

Visual Resource Management

Las Vegas, NV



Course Objective

After attending this course, you will be able to:

- Describe the basic principles and concepts of the VRM system
- Communicate the role of visual resource management in BLM land use planning and activity planning
- Demonstrate the skills and knowledge necessary to:
 - inventory visual resources
 - analyze the landscape
 - design and mitigate for minimizing contrast to the landscape from activities.

Successfully complete a field project in an interdisciplinary setting to reduce the contrast of a proposed project on the characteristic landscape.

Visual Resource Management: Student Agenda

Monday

8:00a-9:30a	Unit 1	Overview of VRM	John McCarty
9:30a-12:00	Unit 2	Looking at Landscapes	Allysia Angus
1:00 p-3:00 p	Unit 3	VRM Inventory	Kiel/ Sweeten
3:00 p-5:00 p	Field Trip	Landscape Analysis Scenic Quality Exercise	Jennifer Burns Sweeten

Tuesday

8:00a-10:00a	Unit 4	Land Use Planning	Kiel/Sweeten
10:00a-10:30a	Unit 5	Project Planning and VRM	Angus
10:30a-11:15a	Unit 6	Design Fundamentals	Gary Long/Angus
11:15a-12:00	Unit 7	Design Strategies	Long/Angus
1:00p-2:00p	Unit 8	Environmental Factors	Long/Angus
2:00p-2:30p	Unit 9	Types of Projects	Long
2:30p-5:00p	Field Problem		Long

Wednesday

8:00a- 9:30a	Unit 10	Project Planning/Analysis	Burns/Sweeten
9:30a -12:00	Contrast Rating Field Problem		Sweeten/Burns
1:00p- 2:00p	Unit 11	Visual Simulation	Sweeten
2:00p- 2:30p	Unit 12	Writing Good EAs	Long
2:30p- 3:00p	Unit 13	Monitoring and Compliance	John McCarty
3:00p- 4:30p	Unit 14	Experience Examples	McCarty/Long/ Burns
4:30p- 5:00p	Unit 15	Stump the Experts	Panel

Thursday

8:00- 8:30	Renewable Energy	Industry Reps
8:30a- 8:45a	<u>Final Class Team Project:</u> <ul style="list-style-type: none"> ○ explain procedures ○ team assignments 	McCarty
8:45a- 11:00a	<u>Team Project cont..</u> <ul style="list-style-type: none"> ○ Meet with Customers ○ Review proposals ○ Determine Info Needs ○ Prepare for field trip 	Teams to be assigned
11:00a- 12:00	LUNCH and Travel to field sites	
12:00- 2:30p	<u>Team Project cont...</u> <ul style="list-style-type: none"> ○ Review site/proposal ○ Suggest alternatives ○ Finalize negotiations ○ Select KOPs ○ Analyze landscape ○ Prepare rough sketches ○ Conduct contrast rating ○ Suggest additional Mitigation 	Teams work on their own
2:30p- 5:00p	Travel back to Hotel <u>Team Project cont...</u> <ul style="list-style-type: none"> ○ Prepare Reports ○ Prepare Simulations 	Teams

Friday

8:00a- 8:15a	Evaluations – Training - Commitments	
8:150a- 11:00a	<u>Team Presentations</u>	Teams
11:00a- 11:30a	Unit 16 Summary – Close Out	McCarty

VRM Instructor Contact List – 2008/2009

Rob Sweeten, Moab Support Center (Moab Field Office), 435-259-2139

Rob Sweeten is the Moab Support Center Landscape Architect stationed in the Moab Utah Field Office. His expertise is in VRM planning and contrast rating, recreational site design, accessibility issues, site construction, and contract inspection. He worked at the Utah State Office before moving to Moab and has been with the BLM for 11 years. Rob has faced many of the surface disturbing projects that occur on BLM land such as oil and gas, pipelines, landfills, open pit mines, recreation development, fire rehabilitation, road development, power lines, and many other projects. Rob served on the original committee that started and created this course. Rob has taught at each of the 10 offerings of this course. Rob also team teaches the Visual Simulation course at the National Training Center and most recently was an instructor for the Visual Resource Management for Fluid Minerals Best Management Practices satellite broadcast. We are extremely grateful for his dedication.

Gary Long, Retired BLM

Gary is a state lead recreation planner for Wyoming. His expertise is in recreation planning, OHV Management, wilderness and visual resource management. He has a BA in Geography & Recreation from the University of Wyoming. He pursued graduate studies in wilderness management at UW. He began his career with BLM in 1974 in Rawlins, Wyoming. He has also worked in Alaska, Lander, and Casper, Wyoming.

He has worked extensively on recreation project planning and as such led or served as a team member on numerous efforts to design or re-design developed recreation sites, recreational trails, and interpretive centers. Gary led several activity planning efforts in Wyoming, including a statewide management plan for the Oregon and Mormon Pioneer National Historic Trails.

He also has extensive background in oil and gas development, national historic trails management, transportation planning, energy related rights of way, and other fluid minerals projects. Gary's experience with VRM includes developing mitigation measures for oil and gas exploration projects, range developments such as fences and water projects, rights-of-way, recreational trails, timber harvest operations, and road systems.

Allysia Angus, Landscape Architect / Land Use Planner, 435-644-4364

Allysia Angus is the Landscape Architect / Land Use Planner for Grand Staircase-Escalante National Monument working out of the Monument's Escalante Field Station. She has been with the Monument for six years and has worked on a number of planning and design projects ranging from the Monument's new visitor centers, developed and primitive recreation sites, and the Monument's Architecture and Landscape Architecture Guidelines. Allysia also served as project planner and graphic designer for the Scenic Byway 12 Corridor Management Plan (CMP), which was used to successfully designate Utah's Scenic Byway 12 as the state's first All-American Road (the highest award of the National Scenic Byway program). The CMP has won planning awards from both the Utah chapters of the American Planning Association and the American Society of Landscape Architecture. She now serves as an executive officer of the Scenic Byway 12 Committee.

She holds a bachelor's degree in Communications and Art from the University of Tennessee and a master's degree in Landscape Architecture and Environmental Planning from Utah State University. Her office address is 755 W. Main Street/PO Box 646, Escalante, UT 84726, and her phone number is (435) 826-5615.

Dave Kiel, Vermilion Cliffs National Monument, 435-688-3240

Dave is an Outdoor Recreation Planner for the Vermilion Cliffs National Monument, which is part of the Arizona Strip District Office. Prior to holding his current position, he spent five years as a GIS Specialist for the Arizona Strip District Office and the Cedar City Support Area in Utah. Before coming to work for the BLM, he spent 17 years working for the City of and Borough of Juneau, Alaska, where he served as Parks Superintendent. He has a BS in Geography and his expertise lies in recreation management and the use of GIS in land use planning. He spent the past four years integrating GIS into the Arizona Strip District's land use planning effort. His experience with VRM lies in the use of GIS tools for inventory, alternative development, and impact analysis.

Elvin Clapp, National Training Center, 602-906-5506

Elvin Clapp has been a training coordinator and supervisor at the NTC for 11 years. He has also worked at the field, state, and headquarters office levels of BLM in lands and recreation programs. He has a special interest in protecting and enhancing landscapes by good management practices and sound land use and project planning. Elvin has an undergraduate and master's degrees in outdoor recreation from North Carolina State University, where he also taught for two years.

John McCarty, National VRM Leader, BLM-Washington Office, 202-785-6574

John McCarty serves as the BLM's Chief Landscape Architect since April 4th of 2007 and is located at the BLM's headquarters in Washington, DC. He joined the ranks of the BLM after 7 years of private industry service with a national architectural/engineering firm. John was located in their Western Colorado office, which specializes in landscape architecture, environmental planning and community/land use master planning.

While new to the BLM, John has a history in working with the BLM as a private consulting contractor. Project areas of experience include Visual Resource Management (VRM) inventories, energy development VRM mitigation plans and strategies, researching and developing new VRM mitigation strategies using color applications, recreation project planning, NEPA, and stream restoration and habitat improvements.

In addition to BLM work, he has been responsible for management, coordination and design of a wide variety of public and private projects. He has been credited with skillful experience and innovative approach to context sensitive design strategies and his consideration of sensitive environmental and natural resource issues for blending the built environment with the natural setting.

Prior to private consulting, John worked for the Town of Snowmass Village and the Colorado Department of Transportation. He holds a Bachelors of Science degree in Landscape Architecture and Recreation Resources from Colorado State University, earned in 1982.

Jennifer Burns works for San Juan Public Lands in Durango, Colorado. She studied in Tucson at UA, receiving a BS and MLA. During the last couple of decades she has been a planner and landscape architect for both the Park Service and Forest Service, working at Grand Canyon, Chiricahua NM, and Mount Hood, Coconino, Prescott and Deschutes national forests. In her current "Service First" job she works with both the Visual Resource Management and Scenery Management systems, generally confusing everyone and sometimes getting what she wants. She can be reached at 970-385-1334 or jmburns@fs.fed.us. Jennifer also is part of the instructor cadre for the 2-day Visual Resource Basics class which BLM offers to individual offices after piloting it in Durango, CO and Farmington, NM. Please well Jennifer as a new member to our instructional cadre.

Useful Websites

A. Website containing all of the notebook, Powerpoints, and handout material. You can save all of the material on your own computer, print, and share with others. NTC will update the site as new material, including next year's notebook, is developed.

<http://www.ntc.blm.gov/krc/resource.php?type=byProgramArea&programAreald=50>

B. National Visual Resource Management web site, include manuals, forms, field contacts, and other guidance:

<http://www.blm.gov/nstc/VRM/index.html>

C. Best Management Practices for Oil and Gas Development, with focus on visual resources. Contains images and guidance. You can also download BLM's Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development (commonly referred to as The Gold Book):

http://www.blm.gov/bmp/Technical_Information.htm

D. Video Segments from Showing the Basic Principles of VRM, and VRM applied to National Scenic and Historic Trails

<http://www.ntc.blm.gov/krc/resource.php?type=byProgramAreaCourseType&programAreald=50&courseTypeld=6>

E. Scenic America:

<http://www.scenic.org/>

F. Forest Service's Built Environment Image Guide:

<http://www.fs.fed.us/recreation/programs/beig/>

G. Forms for VRM, Recreation and Other Programs:

<https://web.eforms.blm.gov:8201/FormsCentral/show-home.do>

Available NTC Training in 2008

For more information, go to <https://doilearn.doi.gov/>

Visual Resource Management, 8400-05

April, 2009 Las Vegas, AZ

Call Elvin Clapp, 602-906-5506

or Mike Brown, 602-906-5605

Visual Resource Simulation, 8400-06

March 10-12, 2009 Phoenix, AZ

Call Elvin Clapp, 602-906-5506

or Mike Brown, 602-906-5605

This course covers use of Adobe Photo Shop to generate visual simulations for your typical projects: powerlines, range improvements, oil and gas wells, etc. It's a hands-on format where participants will scan, import, and work on images to develop accurate visual simulations. Other topics include advantages/disadvantages of simulations, ethics, evaluating products of contractors, techniques for inputting photos, printer and other output techniques, simulation policies and relationship to VRM system. This training is at a technical level to support visual simulations for EAs and other documentation. It won a regional award from the Society of Landscape Architects. Participants receive comprehensive notebook and CD for application of tools in the field.

Note: NTC needs 8 more nominations to make this a go!

Surface Management for Fluid Minerals, 3100-15

Spring, 2009 – Location TBD

Call Burrett Clay, 602-906-5521

This basic course is designed to address operational aspects of dirt work and reclamation involved in permitting an Application for Permit to Drill an Oil, Gas, or Geothermal well. Participants review construction and reclamation plans, perform preoperational field inspections, and recommend necessary modifications to mitigate the effects of surface disturbing activities in accordance with the Bureaus' standards and guidelines. A field exercise is designed to allow students to perform pre-construction onsite visits to determine any changes needed of a submitted application and also perform reclamation inspections to ensure compliance with applications that have been approved. The target audience is surface protection specialists, resource specialists and others involved in the APD approval process.

Construction and Reclamation for Fluid Minerals, 3100-16

Date and Location TBD

Call Burrett Clay, 602-906-5521

This is a more complex course and is designed to address the operational aspects of roads and pads for fluid minerals. Covers road and pad design, construction and reclamation. Participants review fluid minerals related surface disturbing proposals to determine if they are complete, feasible and meet Bureau standards. They will identify potential conflicts and recommend possible mitigation measures and monitor approved projects to determine if they are constructed in compliance with the approved operating plan. In addition, participants review a reclamation plan and determine if the plan includes suitable reclamation procedures and recommend appropriate modifications to achieve Bureau objectives. Target audience is surface protection specialists, civil engineers, mining engineers, and petroleum engineers.

Other Recreation and Visitor Services Training

Leading the Recreation Program, 8300-10

Mar 2-6, 2009 Phoenix, AZ

Elvin Clapp, 602-906-5506

Recreation Planning: Effective Engagement in BLM's Land Use Planning, 8300-11

Feb 23-27, 2009 Albuquerque

Mike Brown, 602-906-5605

Cave and Karst Management, 8300-24

TBD 2010 Las Vegas, NM

Mike Brown, 602-906-5605

Trail Management: Plans, Projects, and People, 8300-17

Late Feb, 2009 California

Mike Brown, 602-906-5605

Recreation Permits Refresher, 8300-14

State rec. leaders should call to schedule a session in your state

Elvin Clapp, 602-906-5506

Online Recreation and NEPA Courses – Register via DOI Learn

Special Recreation Permits, 8300-15

Elvin Clapp, 602-906-5506

Visual Resource Management for Fluid Minerals, 8300-07

Calvin Russell, 602-906-5635

Introduction to Basic All Terrain (ATV) Operation, 1112-06

June Clay, 602-906-5544

NEPA Concepts

Mod 1 (NEPA)

Mod 2 (CEQ Regulations), 1620-17

Mod 3 (BLM-specific NEPA Requirements), 1620-18

Purpose & Need, 1620-28

Cathy Humphrey, 602-906-5536

Note: Supervisory approval not required for online courses.

Unit 1:

Introduction; Overview of VRM



A. Introduction

Objective: Describe the importance of protecting scenic values, and explain in general terms, the process the BLM uses to manage for scenery via the Visual Resource Management (VRM) System

- Field manager perspective
- Course Outline: units, notebook, and field exercises
- Instructor and Participant Introductions

B. What is VRM, Why do we use it?

- **BLM manages lands with inherent Scenic Value**
 - Western landscapes are a legacy to pass on to future generations.
 - BLM manages more land (261 million acres) than any other agency.
 - BLM manages a diversity of landscapes, each with a unique sense of place.



- **Multiple Uses on BLM Lands have potential to create visual impacts**
 - Growing demand for land uses such as communication sites, rights-of-way, recreation use, energy and mineral development.
 - If not carefully planned and design, these activities have potential to greatly modify character of the landscape for which BLM is recognized.
 - Poorly designed activities reflect negatively on BLM's image and may result in undesirable consequences to local communities' economy, quality of life, and visitor experiences.



These images reflect strong visual contrasts created by individual activities and cumulative effects

- **The Changing West; Western Population Growth and the Importance of Recreation in Tourism and Rural Economies**
 - Western states have experienced rapid growth and development
 - Public lands have been increasingly used for outdoor recreation and tourism.
 - Many rural communities are reliant on tourism to sustain their economies.
 - Thus, the management of the scenic values of public lands has become a much more important aspect of natural resource management to BLM.



- **Director's Priorities for Recreation and Visitor Services**
 - Goals: Provide access for recreation; Ensure quality experience and enjoyment of natural and cultural resources
 - Objectives: Manage for settings and experiences; Attention to the design of facilities and built environment.
- **Visual Resource Management is BLM's System to:**
 - Help identify visual (scenic) values.
 - Minimize visual impacts to landscape character of public lands

- It's essentially, a language for “looking at landscapes”.
- VRM system helps lend objectivity to process.
- **Benefits of addressing visual concerns:**
 - The benefits to be gained by carefully designing surface-disturbing activities to minimize visual impacts are readily apparent.
 - BLM is committed to sound management of the scenic values on public lands in order to ensure that these benefits are realized and the scenic values are protected.
 - VRM system uses basic, fundamental landscape site planning and design techniques to help reduce contrast to landscape character.



Road that follows contours of landscape.



Pipeline that has been reclaimed and re-vegetated.

C. Legal Obligations/Authority/Policy

By law, BLM is responsible for managing public lands for multiple uses. But BLM is also responsible for ensuring that the scenic values of these public lands are considered before allowing uses that may have negative visual impacts.

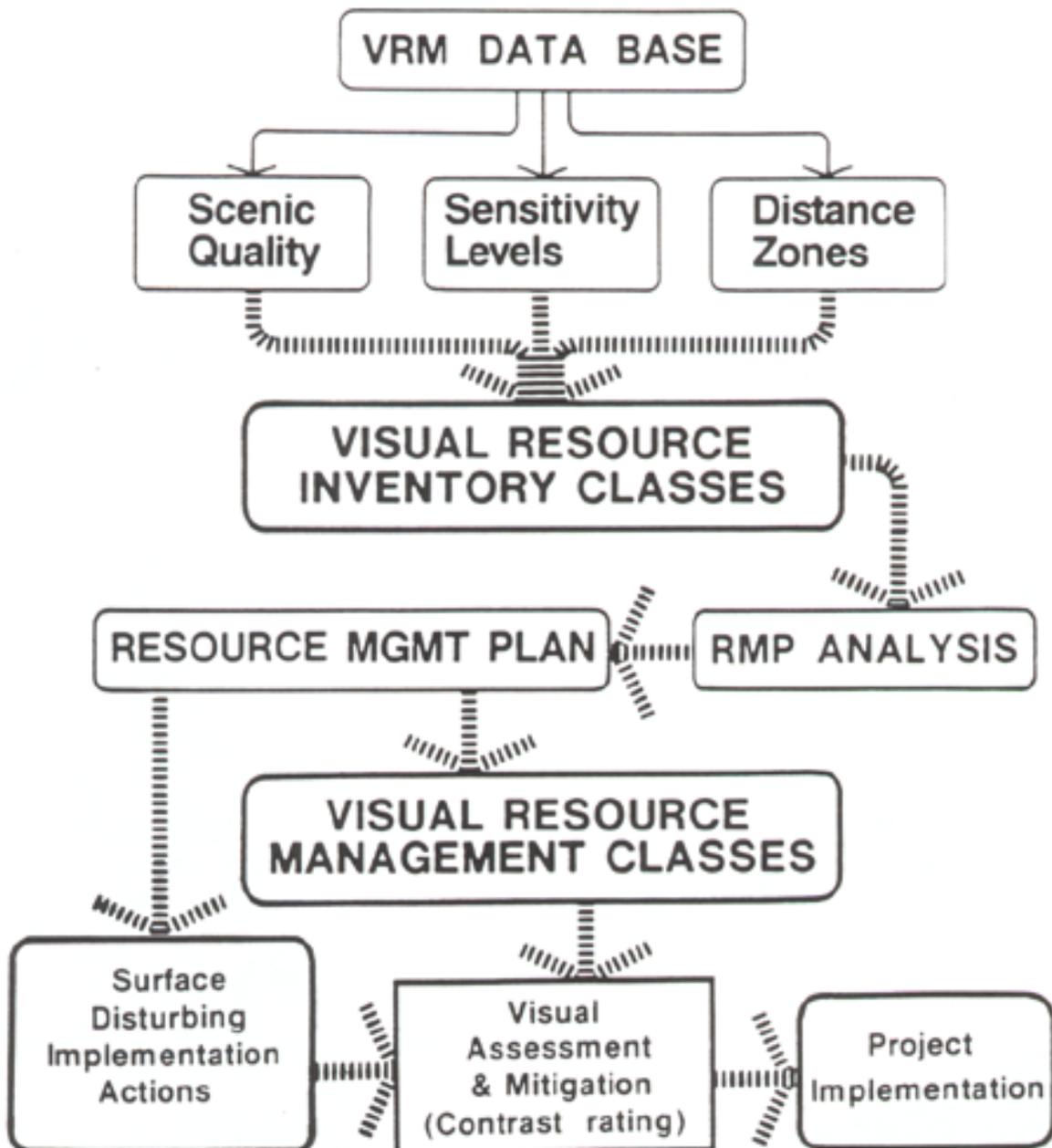
- **The National Environmental Policy Act of 1969 (NEPA)** 43 U.S.C. 4321 et. seq.;
 - Section 101 (b). Requires measures be taken to “...assure for all American...esthetically pleasing surroundings...”
 - Section 102. Requires agencies to “Utilize a systematic, interdisciplinary approach which will ensure the integrated use of...Environmental Design Arts in the planning and decision making...”
- **The Federal Land Policy and Management Act of 1976 (FLPMA)** 43 U.S.C. 1701 et. seq.;
 - Section 102 (a)(8). States that “...the public lands be managed in a manner that will protect the quality of the...scenic...values...”
 - Section 103 (c). Identifies “scenic values” as one of the resources for which public land should be managed.

- Section 201 (a). States that “The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including...scenic values)....”
- Section 505 (a). Requires that “Each right-of-way shall contain terms and conditions which will... minimize damage to the scenic and esthetic values....”
- **BLM Policy: Manual Section 8400- Visual Resource Management**
 - The Bureau has a basic stewardship responsibility to identify and protect visual values on public lands.
 - Each program (i.e., Range, Forestry, Minerals, Lands, etc.) involved in resource development work is responsible for protecting visual values. This includes ensuring that:
 - Personnel in each program who are involved in activities which affect visual values are properly trained in visual management techniques
 - Visual values are adequately considered in all management activities
 - Adequate guidance and funding is available to accomplish these purposes.
 - The Bureau shall prepare and maintain, on a continuing basis, an inventory of visual values on all public lands.
 - Visual management objectives (classes) are developed through the RMP process for all Bureau lands.
 - The approved VRM objectives (classes) provide the visual management standards for the design and development of future projects and for rehabilitation of existing projects.
 - The contrast rating process (Manual Section 8431) is used as a visual design tool in project design and as a project assessment tool during environmental review.

D. VRM System Overview

- Public lands have a variety of visual values which warrant different levels of management. VRM is used to systematically identify and evaluate these values to determine the appropriate management objectives and to design activities to meet those objectives.
- The **VRM process** involves:
 - 1) inventorying scenic values
 - 2) establishing management objectives for those values through the resource management planning process, and
 - 3) evaluating proposed activities to analyze effects and develop mitigations to meet established VRM objectives.

Visual Resource Management



Unit 2: Looking at Landscapes



A. Introduction

Objective:

Students will use the three landscape analysis components:

- Landscapes Types*
- Landscape Character Elements*
- Landscape Analysis Factors*

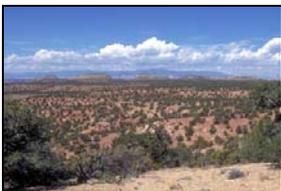
to analyze and describe the landscape character of a given scene using common landscape vocabulary.

B. Landscape Character

The **character of a landscape** is the overall impression created by its unique combination of visual features (such as land, vegetation, water, and structures).

C. Types of Landscapes

- Panoramic



- A broad horizontal composition.
- Little or no sense of boundary restriction; no apparent limits to the view.
- Foreground or middle ground objects do not substantially block viewing of background objects.
- Sky and foreground elements may occupy much of the scene.
- Includes plains, expanses of water, and distant mountain ranges.

- **Enclosed**



- Landscape spaces, large or small, are surrounded by continuous groupings of objects.
- Landscape elements form “walls” and “floor”.
- Eye is drawn to enclosed portion of landscape.
- An example is a meadow or small lake surrounded by walls of trees or earth forms.
- Vulnerable to modification if within enclosure space.

- **Feature**



- Dominated by a feature or a group of feature objects in the distance to which the eye is drawn.
- Typically includes such elements as a waterfall, prominent landform, or tree.
- Vulnerable to modification if near feature.

