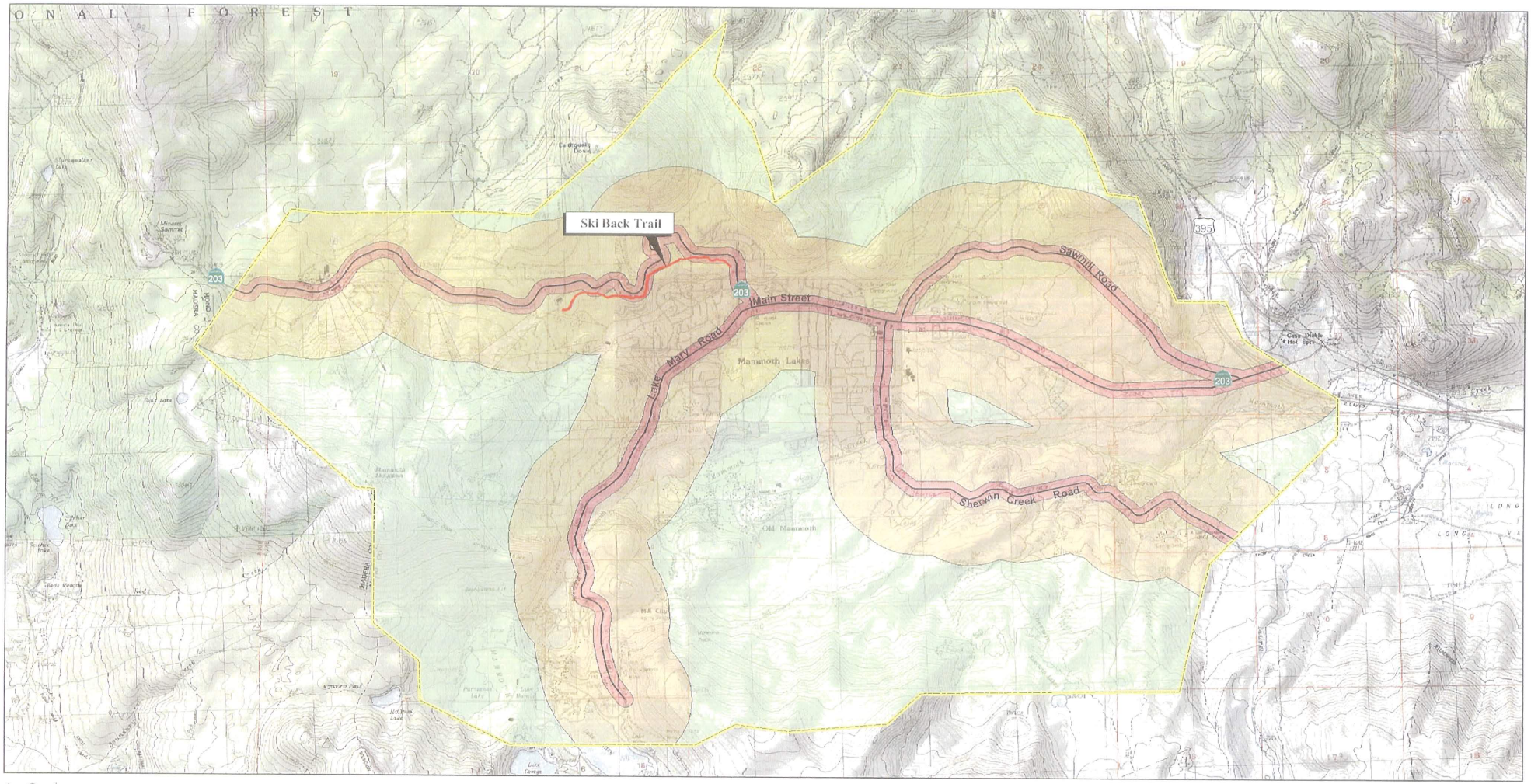

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FIGURE 10

Legend

Immediate Foreground (0 ft. to 300 ft.)

Foreground (300 ft. to 2,500 ft.)

Middle Ground (2,500 ft. or Greater)

0 1,750 3,500
Feet

Mammoth Mountain Ski Back Trail
Landscape Visibility

SOURCE: USGS 7.5' QUAD - Mammoth Mtn., Old Mammoth, Crystal Crag, Bloody Mtn., Revision 1994
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rivers, canals, and other waterways."[7] These travelways are then separated into categories ranging from Primary Travelways with High Use to Secondary Travelways with Low Use. State Highway 203, near the proposed project area, should be classified as a Secondary Travelway with Moderate Use. This roadway extends from the Town, connecting the main urban center with a few residential areas and resort facilities. The primary function of this roadway segment is to facilitate traffic between the urban core and the resort facilities (and residential areas) within a relatively short distance. There are no turnouts or scenic viewpoints along this portion of State Highway 203.