- **Focal**



- Tend to converge upon themselves as distance increases or as they curve horizontally.
- Eye is led to focal point in landscape.
- Vulnerable to modification if near focal point.

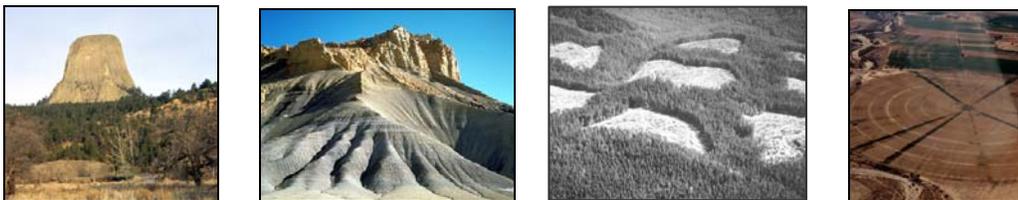
- **Canopied**



- The landscape where features overhead create a ceiling or canopy.
- Typically within or at the edge of a forest where branches and foliage are overhead.
- Also within canyons with predominately arched, overhanging walls.

D. Landscape Character Elements

- **Form**



- Mass of an object or of a combination of objects that appear unified. (If seen only two-dimensionally, it's called a shape.)
- Forms that are bold, regular, solid or vertical tend to be dominant in the landscape.

- **Types of Form**

- Dimensional shape appears as a two-dimensional shape on the landscape caused by contrast in color or texture of adjacent areas.
- Dimensional mass is the volume of a landform, natural object, or manmade structure.

- **Line**



- The path (real or imagined) that the eye follows in a landscape.
- Perceived in abrupt differences in form, color, or texture, or when objects are aligned in one-dimensional sequence.
- Line is usually evident as the edge of shapes or masses in the landscape.
- **Types of Lines**
 - Edge is the boundary between two contrasting areas (i.e. where grass and tree line meet, etc.) or the outline of a two-dimensional shape on the land surface (i.e. triangular clear cut, etc.).
 - Band is the contrasting linear form with two roughly parallel edges dividing an area in two (i.e. road).
 - Silhouette is the outline of a mass seen against a backdrop (i.e. skyline, ridgeline, etc.).

- **Color**



- The property of reflecting light of a particular intensity and wavelength to which the eye is sensitive.
- THE major visual property of surfaces.
- Color is what enables us to differentiate objects even though they have identical form, line, and texture.
- Light, warm, bright colors in a landscape will typically advance and dominate; dark, cool, dull colors will typically retreat.
- Dark next to light tends to attract the eye and become a visual focal point.

- **Texture**



- Texture is the aggregation of small forms or color mixtures into a continuous surface pattern.
- Aggregated parts are such that they do not appear as discrete objects in the composition of the scene.
- Texture dominance diminishes with increasing distance.

- **Sub-elements of Texture**

- Grain – relative dimensions of the surface variations from large to small.
 - Fine*
 - Medium*
 - Coarse*
- Density – spacing of surface variations creating the texture.
 - Sparse*
 - Medium*
 - Dense*
- Regularity – degree of uniform recurrence and symmetrical arrangement of the surface variation.
 - Uneven / random*
 - Even / ordered*
 - Even / random*
 - Gradation*

E. Visual Variety



Landscapes with abundance and variety in form, line, color and texture, as well as combinations of types – are typically the most interesting and visually appealing.

- Homogeneous landscapes are typically considered less visually appealing and memorable.
- Complex landscapes, those with much visual variety, however, are typically considered more visually appealing and memorable.

E. Landscape Analysis Factors

- **Contrast**



- The degree to which sharp differences in adjacent objects or areas exist.
- Landscapes or areas of landscapes with great contrast attract the eye more readily than those with little to no contrast.

- **Sequence**



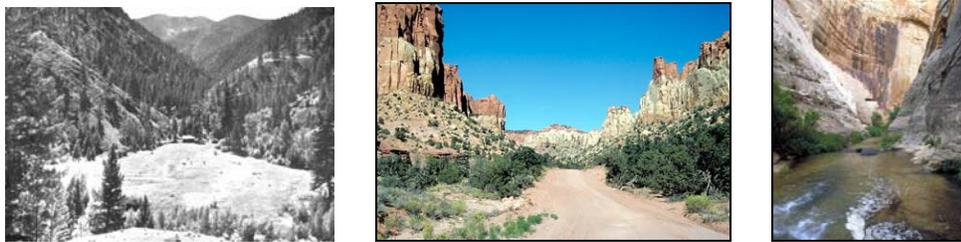
- A succession of landscape elements.
- Repetitious dominance of form, line, color, or texture.
- **Types of Sequence**
 - Form sequence
 - Systematic repetition of landform and vegetative patterns.
 - Interruption of form sequence can create a “missing tooth” effect.
 - Line sequence
 - Systematic repetition of landform and vegetative patterns.
 - Can lead the eye to, and emphasize, a distant object.
 - Removal of one of the elements forming line would break the line and be visually disruptive.
 - Color sequence
 - Systematic repetition of landform and vegetative patterns.
 - Can also lead the eye to, and emphasize, a distant object.

- **Axis**



- A straight line, real or imaginary, passing through the center of a landscape such that each half is symmetrical.
- A natural or created landscape with an axis focuses viewer attention primarily on the terminus and its background.
- The axis has always been a design tool of great forcefulness.

- **Convergence**



- Tends to focus attention on one point or small area.
- The point at which the landscape elements come together and its adjacent area generally become dominant focal points within the landscape.

- **Co-dominance**



- Two major landscape form features are nearly identical.
- Co-dominant features often produce a symmetrical composition that does not blend with the characteristic landscape.
- Natural landscapes with co-dominant features added are seldom as visually pleasing as those with a singular dominant element.

- **Enframement**



- Created when features in the landscape direct the viewer's attention inwards like the frame of a picture.
- Walls of trees or rock cliffs on either side, reflecting waters at the base, and tree canopies overhead serve as forces of enframement.

- **Scale**



- The proportionate size relationship between an object and the surroundings in which it is placed.
- The scale of an object relative to the visible expanse of the landscape which forms its setting determines the object's dominance in that landscape.
- The size of the enclosing space inversely affects an object's relative scale -- small spaces make objects appear larger.

How do you analyze the Character of a Landscape?

1 Determine the LANDSCAPE TYPES. +

- Panoramic
- Enclosed
- Feature
- Focal
- Canopied

2 Identify and Describe LANDSCAPE CHARACTER ELEMENTS. +

- Form
- Line
- Color
- Texture

3 Identify any LANDSCAPE ANALYSIS FACTORS. +

- Contrast
- Sequence
- Axis
- Convergence
- Co-dominance
- Enframement
- Scale

= CHARACTER of a LANDSCAPE

Some Suggested Landscape Vocabulary

Form

Bold / definite / indistinct
Prominent
Flat / rolling / rugged
Rounded / angular
Rough / smooth
Jagged / domed / flattened
Steep / moderate / gentle
Solid / transparent
Simple / complex
Amorphous / geometric
Regular / irregular
Narrow / wide
Long / short / tall
High / low
Diverse / numerous / few
Large / small
Convex / concave
Circular / oval
Square / rectangular / rhomboid
Triangular / trapezoid
Linear / parallel / curving
Conical / cylindrical / cubic
Pyramidal / spherical
Contrasting / compatible
Vertical / horizontal / diagonal
Nondirectional
Symmetrical / asymmetrical
Strip / block / patch

Line

Bold / weak
Regular / irregular
Straight / curving
Curvilinear
Diagonal / horizontal / vertical
Angular / subangular
Jagged / rugged / smooth
Undulating / flowing
Complex / simple
Soft / hard
Broken / continuous
Concave / convex
Converging / diverging
Parallel / perpendicular
Geometric / circular / semicircular

Color

Hues - red, yellow, brown, green
Value - dark to light
Chroma - brilliant, pure, saturated, dull, grayish
Warm or cool
Vivid
Subtle
Luminous
Glaring
Pastel
Monotone - uniformity of color
Harmonious - pleasing combination of color

Texture

Coarse / medium / fine
Smooth / rough
Uniform / patchy / gradational
Directional / nondirectional
Discontinuous / continuous
Random / ordered
Contrasting / subtle
Dense / sparse
Glossy / matte
Striated
Scattered
Dotted
Clumped
Striped
Stippled
Granular

Unit 3:

Land Use Planning/Inventory



A. Introduction to Visual Resource Inventory

- **Land Use Planning and VRM**

- Visual Management Classes are developed through the RMP process for all BLM lands.
- The approved VRM Classes shall result from, and conform with, the resource allocation decisions made in RMP's.

- **Unit 3 Objective**

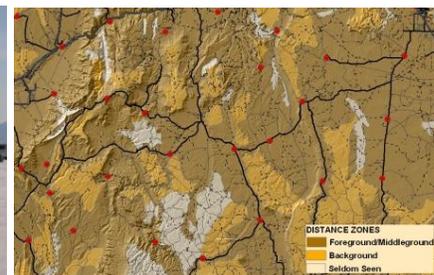
- Understand how to conduct a VRM inventory and create Inventory Classes

- **Visual Resource Inventory**

- A systematic process designed to determine the extent and quality of visual resources in a given area
- Visual inventory provides a means to determine visual values on public lands.

- **VRM Inventory Process**

- Scenic Quality Evaluation
- Sensitivity Level Analysis
- Delineation of Distance Zones



- **VRM Inventory Classes**

- Based on a combination of these three categories, BLM lands fall into one of four classes:
 - Class I
 - Class II
 - Class III
 - Class IV

B. Visual Resource Inventory

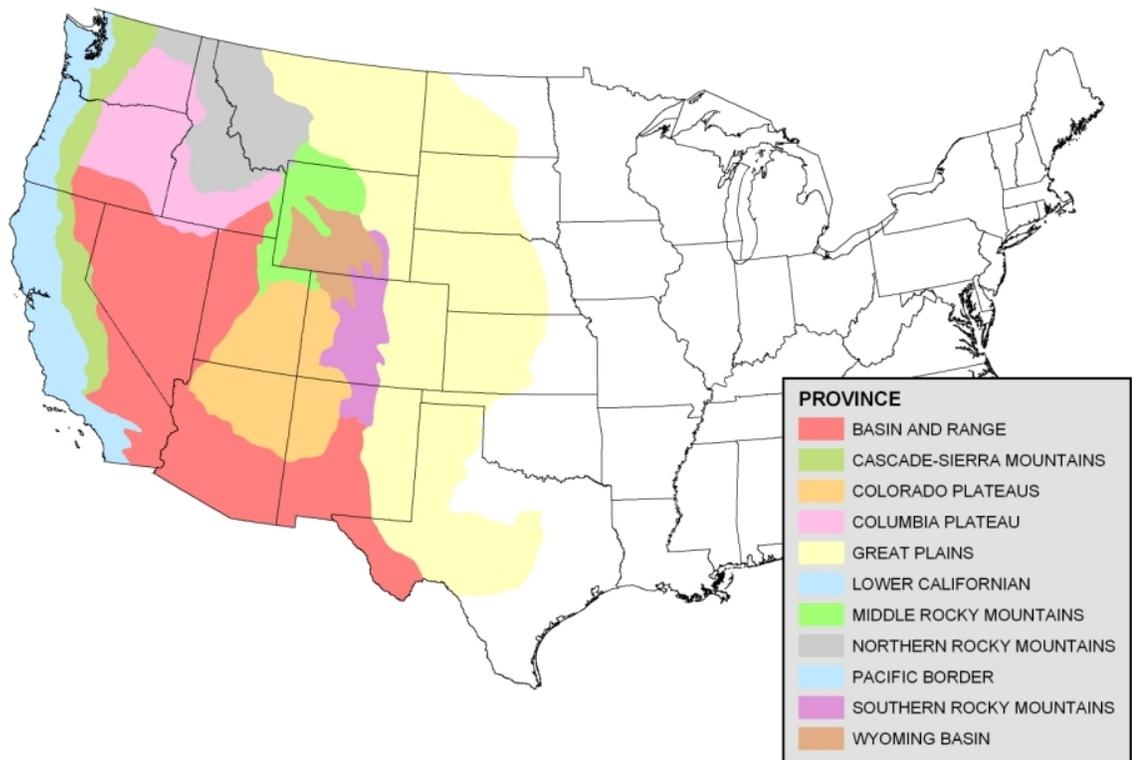
• Scenic Quality Evaluation

- All lands have scenic value but areas with the most variety and the most harmonious composition have the greatest scenic value.
- Evaluation of scenic quality is done in relation to the natural landscape. This does not mean man-made features necessarily detract.
- Scenic quality is a measure of the visual appeal of a parcel of land.
- Public lands are given an A, B, or C rating based on apparent scenic quality.
- Public lands are only rated when compared to other public lands within the same Physiographic Region. We compare apples to apples, not apples to oranges.

• Physiographic Regions

- Scenery is ranked relative to similar features in the same physiographic region. Scenery in the Colorado Plateau is compared to scenery in the Colorado Plateau, not the Wyoming Basin or Southern Rocky Mountains.

Physiographic Provinces of the Western United States





Colorado Plateau



Southern Rocky Mtns

Comparing apples to oranges



Colorado Plateau



Colorado Plateau

Comparing apples to apples

- **The Seven Scenic Quality Inventory Factors**

- Land Forms - Topography gets more interesting as it gets steeper and more massive, or more severely sculptured



- Vegetation - Give primary consideration to the variety of patterns, forms, and texture created by plant life.



- Water - Adds movement or serenity to a scene. The degree to which water dominates the scene affects the rating.



- Color - Consider the overall color(s) in the landscape. Key factors are variety, contrast, and harmony.



Contrast in color



Harmony in color

- Adjacent Scenery - The degree to which scenery outside the scenery unit being rated enhances the overall impression of the scenery within the rating unit.



Area being rated



Same area with adjacent scenery

- Scarcity - This factor provides an opportunity to give added importance to one or all of the scenic features that may be relatively unique within a physiographic region.



- Cultural Modifications - May detract or compliment. May actually improve the scenic quality of an area.



- **Use the seven scenic quality inventory factors to rank lands as A, B, or C**
 - **Use Form 8400-1 (Scenic Quality Field Inventory) to record your findings**
 - Describe the landscape character by features (top of form)
 - Landform/Water
 - Vegetation
 - Structures
 - Describe using Form, Line, Color, Texture
 - Describe the landscape character in narrative format (middle of form)
 - Score the Scenic Quality Rating Unit (bottom of form)
 - Use Scenic Quality Inventory and Evaluation Chart scoring system
 - Scoring “in-between” is OK
 - Total scores from seven categories to obtain final Scenic Quality Rating

○ **Scenic Quality Evaluations**

- Use an interdisciplinary team
- Evaluate from several key observation points (KOPs)
- Score based on overall impression of the ID Team
- Develop a photographic record
- File evaluation forms
- Keep a record of your work



Hypothetical A Scenery



Hypothetical B Scenery

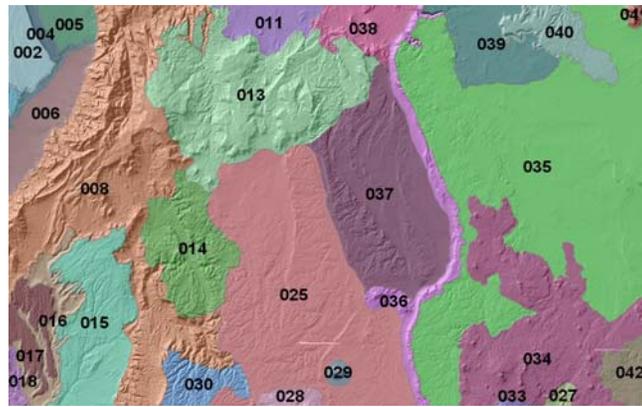


Hypothetical C Scenery

- **Scenic Quality Rating Example**
- **Scenic Quality Rating Exercise**
- **Scenic Quality Rating Units**
 - Divide planning area into Scenic Quality Rating Units – based on like physiographic characteristics.
 - Texture
 - Color
 - Variety
 - Man-made features
 - Similar visual patterns
 - Topographic features
 - Scenic Quality Rating Units breaks the area down into units with similar characteristics so management objectives will remain applicable to the entire area.



Scenic Quality Rating Units can be drawn on paper maps, but should then be digitized in GIS

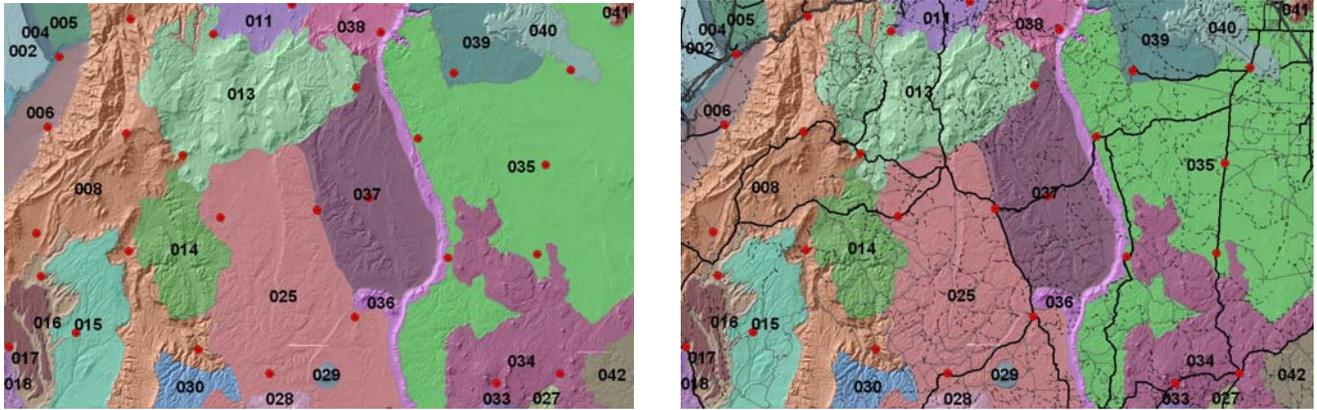


Scenic Quality Rating Units in GIS

- Scenic Quality Rating Unit size depends on several factors
 - Diverse topography
 - Man-made features
 - Similar visual patterns
 - Available staff and time
 - Budget constraints



- Evaluating Scenic Quality Rating Units with Key Observation Points (KOP's)
- When choosing KOP's, consider the following:
 - - Traffic Volume
 - Logical stopping places
 - Effectively evaluate the Scenic Quality Rating Unit



Choosing Key Observation Points is a crucial task. Look for points where the rating unit can be effectively analyzed. The most obvious KOP's are on well-traveled transportation routes.

- Volunteers and/or BLM staff can be used to collect scenic quality data. When using volunteers, make sure they can perform the following tasks:
 - Drive BLM vehicles
 - Use recreational-grade GPS units
 - Read a map
 - Use a digital camera
 - Use a compass



Make sure volunteers or field staff have good maps to work from. Choosing KOP's in advance helps speed up the collection process.

VRM Inventory Record
VRM Matters Field Office

KOP ID	Photo ID	Date	Azimuth	Waypoint ID	GPS Coordinates
01	153	4/3/06	290°	001	N 4143692 E 295000
01	154	4/3/06	15°	002	N 4154991 E 288765
01	155	4/3/06	185°	003	N 4180021 E 300029
02	156	4/4/06	90°	004	N 4142900 E 296000
02	157	4/4/06	270°	005	N 4131942 E 299054
03	158	4/5/06	100°	006	N 4191874 E 298004
03	159	4/5/06	200°	007	N 4171899 E 288755
03	160	4/5/06	300°	008	N 4162873 E 287642
04	161	4/6/06	25°	009	N 4143600 E 288764

Data collection should be simple and concise.
Matching KOP's to photos is crucial.

Form 8400-5
(May 1984)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date Aug. 16, 1985
District Moab
Resource Area Grand

SCENIC QUALITY RATING SUMMARY

1. Evaluators (names)
Bob Tumwater, Russ Grimes, Pete Jordan

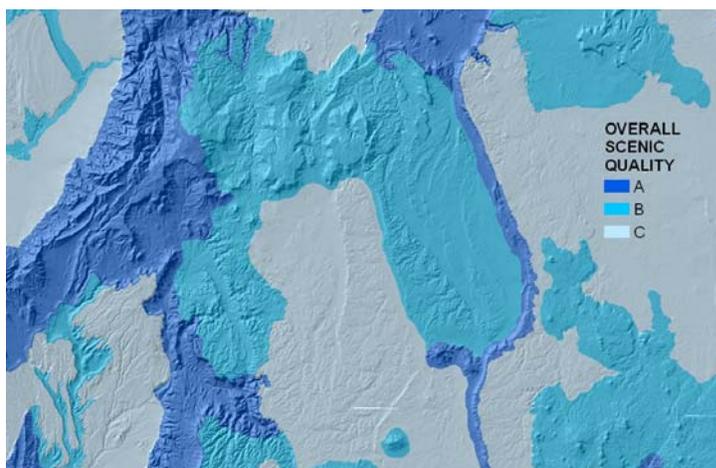
SCENIC QUALITY RATING UNITS (1)	SCENIC QUALITY FACTORS (2)							TOTAL SCORE (3)	EXPLANATION (11)
	Landform (2)	Vegetation (3)	Water (4)	Color (5)	Adjacent Scenery (6)	Scarcity (7)	Cultural Modifications (8)		
001	3	4	5	4	2	2	0	20	A colorful waterway
002	3	1	0	2	3	2	0	11	C rolling hills, colorless, little veg.
003	2	1	0	2	3	2	0	10	C flat, colorless, barren
004	4	3	4	4	3	1	0	19	A water, scenic cliffs, & interesting veg.
005	4	3	0	4	4	3	0	18	B scenic cliffs
006	1	1	0	2	2	2	0	8	C flat, colorless, barren
007	4	4	5	4	3	2	0	22	A water, riverside veg., colorful cliffs.
008	3	3	0	3	3	3	0	15	B good mixture of color, topo., & veg.
009	3	2	0	2	2	2	0	11	C rugged but otherwise mountains
010	1	2	0	2	3	2	0	10	C mountains but good view of N.P.



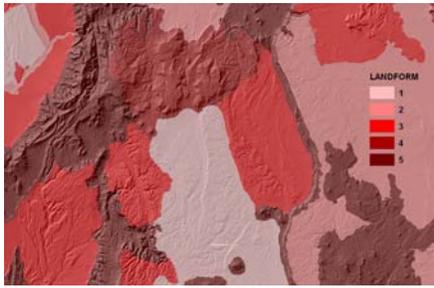
If you choose the manual method, record scores for all rating units on BLM Form 8400-5.

- o Better yet, capture all scenic quality ratings in GIS
 - All seven scenic quality factors can then reside in the same data set
 - o Landform
 - o Vegetation
 - o Water
 - o Color
 - o Adjacent Scenery
 - o Scarcity
 - o Cultural Modifications
 - o Overall Scenic Quality (A, B, C)

SQ_UNIT	LANDFORM	VEGETATION	WATER	COLOR	ADJ_SCENERY	SCARCITY	CULTURALMOD	TOTAL_SCORE	SQ_RATING	GEN_SQ_RATING	ACRES
001	3	3	0	3	2	1	0	12	B (Lo)	B	3922.569
002	1	3	0	2	0	1	0	7	C (Med)	C	30262.480
003	3	3	0	3	1	2	0	12	B (Lo)	B	1648.235
004	2	3	4	3	1	5	-3	15	B (Med)	B	12140.752
005	3	3	0	1	4	2	-2	11	C (Hi)	C	18958.617
006	3	3	0	1	4	2	-2	11	C (Hi)	C	40177.891
007	5	5	3	5	0	4	0	22	A (Lo)	A	249.132
008	5	5	3	5	0	4	0	22	A (Lo)	A	341650.642
009	2	3	0	1	3	2	0	11	C (Hi)	C	1073.566
010	2	3	0	1	3	2	0	11	C (Hi)	C	3101.878
011	2	2	0	3	1	1	-2	7	C (Med)	C	26948.720
012	5	3	0	5	3	3	1	20	A (Lo)	A	760.500
013	4	4	0	3	3	2	-1	15	B (Med)	B	139524.236
014	3	3	0	1	3	2	0	12	B (Lo)	B	51374.602
015	3	3	0	1	3	1	0	11	C (Hi)	C	138797.410
016	3	4	0	3	0	3	1	14	B (Med)	B	25043.626
017	3	3	0	1	3	1	0	11	C (Hi)	C	32079.312
018	5	3	3	5	3	2	2	23	A (Med)	A	14015.895
019	3	3	0	3	2	2	2	15	B (Med)	B	13717.023



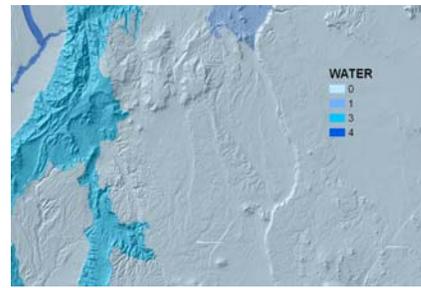
- **GIS data layers that can assist with scenic quality inventory**
 - Digital Raster Graphs (scanned topographic maps)
 - Digital Elevation Models
 - Aerial Photography
 - Vegetation
 - Ecological Zones
 - Land Status
 - NLCS Units (Monuments, Wilderness)\
 - ACEC's
 - Lands with Wilderness Characteristics
 - Transportation
 - Watersheds
 - Special Recreation Management Areas
 - Wildlife Viewing Areas
 - OHV open areas
 - Oil and Gas Development
 - Mineral Development



Landform



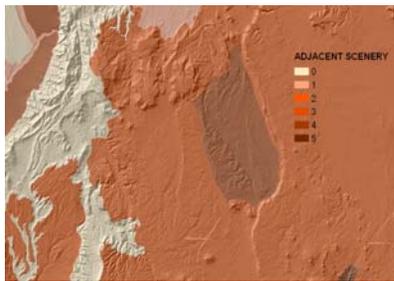
Vegetation



Water



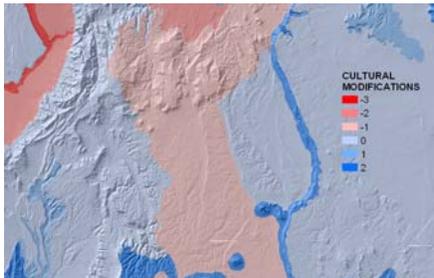
Color



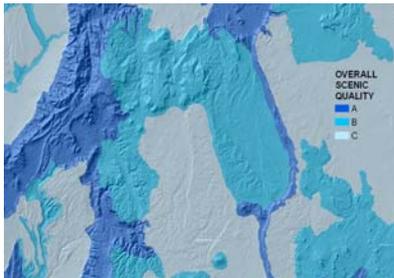
Adjacent Scenery



Scarcity



Cultural Modifications



Overall Scenic Quality

Mapping Scenic Quality is the most difficult part of conducting an inventory!

- **Sensitivity Level Analysis**

- Sensitivity measures the level of public concern for scenic quality
- Sensitivity Ratings - public lands assigned one of three possible sensitivity ratings:
 - High
 - Medium
 - Low
- Sensitivity Rating Factors to consider :
 - Types of users - Sensitivity varies with types of users; for example, a worker engaged in harvesting timber for a living may view a forest differently than an urban resident going to the forest for recreational pursuits.
 - Amount of use - Areas seen by large numbers of people usually have higher sensitivity ratings.
 - Public interest - Visual quality may be of concern to local, state, or national groups.



- Adjacent land uses - Interrelationships with adjacent land uses can affect visual sensitivity of an area.
- Special Areas - Management objectives for special areas frequently require special consideration of visual sensitivity.



- Conducting a Sensitivity Level Analysis

- Break the area into sensitivity level rating units
- Rating units are often based on similar physical characteristics
- Sensitivity level rating units may coincide with scenic quality rating units
- Score using Form 84006-1
- There are three possible scores: High, Medium, and Low
- Identify and score areas with the highest sensitivity first

- GIS can be used exclusively
 - Use existing polygon data to identify high sensitivity areas
 - Create polygons along sensitive transportation corridors. Include entire viewshed.
 - Divide remaining area in medium and low sensitivity polygons
 - Record your rationale on Form 8400-6

- Examples of high sensitivity areas
 - Scenic Byways and Backways
 - National Monuments
 - Wilderness / Wilderness Study Area / Outstanding Natural Area
 - Special Recreation Management Areas where a pristine setting is important
 - Major transportation corridors

- Examples of low sensitivity areas
 - OHV Open Areas
 - Mineral Development
 - Oil and Gas Development

Form 8400-6
(September 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Date *Aug. 15, 1985*

District *Moab*

Resource Area *Grand*

SENSITIVITY LEVEL RATING SHEET

I. Evaluators (*names*)

Bob Tumwater, Russ Grimes, Pete Jordan

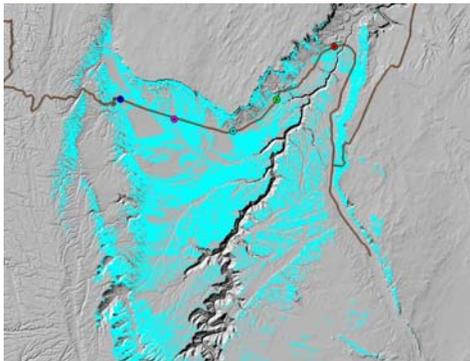
SENSITIVITY LEVEL RATING UNIT (1)	Type of User (2)	Amount of Use (3)	Public Interest (4)	Adjacent Land Uses (5)	Special Areas (6)	Other Factors (7)	Overall Rating (8)	EXPLANATION (9)
001	H	H	H	H	H	-	H	<i>within f/m zone of i-70 & u163</i>
002	H	L	M	L	H	-	H	<i>visible from river & floatboat users.</i>
003	L	L	L	L	L	-	L	<i>isolated area with low scenic values</i>
004	H	M	H	M	M	-	H	<i>f/m zone for state park entrance road.</i>

• **Distance Zones**

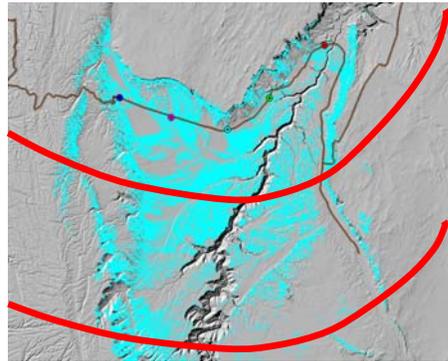
- There are three Distance Zones:
 - Foreground/middle ground: 0 – 5 miles
 - Background: 5 – 15 miles
 - Seldom seen: beyond background or can't see
- The closer to the viewer, the more details are visible.
- Shows relative visibility from travel routes and/or observation points.
- Use Scenic Quality KOP's



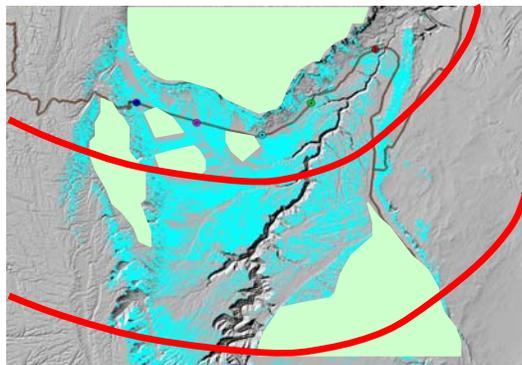
Distance Zones can also be created manually



Using GIS to create viewsheds is faster and removes any guesswork



Identifying Foreground/Midleground and Background is simplified



Empty areas that show up in multiple viewsheds are in the Seldom Seen zone

- **VRM Inventory Classes**

- To determine VRM Inventory Classes, combine overlays for:
 - Scenic Quality
 - Sensitivity Levels
 - Distance Zones



Have your GIS Specialist intersect all three data sets

Basis for Determining Visual Resource Inventory Classes

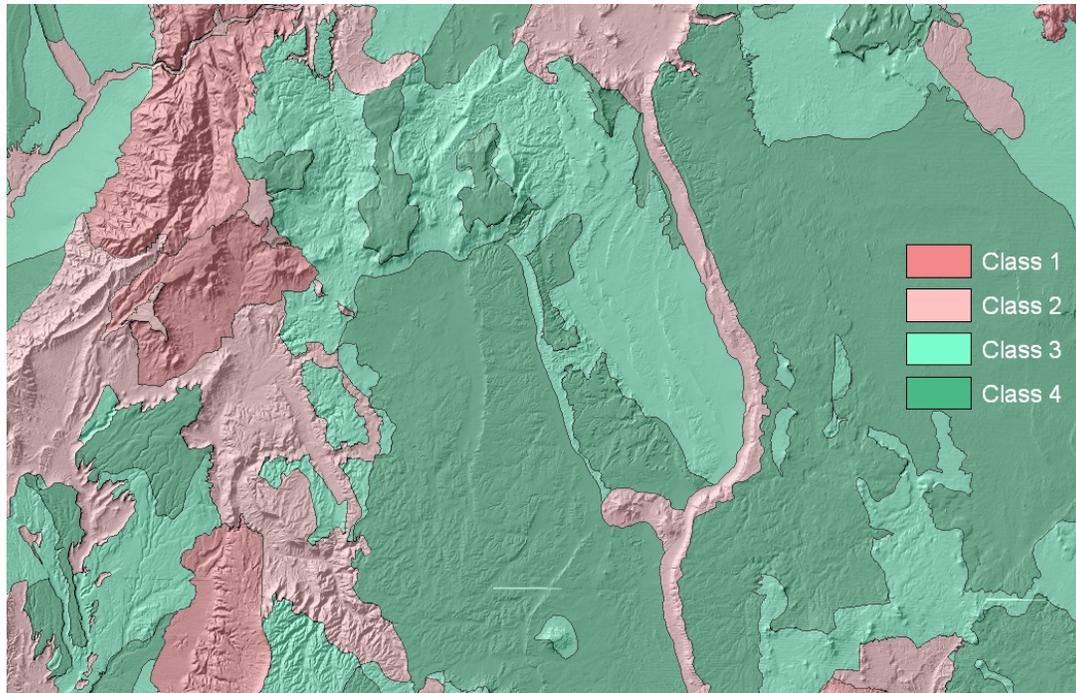
		Visual Sensitivity Levels					
		High		Medium		Low	
Special Areas		I	I	I	I	I	I
Scenic Quality	A	II	II	II	II	II	II
	B	II	III	III/IV*	III	IV	IV
	C	III	IV	IV	IV	IV	IV
		f/m	b	s/s	f/m	b	s/s
		Distance Zones					

* if adjacent area is Class III or lower, (ie - Class II) assign Class III, if higher, (ie. Class IV) Class IV

Use Matrix (H-8410-1) with GIS data to determine final inventory classes.

AREA	PERIMETER	VRM_INV05	VRM_INV05	VRM_NAME	ACRES
88598812.21474	56907.13644	2	1	Class 4	21893.245
43732802.34093	52254.17771	3	2	Class 3	10806.612
4243199.82351	11536.45695	4	3	Class 2	1048.518
76723607.46113	41017.22384	5	4	Class 3	18958.818
1008211.51999	5144.08075	6	5	Class 2	249.135
106104170.36201	216425.21003	7	251	Class 2	26218.913
34809139.75616	41672.56790	8	249	Class 1	8601.526
4382785.08206	14160.52293	9	7	Class 4	1083.010
6593938.02355	19006.44048	10	8	Class 4	1629.398
58607383.69920	39791.54533	11	9	Class 3	14482.201
56522195.44263	39449.96829	12	10	Class 4	13966.940
3077729.64477	6737.16150	13	11	Class 2	760.524
973070615.63662	941958.77150	14	259	Class 2	240451.004
1862835921.44000	633358.77510	15	13	Class 4	460316.816
180040485.14687	95664.71467	16	14	Class 3	44488.976
41256207.47116	42410.57193	17	15	Class 4	10194.632
5986607.50004	10672.26227	18	16	Class 3	1479.323
44669764.22444	45649.58569	19	17	Class 2	11038.140
305253347.53849	186287.27056	20	18	Class 3	75429.751
25489133.49121	27094.95388	21	250	Class 1	6298.503
14378448.33972	24317.44410	22	260	Class 1	3552.992
7203169.39654	11836.73336	23	20	Class 4	1779.942
12228790.87990	24437.86736	24	261	Class 1	3021.800
58774367.02859	64160.13622	25	19	Class 2	14523.463
4403774.46450	11149.12471	26	21	Class 4	1088.196
178762484.77902	99878.27453	27	22	Class 3	44173.175
3734127.12952	12589.03456	28	23	Class 2	922.723

Final GIS Table should look similar to this



Final GIS data represent the visual values in a given area, and can be used to overlay with other resources during the RMP process.

Scenic Quality Inventory and Evaluation Chart

Key factors	Rating Criteria and Score.		
Landform	High vertical relief as expressed in prominent cliffs, spires, or massive rock outcrops, or severe surface variation or highly eroded formations including major badlands or dune systems; or detail features dominant and exceptionally striking and intriguing such as glaciers. 5	Steep canyons, mesas, buttes, cinder cones, and drumlins; or interesting erosional patterns or variety in size and shape of landforms; or detail features which are interesting though not dominant or exceptional. 3	Low rolling hills, foothills, or flat valley bottoms; or few or no interesting landscape features. 1
Vegetation	A variety of vegetative types as expressed in interesting forms, textures, and patterns. 5	Some variety of vegetation, but only one or two major types. 3	Little or no variety or contrast in vegetation. 1
Water	Clear and clean appearing, still, or cascading white water, any of which are a dominant factor in the landscape. 5	Flowing, or still, but not dominant in the landscape. 3	Absent, or present, but not noticeable. 0
Color	Rich color combinations, variety or vivid color; or pleasing contrasts in the soil, rock, vegetation, water or snow fields. 5	Some intensity or variety in colors and contrast of the soil, rock and vegetation, but not a dominant scenic element. 3	Subtle color variations, contrast, or interest; generally mute tones. 1
Influence of adjacent scenery	Adjacent scenery greatly enhances visual quality. 5	Adjacent scenery moderately enhances overall visual quality. 3	Adjacent scenery has little or no influence on overall visual quality. 0
Scarcity	One of a kind; or unusually memorable, or very rare within region. Consistent chance for exceptional wildlife or wildflower viewing, etc. 5+	Distinctive, though somewhat similar to others within the region. 3	Interesting within its setting, but fairly common within the region. 1
Cultural modifications	Modifications add favorably to visual variety while promoting visual harmony. 2	Modifications add little or no visual variety to the area, and introduce no discordant elements. 0	Modifications add variety but are very discordant and promote strong disharmony. -4

Unit 4:

Land Use Planning RMP Development



A. Introduction

Objective: Students will understand how to incorporate Visual Resource Inventory Classes into the land use planning process. This includes: understanding Visual Resource Management Classes; the relationship of management classes to other allocations; and working with other resources on the development of viable alternatives.

Additionally, this section provides a structured forum for further discussion regarding land use planning issues, including but not limited to: benefits-based recreation management; wilderness characteristics and VRM; land-use plan amendments; interim VRM guidelines; going beyond Visual Resource Management Classes; and Wind Energy issues.

B. Moving from Inventory to Management Classes

- Inventory Classes are used to assess visual values for the RMP
- These visual values are weighed along with all other resources
- Handbook H-1601-1, Land Use Planning requires:
 - Designating VRM Classes
 - Implementation decisions must be designed to achieve VRM objectives within each VRM Class
- A signed Record of Decision locks in the RMP's VRM Classes
- Final VRM Classes may or may not reflect the inventory classes



C. Defining Management Classes

- **Class I**

- Objective: To preserve the existing character of the landscape.
- Level of change to the landscape should be very low; and must not attract attention
- Provides for natural ecological change
- Provides for limited management activity



- **Class II**

- Objective: To retain the existing character of the landscape
- Level of change to the landscape should be low
- Changes should repeat the basic elements found in the natural features of the landscape – form, line, color, & texture
- Management activities may be seen but should not attract attention of the observer



- **Class III**

- Objective: To partially retain the existing character of the landscape
- Level of change to the landscape can be moderate
- Management activities may attract attention, but should not dominate the view of the casual observer
- Change should repeat the basic elements found in the natural landscape – form, line, color, & texture



- **Class IV**

- Objective: To provide for activities that require major modification of the landscape
- Level of change to the landscape can be high
- Management activities may dominate the view and be the major focus of attention
- Still minimize impacts through location and design by repeating form, line, color, and texture



D. Working with other resources

- Planning Team: Recreation represents the values of visual resources with other resource values and uses
- During the planning process, you will discover that some resources are compatible with high VRM Classes, and some with low VRM Classes



- The alliances and conflicts that are a natural part of the planning process will lead to the development of valid, defensible alternatives.
- . You want alternatives you can live with
- **VRM and Benefits-Based Recreation Management**



- How are the opportunities, experiences, and benefits tied to the physical setting?
- Is a pristine setting important to the RMZ?
- . . . or not important at all?



- **VRM and Wilderness Characteristics**

- *Wilderness Inventory and Study Procedures* Handbook, H-1630-1 was rescinded as part of the *Utah v. Norton* settlement
- It was replaced with IM 2003-275, Change 1, *Consideration of Wilderness Characteristics in Land Use Plans*
- “The BLM can make a variety of land use plan decisions to protect wilderness characteristics, such as establishing Visual Resource Management (VRM) class objectives . . . and other authorizations to achieve the desired level of resource protection”



E. Resource Management Plan (RMP) Examples

F. Plan Amendments

- Consider valid existing rights and reasonable foreseeable development scenarios.
- What if you have a conflicting project?
 - Deny
 - Mitigate
 - Amend the Plan

G. Going Beyond VRM

- At a minimum, all plans should delineate the standards and objectives for protecting scenic resources by designate BLM lands as Class I, II, III, or IV.
 - The RMP process allows further objectives and standards for visual resources to be described.
 - Consider implications to other resource allocations/standards as it relates to visual resources.
-

- Consider potential for cumulative impacts when describing visual resource standards and making other resource use allocations.
- Consider specific language within lease notices.
- Consider valid existing rights, reasonable foreseeable development scenarios, off-site mitigation.
- Night Sky
- Visual ACEC

H. Interim Guidelines

- What if there are no VRM objectives for an area of public land:
 - Develop interim VRM classes using H-8410-1 guidelines
 - Conduct an inventory: scenic quality, sensitivity levels, distance zones
 - Create inventory classes
 - Create management classes that reflect decisions already in the existing RMP
- A plan amendment is not required unless the project driving the VRM evaluation requires one.

I. Wind Energy and VRM

There is a Programmatic EIS that amended 52 Land-Use Plans in 9 western states

Unit 5:

Project Planning and VRM



A. Introduction to Project Planning

Objective: Students will understand how to incorporate visual resource objectives into all phases of project planning and why it's important to do so.

- **Key Points to Remember**
 - Incorporate visual resource considerations early in and throughout process.
 - Understand existing constraints.
 - Team approach is best.
 - Field review is essential.
 - Don't jump to design details too soon.

B. Incorporate Visual Resources in Project Planning Process

- Better efficiency
- Better chance of acceptance
- Better projects
- Less chance for costly, time delaying court challenges
- Avoid and/or minimize mitigation

C. Understanding Existing Constraints

- Laws, Management Strategies, Guidance
- RMPs, MFPs, City and County General Plans
- **Visual Resource Management Class Objectives**
- Activity Plans, Travel Management Plans, Transportation Plans, Master Plans, Recreation Area Management Plans (RAMPs), etc.
- Project plans, design guidelines/standards
- Existing Facilities

C. Team Approach is Best



- Minimizing the visual impacts is everyone's job.
- Include all of the disciplines that have a significant stake.
- Include external stakeholders early on.
- Increases the credibility of the recommendations and makes project easier to implement.

D. Field Review is Essential



- Project proponent and planning team can only meaningfully discuss project on-site.
- Keeps everyone on the same page.
- Misunderstandings can be avoided.
- Project parameters can be determined more easily.

F. Don't Jump to Design Too Soon

- Thoughtful and comprehensive planning leads to better design.
- Saves time and money if planning leads design.

What should you consider when planning and designing a project?

1 Remember DESIGN FUNDAMENTALS. +

- Proper Siting and Location
- Reduction of Visibility
- Repetition of Form, Line, Color and Texture
- Reduction of Unnecessary Disturbance

2 Employ DESIGN STRATEGIES. +

- Color Selection
- Earthwork
- Vegetation Manipulation
- Structures
- Placing Linear Alignments
- Reclamation/Restoration

3 Consider ENVIRONMENTAL FACTORS. +

- Viewing Distance
- Angle of Observation
- Length of Time in View
- Relative Size or Scale
- Season of Use
- Light Conditions
- Recovery Time
- Spatial Relationships
- Atmospheric Conditions
- Motion

= Minimal Visual Impacts

Unit 6:

DESIGN FUNDAMENTALS



A. Introduction to Design Fundamentals

Objective: Students will learn fundamental design concepts, methods, and techniques to minimize adverse affects to visual resources from resource development projects on the public lands.

- **Design Fundamentals**
 - Proper Siting and Location
 - Reduction of Visibility
 - Repetition of Form, Line, Color and Texture
 - Reduction of Unnecessary Disturbance

B. Design Fundamentals

- **Proper Siting and Location:** First line of defense in mitigating a projects' impact is to place it properly on the landscape.
 - Locate projects as far away from prominent viewing locations as possible.
 - The location is screened by topographic or vegetative features
 - The optimum site enables the operator to minimize visual impacts and surface disturbance
 - Locate project away from sensitive areas
 - Locate project away from dominant landscape features
 - Avoid locating projects on ridgelines.
 - Locate project away from points of convergence

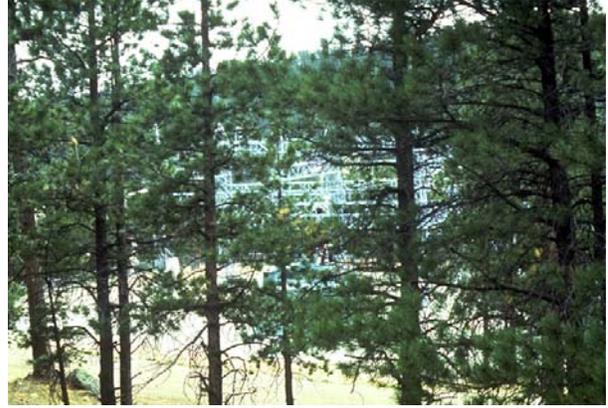


- **Reduction of Visibility**

- Screen project with vegetation
- Bury projects underground
- Hide projects behind a hill or knoll



This water tank was buried into the hillside to reduce the overall visible profile.



This utility substation was carefully located so that natural vegetation helps to screen visibility of the structures.



This creative placement of a pipeline used natural existing vegetation to screen the project.



This project utilized many techniques, such as reduced disturbance, partial screening by vegetation, and location within a knoll, to help reduce overall visibility.

- **Repetition of Form, Line, Color and Texture:** Repeating these elements when designing projects will reduce contrasts between landscape and development.