Use areas are defined as "spots that receive concentrated public-viewing use."[8] Samples include visitor centers, vista points, ski areas, and recreational sites. The proposed project area is not readily visible from any such areas to any significant degree from such areas. The degree of public importance assessed to landscapes as viewed from travelways and use areas are measured in terms of Concern Levels. *Agricultural Handbook No. 701* provides the following matrix to assist with determining applicable Concern Levels.

Hierarchy of Concern Levels

	Interest in Scenery		
	High	Moderate	Low
Primary Travelway/Use Area High Use	1	2	2
Primary Travelway/Use Area Moderate Use	1	2	2
Primary Travelway/Use Area Low Use	1	2	3
Secondary Travelway/Use Area High Use	1	2	2
Secondary Travelway/Use Area Moderate Use	1	2	3
Secondary Travelway/Use Area Low Use	1	2	3

The combination of the existing travelway and lack of appropriate use areas would result in a Concern Level of 2 (combination of Secondary Travelway/Use Area: Moderate Use with a Moderate Interest in Scenery.)

It should be noted, however, that Figure 10 depicts these visibility ranges on a two-dimensional scale and does not account for the varying topography and landscaping that may inhibit views from these locations. For example, the proposed Ski Back Trail is relatively close to State Highway 203; however, continual direct views of the proposed alignment are not possible due to differences in elevation. Figure 11 is a plan view of the proposed project area with a series of cross sections that illustrates the topography and actual visible areas from State Highway 203 to the south toward the proposed trail alignment. Figure 11 also depicts the previously mentioned bike trails. Figure 11 does not

[7] Ibid. p. 4–6.
[8] Ibid. p. 4–7.

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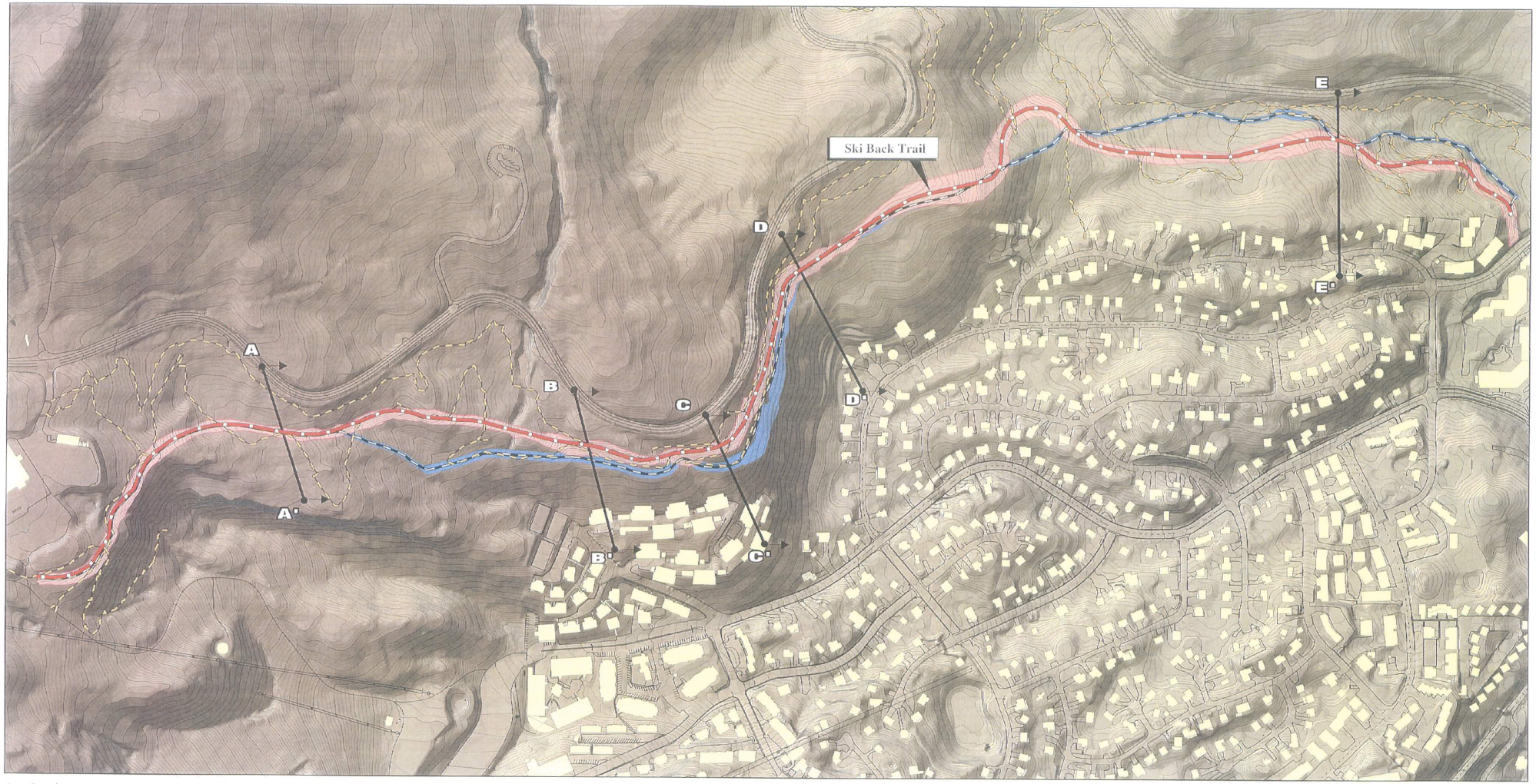