- Repeating FORM



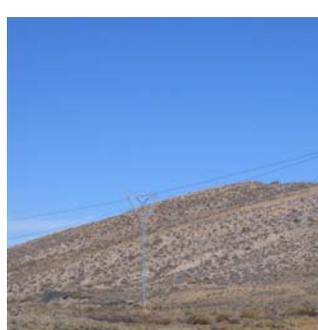
- Repeating LINE



- Repeating COLOR



- Repeating TEXTURE



- **Reduction of Unnecessary Disturbance**

- Fit the project to the landscape.
- Use smallest area necessary for project.
- Share ROWs.
- Placement along the edge of roads or other existing linear disturbances.
- Installation under existing or proposed road surfaces.
- Retain and reuse topsoil.
- Minimize road width.
- Avoid large side cuts - minimize cuts and fills.
- Consolidate the use of facilities and supporting infrastructure.
- Promote early reclamation.
- Restore areas no longer needed or required after construction is complete.



Unit 7:

DESIGN STRATEGIES



A. Introduction to Design Strategies

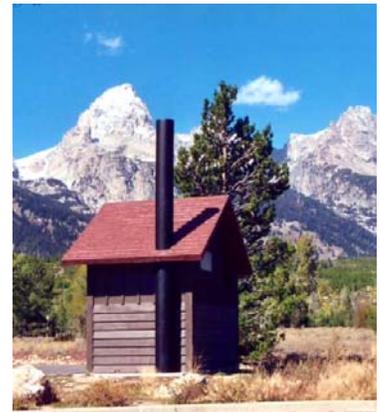
Objective: Students will learn fundamental design strategies to minimize adverse affects to visual resources from resource development projects on the public lands.

- **Design Strategies**
 - Color Selection
 - Earthwork
 - Vegetative Manipulation
 - Structures
 - Placing Linear Alignments
 - Reclamation/Restoration

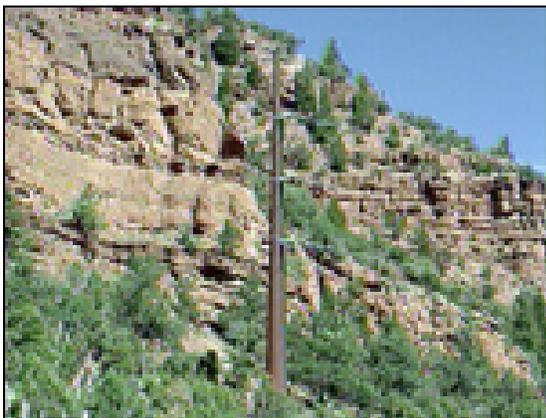
B. Design Strategies

- **Color Selection:** Generally the most impacting decision you have over a design is color selection, consider:
 - White or light colors usually cause the most contrast
 - Color selections need to be two or three shades darker than the background colors
 - Achieve the best blending with the surrounding landscape in all seasons
 - Colors should reflect those of the landscape, not the sky.
 - Galvanized steel on utility structures should be darkened to prevent glare.
 - Color (hue) is most effective within 1,000 feet.
 - Be aware of the lighter colors that usually occur when the soil surface is disturbed.
- Refer to the Standard or Supplemental Environmental Colors Charts or the Munsell Color Charts when specifying the colors you wish a contractor to use.





Be consistent and use environmental colors.



The color selected for this electrical tower blends well with the rock formations surrounding it.



It is important to select colors that are in harmony with the natural colors in the landscape, thereby avoiding strong contrasts.

- **Earthwork**

- The scars left by excessive cut and fill activities during construction in our western landscapes often leave long-lasting negative visual impacts. This is especially true of activities that disturb the highly mineralized soils of the arid west.
- Proper location and alignment are probably the most important factors in reducing contrast created by earthwork . Fitting the proposed development to the existing landforms in a manner that minimizes the size of cuts and fills will greatly reduce visual impacts from earthwork.
- Other strategies include:
 - Avoid hauling in or hauling out excess earth cut or fill.
 - Avoid rounding and/or warping slopes.
 - Bend slopes.
 - Retaining existing rock formations, vegetation, drainage, etc., whenever possible.
 - Utilize split-face rock blasting, i.e., cutting formations so rock forms are irregular in shape.
 - Tone down freshly broken rock faces with use of asphalt emulsions, rock stains, etc.
 - Use retaining walls to reduce the amount and extent of earthwork.
 - Retain existing vegetation by using retaining walls on fill slopes, reducing surface disturbance, and protecting roots from damage during excavations.
 - Avoid disturbing soil types that will generate strong contrasts.
 - Prohibiting dumping or sloughing of excess earth/rock on downhill slopes.



Earth work should follow the form of the land and contours



Rounding the top and bottom of the slope and also undulating the face of the slope create a more natural-looking landscape.



The split-face rock blasting technique used on this project creates a more natural-looking rock face.



The rock gabion treatment of this hillside creates strong contrasts in line and color.

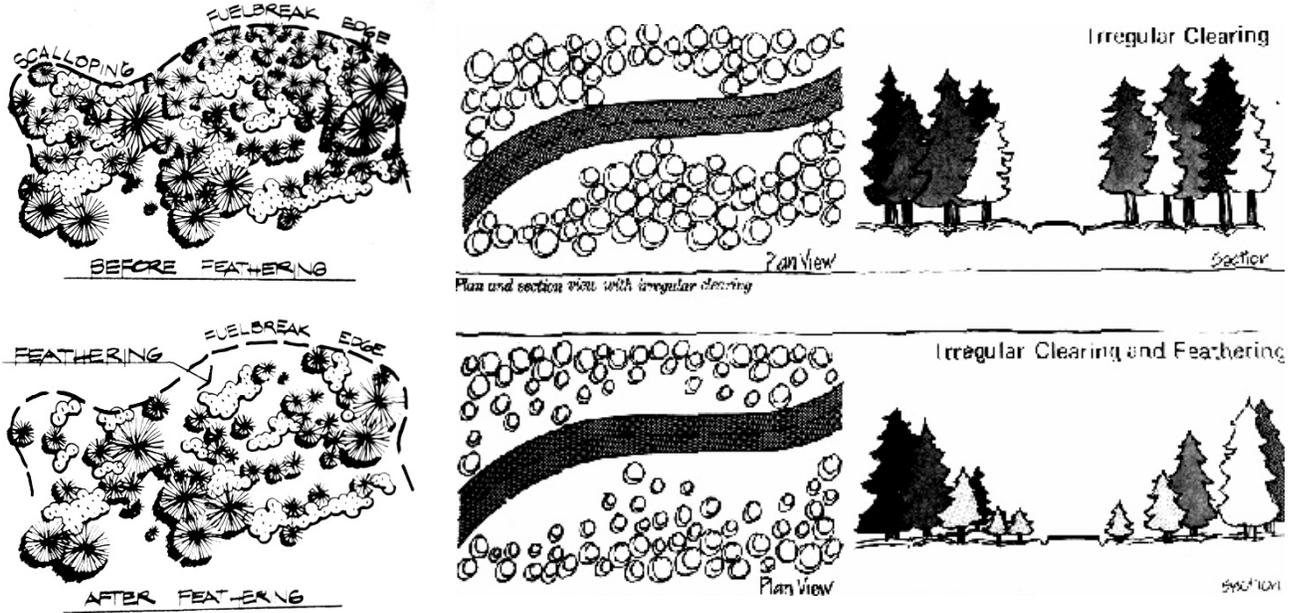


This recontoured slope blends well by repeating the existing forms and lines found in this landscape.

- **Vegetation Manipulation:** Designing vegetative openings in the landscape.
 - Another effective method of reducing the visual impact from a proposed activity or development is to retain as much of the existing vegetation as possible, and where practical, to use the existing vegetation to screen the development from public viewing areas.
 - Scalloped, irregular cleared edges are more natural looking.
 - Avoid straight line edges.
 - Minimizing the impact on existing vegetation by:
 - Partial clearing of the limits of construction rather clearing the entire area --- leaving islands of vegetation results in a more natural look.
 - Using irregular clearing shapes.
 - Feathering/thinning the edges of the cleared areas. Feathering edges reduces strong lines of contrast. To create a more natural look along an edge, retain a good mix of

tree/shrub species and sizes.

- Disposing of all “slash”.



The use of irregular shapes with “feathered” edges during vegetative clearing yields a more natural looking environment. The graphics illustrate irregular edges, scalloping, and feathering.



Vegetative clearings of an irregular shape blend well in this landscape.



The design of this ski slope incorporates irregular shapes, but the hard, unthinned edges create a strong visual contrast.



Vegetative openings like this one repeat natural shapes and openings in the landscape.

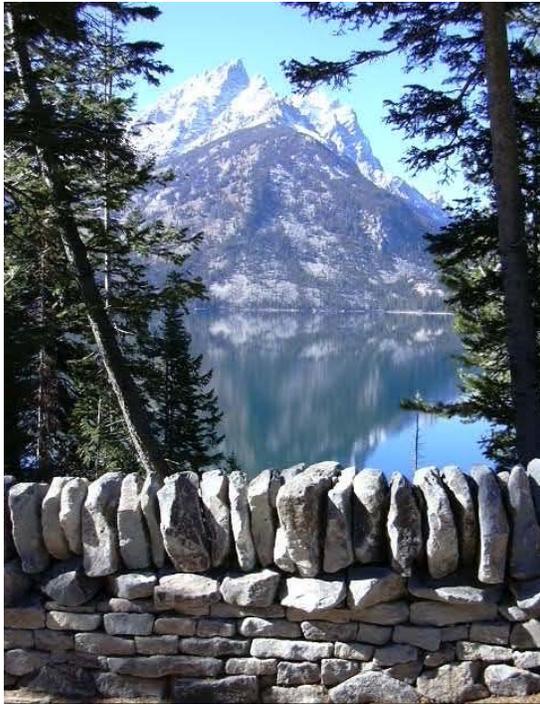


The edges of this vegetation clearing have been thinned or “feathered” to create a natural-looking treatment.

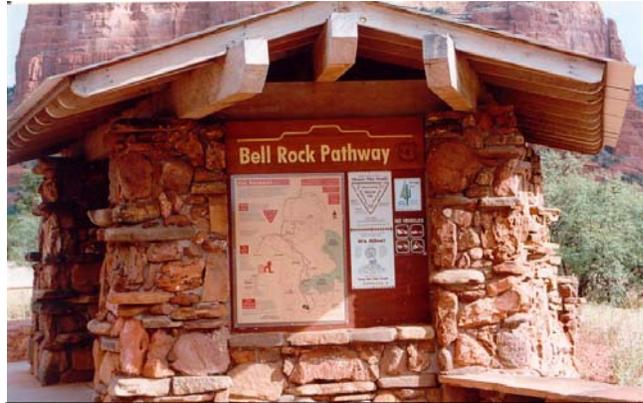


This feathered edge treatment creates a natural progression from grasses to mature trees.

- **Structures** - The visual impact from new structures can be reduced by:
 - Repeating form, line, color, and texture.
 - Minimizing the number of structures. Combine different activities in one structure wherever possible.
 - Using earth-tone paints and stains.
 - Using self-weathering metals.
 - Chemically treating wood so that it can be allowed to self-weather.
 - Using natural stone on surfaces.
 - Burying all or part of the structure.
 - Selecting paint finishes with low levels of reflectivity.
 - Using rustic designs and native building materials.
 - Using natural appearing forms to complement landscape character.
 - Screening the structure from view through the use of natural land forms and vegetation.
-



Wall along pathway -
Teton National Park, WY



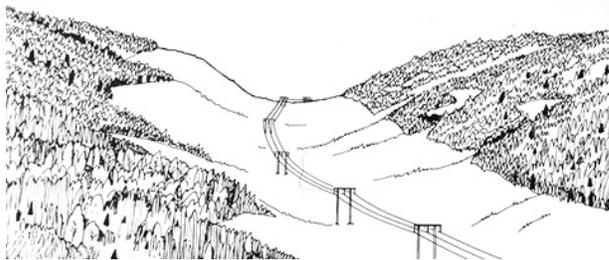
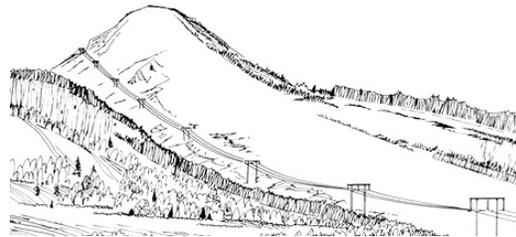
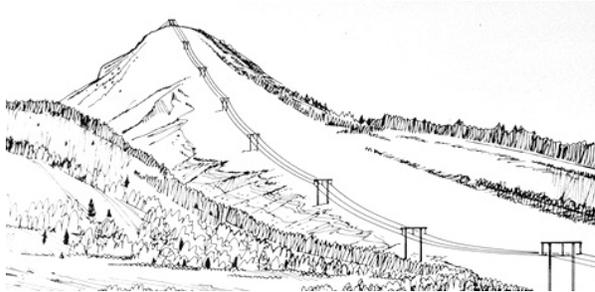
Bell Rock Pathway Kiosk –
Sedona AZ



Structures use native materials, and reflect the form, line, color, and textures of the surrounding landscapes.

- **Locating Linear Alignments:**

- Identify all possible alternative corridor alignments.
- Select one most feasible for the proposed project.
- Topography - hide manmade changes.
- Soils - should be analyzed for stability and fertility, need revegetation plan.
- Hydrological conditions - evaluate risks of surface/subsurface erosion.
- Select an alignment that follows landscape contours
- Avoid fall-line cuts and bisection ridge tops
- Hug Vegetation line and avoid valley bottoms





This pipeline location follows along the natural lines created by the edge of the wooded area, rather than crossing through it.



The gradual, gently curving alignment of this roadway helps to repeats the forms of this landscape.



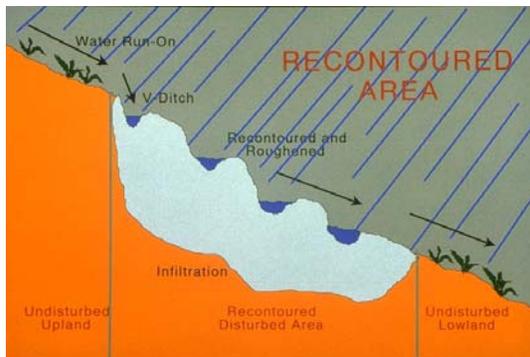
These linear alignments respect (repeat) the forms and line in the landscape, helping to minimize contrast.



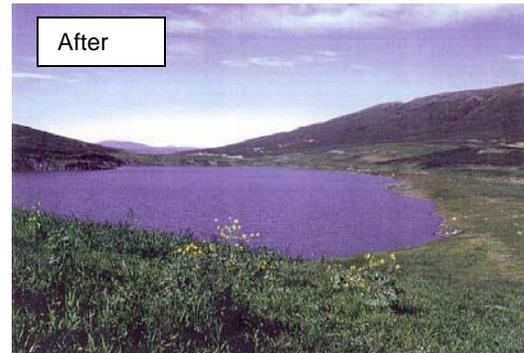
These linear alignments **do not** repeat the forms, lines, colors, or textures of the landscape, thereby creating strong, noticeable contrasts.

- **Reclamation / Restoration**

- Strategies for restoration and reclamation are very much akin to the design strategies for earthwork, as well as the basic site planning principle of reducing unnecessary disturbance.
- The objectives of restoration and reclamation include reducing long-term visual impacts by decreasing the amount of disturbed area and blending the disturbed area into the natural environment while still providing for project operations.
- Though restoration and reclamation are a separate part of project design, they should not be forgotten or ignored. It is always a good idea to require a restoration/reclamation plan as part of the original design package.
- All areas of disturbance that are not needed for operation and maintenance should be restored as closely as possible to previous conditions.
- Several strategies that can enhance any restoration or reclamation effort include:
 - Mulch cleared areas.
 - Furrow slopes.
 - Utilize planting holes on cut/fill slopes to retain water.
 - Choose native plant species.
 - Fertilize, mulch, and water vegetation.
 - Replace soil, brush, rocks, forest debris, etc., over disturbed area.



Disturbed areas can be recontoured, then roughened, to trap water and aid vegetation regrowth. Rocks and other natural debris can be replaced afterwards to help blend with adjacent, undisturbed areas.





The replacement of the large rocks in this pipeline right-of-way creates a natural-looking environment.



Replacement of rock on this exploratory drilling site repeats the texture of this landscape.



This restoration of this natural gas facility has been improved by:

- Reducing the disturbed area
- Blending/terracing the earth form to reflect surrounding contours
- Planting grasses and forbs on the disturbed areas
- Selecting colors that blend with the landscape

Unit 8:

Environmental Factors



A. Introduction to Environmental Factors

Objective: On completion of this unit, students will be able to use Environmental Factors in the planning and design process for a given project.

Environmental factors effect our perception of objects in the landscape. They can either enhance your design technique or work against it. You should remain aware of these factors throughout the planning and design process.

Environmental factors affect the viewer's perspective of form, line, color, texture of a project.

- **Key Points to Remember**
 - **Environmental Factors can help you plan a project to minimize visual impacts.**
 - **Environmental Factors should be considered when assessing visual impacts of a proposed project.**
 - **They are constantly changing.**
 - **We can't change them - but we must analyze impacts from them.**
 - **You should identify the most critical location or time to judge them.**
 - **Judge the most severe, most sensitive conditions possible = when viewed by most people.**
- **Environmental Factors**
 - Viewing Distance
 - Angle of Observation
 - Length of Time in View
 - Relative Size or Scale
 - Season of Use
 - Light Conditions
 - Recovery Time
 - Spatial Relationships
 - Atmospheric Conditions
 - Motion

B. Types of Environmental Factors

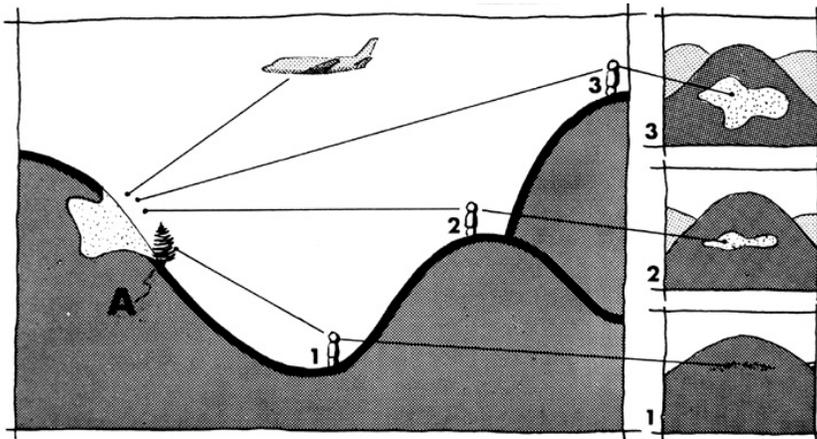
- **Viewing Distance**

- As viewing distance increases, the project becomes less visually dominant.
- As viewing distance increases, color value decreases toward uniformity.



- **Angle of Observation**

- Apparent size of a project is directly related to the angle between the viewer's line-of sight and the slope upon which the project is located.



The visual impact of a project can vary greatly depending of the angle of observation.



- **Length of Time in View**
 - If brief glimpse, contrast is less.
 - Three-tenths of a second is needed for the eye to fixate on an object.

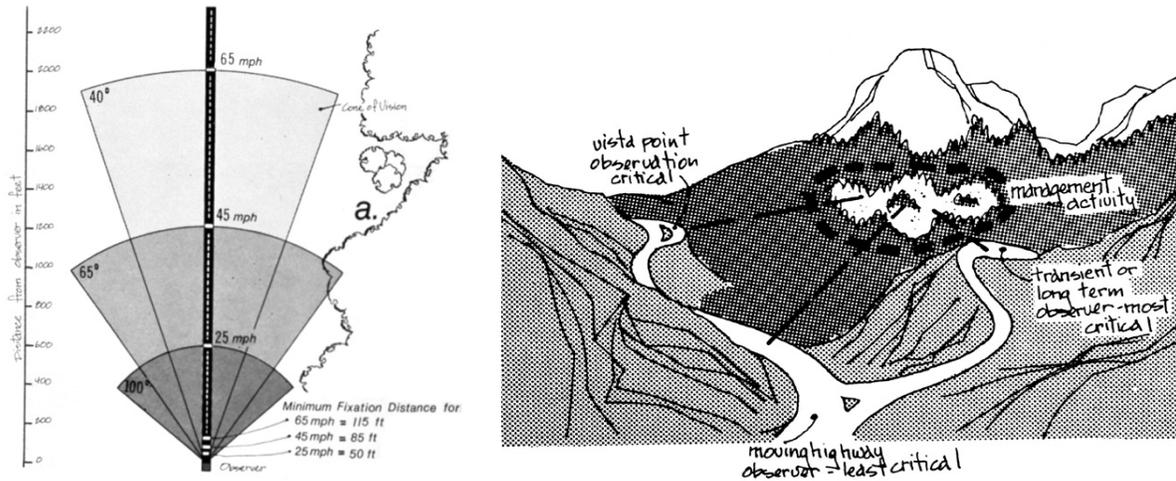


Diagram shows how your cone of vision decreases as speed increases along a linear corridor.

- **Relative Size or Scale**
 - The contrast created by a project is directly related to its size and scale compared to the surrounding landscape in which it is located.



- **Season of use**
 - Consider the physical conditions that exist during the heaviest or most critical visitor use season, such as snow cover, tree defoliation, leaf color, etc.



- **Lighting conditions**

The direction, angle and quality of light affects the color intensity, reflection, shadow, form, and texture of visual aspects of a landscape.

- *Back lighting* - do not evaluate dominance elements when back lit.
- *Front lighting* – when most of landscape is in full sunlight, it is flattened by lack of shadow.
- *Side lighting* - causes shadows, causes size of management activity to appear smaller.
- *Shadows* - create visible lines.



- **Recovery Time**

- The amount of time successful revegetation/reclamation is expected to take.



- **Spatial Relationships**

- Spatial relationships within a landscape determine the degree of contrast.
- Spatial qualities of a landscape are determined by the three-dimensional arrangement of objects and voids.
- Arrangement of objects and voids in the landscape can be categorized by their spatial composition.

- **Atmospheric Conditions**

- The impact of form, line, color, and texture is reduced by clouds, fog or smog, precipitation, and wind motion.



- **Motion**

- Movement such as windmills, vehicles, or plumes draws attention to a project.
-

Unit 9:

TYPES OF PROJECTS



A. Introduction to Design Considerations for Various Projects Types

Objective: Students will learn about design considerations for the variety of projects on BLM lands where visual resource management is utilized.

- **Basic Project Types**
 - Linear Alignments
 - Oil and Gas Facilities
 - Mineral Sites
 - Water Storage Facilities
 - Communication Sites
 - Wildlife and Range Improvements
 - Vegetation Treatments
 - Recreation Sites
 - Fire Rehabilitation Projects

B. Types of Projects

- **Linear Alignment Design Considerations**
 - Follow contours of landform
 - Co-locate rights-of-way
 - Minimize cut and fill
 - Avoid over-casting material



- **Oil and Gas Design Considerations**

- Avoid hilltops and ridgelines
- Co-locate rights-of-way
- Minimize cut and fill
- Choose the appropriate color
- Use lower profile facilities
- Screen with vegetation & landforms



- **Mineral Sites Design Considerations**

- Avoid hilltops and ridgelines
- Screen with vegetation & landforms



- **Water Storage Facilities Design Considerations**

- Avoid hilltops and ridgelines
- Screen with vegetation & landforms
- Choose appropriate color and texture



- **Communication Sites Design Considerations**

- Avoid hilltops and ridgelines
- Screen with vegetation & landforms
- Choose appropriate color and texture
- Avoid hilltops and ridgelines
- Use minimum height necessary to provide service
- Co-locate rights-of-way
- Minimize cut and fill
- Avoid over-casting material
- Choose the appropriate color
- Choose appropriate materials
- Screen (access, buildings, etc.) with vegetation & landforms



- **Wildlife / Range Improvements Design Considerations**

- Avoid hilltops and ridgelines
- Minimize cut and fill
- Choose the appropriate color
- Choose appropriate materials
- Screen (access, buildings, etc.) with vegetation & landforms



- **Recreation Site Design Considerations**

- Choose the appropriate color
- Choose appropriate materials
- Screen with vegetation & landforms



- **Vegetation Treatment Design Considerations**

- Avoid hard edges and unnatural patterns



- **Fire Rehabilitation Project Design Considerations**

- Avoid hard edges and unnatural patterns



Unit 10:

Project Analysis and Evaluation



A. Introduction

Objective: Students will use the Visual Contrast Rating System to determine the elements of a project that are inconsistent with VRM objectives and recommend measures to improve the visual quality of a project.

B. Visual Contrast Rating System

- A systematic process to analyze potential visual impacts of proposed projects and activities.
- The degree to which a development adversely affects the visual quality of a landscape is directly related to the amount of visual contrast between it and the existing landscape character.
- The amount of contrast is measured by separating the landscape into major features - (Landform/Water, Vegetation, Structures) – then predicting the magnitude of contrast in each of the basic elements – Form, Line, Color, Texture.
- The Visual Contrast Rating System is primarily intended to assist BLM personnel not formally trained in design arts to apply basic principles of planning and design to prevent or minimize visual impacts.
- Every attempt is made to reduce visual impacts even if the proposed project meets VRM Management Objectives for the area.
- The BLM Handbook, H-8431-1, Visual Contrast Rating, provides the necessary guidance to follow when conducting the ratings.



The above image shows a failed effort to reclaim a pipeline right-of-way after construction. The line of boulders is visible for several miles and has adversely affected form, line, color, and texture in the landscape.

Allowable changes and relationship to the casual observer for each VRM Class are summarized in the below table.

VRM CLASS	Visual Resource Objective	Change Allowed (Relative Level)	Relationship to the Casual Observer
Class I	Preserve the existing character of the landscape. Manage for natural ecological changes.	Very Low	Activities should not be visible and must not attract attention.
Class II	Retain the existing character of the landscape.	Low	Activities may be visible, but should not attract attention.
Class III	Partially retain the existing character of the landscape.	Moderate	Activities may attract attention but should not dominate the view.
Class IV	Provide for management activities which require major modification of the existing character of the landscape.	High	Activities may attract attention, may dominate the view, but are still mitigated.

C. Steps in Visual Contrast Rating Process

- **Obtain a complete project description.**
 - Emphasize early contact with project proponent
 - Coach proponent on project design
 - Proposal must be comprehensive

- **Identify VRM Objectives from land use plan.**
 - Class I – No visible change
 - Class II – Change visible but does not attract attention
 - Class III – Change attracts attention but does not dominate
 - Class IV – Change is dominant but mitigated

- **Select key observation points.**
 - Linear projects should have more than one KOP
 - Views from communities, rivers & roads
 - Scenic overlooks, important vantage points
 - Factors that should be considered in selecting KOPs are:
 - angle of observation
 - number of viewers
 - length of time the project is in view
 - relative project size
 - season of use
 - light conditions

- **Prepare visual simulations.**
 - Helps understand the project
 - Helps understand the visual impacts
 - Great way to illustrate impacts in the EA
 - Seeing an image of the project is much better than trying to imagine it
 - Helps the proponent, the public, as well as BLM

- **Complete Contrast Rating.**
 - See Bureau Manual Handbook H-8431-1
 - Illustrations and appendices
 - Provides documentation for EA
 - Provides a record for future action
 - Protects & appeals

D. Visual Contrast Rating Form

- Quickly reveals elements and features that cause the greatest visual impact.

- Filling it out is NOT a pass-fail exercise.

- To properly assess the contrast between the proposed and existing situation, it is necessary to break each down into the basic features (i.e., landform/water, vegetation., and structures) and basic elements (i.e., for, line, color, and texture) so that the specific features and elements that cause contrast can be accurately identified and documented.

- Here are some helpful tips for contrast rating forms:
 - **Complete it in field:** The actual rating should be completed in the field from the KOP(s). When possible , it should be done as a team. Do not “dry-lab” these forms.
 - **Time of Year:** The rating should be completed during the time of year and time of day when most people will be viewing the area of development.
 - **Rate the Contrast:** Using the matrix, rate the degree of contrast. Be sure to include any mitigating measures.

Did you meet the VRM objectives? Determining whether or not VRM objectives have been met - - compare the contrast ratings with the objectives for the approved VRM class from the RMP. For comparative purposes, the four levels of contrast (none, weak, moderate, and strong) roughly correspond with classes I, II, III, and IV, respectively.

- **Document! Document! Document!** Take pictures, complete the form, write short narratives, prepare visual simulations - - - whatever it takes to describe your thought process and final recommendations. You will probably be called upon many months later to *defend your recommendation* and proper documentation is the only way you or your manager will accurately remember what took place during your analysis.
- **Input info into NEPA document:** Enter your findings, along with the necessary documentation, in the NEPA document. Write any necessary stipulations. Be sure all resource stipulations are coordinated and in agreement.
- **Monitor construction and operation compliance:** Be sure that the visual stipulations are being followed. Many times your hard work goes down the drain because of in-the-field changes during construction and maintenance. You must monitor throughout construction to ensure compliance. Document, document and document. If the project proponent is not in compliance, then your written notes and photographs are our only line of defense.

Form 8400-4 (September 1985) UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT VISUAL CONTRAST RATING WORKSHEET	Date <u>Aug. 16, 1985</u> District <u>Moab</u> Resource Area <u>Grand</u> Activity (program) <u>Oil/Gas</u>	
SECTION A. PROJECT INFORMATION		
1. Project Name <u>Well Site #136</u> 2. Key Observation Point <u>#15 on Hatch Point Road</u> 3. VRM Class <u>Class II</u>	4. Location Township <u>27S</u> Range <u>21E</u> Section <u>24</u>	5. Location Sketch

Section A of the Visual Contrast Rating Form locates the project and identifies the VRM class. A simple illustration identifies the project location and, just as important, the location of the KOP.

This project is an oil and gas development project that would create an access road, a leveled drilling location (pad), and production facilities should drilling result in a discovery of recoverable reserves.

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created by vegetative patterns	_____
LINE	Horizontal & diagonal	Weak & undulating	_____
COLOR	Dark tan to orange	Light to dark green, mottled	_____
TEXTURE	smooth	Smooth to coarse	_____

Section B of the Visual Contrast Rating Form is where the Existing Characteristic Landscape of the Project Area is described. Note the use of simple language. Use short phrases and, most importantly, focus on the area being affected by the project. It is inappropriate to describe the background in detail if the project is to occur in the foreground.

SECTION C. PROPOSED ACTIVITY DESCRIPTION

	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat	Geometric & linear forms created by clearings	Cylindrical, geometric & angular
LINE	Horizontal (pad) Curved (road)	Strong irregular lines created by edge effect of clearings & roads	Vertical, horizontal & Angular
COLOR	Tan	Light Green	Tan
TEXTURE	Fine to Smooth	Patchy	Coarse

Section C of the Visual Contrast Rating Form is where the Proposed Activity's effects on the Characteristic Landscape are described.

SECTION D. CONTRAST RATING SHORT TERM LONG TERM

ELEMENTS	1. DEGREE OF CONTRAST	FEATURES												2. Does project design meet visual resource management objectives? Yes ___ No <u>X</u> (Explain on reverse)	
		Land/Water Body				Vegetation				Structures					3. Additional mitigating measures recommended. Yes <u>X</u> No ___ (Explain on reverse)
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None		
Form			X				X					X		Evaluator's Names Date: Cimarron Chacon 7/16/04 Allysia Angus	
Line		X				X						X			
Color			X				X					X			
Texture			X				X					X			

Section D is organized into features and elements. The terms strong, moderate, weak and none conform to VRM Classes IV, III, II, and I. In other words, if the project creates strong contrast (impacts), it would still conform to Class IV but not to Classes I – III. If the project only causes weak contrast (impacts, it would meet the Class II VRM objective.

In the example above, the project would meet a Class II objective for Form, Color, and Texture, but only a Class III objective for Line. Note that the structures only caused a weak degree of contrast, but changes to land and vegetation caused a moderate degree of contrast to the element Line.

This tells you where to focus mitigation efforts in order to reduce the degree of impact, and thus meet the Class II VRM objective.

E. Vocabulary

- Analyze the landscape for those elements which are dominant - - - they are the most important.
- Use terminology that is meaningful to you - you are the one who 1) is going to have to use the analysis to solve design problems, and 2) is going to have to explain why you did what you did to both management and the public - - many times, months after you performed the analysis.



If everything goes right you may have a project that blends with the landscape and is virtually unseen.

Unit 11:

Visual Simulations



Objective: Illustrate the value and utility of visual simulation techniques for visual resource management. Several different software programs will be described along with example case studies in which simulations were used effectively.

Photography Basics for Visual Simulation

Adapted from "Canon(r) World of Creative Photography" and "Kodak Pocket Photoguide"

Definitions:

SLR - The single lens reflex camera (SLR) provides view and focus through the same lens used to photograph the subject. The lens transmits light from the subject through the SLR to the eye via a mirror, allowing the photographer to see the subject and compose the photograph. Pressing the shutter button causes the mirror to swing out of the way, opens the focal plane shutter, and permits the light to reach the film. The camera lens and shutter must work together to give a correct exposure.

Point and Shoot - This type of camera is highly automated, setting all aspects of exposure for you if you choose, or allowing various levels of control.

Aperture (f-stop) - A camera lens, like the human eye, regulates the amount of light entering. The pupil of the eye, or aperture of the lens, opens wider for dim light, or cuts back bright light by becoming quite small. Apertures, also known as "f-stops", have numerical values. Wider f-stop openings have smaller f-stop designations like f1.8 or f2.8, allowing more light to pass through the lens. A large f-stop number such as f16 is a smaller lens opening and reduces the amount of light entering the lens. Control of aperture also controls "depth of field" in the picture.

Depth of field - The amount of sharpness from front to back (foreground to middleground to background) in the photograph.

Focal plane shutter - Controls the amount of light entering the camera by opening and closing at different speeds. 1/125th second is considered a mid-range shutter speed. Speeds generally are calibrated as 1/60, 1/125, 1/250, 1/500, 1/1000 (or in 2x increments). Faster shutter speeds "freeze" rapidly moving subjects, such as rivers, waterfalls, or automobiles. A subject moving parallel to the camera requires a higher shutter speed to stop the motion. The closer you are to the subject, the faster the speed needed to capture it clearly. Try to use the fastest shutter speed whenever possible. Various aperture/shutter speed combinations are equivalent in giving the correct exposure, but the effect you want determines which is most appropriate for the situation at hand. For example, the following combinations may all give correct exposure in a certain situation, but the effect on such things as depth of field, "freezing" movement, and sharpness may vary: f2.8 at 1/250 = f4 at 1/125 = f5.6 at 1/60 = f8 at 1/30 = f11 at 1/15, etc.

ISO, or ASA (old term) - Commonly referred to as film speed. ISO is an international numbering standard that refers to the film's sensitivity to light. The smaller the ISO number,

the lower the film's sensitivity to light. ISO 25, 64, or 100 is good for bright light conditions. Faster speed films of 200, 400, 1000, or 1600 are more sensitive to light for shooting action or whenever high shutter speed or maximum depth of field is desired. Doubling the ISO number doubles the light sensitivity of the film; ISO 200 is twice as fast (or two times as light sensitive) as ISO 100 and requires only 1/2 as much exposure to light.

Grain - Grain (coarseness of image texture) increases as ISO increases. Using lower ISO film will result in a "smoother" image.

Lens - The lens is made up of several convex and concave glass elements that bend light toward the film. Focusing causes the elements to move and bring the light rays into sharp focus on the film.

Helpful hints for better camera operation:

Remember to set the ISO indicator on your camera correctly. Many newer cameras set this automatically.

Richer color saturation can be achieved by setting the ISO speed a little higher on the camera than the recommended rating, causing a slight underexposure. This is often done with color transparency (slide) photography. The same effect can be achieved by adjusting the exposure compensation setting on many cameras.

"Bracket" exposures by shooting one picture according to camera's meter, then shooting at least one picture over and one picture under the correct metering, giving a variety of exposures from which to choose.

Be sure that film is loaded and advancing properly through the camera.

Proper camera handling:

Keep the camera firmly against the forehead or cheekbone and tuck both arms in tightly against your body.

Stand with feet slightly apart, resting camera and lens in palm of hand for more support. Focus the lens with thumb and forefinger.

Brace yourself against a wall, tree, fence, etc.

Inhale a deep breath and hold it, or exhale completely and pause, then gently press the shutter release.

Use shutter speeds of 1/60 or faster when hand holding the camera.

When using telephoto lenses, set the shutter speed as close to the focal length of the lens as possible, or faster, e.g. 135mm lens = 1/125.

Use a tripod or monopod when in doubt about the stability of the camera, or when using a slow shutter speed (due to slow film speed, large f-stop, or combination). There are many styles and features available. Pick one that is easy to use, very stable (which often means heavier), and not too complicated. There are tripod/monopod heads available with pistol grips that allow you to quickly swivel the head to any position, and they have a built-in bubble level.

Selection of lens to use:

Lenses cover a variety of focal lengths, or angles of view.

Lenses project a round image; the image is therefore cut off to a rectangular shape on the film surface.

Lens "speed" refers to the lowest f-stop (widest aperture); the lower the available f-stop, the "faster" the lens.

"Normal" lens is 50mm; very similar to the view angle of the human eye.

Telephoto lens is above 50mm, usually from 85mm to 1200mm. These appear to bring far away subjects closer, and they narrow the angle of view. They also cause depth to appear decreased, or compressed.

Wide Angle lens is below 50mm, usually 35mm, 28mm, 24mm, 21mm and 19mm. These take in more subject matter, expand spatial relationships, and increase angle of view. They cause the image to appear to be compressed horizontally.

Fish-eye lenses (7.5mm to 15mm) give greatly distorted, rounded images, with 180-degree angle of view.

Zoom lenses incorporate several different focal lengths into one lens. They are convenient, but often not as "sharp" or "fast" as other lenses.

Film:

There are two basic types of color film for 35mm SLR cameras -- print (negative) film and slide (transparency) film. Slide films are also called "chrome" films, such as Ektachrome or Fujichrome or Agfachrome. Print and slide films are available in a wide range of types and speeds. Some films are known by professional photographers to accent (some would say exaggerate) certain colors. For example, Fuji film has a reputation for enhanced greens, while Ektachrome is known for its blues. Fujichrome "Velvia" film has very rich, saturated colors but some believe they are less "true". Kodachrome's colors are widely regarded as "true" colors, although many photographers prefer a more saturated effect. The print films include Kodacolor and Fujicolor. Fujicolor "Reala" is regarded by many photographers as very "true" color, and Kodacolor Gold is also highly regarded.

Film can also be described as "amateur" and "professional". The film that is sold over the counter in department stores, photography shops, and one hour photo labs is "amateur"; it is the common consumer film. Professional film is the same product, but it has been stored differently (refrigerated) and it is sold only when the film is at its "peak", which is determined by its age. All film has an expiration date printed on the box. Professional film is therefore only sold when it will yield the best results in terms of speed accuracy, color rendition, and grain. It is generally stocked only by specialty photography stores, and is more expensive.

Film "latitude" refers to the ability of the film to yield an acceptable image when overexposed or underexposed. Slide film has a very narrow latitude, therefore the exposure

made with the camera must be very accurate, generally within one half f-stop to yield a properly exposed slide. Print film has much broader latitude, often up to 2.5 or even more f-stops. It is therefore more flexible in yielding an acceptable image when the camera (or the photographer) has made an exposure error.

It is possible to produce a slide from a print (or its negative) or to produce a print from a slide (generally an easier process). However, cost is usually much more than simply taking dual sets of prints and slides if you anticipate the need for both.

Some companies sell film that is advertised as providing both prints and slides from the same roll of "Hollywood" movie film. This film is simply leftover ends of 35mm movie film that is processed and made into both slides and prints. There is nothing magical about this film, in fact, many photographers consider it to be of inferior quality.

Perspective:

Perspective can be affected by the selection of lens focal length. By changing lenses, distance to the subject, and the camera angle, new illusions of size relationships and three-dimensionality can be achieved. The distance between foreground and background may be exaggerated. The amount of exaggeration in a shot depends on the focal length selected and the distance to the subject. The shorter the focal length, the more exaggeration is produced. To emphasize perspective, use a shorter focal length lens such as a wide angle and move in closer to the subject. Telephoto lenses compress perspective as higher magnifications are used, though the main use of a telephoto is to bring a distant object closer.

Depth of field:

Depth of field (the zone of sharpness in front of and in back of the main subject) is increased by using a small f-stop, by moving away from the subject, or by using a shorter focal length lens. To decrease depth of field, open up to a wider f-stop, decrease the camera to subject distance, or use a longer focal length lens.

Basics of Digital Camera Technology

As simple as they are to use, choosing the right digital camera involves a number of decisions. Key issues are computing platform, image quality, on-board image capacity, exposure versatility, feature set, and included software.

Computing Platform:

This is an obvious first choice, but is becoming less of an issue than it once was. Most current cameras can be interfaced to both Mac and Windows platforms, although some include more software for one platform than the other. A few still work only on one or the other.

Image Quality:

Image quality is a complex subject involving exposure accuracy, color purity, optics, and image compression techniques. Unfortunately, the best way to make sure the image quality is good is to look at sample photos. These aren't always available, so do your homework and hope for the best. The two most important factors to consider are Resolution (or pixel count) and Compression.

Resolution

To put it simply, the more the merrier. The higher the pixel count the better resolution you can achieve. However, it is worth looking into whether the pixel count is the actual count from the image sensor or whether the camera is using software to interpolate the count up to a higher level.

Image Compression

At first glance image compression looks like magic. In fact, at second glance, it's pretty easy to convince yourself it is magic! Of course, nothing comes for free, not even with the spiffiest of high technology: While you can get away with pretty substantial amounts of image compression without people noticing, the level used in many DPS cameras is well beyond that point. (Although, as memory has become cheaper, manufacturers are finding it to their advantage to trade more memory usage for less compression and therefore better picture quality.) Nonetheless, different devices succeed to varying degrees, depending on the details of their particular compression techniques. The key to usable image compression is to throw away "unimportant" information in the images, and to take advantage of local areas of similarity within each image. For instance, you don't need 24 bits of information to tell you what color a particular piece of an image is, if it happens to be about the same as the pieces on either side of it: Just record the differences! If the differences are small, the information you'll need to store will be small as well. Also, the eye tends to be much more sensitive to certain kinds of detail in an image than to others. If we can find a way to throw out only the sort of detail our eyes aren't very sensitive to, we can reduce the size of the file without our eyes noticing what we've done.

On Board Capacity

Depending on your application, the amount of on-board image storage could be pretty important. There is generally a tradeoff between image capacity and image quality however, so don't get too excited by a large image capacity until you check to see how much actual memory the camera contains compared to the resolution of the images. One camera may promise storage for twice as many images as another, yet have no more actual storage space. The consequence would likely be a loss of image quality.

Many cameras allow you to make your own decision about the memory/cost tradeoff, by allowing you to store images on plug-in cards. This approach allows each user to add as much or as little memory to the camera as they feel they need. There's a plethora of memory types in use, although either CompactFlash or SmartMedia are the most common.

Exposure Versatility:

One notable disadvantage of digital cameras is their inability to handle radically different lighting conditions just by using a different type of film: With a digital camera, the camera is the film, so whatever you buy is what you'll have to live with. This means you'll want to be sure your camera's exposure system (shutter, variable lens opening, supplementary flash) can handle a wide enough range of conditions. Many now have settings, which change the 'film' type to mimic either 100, 200, or 400 speed.

Beyond the ISO rating, look for a wide range of shutter speeds and lens apertures. Typical numbers here are shutter speeds from 1/30 to 1/1000 of a second, and lens openings from f2.8 to f16, although the present generation of cameras has shutter speeds ranging from 1/2 to 1/10,000 of a second(!) The wider the range spanned by both these sets of numbers the better.

Also look at the capability of the built-in flash if one exists. Key factors here are the distance range over which the flash will be useful, and the number of "modes" it has.

Feature Set:

Besides the basic parameters listed above, you'll find a variety of features on the cameras that may have varying degrees of usefulness in your application:

Close-Up and Wide-Angle

The ability to take close-up pictures is critical to many applications. Many DPS cameras have a "fixed-focus" lens, in which the focal point is set so everything from about 4 feet on out is in focus. This is handy if you need to photograph subjects in that range, but pretty useless if you have to take a picture of something only a few inches wide. Some DPS units have attachments to improve their close-up performance, while others offer special "macro" focusing modes that let you get much closer to the subject than a standard lens would.

Wide-angle photography is another important ability if you need it. Again, some cameras have aftermarket accessories available to expand their field of view, so you will want to take this into account when purchasing. Several cameras feature zoom lenses, with a range of focal lengths running from a mild wide-angle (roughly equivalent to a 35mm lens on a 35mm

camera) out to a mild telephoto (slightly more than the equivalent of a 100mm lens on a 35mm camera).

Battery Life

This may not be a "feature," but it's important, and this seemed a logical place to include it. You'll find a wide variation between cameras in how long their batteries last. Some manufacturers specify battery life, and others don't. An important question is whether the camera can run off rechargeable batteries: If you plan to take a lot of pictures, the ability to use rechargeable cells could save a lot of money in the long run.

External "booster" battery packs are available for some cameras, increasing their working time in the field many fold. Keep this in mind if you plan to spend long periods on the road, far from power outlets. If a "booster" pack isn't offered, can you change or replace batteries in the field?

External Power Adapter

While we're talking about power, how about an external power adapter? You'll find DPS cameras generally consume much more power while communicating with the computer via their serial ports. If you have an option to run from a power adapter while downloading images, your batteries will last a lot longer.

Included Software:

The most important software component you will need is a TWAIN plug-in. If the camera is TWAIN compatible you will be able to download your images directly into Adobe Photoshop.

Tips for photography for computer visual simulation:

1) Cameras and film

Carry more than one 35mm SLR camera or camera body. According to Murphy's Law, when you have traveled two days to get to your site, you can be assured that your first camera will not work. Use "point and shoot" cameras as backups. Humorous (after the fact) anecdote: I once traveled three hours to a site, carrying four cameras. The shutter jammed on the first one, the batteries died on the second one, the third one would not advance the film, and finally the fourth one (which I had bought 20 years earlier!) worked perfectly. Whew!

Take lots of extra (fresh) camera batteries (and be sure they are the right ones).

Take lots of fresh film and lots of photographs. You cannot take too many photos; you can take too few. Film is the cheapest part of the process; a second trip is the most expensive. Live by the old carpenter's adage, "measure twice, cut once".

Use print film primarily. You will most likely be using a flatbed scanner, which will only scan prints. See also the discussion of film latitude above.

Assuming you are going to be taking your photos on sunny/mostly sunny days in the middle of the day, use relatively slow speed film (ISO 200 or less). The finer grain of slower films will yield better scans.

If you are using a digital camera, be sure you have plenty of data disks for image storage.

Use a 50mm lens, since it most closely approximates the normal human eye field of vision with a 35mm camera. Avoid wide angle and telephoto lenses since they distort perspective and depth of field. Visual simulations are intended to be realistic and credible, not works of artistic expression or demonstrations of photographic special effects.

Use Polaroid cameras to take "study photos" for use on the same day in comparing the views of existing elements and proposed landscapes.

Use a video camera to scan the field of view from a KOP or other viewpoint and to clearly indicate the exact position of the KOP/viewpoint (especially useful if someone else tries to occupy your KOP/viewpoint again without you there).

2) Panoramas

If you need to get more of the scene in than can be captured with a 50mm lens, take two or more shots that are horizontally matched (make a panorama, and use a tripod!).

You can buy a device commonly called a "panorama head" for your tripod that will assure that your horizontal photos are level and matched, up to 360 degrees. They cost about \$100. It then is necessary to use photoshop to adjust and balance the color from one photo's edge to the next one's (especially the sky, which tends to change a lot from edge to center on a photograph).