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FIGURE 11

N

0 200 400
Feet

Legend

Line of Sight - Cross Sections (A thru E)

Mountain Bike Trails

Skiback Trail (Proposed Project)

Skiback Trail (Original Project)

Skiback Trail Grading Area (Proposed Project)

Skiback Trail Grading Area (Original Project)

Mammoth Mountain Ski Back Trail

Plan View of Cross Sections

SOURCE: Triad holms, Inc. 6/28/04.
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take into account the presence of the existing timber stands, which further serve to impair potential views of the proposed alignment from State Highway 203. These cross sections were based upon points that would provide the most optional vantage points from Highway 203. Figures 12 through 16 are cross sections that illustrate the perspective from Highway 203. With the exception of Figure 15, the topography prevents direct views of the proposed trail alignment.

This limited portion of State Highway 203 essentially provides the only potential public views of the trail alignment.

Scenic Classes

Scenic classification is possible by combining the Scenic Attractiveness classification and Landscape Visibility (Distance Zones). As previously noted, Scenic Attractiveness measures the visual importance of the natural landscape and is divided into three general categories: (1) Distinctive, (2) Typical, and (3) Indistinctive. The proposed alignment is within an area tentatively identified as a Typical landscape for the Mammoth area. The higher degree (or relatively closer distance) of visibility from a public vantage point, the greater (or higher) the concern level. Combining these two qualitative facts results in a relatively high concern level.

As previously noted, the proposed trail alignment is not readily viewed from (although in close proximity to) State Highway 203 due to the grade difference and existing vegetation. Figure 17 provides a simple analysis of the applicable Scenic class by combining the following factors:

- Scenic Attractiveness: Class B, Typical
- Visibility Distance: Immediate Foreground/Foreground, FG1/FG2
- Concern Level: Secondary TW/UA Moderate Use, Moderate Scenery Interest, 2

Figure 17 depicts a compilation of Scenic Attractiveness (Figure 7) and Landscape Visibility (Figure 10) using GIS. Each of the categories within Scenic Attractiveness and Landscape Visibility were assigned a value, mapped as such, and then combined revealing a range of Scenic Classes. All values were assigned equal weight allowing for a simplified methodology. These values are expressed as follows:

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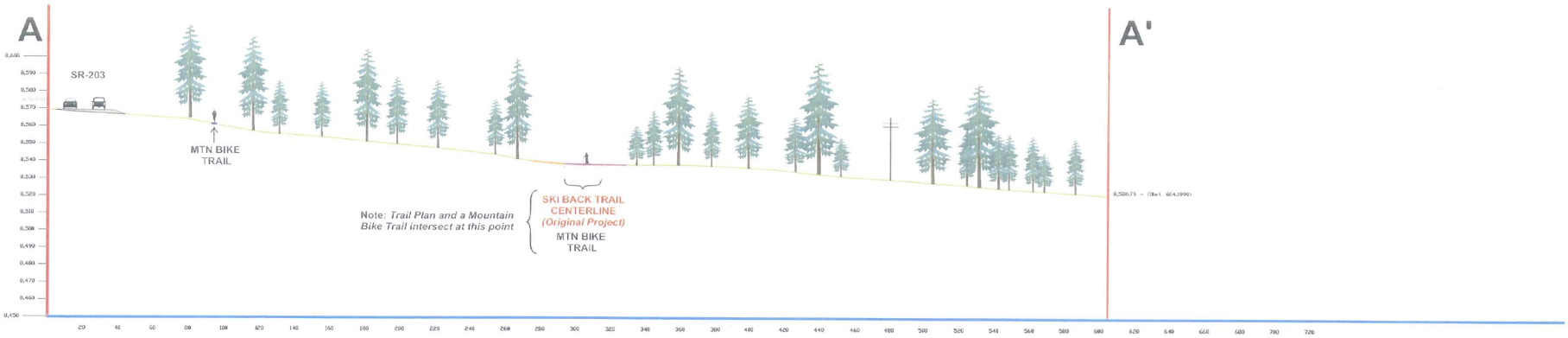

LSA

- Fill Slope
- Cut Slope
- Mountain Bike Trail

FIGURE 12

0 30 60
FEET

Mammoth Mountain Ski Back Trail

Vantage Point A - Line of Sight Cross-Section

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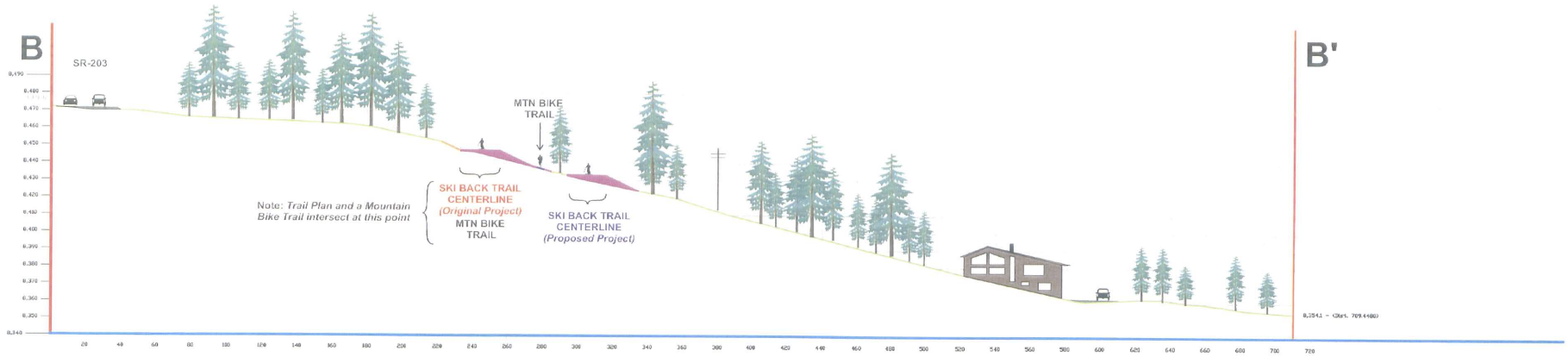

LSA

- Fill Slope
- Cut Slope
- Mountain Bike Trail

FIGURE 13

0 30 60
FEET

Mammoth Mountain Ski Back Trail

Vantage Point B - Line of Sight Cross-Section

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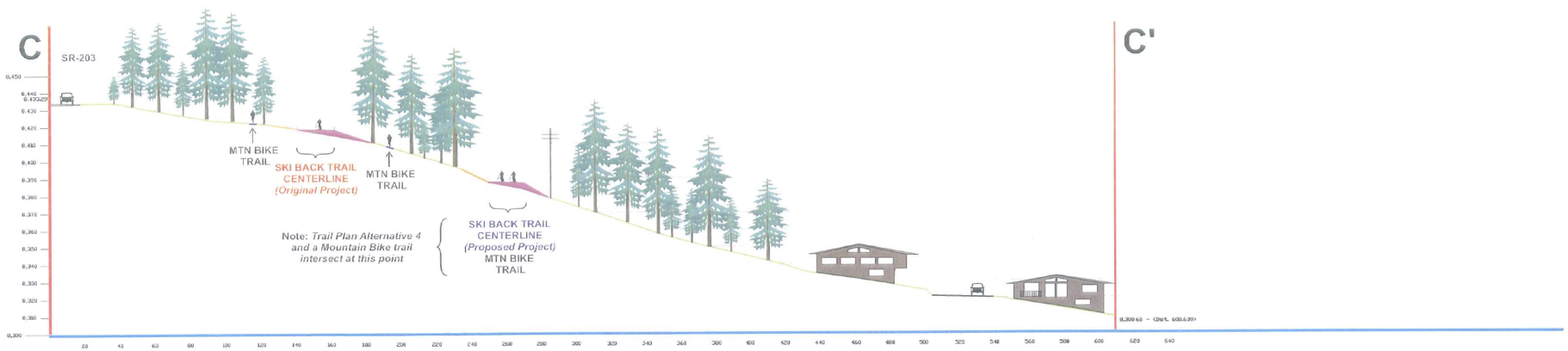