You can also "stitch" the various photos together with computer software such as "Quickstitch" from enroute software company (<http://www.enroute.com/>). It is inexpensive (\$49.95) and does a reasonably good job of stitching multiple horizontal shots into a panorama. Experiment with the software before taking your photos, and for this software be sure you have lots of overlap between shots to get the most seamless stitch.

The biggest challenge to a good panorama from stitched photos is the sky. There will be a lot of variation at the photo seams, so it is a good idea to spend some time to develop one good stitched clear blue sky and use it in all of your panoramas. Just outline the sky above the panorama's horizon and replace the "seamy" sky with the good stitched sky.

You can also buy a panorama camera, which will cost up to several thousand dollars, or can be rented for about a hundred dollars per day or less. This is not the same as the "point and shoot" cameras that are sold as "panoramic". These cheap cameras achieve the "panorama" affect by simply cropping the upper and lower film edges, making the picture appear wide and narrow, while the actual field of view is unchanged.

3) Tripods

Use a good quality tripod. Your photos will be sharper, clearer, and your composition better as a result of the care required in setting up the tripod. A pistol grip tripod head (about \$150) is much quicker and easier than a standard head with all the knobs and arms.

A beanbag makes for a simple, lightweight, and economical tripod. You simply set it on the hood of the truck, a fence post, or other solid object then rest your camera in it. Many camera stores sell beanbags just for this purpose.

4) Miscellaneous tools

Carry other tools such as a measuring tape (100' minimum), simple range finder, gps unit, flagging with stakes and hammer, orange safety vests and hardhats. Two-way or CB radios or cell phones help to communicate with a partner in setting up the shots, with one of you at the KOP and the other at the element being photographed.

5) Helium balloons

Helium balloons may be helpful on calm days to establish heights (use photoshop to remove them from the scanned photo later). Don't forget the helium, cords, anchors, hammer, and measuring tape!

6) Design elements

Consider the forms, lines, colors, textures, size and scale of the landscapes and elements you are photographing. For example, if you have a choice of photographing a brown water tank versus a white one, and you know brown may fit your proposed landscape better, be sure to extensively photograph the brown one.

7) Field techniques

Keep a written or tape recorded log of your photos, with clear indications of the location, weather and clouds, direction of view, aperture and shutter speeds, date and time of day, and other pertinent data. Make sketches to clarify and illustrate.

Take all of your photos at approximately the same time of day, preferably in the middle third of daylight hours. This will minimize the effects of long shadows which can be hard to match in a visual simulation.

Take photos from a variety of angles and observer positions (inferior, normal, superior), changing angles and positions slightly with each shot to improve your chances of getting just the right shot you will need.

Consider marking your KOP with flagging, paint, rock cairns, or other appropriate materials in case you need to return for more photos.

You will be taking photos of the proposed landscape (where the change will occur) and of other sites where similar changes have already occurred (for example, of a water tank that you will paste into the proposed landscape). So, find as many kinds of water tanks (or whatever the change will be) and photograph them from as many distances, angles, and observer positions (inferior, normal, superior) as possible. Remember also that if your visual simulation will involve the removal of one or more elements (for example, remove an old bridge and replace it with a new one on a new alignment) you will need to take photos of

areas/elements to “fill in” for the area exposed by the removal of the old bridge (like vegetation, rock outcrops, or whatever might be visible after the old bridge is removed).

Take all of your photos within a few days of one another, to minimize the effects of seasonal change in light and vegetation.

In accordance with the basic principles of the BLM Visual Resource Management program, take your photos from KOP's (and from other useful viewpoints), and during times of the year and day that will best represent the experience of the most viewers or the “typical” viewer.

Include people, cars, powerlines, fencelines, and other known figures for scale in your photos (cows work really well). Use your measuring tape to confirm the dimensions of these elements and keep meticulous notes.

If you are photographing roads for pasting into a scene, be sure to stand in one of the lanes when you take the shot, not on the shoulder or in the median (wear your orange vest and watch for cars behind you!). This is because the driver sees the road from the lane, not the edge or centerline. Also, remember that you can horizontally flip the image of the road once it is scanned into the computer. So, if you need a photo of a road curving to the left climbing a hill but can't find one, then shoot one of a road curving to the right climbing a hill and flip it horizontally later. Also remember to stand in the oncoming traffic lane for that shot (while still wearing that orange vest!) so that when it's flipped the view will be correct. (When in doubt, sketch it out!).

8) Film processing

Use a professional photo processing lab. Don't risk all the time, energy, and expense of taking good photographs on a one-hour photo lab where high school sophomores process snapshots of thumb-sucking babies and shoe-chewing puppies!

9) Most important

Be sure the person taking the photographs clearly understands these tips for photography for computer visual simulation (give them a field copy of this sheet)!

Weather and cameras:

Cold weather - Battery power may be diminished. Monitor the battery level indicator. Carry extra batteries, and be sure they are fresh. Film can become stiff and brittle in extreme cold, and static electric marks may occur on the film as the air becomes drier. Advance and rewind slowly. Protect the camera from the cold by holding it close to your body under your coat. When moving from the outdoor cold to indoor warmth, protect from condensation by enclosing the camera in a plastic bag and squeezing out all the air. Thus, moisture will condense on the outside of the bag instead of on the equipment surfaces. Allow the camera to adjust to room temperature, usually about 30 minutes.

Hot weather - Never leave the camera or film in direct sunlight, or in a sealed vehicle where temperatures can reach 160 degrees F. When using the camera outdoors on hot days, try to shade it as much as possible. Keep it in a bag when not in use. Avoid aiming the lens directly into the sun otherwise severe damage can occur to the camera's shutter curtain.

Four roles for image processing to play in the context of landscape aesthetic policy development, implementation, and evaluation:

1. A tool for enforcement of the public's right to know the aesthetic consequences of environmental modifications.

Legally mandated environmental assessments are a product of fundamental concept that the public has the right to know, within a degree of certitude limited only by the best available knowledge, the consequences of major modifications to their environment. There is no legal reason why the "right to know", commonly accepted with respect to non-aesthetic aspects of environmental issues. It might be argued that imaging technology can provide the "best available knowledge" regarding the aesthetic consequences of proposed environmental modification.

2. Negotiated Legal Documents

With the exception of some maps, legal documents are typically written, replete with lots of whereas's. Aesthetic policy issues are obviously visual in nature (not to discount auditory and olfactory). But...there is no inherent reason that legal documents be confined to the written word....Let us suppose that a visual simulation...becomes part of the contract – e.g., a five-year projection about the visual appearance of the property as a set of conditions pursuant to the grant of a permit. How, five years from now, would one know whether or not such a visually based contract had been breached or not? The judgment now called for is a relatively simple one in a judicial context compared to a judgment about the aesthetic value of a landscape: namely, one must decide whether or not the existing situation, as it came to be after five years, is reasonably similar to the visual conditions depicted in the contract.

3. Perceptually-based Performance Standards

...identify the limits of aesthetically-unacceptable change based on responses to simulated images of the appearances of future landscapes. Such limits might then be used to assist in the drafting of regulatory language which provides for growth and development, but within aesthetic constraints imposed not only by legislative mandates, but by shared, visually-concrete expectations and preferences people express for how they want their local landscapes to look in the future.

4. Aesthetic Damages

Despoliation of our landscape aesthetic resources is an everyday occurrence. Even if we became effective in protecting the beauty of many landscapes through planning, design, and policy initiatives, there would still be numerous instances of violations. Unfortunately, economic analyses have not traditionally accounted for unmarketed resources such as aesthetics... The bottom line is that, in the advancement of the profession's stewardship roles, it would be most useful to have policies calling for the assessment of monetary penalties for aesthetic damages. In that regard, image processing might play a role.

Unit 12:

Writing Good EAs



A. Introduction

Objective: Students will be able to write good Visual Resource sections for a typical EA after completion of this session.

B. General Rules to Remember

- As in any EA you need to adequately describe:
 - Proposed action
 - Alternatives
 - Affected environment
 - Environmental consequences
 - Effective mitigation measures

- VRM data sources for a good EA
 - The RMP
 - The VRM inventory
 - The project description
 - The contrast rating
 - Knowledge from Resource specialists(s)
 - Input from the Public
 - Field review of project proposal
 - Photos and Visual Simulations (if needed)

- How to approach writing VRM analysis?
 - Focus your analysis on the project area
 - Visit the project area
 - Do a Visual Contrast Rating(s)
 - Write a landscape character description
 - Do a visual simulation, review photos, visit similar project areas
 - Identify Features affected by the project (land/water, vegetation, etc)
 - Identify Elements affected by the project (form, line, color, texture)
 - Include the following factors in your analysis of the project:
 - Distance
 - Angle of observation
 - Length of time projects is in view
 - Relative size or scale
 - Season of use and light conditions
 - Recovery time
 - Spatial relationships
 - Atmospheric conditions
 - Identify impacts to Form, Line, Color and Texture. Identify what features are affected. Do the analysis in terms of the above factors.
 - Take a professional interest in writing good EAs. Writing good EAs is as much about the analysis process as it is about writing up the results.

B. Tips for Sections of EA

- Proposed Action and Alternatives
 - Use Section C of the Contrast Rating Form (separate forms should be completed for each Alternative)
 - Obtain complete project description from the proponent
 - Document in form of notes and photos from the field trip
 - Produce visual simulations to better understand project
 - Describe in terms of landscape character elements for landscape features
 - Recognize that a high level EA requires more detail

- Affected Environment Section – good sources to use
 - Scenic Quality Field Inventory form (8400-1)

Form 8400-1 (September 1985)		Date: Feb 15, 2003	
UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT		District: Rawlins	
SCENIC QUALITY FIELD INVENTORY		Resource Area: Lander	
		Scenic Quality Rating Unit: 024	
1. Evaluators (<i>names</i>) Gary Long, Cimarron Chacon, Steve Knox			
2. Landscape Character (<i>Feature</i>)			
Form	a. LANDFORM/WATER	b. VEGETATION	c. STRUCTURE
	Gently rolling hills with stabilized Sand dunes	Low, somewhat clumpy in foreground	None visible
Line	Predominately horizontal lines	Horizontal, Lines created by subtle	None Visible
	Formed by hills and low sand dunes	Changes and variation in vegetative	
		Cover which is predominately sage brush	
Color	Tan to buff colored soils where Visible. Rock outcrops are gray to Gray-green & brown	Gray-green, with emphasis on the gray The best color from the BLM color chart Is shale green	None Visible
Texture	Smooth texture with a few Moderately coarse areas due to Rock outcrops	Somewhat coarse in immediate fore Ground. Texture changes to medium & smooth as we move away from KOP	None visible
3. Narrative This SQRU is made up of gently rolling sagebrush covered hills interspersed with stabilized sand dunes. Vertical relief is limited. It is an open, panoramic landscape, mostly devoid of human impacts. It is very representative of typical landscapes found in the Wyoming Basin. No unusual characteristics. Vegetative cover is dominated by Wyoming sage. Grass is present but not visible. The visible color is a function of the vegetation. Very little soil or rock outcrops are visible. The most outstanding feature is the feeling of vastness and naturalness you get due to the size of the unit and the relative lack of human intrusions which are limited to roads and trails, most of which are not visible from the KOP.			

- VRM Class Objective
- Characteristic Landscape Description – Section D Contrast Rating Form

SECTION B. CHARACTERISTIC LANDSCAPE DESCRIPTION			
	1. LAND/WATER	2. VEGETATION	3. STRUCTURES
FORM	Flat to rolling terrain	Simple forms created by vegetative patterns	n/a
LINE	Horizontal and diagonal	Weak and undulating	n/a
COLOR	Dark tans to orange	Light to dark green, mottled	n/a
TEX-TURE	Smooth	Smooth to coarse	n/a

- Sensitivity Level
- Distance Zones and KOPs

- Environmental Consequences
 - The Environmental Impact is the amount of **Contrast** the proposed project causes to the Existing Landscape.
 - Use Section D and narrative on back of contrast rating form

SECTION D. CONTRAST RATING														SHORT TERM	X	LONG TERM
ELEMENTS	1. Degree of Contrast	FEATURES												2. Does Project Design meet visual resource management objectives? Yes <u>X</u> No _____ (explain on reverse)		
		Land/Water Body				Vegetation				Structures						
		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	3. Additional mitigating measures recommended. Yes <u>X</u> No _____ (explain on reverse)		
				X				X			X					
		Form			X			X			X			Evaluator's Names Date: Cimarron Chacon 7/16/04 Allysia Angus		
	Line		X			X			X							
	Color			X			X			X						
	Texture			X			X			X						

- Example language for impacts:
 - Land/Water Body Impacts
 - *Building a level drilling location and access road would cause a weak (minimal) amount of contrast to the form of the land. It would moderately impact line through introduction of the location and road, both of which would be visible linear features. Exposing the soil would cause a weak impact to the color in the landscape. The texture of the exposed soil would be smoother than the existing landscape, thus creating a weak contrast.*
 - Vegetation Impacts
 - *Construction of the level drilling location and access road would cause weak contrast to the form of the vegetation. Removal of vegetation would cause a moderate amount of contrast due to introduction of distinct lines in the landscape. The lighter color of new vegetation that followed completion of the project would weakly contrast with existing vegetation. The smoother texture of the new vegetation would weakly contrast with the existing vegetation.*
 - Structures Impacts
 - *The blocky, rectangular form of the structures would contrast moderately with the existing landscape. They would introduce distinct vertical lines which would strongly contrast with the existing horizontal landscape. The light color of the structures as proposed would strongly contrast with the darker color of sagebrush which is the dominant color in the natural landscape. Finally, the smooth texture of the structures would strongly contrast with the coarser texture of the surrounding sagebrush.*

- Does project meet VRM Objectives?
 - Refer to Section D of Contrast Rating Form
 - The answer is yes if:
 - None = Class I**
 - Weak = Class II**
 - Moderate = Class III**
 - Strong = Class IV**
 - What to do if answer is no?
 - Don't approve project
 - Redesign project to meet objectives
 - Amend RMP

- Mitigation measures
 - Taken from back of the contrast rating form.
 - Can often be avoided if project is planned and designed well.
 - Included even if project meets VRM objectives, in some cases.

Additional Mitigating Measures (See item 3)

1. As per agreement with company representatives, relocate drill pad 250 feet northwest behind/between low stabilized sand dunes.
2. Relocate access road behind/between stabilized dunes
3. Use low profile tanks a maximum of 12 feet high rather than the standard 18 foot tanks
4. Paint facilities a color compatible with sagebrush, the dominant veg species in the area

Unit 13:

Monitoring and Compliance



A. Introduction

Objective: At the end of this session, you will be able to outline the purpose for follow up monitoring, elements of a monitoring plan, and examples to consider when developing a monitoring strategy.

Kickoff – What is Monitoring? Why should VRM monitoring be conducted and what are my roles and responsibilities?

There are 4 aspects of monitoring that we need to consider:

1. Compliance – Did they do what was required?
2. Effectiveness – Did it work?
3. Validation – Did we ask them to do the right thing?
4. Adaptive Management – If it did not work, what changes should we make now or in the future?

The VRM Mitigation Plan should include a section on a monitoring strategy to ensure that the project is constructed according to the plans and mitigation requirements.

- Sets conditions and terms for implementation and how it will be monitored.
- Clarifies performance standards for the applicant and their operators.
- Identifies how compliance will be quantified and measured.
- Outlines corrective actions to be taken when a site is out of compliance.
- Establishes a clear understanding of expectations and a road map to successful compliance.

There is no cookbook approach to compliance monitoring – is dependent on the collective design/ BMP elements of the project's VRM plan.

B. Responsibilities

1. BLM proposed action

If the project is a BLM proposal, such as a recreation site, visitor center, fire station, road, etc., then the internal BLM project staff and ultimately the field manager must ensure that the design elements and mitigation measures are accomplished.



2. Industry proposed action

If the project is an applicant driven project, the applicant is responsible for preparing a compliance monitoring strategy that demonstrates their ability to meet VRM objectives.

- Their strategy should be based on sound design and mitigation planning principles including how to monitor and measure for compliance.
- Mitigation and monitoring plans should be a requirement identified in the Conditions of Approval.
- Critically review proposal assuring that the mitigation strategy can be implemented.

3. Determination of adequacy

The BLM is responsible:

- For assessing the credibility of the applicant’s strategy.
- To ensure the approved monitoring plan is being implemented by the applicant.
- Determine that the necessary tools have been provided to adequately measure compliance.
 - If so,
 - Accept it
 - If not,
 - Accept it with changes
 - Reject it with an outline of missing or incorrect elements and ask for resubmission.

Explore creative and innovative means for monitoring and checking compliance.

Proper monitoring and compliance checking takes time and money, but assures successful results. There is a significant risk of greater long term costs associated with not achieving successful results.

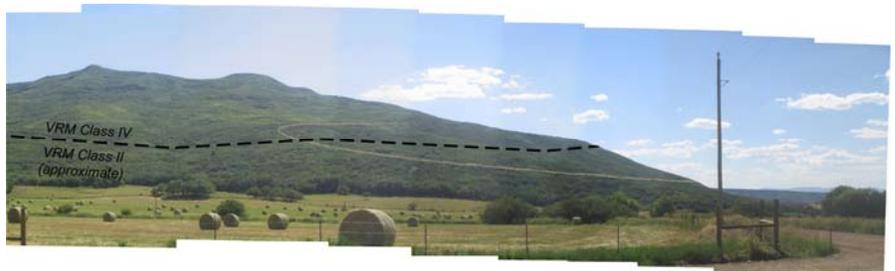
4. Qualifications of VRM designer/planner

- BLM
- Contractor
- Continuing education

5. How much monitoring is enough?

Monitoring Plan should be in scale with the level of development proposed. The plan should be in balance with the scale of development, VRM sensitivities and magnitude of impact:

- a. Small scale projects
- b. Large scale projects
- c. Scale of impact
- d. Special considerations



6. Tracking the project progress through photo documentation

Maintain a comprehensive image file of project for referencing throughout the life of the project, including monitoring (hard copy and electronic filing):

- a. Photo-document the site during initial on-site review during the proposal planning phase.
- b. After site improvement is staked and limits delineated.
- c. During early construction phases.
- d. Construction and installation of VRM mitigation requirements.
- e. Post-construction monitoring of interim mitigation
- f. Final reclamation construction
- g. After monitoring of final reclamation

C. Design requirements and monitoring strategies

1. Measuring for compliance

All design plans should have construction elements, also referred to as line-items that enable tracking and measuring of the implementation. A question to ask during the monitoring and compliance period of a project is “Was the plan followed?”

Design elements and on-site monitoring measurement tools may include:

Design/Plan Element

a. Minimizing disturbance

- Disturbance limits delineated on plans



Monitoring Strategy

- Survey the boundaries limits of disturbance
- Flag and fence limits of disturbance
- Review site on a regular schedule

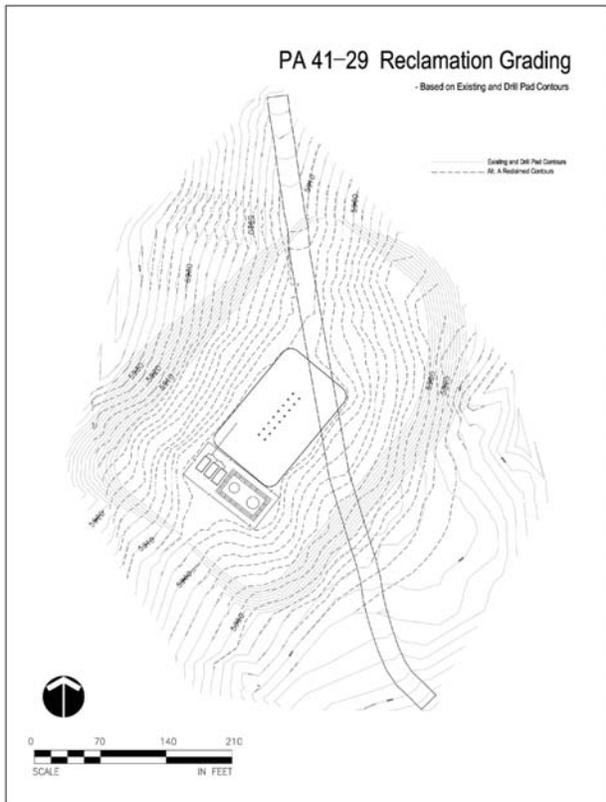
b. Earthwork

- Grading plan, contour grading details
- Tabulation of quantities
- Topsoil specification

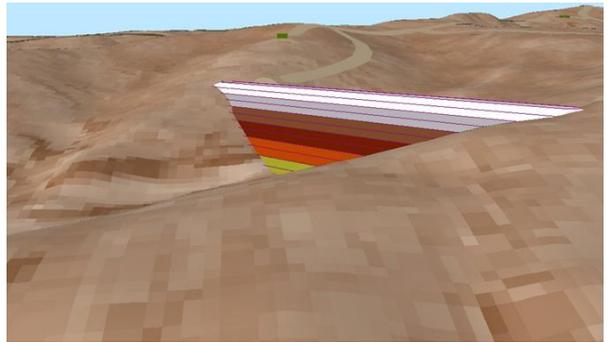
Visual review or topographical survey check

Derive quantities from survey

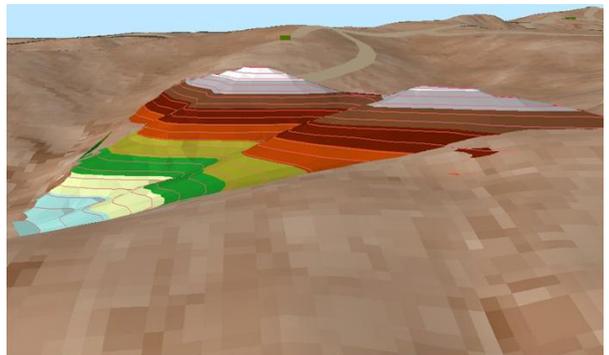
Topsoil source, depth and quality –
sampling and testing



25



Conventional grading

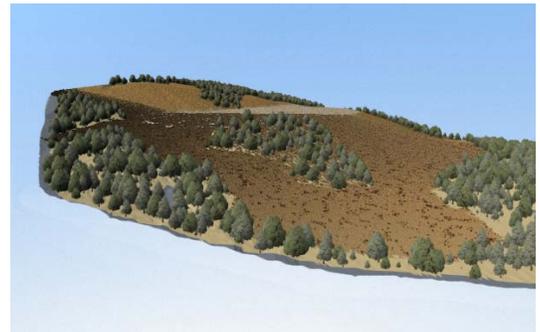
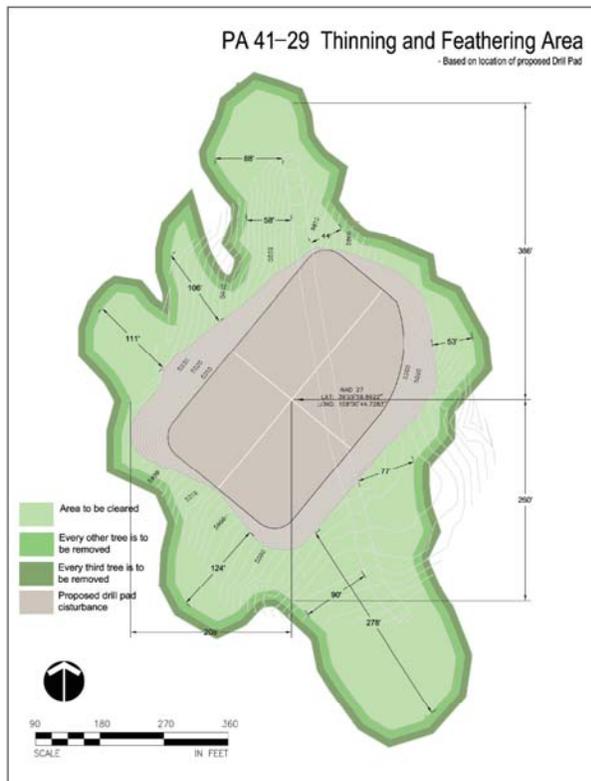


Enhanced grading

c. Vegetation Manipulation

- Delineate thinning/clearing area on plans
- Develop visual models
- Tabulation of trees to be removed
- Clearing
- Preservation of vegetation

- Survey stake treatment area boundaries
- Field verify using models before implementing
- Pre-flag/paint mark the trees to be removed
- Flag or fence the areas to be cleared
- Flag or fence the areas to be preserved



2. Monitoring timeline – the length of the monitoring period should be defined the in plan.

- Dependent on design and construction elements.
- Revegetation monitoring could be as long as five years or more.
- Trend review – you may find that compliance is being achieved in advance of the anticipated schedule and release may be provided early. Opposite may occur as well.