LSA

- Fill Slope
- Cut Slope
- Mountain Bike Trail

FIGURE 14

0 30 60
FEET

Mammoth Mountain Ski Back Trail

Vantage Point C - Line of Sight Cross-Section

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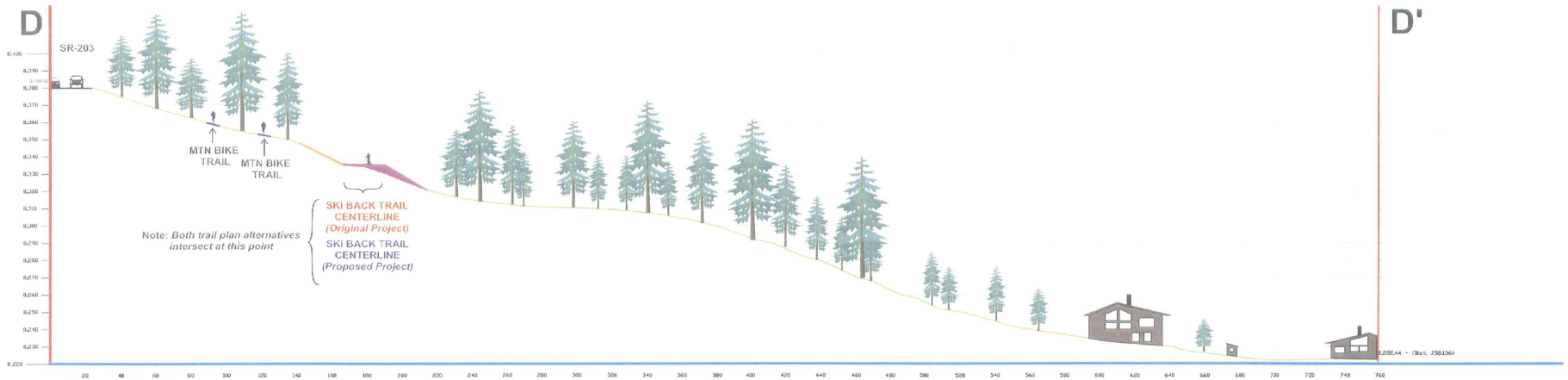

LSA

- Fill Slope
- Cut Slope
- Mountain Bike Trail

FIGURE 15

0 30 60
FEET

Mammoth Mountain Ski Back Trail

Vantage Point D - Line of Sight Cross-Section

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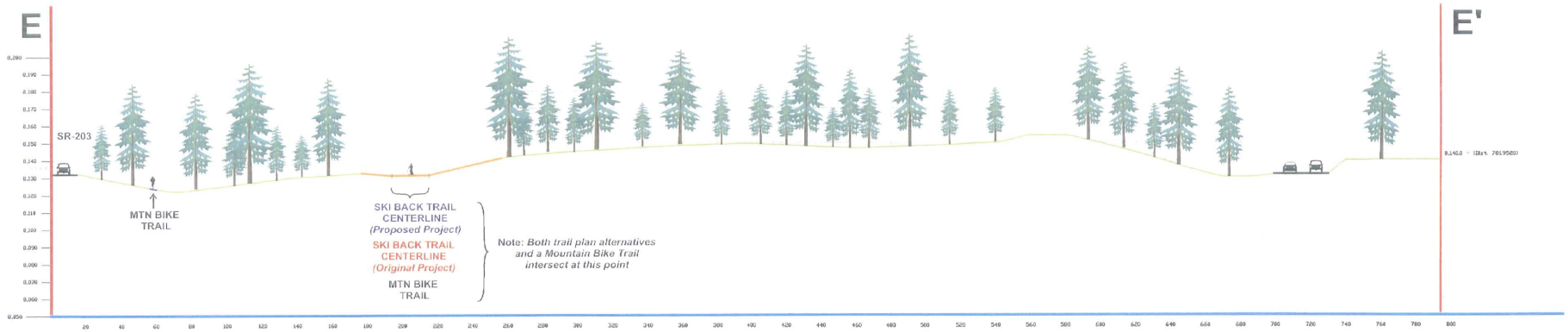

LSA

- Fill Slope
- Cut Slope
- Mountain Bike Trail

FIGURE 16

0 30 60

Mammoth Mountain Ski Back Trail

Vantage Point E - Line of Sight Cross-Section

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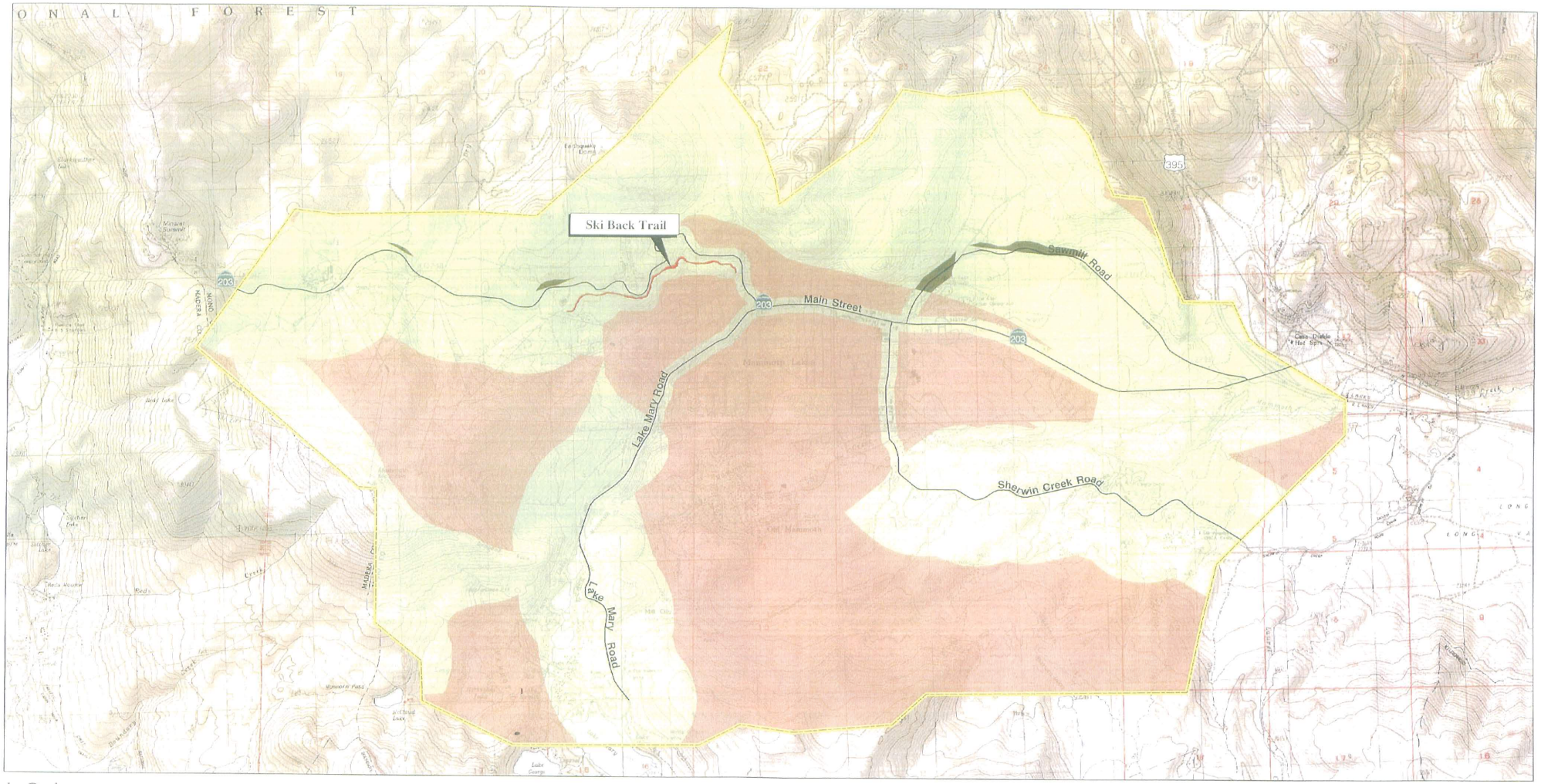

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FIGURE 17

Legend

Class 1-2 High

Class 3-4

Class 5-6 Low

0 1,750 3,500
Feet

SOURCE: USGS 7.5 QUAD: Mammoth Mtn., Old Mammoth, Crystal Crag, Bloody Mtn., Revision 1994

Mammoth Mountain Ski Back Trail

Scenic Classes

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Category	Description	Value
SCENIC ATTRACTIVENESS		
Class A	Distinctive	1
Class B	Typical	2
Class C	Indistinctive	3
LANDSCAPE VISIBILITY		
Immediate Foreground	0–300'	1
Foreground	300–2,500'	2
Middle Ground	2,500' +	3

Pursuant to *Agricultural Handbook No. 701,* the lower the combined "score," the higher the public value. Generally, Scenic Classes 1–2 have high public value, Classes 3–5 have moderate value, and Classes 6–7 have low value.[9] Figure 17 illustrates that the specific proposed project area received a relative ranking of 3–4, or one of having moderate value.

Site Specific Analysis

As previously mentioned, the SMS is oriented toward large-scale, regional inventories and not necessarily small projects with relatively small magnitudes and significance. Therefore, the traditional SMS has been augmented by a site-specific analysis of the project by analyzing its potential impacts to the visual environment. Several steps characterize this analysis. First, the trail alignment was mapped. Then potential public vantage points were mapped, primarily focusing on such vantage points along State Highway 203, located just north of the proposed trail alignment. Photographs were taken from these vantage points portraying existing (preproject) conditions. The proposed trail alignment was visible from the public vantage point; the postproject condition was depicted using digitally placed improvements or project design features as prescribed by the improvement plans. The photographs were taken in November 2004 after a recent snowfall.