3. Tools

- Use the information produced during design/planning phase during monitoring period.
 - GPS/GIS/Cadd/Photoshop interface.
 - Photo simulations.
 - 3-D terrain models of proposed grading.
 - Construction plans.
 - As-built plans.
- Quantify the VRM mitigation implementation using the design plans, rather than simple qualification of anticipated results.
- The dangers of relying solely on photos. Just because it looks good - does this mean that the design elements and mitigation measures were adequate? If not, explain why.
 - Establish and document mitigation monitoring points.
 - May be same as Key Observation Points (KOP).
 - May be different that KOPs.
 - Photo documentation points - should be taken from same location and established before construction begins. Should be identified in monitoring plan.

D. Challenges of arid and semi-arid land restoration.**1. Who Can Help**

- Consult with others in your office or area that have monitoring experience, such as natural resource specialist, fluid minerals experts, range conservationist, etc. Lands and realty staff also have experience with variety of large scale projects.

2. Other Tips

- Work with proponents early on and throughout the monitoring process. Avoid surprises.
- Tips on documentation – photos, GIS, others?
- Develop a listing of best management practices that fit the soils, geology, vegetation in the area

3. References

- BLM's Gold Book at: http://www.blm.gov/bmp/Technical_Information.htm

The new Gold Book introduces improved practices for expediting the processing of Applications for Permits to Drill (APDs) and environmental Best Management Practices (BMPs) to reduce the environmental effect of energy exploration and production. The revised Gold Book includes updated drawings, photographs, tables, and references to updated policy, Orders, and regulations.

Unit 14:

Experience Examples

Unit 15:

Stump the Experts



A. Introduction

Unit 16:

Course Wrap Up



A. Introduction

Objective: This unit will review the Overall Course Objective, highlight key unit lessons, and reiterate the process that BLM uses to manage for scenery via the Visual Resource Management System. An opportunity will be provided for final questions and clarification of learning points.

B. Overall Course Objective

Now, having participated in this course, you should be able to:

- Describe the basic principles and concepts of VRM.
- Communicate the role of visual resource management in BLM land use planning and activity planning.
- Demonstrate the skills and knowledge necessary to inventory visual resources, analyze the landscape, and develop mitigation strategies for minimizing contrast to the landscape from proposed surface-disturbing activities.

C. Unit Highlights

- Scenic resources are public resources.
- BLM has a legal obligation to manage for scenery.
- Visual Resource Management (VRM) is our system for scenery management.
- VRM Process Overview
 - 1) Inventory Scenic Values
 - 2) Establish Management Objectives
 - 3) Evaluate/Design Activities to Meet Objectives
- VRM is a “Language for Looking at Landscapes”
 - Types of Landscapes (Panoramic, Feature, Enclosed..)
 - Elements of Landscape Character
 - FORM
 - LINE
 - COLOR

- TEXTURE
- Landscape Analysis Factors (Contrast, Sequence, Convergence...)
- Land Use Planning and VRM
 - VRM Inventory Classes
 - Scenic Quality
 - Sensitivity Levels
 - Distance Zones
 - VRM Management Classes I-IV
 - VRM and other Land Use Allocations in the RMP
 - Use of GIS and VRM
- Project Level Planning and VRM
 - Site Planning Considerations
 - Observation
 - Project Design
 - Design Strategies
 - Environmental Factors
- Project Analysis and Evaluation
 - Visual Contrast Rating System
 - Obtain Project Description
 - Identify VRM Objectives
 - Select Key Observation Points
 - Prepare Visual Simulations
 - Complete Contrast Rating Form
 - Documentation
 - Vocabulary
- Writing Good Environmental Documents
 - Proposed Action
 - Alternatives
 - Affected Environment
 - Environmental Consequences
 - Mitigation
- Design and Mitigation Experiences

Your Vision for the Next 6 Months

Identify 3 commitments that you plan to make in your office over the next 6 months regarding visual resource management. Identify what, by whom and when will this be accomplished. This will be mailed to your office in February, 2006.

Commitment 1:

What:

By Whom:

Date to be Accomplished

Commitment 2:

What:

By Whom:

Date to be Accomplished

Commitment 3:

What:

By Whom:

Date to be Accomplished

“Even if you’re on the right track, you’ll get run over if you just sit there” Will Rogers

17. Appendix A

IM's, IB's, and IBLA Decision

- A. IB No. 2008-116, Standard Environmental Color Chart - Updated**
- B. IB No. 98-135, Visual Resource management (VRM) Policy Restatement**
- C. IM No. 2000-096, Use of VRM Class I Designation in Wilderness Study Areas**
- D. 174 IBLA 078, Tom Van Sant**
- E. 173 IBLA 313, Union Telephone Company, Inc.**
- F. 144 IBLA 70, et al., Southern Utah Wilderness Alliance**
- G. VRM Inventory for the New Millennium**

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

September 24, 2008

In Reply Refer To:
8400 (250) P

EMS TRANSMISSION 09/30/2008
Information Bulletin No. 2008-116

To: All Field Officials
From: Division Chief, Recreation and Visitor Services
Subject: Standard Environmental Colors Chart - Updated

Program Areas: Visual Resource Management

A new Standard Environmental Colors chart has been distributed to all Bureau of Land Management (BLM) Field Offices, with extra copies to those with major oil and gas and rights-of-way programs. The new color chart provides nine standard color choices for use in selecting the most appropriate color(s) for facilities located on lands managed by the BLM. This chart replaces previous versions of the Standard and Supplemental Environmental Colors charts and should be distributed to all resource development programs within your office.

Previously there were 20 colors represented in the Standard Environmental Color and Supplemental Color Charts, which were field tested. The nine colors represented on the new Standard Color Chart are those that were found to be the most effective in reducing color contrast within the various landscape settings that make up the BLM administered lands. The updated chart also provides a summary description of the Field Testing Team's observations, which is intended to aid field offices in selecting a color that will allow facilities to better blend with the background, typically a vegetated background. As a rule of thumb, selected colors should be two or three shades darker than the background colors. Lighter colors should be avoided. Holding the color chart up to the background from a distance and squinting may help in identifying the predominant background color. The updated color charts also include a description of various vegetated backgrounds and colors that are typically best suited for use in those backgrounds.

Additional information on selecting proper colors and methods for reducing visual contrast can be found on the Visual Resource Management website at www.blm.gov/nstc/VRM/ or on the Fluid Minerals Best Management Practice website at www.blm.gov/bmp . Additional

color charts can be ordered through the BLM's Printed Materials Distribution System. The brochure number is CC-001.

For More Information: Please direct any questions, to John McCarty, Chief Landscape Architect- VRM Lead, Washington Office Division of Recreation and Visitor Services, at 202785-6574, or e-mail john_mccarty@blm.gov

Signed by:
Robert T. Ratcliffe
Division Chief
Recreation and Visitor Services

Authenticated by:
Robert M. Williams
Division of IRM Governance, WO-560

BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

May 22, 1998

In Reply Refer To:
8400 (250) N

EMS TRANSMISSION 5/27/98
Information Bulletin No. 98-135

To: All Field Officials

From: Group Manager, Recreation Group

Subject: Visual Resource Management (VRM) Policy Restatement

It has been brought to my attention that there is a lack of understanding in some of our field offices regarding the need for incorporating VRM in our land-use planning and environmental documents, and in our on-the-ground operative decisions. This memorandum is a reiteration of the current Bureau policy.

It is Bureau policy that VRM management classes be assigned to all public lands as part of the Record of Decision for an RMP, and that visual design considerations shall be incorporated into all surface disturbing projects occurring on public lands regardless of the size or potential visual impact of these projects.

Several manuals/handbooks establish Bureau policy for the administration and use of the Visual Resource Management system. They include:

- + BLM Manual 8400 - Visual Resource Management, dated 4/5/84
- + BLM Manual Handbook H-8410 -1 - Visual Resource Inventory, dated 1/17/86
- + BLM Manual Handbook H-8431-1 - Visual Resource Contrast Rating, dated 1/17/86
- + BLM Manual 1616 - Prescribed Resource Management Planning Actions, dated 4/6/84
- + BLM Manual 1620 - Supplemental Program Guidance, dated 11/14/86
- + BLM manual 1621 - Supplemental Guidance For Environmental Resources, dated 1/14/86

It is important to consider the applicable national laws and as well as the above manuals/handbooks when attempting to interpret Bureau policy and intent. Reading single sentences or phrases out of context can be misleading.

The excerpts from these manuals/handbooks, noted Attachment 1, capture the spirit and intent of the pertinent national laws and the Bureau VRM policy. This language affirms that the Bureau has a basic stewardship responsibility to manage visual values on public lands and that local management discretion for decisions related to visual resource management issues is guided by this basic stewardship responsibility and decisions in planning documents.

In summary, it is the intent and policy of both the Department and the Bureau of Land Management that the visual resource values of public lands must be considered in all land-use planning efforts and surface disturbing activities. This does not mean that VRM should be used as a method to preclude all other resource development. It means that the visual values must be considered and those considerations documented in the decision-making process, and that if resource development/extraction is approved, a reasonable attempt must be made to meet the VRM objectives for the area in question and to minimize the visual impacts of the proposal.

It is also important to understand that the VRM Contrast Rating Process, which is part of the VRM system, should not be viewed as a means to preclude development, but rather as a design tool to assist management in the minimization of potential visual impacts.

Please contact Richard Hagan, the Bureau's National VRM Coordinator at (303) 236-9508, if you have any questions.

Signed by:
Rodger Schmitt
Group Manager
Recreation Group

Authenticated by:
Robert M. Williams
Directives, Records
& Internet Group, WO540

1 Attachment

1- Visual Resource Management Guidelines, Abstracted (4 pp)

Visual Resource Management Guidelines, Extracted

I 8400 - VISUAL RESOURCE MANAGEMENT, dated 11/14/86

.01 Purpose. This section describes the overall policy direction for Visual Resource Management (VRM) in the Bureau of Land Management (BLM).

.02 Objectives. The objective of Visual Resource Management is to manage public lands in a manner which will protect the quality of the scenic (visual) values of these lands.

.03 Authority.

A. Federal Land Policy and Management Act of 1976, 43 U.S.C. 1701 et. seq.;

1. Section 102 (a) (8). States that ". . . the public lands be managed in a manner that will protect the quality of the . . . scenic . . . values"
2. Section 103 (c). Identifies "scenic values" as one of the resources for which public land should be managed.
3. Section 201 (a). States that "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values (including scenic values) . . ."
4. Section 505 (a). Requires that "Each right-of-way shall contain terms and conditions which will . . . minimize damage to the scenic and esthetic values . . ."

B. National Environmental Policy Act of 1969, 43 U.S.C. 4321 et. Seq.;

1. Section 101 (b). Requires measures be taken to ". . . assure for all Americans . . . esthetically pleasing surroundings . . ."

.04 Responsibility.

A. Director.

1. Each program (i.e., Range, Forestry, Minerals, Lands, etc.) involved in resource development work is responsible for protecting visual values. This includes ensuring that ". . . visual values are adequately considered in all management activities . . ."

B. [Self-explanatory]

C. Area Manager.

1. Prepares and maintains on a continuing basis an inventory of visual values on public lands and ensures that these values are adequately considered in the land-use planning and decision making processes.
2. Ensures that visual impacts are minimized in all resource development activities including non-BLM initiated projects.
3. [Self-explanatory]

.06 Policy.

A. "The Bureau has a basic stewardship responsibility to identify and protect visual values on public lands. . . ."

1. "The Bureau shall prepare and maintain on a continuing basis an inventory of visual values on all public lands. . . . The goal is to have a completed VRM inventory for each RMP effort. . . ."
2. Visual management objectives (classes) are developed through the RMP process for all Bureau lands. The approved VRM objectives shall result from, and conform with, the resource allocation decisions made in RMP'S.
3. [Self-explanatory]
4. The approved VRM objectives (classes) provide the visual management standards for the design and development of future projects and for rehabilitation of existing projects.
5. Visual design considerations shall be incorporated into all surface disturbing projects regardless of size or potential impact. . . "
6. The contrast rating process " . . . is used as a visual design tool in project design and as a project assessment tool during environmental review. Contrast ratings are required for proposed projects in highly sensitive areas or high impact projects, but may also be used for other projects where it would appear to be the most effective design or assessment tool. A brief narrative visual assessment is completed for all other projects which require an environmental assessment or environmental impact statement".

.07 Overview of visual resource management system

A. The VRM System. Public lands " . . . Visual management objectives are established in RMP'S in conformance with the land use allocations made in the plan. These area specific objectives provide the standards for planning, designing, and evaluating future management projects. . . . The VRM system therefore, provides a means: to identify visual

values; to establish objectives through the RMP process for managing these values; and to provide timely inputs into proposed surface disturbing projects to ensure that these objectives are met".

B. Use of Basic Landscape Design Principles. Assigning values to visual resources ". . . The information generated through the VRM system is to be used as a guide. The decision on the amount of visual change that is acceptable is made by the field manager.

(The reference here is that management discretion is tied to project development, not resource management planning decisions)

II BLM MANUAL HANDBOOK 8410-1, VISUAL RESOURCE INVENTORY, dated 1/17/86

A. Overview. The visual resource inventory process provides BLM managers with a means for determining visual values ". . . Visual resource management classes are established through the RMP process for all BLM- administered lands . . . Visual management objectives are established for each class."

B. Implementation Options. The detail of the inventory will vary with the visual character ". . . It may be necessary to modify or make adaptations to the inventory system . . . These adaptations must 1) provide a more cost-effective way to complete a quality inventory, and 2) keep the conceptual framework of the . . . (VRM) system in tact."

V-1. Visual Resource Inventory Classes. ". . . Inventory classes are informational in nature and provide the basis for considering visual values in the RMP process. They do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities."

V-2. Visual Resource Management Classes. Visual resource management classes are assigned through RMP'S. The assignment of visual management classes is ultimately based on the management decisions made in RMP'S. However, visual values must be considered throughout the RMP process. All actions proposed during the RMP process that would result in surface disturbance must consider the importance of the visual values and the impacts the project may have on these values. Management decisions in the RMP must reflect the value of visual resources. . . ."

III 1616 - PRESCRIBED RESOURCE MANAGEMENT PLANNING ACTIONS, dated 4/6/84

.1 Identification of Issues. This action ". . . Other resource uses and management activities not involved with the identified planning issues are analyzed as appropriate during the planning process so that all the various public land resources are covered by the RMP at the end of the process."

.16 Comprehensive Aspects of a Resource Management Plan. "A program activity or resource management concern need not be involved in an issue to be considered further in the planning process. A completed RMP must include decisions, terms, and conditions which apply to all resource management activities in the resource area and all the public lands within the resource area. . . ."

IV 1620 - SUPPLEMENTAL PROGRAM GUIDANCE, dated 11/14/86

.02 Objectives. " The 1620 series of the BLM manual contains activity specific guidance for use in resource management planning". ". . . The overall objectives of the 1620 series are to:

A. Identify program specific determinations that are usually made during resource management planning. ". . ."

.06 Policy. "The resource management planning determinations set forth in the 1620 series of the BLM Manual are required in every resource management plan and, as applicable, every plan amendment except in the following situations. If one of these exceptions applies and, as a consequence, a specific determination will not be made, the plan or plan amendment involved must contain an explanation of why the determination will not be made".

A. A determination is not required if the resource in question is not present or potentially present in the resource area and if there is no record of interest or expression of interest in the resource. ". . ."

V 1621 - SUPPLEMENTAL GUIDANCE FOR ENVIRONMENTAL RESOURCES, dated 11/14/86

.4 Visual Resources.

.41 Determinations.

A. Resource Management Planning. The following visual resources related determinations are required in every resource management plan unless one of the exceptions discussed in BLM Manual Section 1620.06 applies.

1. Management Objectives. Management objectives are established for the visual resources in the planning area through the assignment of visual resource management (VRM) classes. The VRM classes are assigned to all public lands within the resource area. Each class ". . ."

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
WASHINGTON, D.C. 20240

March 21, 2000

In Reply Refer To:
8400 (250) P

EMS TRANSMISSION 03/27/2000
Instruction Memorandum No. 2000-096
Expires: 09/30/2001

To: All State Directors
From: Assistant Director, Renewable Resources and Planning
Subject: Use of Visual Resource Management Class I Designation in Wilderness Study Areas

This memorandum provides clarification on the appropriate Visual Resource Management (VRM) Class designation to be used when preparing Resource Management Plans (RMPs), or other management plans or guidance for lands that contain Wilderness Study Areas (WSAs).

Specifically, the Bureau of Land Management (BLM) Handbook, H-8410-1, Visual Resource Inventory, states on page 6, paragraph 1, that “. . . Class I is (emphasis added) assigned to those areas where a decision has been made previously to maintain a natural landscape. This includes areas such as wilderness areas, . . . and other congressionally and administratively designated areas where decisions have been made to preserve a natural landscape.” The BLM has interpreted this statement to include WSAs until such time as these areas are designated as wilderness or released for other uses by the Congress.

It is important to understand that in these situations, the VRM management objectives are being used to support WSA management objectives. For WSAs, this is not only about visual values as many WSAs do not necessarily contain exceptionally high scenic values. The primary objective of WSA management is to retain the WSA’s natural character essentially unaltered by humans during the time it is being managed as a WSA.

Therefore, it is the Bureau position, recognizing case-by-case exceptions for valid existing rights and grandfathered uses, that all WSAs should be classified as Class I, and managed according to VRM Class I management objectives until such time as the Congress decides to designate the area as wilderness or release it for other uses. If a WSA is designated as wilderness, the area would continue to be managed as VRM Class I. However, if the WSA is released, the RMP for the area would need to be amended and appropriate VRM management objectives established. This policy applies to all future plans and plan amendments.

The attachment to this memorandum consists of questions and answers that may be helpful in fully understanding this policy clarification.

Please contact Rich Hagan of my staff at (303) 236-9508 regarding technical implementation of this memorandum.

Signed by:

Elaine M. Brong
Deputy Assistant Director
Renewable Resources & Planning

Authenticated by:
Robert M. Williams
Directives, Records
& Internet Group, WO540

1 Attachment

1 - Questions and Answers - Visual Resource Management Policy Clarification for
WSAs (2 pp)

QUESTIONS & ANSWERS
VISUAL RESOURCE MANAGEMENT POLICY CLARIFICATION FOR WSA'S

Q. What is the reason for this policy clarification?

A. This policy clarification will insure consistent application of the visual resource management policy for wilderness study areas when plans and plan amendments are prepared.

Q. Why should wilderness study areas be included as Class I areas in future planning efforts?

A. Class I is assigned to areas where a management decision has been made previously to maintain a natural landscape. WSAs are administratively or Congressionally designated areas where the decision has been made to retain a natural landscape until Congress makes a decision as to its future management.

Q. Is this policy clarification consistent with the H 8400-1, Visual Resource Inventory Handbook?

A. Yes. The clarification is consistent with the Visual Resource Inventory Handbook, H-8400-1, Section V.A.1., which states that administratively designated areas with an objective of preserving an existing natural landscape should be assigned Class I. This is clearly the case with Wilderness Study Areas.

Q. Why were WSAs not specifically included in the H 8400-1 Handbook?

A. A specific reference to WSAs in the 1984 Handbook was probably an oversight. The purpose of the Instruction Memorandum is to clarify the intent of the Handbook.

Q. What is the process for implementing this policy clarification?

A. This policy should be incorporated in all future plans and plan amendments in areas with WSAs. It is not necessary to amend existing plans solely to change VRM class ratings.

Q. Why is a VRM Class I needed for WSAs? Doesn't the BLM's Interim Management Policy adequately protect WSAs?

A. The BLM's Interim Management Policy prevents the impairment of wilderness values, but does allow some modifications to the natural character of the area if modifications are found not to impair or are allowed because of valid rights, grandfathered activities, safety considerations or other reasons. In these cases visual resource management complements interim management by providing techniques to insure that changes are designed not to attract attention.

Q. Why should WSAs with low scenic quality be classified as Class I areas?

A. The visual resource management process takes into consideration the concepts of both scenic quality and natural appearing landscapes. Areas such as wilderness, wilderness study areas, and wild sections of wild and scenic rivers are designated with the intent to preserve their natural appearing landscape regardless of their scenic value. High scenic quality may be a value of these areas, but is not necessary for their designation.

Q. Will Class I prevent construction of structures or maintenance of existing structures that would be allowed in WSAs under the Interim Management Policy (IMP)?

A. No. Resource Management Plans addressing this issue should note that the visual resource management (VRM) objectives are designed to support the IMP guidelines to not impair the natural character of the existing landscape. They should never be used to supercede the IMP guidelines.



United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Land Appeals
801 N. Quincy St., Suite 300
Arlington, VA 22203

TOM VAN SANT

IBLA 2007-173

Decided March 14, 2008

Appeal from a Finding of No Significant Impact/Decision Record issued by the Field Manager, Bishop, California, Field Office, Bureau of Land Management, approving an amendment to a material site easement. CACA 047712; EA CA-170-07-07.

Intervention granted; motions to dismiss denied; request for oral argument denied; decision set aside and remanded.

1. Federal Land Policy and Management Act of 1976: Land Use Planning

Since FLPMA requires that resource management decisions conform to an approved land use plan, a BLM decision approving a proposed action that does not conform to the visual resource management standards set out in the applicable land use plan will be set aside and remanded if the nonconformance does not fall within an allowed exception to conformance to those standards.

APPEARANCES: Tom Van Sant, Santa Monica, California, *pro se*, and Amy Minter, Esq., Santa Monica, California, for appellant; Nancy S. Zahedi, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Sacramento, California, for the Bureau of Land Management; Thomas P. Hallenbeck, District 9 Director, California Department of Transportation, Bishop, California, for intervenor, California Department of Transportation.

OPINION BY ADMINISTRATIVE JUDGE GREENBERG

Tom Van Sant¹ has appealed the March 29, 2007, Finding of No Significant Impact (FONSI)/Decision Record (DR) issued by the Field Manager, Bishop, California, Field Office, Bureau of Land Management (BLM), approving an amendment to the Independence Material Site 118 (MS #118) Easement issued to the California Department of Transportation (Caltrans)² in April 2006. The approved amendment, which was based on the environmental assessment (EA) prepared for the proposed amendment (EA CA-170-07-07), extended the authorized length of use of the easement from 5 years to 10 years; increased the amount of material permitted to be extracted by 650,000 cubic yards (cy) from 550,000 to 1.2 million cy; and authorized the location of processing plants within the existing material site pit. On appeal, Van Sant objects to the FONSI/DR and underlying EA as violating both the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. § 4332(2) (2000), and the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. §§ 1712(a) and 1732(a) (2000). Because BLM's approval of the amendment allowing the placement of processing plants in the pit violates FLPMA's requirement that management activities conform to applicable land use plans, we set aside BLM's decision and remand the case for further action.³

¹ Van Sant's May 8, 2007, Notice of Appeal identified himself as the only appellant; however, in his statement of reasons for appeal (SOR) dated June 7, 2007, he attempts to add Concerned Citizens of Independence as an appellant to his appeal. Since Concerned Citizens of Independence was not named as an appellant in Van Sant's Notice of Appeal and did not file its own notice of appeal within the 30-day appeal period set out in 43 C.F.R. § 4.411(a), it is not a proper appellant in this appeal.