Construction of the trail will emphasize cut slopes, rather than fill slopes, to minimize visual impacts. Also, existing landscaping between State Highway 203 and the proposed trail alignment will be left in place, as much as feasible, in order to retain the existing visual context. Finally, natural rock material from the area will be used to fortify any manufactured slopes on an as-needed basis.

[9] Ibid. p. 4–14.

Figure 18 depicts the locations of the various vantage points. As noted above, the proposed trail alignment is not readily visible from most of the State Highway 203 segment in this area, thereby limiting the potential number of vantage points. Four public vantage points (A–D) were established and photographed. In addition, two privately oriented vantage points (E and F) augment the analysis to provide views of the project design features (rock wall).

Vantage Point A

This vantage point depicts the start of the Ski Back Trail at the uppermost elevation. Figure 19A provides the existing view, while Figure 19B illustrates the postproject view. The most notable change in view will be the removal of several trees and signage indicating the trail's location and direction. The existing visual context remains unchanged because the remaining Jeffery pines and red firs are of significant-enough size, maturity, and density.

Vantage Point B

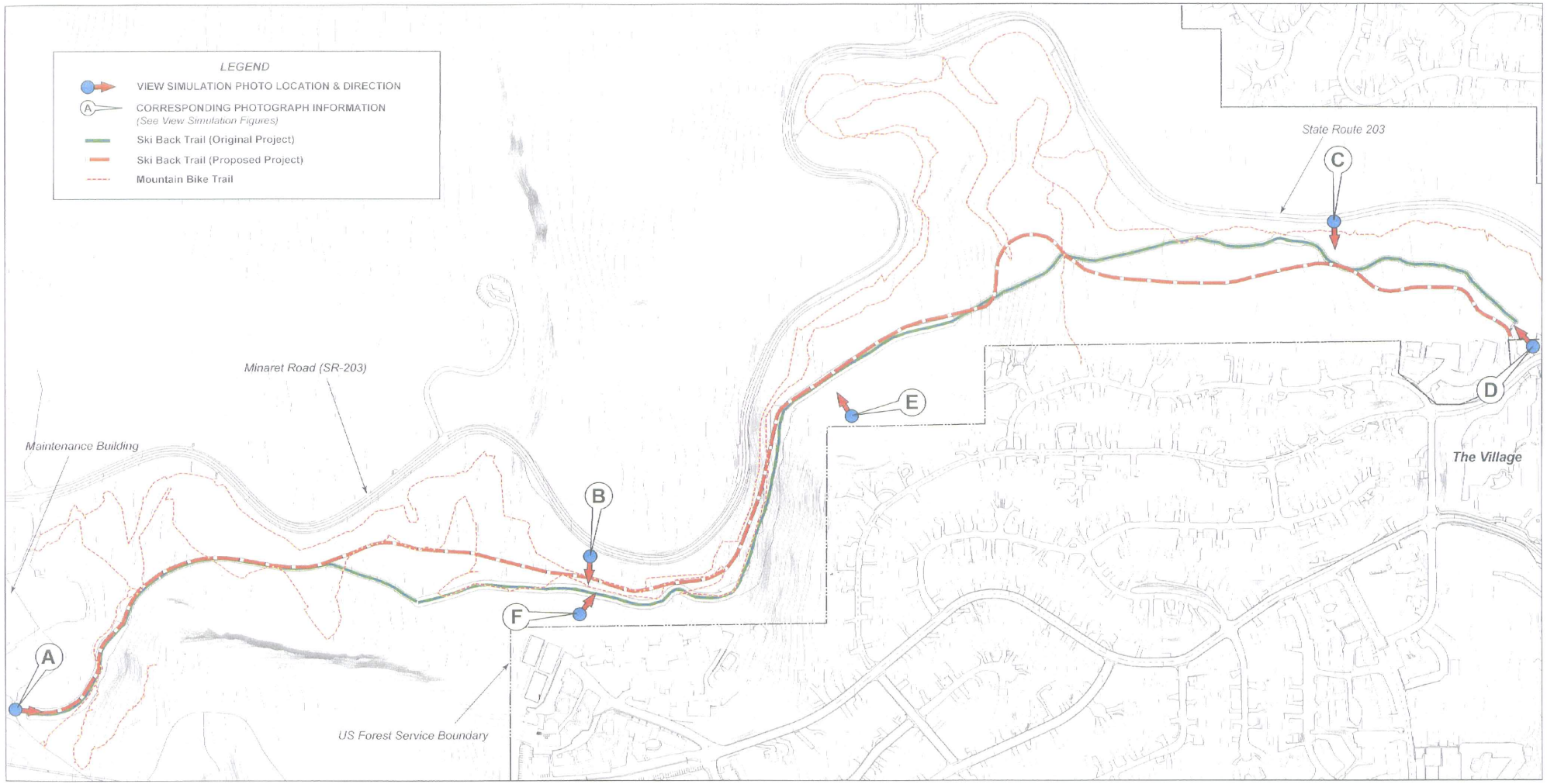
Figure 20 depicts the vantage point that would provide the best opportunity to view the trail from this portion of State Highway 203. Due to the elevation difference between the vantage point and proposed trail alignment and the existing tree variety and density, the trail and its support improvements will not be visible from this location.

Vantage Point C

Figure 21 depicts the vantage point that will probably be the closest and most direct view of the proposed trail alignment. However, there are no structural improvements proposed for this segment of the trail. The person in the photograph provides a sense of scale and is probably standing within the alignment of the less grading alternative. The proposed project alignment is located several yards/meters beyond this point. The tree density will allow the trail to be constructed without removing these trees. No postproject analysis is warranted since the visual change will be minimal, if at all.

Vantage Point D

Figure 22 provides a vantage point from the intersection of State Highway 203 and Forest Trail Road. Vantage Point D also illustrates the terminus of the proposed Ski Back Trail. A bridge is located to the left of the scene portrayed in Figure 22A, connecting the trail to The Village. Figure 22B depicts the postproject view from this vantage point. Figure 22B illustrates the proposed use of a slope stabilization measure using vegetation to support the trail. Also, some smaller trees have been removed to accommodate the proposed trail alignment in this area.



LSA

FIGURE 18

0 200 400
FEET

SOURCE: Triad Holmes, Inc. 6/28/04

Mammoth Mountain Ski Back Trail

View Simulation Photo Locations

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FIGURE 19A

Mammoth Mountain Ski Back Trail

Vantage Point A - Before

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FIGURE 19B

Mammoth Mountain Ski Back Trail

Vantage Point A - After

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FIGURE 20

Mammoth Mountain Ski Back Trail

Vantage Point B - No-Change

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LSA

FIGURE 21

Mammoth Mountain Ski Bback Trail

Vantage Point C - No-Change

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FIGURE 22A

Mammoth Mountain Ski Back Trail

Vantage Point D - Before

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FIGURE 22B

Mammoth Mountain Ski Back Trail

Vantage Point D - After

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Vantage Point E

Figure 23A illustrates a vantage point of the proposed trail from a private residential area. Although not a public vantage point, this perspective is provided to allow a view of the use of the slope stabilization measure using natural vegetation and ground cover as a potential design feature, as depicted in Figure 23B.

Vantage Point F

Figure 24A illustrates a vantage point of the proposed trail from a private residence that is located in relatively close proximity. Figure 24B depicts the postproject condition with the slope stabilization measure using natural vegetation and ground cover.

Summary

The SMS provides a regional scale to assess scenic value on a qualitative basis, while the site specific pre- and postproject photographs (view simulations) allow the viewer to understand the actual potential impact of the trail and supporting structures. The combined results of these analyses provide a reasonable and accurate assessment of the potential impact on the area's visual resources.

The INFLRMP identifies the Management Direction of maintaining the visual resources at a level no lower than Partial Retention with the goal of maintaining a Retention level. The INFLRMP was established before the SMS was delineated by *Agricultural Handbook No. 701*. However, this Handbook provides a list of equivalent terms for the prior system employed at the time of developing the INFLRMP. The Moderate Level of Scenic Integrity (SMS) identified in Figure 7 is equivalent to the Partial Retention category established by the INFLRMP. For further reference, the SMS High Scenic Integrity is equivalent to the INFLRMP's Retention category.

In summary, the SMS identified the potentially affected area as having a Scenic class that reflects the general goals of the INFLRMP, Partial Retention, and even perhaps Retention, so that the existing visual character will not change as a result of the proposed project.

The site specific visual simulations further support this conclusion. Project design features such as natural rock walls and minimal tree removal will minimize any potential impact to the existing visual resources as a result of the proposed project.

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FIGURE 23A

Mammoth Mountain Ski Back Trail

Vantage Point E - Before

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FIGURE 23B

Mammoth Mountain Ski Back Trail

Vantage Point E - After

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FIGURE 24A

Mammoth Mountain Ski Back Trail

Vantage Point F - Before

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FIGURE 24B

Mammoth Mountain Ski Back Trail

Vantage Point F - After

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