² Caltrans has requested that it be allowed to intervene in this appeal. We grant that request.

³ Both BLM and Caltrans have moved for dismissal of Van Sant's appeal for lack of standing under 43 C.F.R. § 4.410. We find that the record supports Van Sant's standing to bring this appeal because he participated in a public meeting regarding the proposed activity and made comments regarding the action's visual aspects, which BLM cited in the EA, and because he has a legally cognizable interest that is substantially likely to be injured by the approved easement amendment. We thus deny the motions to dismiss. Van Sant has requested an opportunity for oral argument pursuant to 43 C.F.R. § 4.25. The extensive written appeal submissions provide more than sufficient analysis of the issues raised in this appeal, and we see no need for oral argument. We therefore deny Van Sant's request for oral argument. Van Sant has also moved for expedited consideration of his appeal. Since we are now deciding the appeal, the motion to expedite is moot.

Background

MS #118 is a 50-year old gravel pit on an approximately 8-acre parcel situated in the NW $\frac{1}{4}$ SW $\frac{1}{4}$, SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 7, T. 13 S., R. 35 E., Mount Diablo Meridian, Inyo County, California, just west of and adjacent to U.S. Highway 395 (Hwy 395) at mile post marker 75.1, 1.2 miles northwest of the town of Independence. The site was originally permitted to Caltrans in 1957 pursuant to a materials site right-of-way (No. CALA-0151584) issued under the Federal Aid Highway Act, 23 U.S.C. § 317 (2000). Caltrans removed 133,000 cy of material from between 1957 and 1991, disturbing approximately 35 acres of surface before major use ceased in 1991. Caltrans relinquished the site in 1997, with the understanding that BLM would make material within the pit available through commercial mineral material sales for highway projects. EA at 1-2; *see Larry Thompson*, 151 IBLA 208, 210 (1999).⁴ Although in July 1998 BLM approved issuance of a mineral materials sales contract authorizing removal of 550,000 cy from the pit over a 5-year period, that sale was never finalized. EA at 2; *see Larry Thompson*, 151 IBLA at 219 n.4 (referring to Inyo County's denial of approval of the reclamation plan for the mineral material sale, the approval of which had been a condition of BLM's decision).

On December 12, 2005, Caltrans requested that the Federal Highway Administration (FHWA), U.S. Department of Transportation (DOT), assist it in securing a DOT easement from BLM for MS #118, pursuant to 23 U.S.C. § 317 (2000). On December 19, 2005, FHWA requested BLM's concurrence on the Caltrans request and issuance of a Letter of Consent specifying the conditions of the transfer. *See* "Decision Record Federal Highway Administration Letter of Consent for Independence Mineral Material Pit CACA 047712," dated Mar. 31, 2006 (2006 DR), at 1. In accordance with the July 27, 1982, Interagency Agreement between BLM and FHWA, on April 1, 2006, BLM issued a Letter of Consent allowing FHWA to issue a 5-year highway easement deed to Caltrans authorizing the use of MS #118, but limited that use to the extraction of a maximum of 550,000 cy of material over the 5-year period and restricted pit activity to the extraction and separation of materials using a steel grid (grizzly). Apr. 1, 2006, Letter of Consent at 4, 5; *see also* 2006 DR

⁴ In *Larry Thompson*, 151 IBLA at 209, 220, the Board affirmed a BLM decision approving issuance of a mineral material sales contract for MS #118.

at 2.⁵ FHWA issued Highway Easement Deed MS 118 9-INY-395 to Caltrans on February 27, 2007.

After receiving BLM's April 2006 approval for use of MS #118, Caltrans reviewed its highway improvement plans for Hwy 395 in the Independence area over the next 15 years and calculated that the anticipated three large highway widening projects would require approximately 1 million cy of material.⁶ In light of the rapidly increasing costs associated with construction material for highway improvement projects and the need to reduce the fiscal impacts of those projects, Caltrans determined that the current material site easement would better serve the projects and the public if it were amended. EA at 2. Accordingly, Caltrans requested that the easement be amended to extend the authorized length of use of the easement from 5 years to 10 years; increase the amount of material permitted to be extracted by 650,000 cy, from 550,000 to 1.2 million cy; and allow the placement of processing plants, including rock crushers and separators and concrete or asphalt batch plants, in the pit, with multiple plants permitted on the site should highway projects overlap.⁷ See EA at 3, 9.

The EA, FONSI, and DR

BLM prepared an EA to assess the impacts of the proposed easement amendment. In addressing the need for the proposed action, the EA identified the issues inducing the amendment, including the lack of available material pits near the proposed project sites; the excessive hauling costs for materials; the efficiency and

⁵ BLM based its decision to approve issuance of the letter of consent and Caltrans' use of MS #118 on the May 19, 1998, EA prepared for the commercial mineral materials sales contract that was never finalized (EA CA-170-98-28). See 2006 DR at 1. In rejecting the proposed alternative set out in the 1998 EA, which tracks the proposal now before us, and instead adopting Alternative 2, with minor changes, BLM noted the selected alternative did not allow for rock crushers and separators or for asphalt or concrete batch plants, and thus would reduce or eliminate public concerns over noise, odor, visual impacts, and dust emissions. 2006 DR at 5.

⁶ These projects consist of widening portions of Hwy 395 from 2 lanes to 4 lanes and include the 2007 Blackrock 4-lane project (requiring 170,000 cy), the 2008 Independence/Manazur 4-lane project (requiring 288,000 cy), and the 2012 Olancho/Cartago (Olancho) 4-lane project (requiring 600,000 cy). EA at 2.

⁷ The record is unclear about when Caltrans requested the easement amendment; however, Caltrans advised the public of its plans to seek easement amendment in November 2006. See EA at 26; Nov. 20, 2006, Caltrans Concerned Citizen letters, seeking public comment; Nov. 11, 2006 and Dec. 2, 2006, public notices published in the *Inyo Register*.

costs savings from performing processing activities in the pit during road construction; and the reduction of visual, noise, and air quality impacts along the highway if processing facilities were sited in the pit instead of along the highway. The EA noted that no other approved material site available to Caltrans contained sufficient material to satisfy all three proposed highway projects, and that, while two pits near Lone Pine (a Los Angeles Department of Water and Power (LADWP) site near Cottonwood Canyon and a Caltrans site near Keeler) might be able to provide materials for the Olancho project, the distance from those pits and from other pits near Bishop to the two projects near Independence would increase hauling costs and impacts to existing surface roads. The EA also explained that, without the amendment permitting processing activities in the pit, crushing and batch plant activities would have to be located within the Hwy 395 right-of-way, either on the side of the road or in the proposed median, which would create safety, visual, and noise impacts, and the need to return unusable waste material to MS #118 (in addition to transporting the raw material to the project site) would enlarge the number of required hauling trips with consequent costs and traffic. EA at 2-3.

The EA analyzed three alternatives: Alternative 1, the No Action Alternative, which would perpetuate the currently approved use under the existing 5-year easement for the removal of 550,000 cy of material; Alternative 2, the Modified Alternative, which would amend the existing easement to extend the period of use to 10 years, allow the siting of processing plants, including crushers and separators and concrete or asphalt batch plants, within the pit, and permit multiple plants on site if highway projects overlapped; and Alternative 3, Caltrans' Preferred Alternative, which, in addition to the amendments described in Alternative 2, would also increase the amount of material authorized to be extracted by 650,000 cy to 1.2 million cy. EA at 9. The EA also identified alternatives that had been considered and rejected, including using the LADWP and Caltrans sites near Lone Pine and the sites near Bishop, which had been rejected because of the increased hauling costs and impacts to existing road surfaces if these sites were used for the projects near Independence. *Id.* The EA added that there were no other approved mineral material sites with sufficient material amounts and suitable locations to support the Caltrans projects. *Id.* at 9-10.

The EA discussed the impacts associated with each alternative, including, *inter alia*, impacts on air quality, noise, visual resources, public health and safety, and socio-economics. In its discussion of the impacts of Alternative 3, which incorporated the impact analysis for Alternative 2 with some slight modifications,⁸ the EA first

⁸ The EA's discussion of the impacts of Alternative 3 adopted the impacts analysis for Alternative 2, except for the analyses of noise, visual resources, minerals, and realty and lands, which were slightly modified to reflect the increased amount of material

(continued...)

noted that all extraction and processing operations, including batch plant activities, would be required to comply with and operate under a permit issued in accordance with Great Basin Unified Air Pollution Control District (GBUAPCD) regulations. According to the EA, air emissions from the batch plants would be controlled by a bag house and water sprays and would be source tested to ensure that they were within Federal emissions standards. Additionally, best available control technology, such as maintaining moist aggregate surfaces and bag houses on the crusher, would be employed to suppress dust from extraction, processing, and hauling. EA at 19.

As to air quality impacts, the EA stated that dust would be confined to the site through the measures imposed by GBUAPCD, that visual air quality in the pit area would be affected less than 20 percent by dust or plant emissions from any phase of the operation, and that water and/or dust palliatives would be used to keep dust low. While acknowledging that extraction and processing would also cause some vehicular and batch plant emissions, as well as some suspended dust within the pit, the EA stated that because the soil disturbance from extraction, processing, and hauling would be a fresh disturbance, the major component of the ensuing dust would be large particles (greater than 10 microns) that would settle out rapidly. The EA added that during inactive periods, little if any dust would come from the site due to the large particle size of the fines, although there could be dust during an extreme wind event. The EA further indicated that the action would not result in the emission of PM₁₀. EA at 20.

In discussing noise impacts, the EA recognized that the greatest noise emissions would be concentrated within the processing area of the pit, but noted that noise emissions would be somewhat contained or reduced by the below-grade pit and resulting pit walls and would decrease over time as material was removed and the pit floor lowered. EA at 21. The removal of the additional material authorized under Alternative 3 would increase the depth of the pit, and the location of equipment and plants within the lowering pit would lessen noise impacts. *Id.* at 24. The EA estimated that the combined noise level from the material site, with the equipment placed below the current grade of the site, would be 30-40 dB at 2,000 feet, which would be considered "Faint." EA at 21; *see also id.* at 6.

In its analysis of visual resources, the EA noted that the plants to be located in the pits included crushing and separating plants (rock plants) and concrete and asphalt batch plants. The EA explained that rock plants, with their various conveyor systems and open-looking appearance, would be slightly lower in height, but occupy

⁸ (...continued)

authorized in Alternative 3. *See* EA at 24-25. Our discussion of the impacts of Alternative 3 will include the relevant portions of the impacts analysis for Alternative 2.

more ground than batch plants, which have large cylindrical towers (silos) extending above the equipment. The EA estimated that a rock plant located in the middle of the site would likely extend 10 to 12 feet above the ground surface, that a 50-foot asphalt plant hopper and conveyor would extend about 18 to 20 feet above the ground surface, and that a 70-foot hopper would extend twice as far above the ground as a 50-foot one. The EA acknowledged that regardless of the measures taken to screen the pit, the plants located in the pit would be visible from all key observation points (KOPs) in the near term.⁹ EA at 21.

The EA specifically assessed whether the visual impacts from the proposed amendment conformed to the visual resource management (VRM) standards established for the area in the Bishop Resource Management Plan (RMP). The EA explained that, according to the RMP, the site was located in a VRM Class III area. The objective of that classification is to partially retain the existing character of the landscape, which means that the level of change to the characteristic landscape of such areas may be moderate, management activities within those areas may attract attention from KOPs but should not dominate the view of the casual observer, and changes to the areas should repeat the basic elements found in the predominant natural features of the landscape. EA at 7 (discussion of existing environment). The EA found that plants and plant operations located within the pit, while visible to some extent from all KOPs, would nevertheless meet the VRM Class III standards from KOPs #1 and #4. The EA concluded, however, that, for KOPs #2 and #3, the plants would be very noticeable and therefore would not meet the VRM Class III criteria. *Id.* at 22; *see id.* at 36 (Photo KOP #2 (Plant Simulation)) and 39 (Photo KOP #3 (Plant Simulation)). The EA added that additional plants would increase the visual impacts if they were located adjacent to each other. *Id.* at 22.

The EA noted that the distance to the highway and the lowering of the pit as mining progressed would begin to lessen the appearance of the plants during periods of operation. The EA further noted that the plants would only be in the pit during the construction periods for planned 4-lane projects and would be removed once the project was completed so that the visual intrusions would be temporary. *Id.* at 22. It also found that the excavation of the greater amount of material proposed under Alternative 3 would increase the depth of the pit and improve visual impacts over those in Alternative 2 because most of the mining equipment and processing plants

⁹ The KOPs for this site are along Hwy 395 and the Fish Hatchery access road (Oak Creek): KOP #1 is located about 1/4 mile north of Independence on northbound Hwy 395; KOP #2 is located on the highway, mostly opposite the existing pit and looking southwest; KOP #3 is located on the highway on the southbound lane looking at the existing pit; and KOP #4 is on the Fish Hatchery road looking southeast toward the pit. EA at 7; *see* EA at 32 (Map #3) and 33, 35, 38, and 40 (Photos KOP #1-#4, titled "Existing").

would no longer be visible. It recognized, however, that the upper 20 feet of a plant projecting above the pit's eastern edge might still be visible from Hwy 395 directly east of the pit. *Id.* at 24-25.

The EA also identified mitigation measures to minimize visual impacts:

1. Paint areas of the plant structure dull dark olive green that are above pit grade and have large blocky, flat, or rounded surfaces.
2. Locate plants in the lowest portion of the pit.
3. Begin material excavation in areas where plants are to be located, thereby lowering the pit floor and the processing plants.
4. Utilize olive green or dark netting if possible to screen non-moveable equipment or processing plants if such are visible above the pit surface grade.
5. Separate multiple plants within the pit to avoid a clustering visual effect.

EA at 24, 25. The EA anticipated that the use of all the mitigation measures would bring the residual visual impacts within VRM Class III standards because, although the plants might still be visible, they would not dominate the landscape and the color contrasts of the upper portions of the batch plants would be moderated. *Id.*

The EA's discussion of Public Health and Safety emphasized that the use of the material site under Alternatives 2 and 3 would actually reduce the number of truck trips by eliminating the need to return unusable waste material to the pit. The EA also explained that the observable air quality impacts and unacceptable odors would be minimized by the use of current technology and the requirement that processing plants meet state standards and county-approved reclamation plan conditions imposed for dust, air quality, and odors. The EA added that placing the processing operations in the pit, and not along the highway, would reduce or eliminate visual and noise impacts that might distract travelers along the highway corridor, and that the highway upgrades using the pit materials would improve safety and the experience and enjoyment of the traveling public. EA at 23.

In discussing the socio-economic impacts of the alternatives, the EA first noted that the parts of Hwy 395 designated as a scenic highway ended approximately 1.5 miles north of the entrance to MS #118 (EA at 9 (Existing Environment)), and that the operation, therefore, would not impact that designation (*id.* at 18 (Discussion of Alternative 1)). The EA then pointed out that locating the processing plants in the pit

would result in efficient material handling, reduced material hauling, and significantly decreased highway project costs, saving 2 to 5 million dollars. *Id.* at 23.

The EA also reviewed the public involvement in the project, including the notices of comment periods and public meetings, both sent to interested members of the public¹⁰ and published in the *Inyo Register*, summarized comments received at the meetings, and provided responses to both oral and written comments. *Id.* at 26-28.

The Field Manager issued his FONSI and DR, adopting Alternative 3 analyzed in the EA, but modifying the mitigation measures identified in the EA.¹¹ He determined that adopting Alternative 3, with the described mitigation measures, would not have significant impacts on the human environment and that, therefore, preparation of an environmental impact statement (EIS) was not required. DR at 2. He further found that it was in the public interest to amend the existing Caltrans easement for MS #118 to (1) extend the use of the material site to 10 years until 2016; (2) increase the amount of material extracted by 650,000 cy to a total of 1.2 million cy; and (3) allow the placement of processing plants, including crushing and separating equipment, asphalt and concrete batch plants, and other equipment, within the pit, and permit the use of bulldozers, front-end loaders, belly dump trucks, bobtail dump trucks, maintenance trucks, water trucks, and haul trucks. *Id.* at 1-2.

In discussing the approved amendment's conformance to the Bishop RMP, the Field Manager acknowledged that the placement of tall 50- to 70-foot high batch plants in the pit would violate VRM Class III standards for 2 of the 4 KOPs. He pointed out, however, that the RMP allowed for exceptions for nonconformance in certain circumstance, including permitting a field manager to

“allow temporary projects to exceed VRM standards in Class 2-4 areas, if the project will terminate within two years of initiation.

¹⁰ Van Sant was listed as one of those interested members of the public. *See* BLM Motion to Dismiss for Lack of Standing, Response to Statement of Reasons, and Opposition to Request for Hearing (BLM Answer), Attachment (Att.) 4. Van Sant denies having received any information until the FONSI/DR issued. He agrees that he received necessary service of the final decision. Additionally, although Van Sant was not identified by name, a summary of the substance of the comments and concerns he expressed during a Jan. 9, 2007, Caltrans presentation to the Inyo County Board of Supervisors, which a BLM representative attended, was included in the Public Involvement section of the EA. *See* EA at 26.

¹¹ The Field Manager noted that, as part of his decision, a concurrent Letter of Consent would be issued to the FHWA authorizing the amendment of the existing highway easement deed held by Caltrans. DR at 1.

Rehabilitation will begin at the end of the two year period. During the temporary project, the field manager may require phased mitigation to better conform to prescribed VRM standards.”

DR at 2, *quoting* Bishop RMP Record of Decision (ROD) at 14. Rather than adopting the mitigation measures identified in the EA to reduce visual impacts to conform to the VRM Class III standards, the Field Manager chose instead to implement this exception. While acknowledging that the easement amendment authorized use of MS #118 for a total of 10 years, he stated that the pit would be used irregularly during its life, and that, although the first few highway projects would initially create visual contrasts, the deepening of the pit from excavation activity should lessen visual impacts and improve conformance to the prescribed VRM standards. *Id* at 2. Since each component of the project was expected to last less than 2 years, the Field Manager anticipated that BLM would have the opportunity to evaluate changing visual contrasts and ensure increasing conformance during the 10-year life of the project. He added that since the operations were confined to an existing pit, no new surface area would be affected and that rehabilitation at the end of the 10-year project life would comply with state Surface Mining and Reclamation Act (SMARA) requirements. *Id.*

The Field Manager addressed the two factors underlying the approved amendment’s nonconformance to VRM standards: facility height and facility color. As to facility height, he noted that the nonconformance would occur only if extremely tall processing plants were used and sited in the highest area of the pit. He pointed out that, as material was removed from the pit, the pit floor was expected to deepen up to 50 feet, and that the lowering of the pit floor would also lower the height of any plants located in the pit and increase conformance with the VRM Class III standards. He also indicated that the plants would not be present during the entire 10-year period, but only when each separate highway project was underway, and would be removed between projects.¹² He concluded that the visual contrasts would diminish through time as the pit lowered from the distinct and separate excavation phases. DR at 2-3.

As far as facility color was concerned, the Field Manager acknowledged that striking colors increase visual contrasts and that using all the mitigation measures identified in the EA would reduce visual impacts to VRM Class III standards. Nevertheless, he declined to adopt all those measures, stating that, because Caltrans could not predict the color of a contractor’s processing plant, he would initially defer imposing the painting mitigation “due to the cost of painting a large processing plant for a short duration of use. This would increase the cost of the 4-lane project to the

¹² The approved amendment did not preclude the overlap of highway projects and that, in fact, the EA explicitly acknowledged that possibility. *See, e.g.,* EA at 9.

taxpayers and cost savings is one of the intended purposes for locating the plants in the pit.” DR at 3. In conformance with the exception to compliance with the VRM standards, the Field Manager indicated that he would require painting or other appropriate mitigation if visual contrast exceeded Class III standards for greater than 2 years and that BLM would conduct a visual contrast analysis 2 years after the project commenced to determine VRM conformance and necessary actions to meet VRM standards. He added, however, that any plant facilities creating egregious and unacceptable color contrasts, as determined through a visual contrast analysis, would be required to undergo painting or other appropriate mitigation to reduce the contrast. *Id.*

The Field Manager decided, however, to modify several of the visual mitigation measures because of the “unreasonable and unnecessary costs associated with full adoption of the measures” and because “strict adherence to the EA mitigation measures [might] be technically infeasible because specifying plant locations [might] prohibit actual excavation where it is needed for future projects.” DR at 3. He explained:

The Residual Impacts section of the EA states that although the mitigation will bring the visual contrasts to within Class III standards, its implementation will increase the operational costs. These additional costs will occur from either the placement of plants in areas which conflict with more efficient and desirable locations of excavation or excavating areas which conflict with pit operations or schedules. It is unknown at this time, how a contractor will plan the material extraction and plant location within the pit for efficient operation. In order to allow for flexibility in the planning and execution of the pit operations, the mitigations have been altered so that the contractor can determine the most efficient plant locations and extraction areas within the pit. It is known that mineral material for the initial road elevation fill will be removed from the pit before batch plants are placed there, immediately lowering the pit to some degree. Therefore, when batch plants are set-up, the pit floor will already be lower than its current depth. The intent of the visual mitigations below are still retained to reduce visual contrast and improve visual conformance but the modified mitigations below provide practical flexibility for future material needs. The visual contrast of tall batch plants will still be reduced, without increasing the cost of the material operation through implementation of the modified mitigation measures.

Id. at 3-4.

The Field Manager therefore decided to implement the project with the following revised mitigation measures:

1. Implement VRM exception No. 2 in the Visual Resources section of the BLM Bishop RMP which reads, "The field manager may allow temporary projects to exceed VRM standards in Class 2-4 areas, if the project will terminate within two years of initiation. Rehabilitation will begin at the end of the two year period. During the temporary project, the field manager may require phased mitigation to better conform with prescribed VRM standards."
2. At the end of the two year period, conduct a visual contrast analysis to identify conformance or non-conformance of plant operations with the VRM Class III standard. A non-conformance determination will result in implementation of mitigations to conform to the VRM standard including painting areas of the plant structure dull dark olive green that are above pit grade and have large blocky, flat, or rounded surfaces. This will only be applied if visual contrasts do not meet Class III standards and impacts extend beyond 2 years. However, if the color of any future plant facilities create[s] unacceptable and egregious color contrasts, as determined through a visual contrast analysis, then BLM retains the authority to require painting or other appropriate mitigation to reduce the contrast to conform with the RMP.
3. Locate plants in the lowest portion of the pit if compatible with material extraction.
4. Material excavation should begin in areas where plants are to be located, thereby lowering the pit floor and the processing plants.
5. Utilize olive green or dark netting where technically or practically feasible to screen non-moveable equipment or processing plants if they are visible as per BLM's VRM criteria above the pit surface grade.
6. Strive to separate multiple plants within the pit to avoid a clustering visual effect.

DR at 5-6.

ANALYSIS

Van Sant challenges BLM's EA, FONSI, and DR as violative of both NEPA and FLPMA. Van Sant asserts that the EA is inadequate and cannot support a FONSI because (1) the visual impacts will violate the Bishop RMP;¹³ (2) the air quality impacts were not adequately addressed; (3) the significant noise impacts were not sufficiently analyzed; (4) the public safety hazards were not evaluated; (5) the serious traffic problems were not discussed; and (6) the alternatives analysis was inadequate. He also asserts that the material site easement amendment does not comply with the Bishop RMP because it fails to provide for saleable materials.¹⁴ We find that the amendment approved in the DR, as modified by the Field Manager, fails to conform with the Bishop RMP VRM Class III standards and therefore violates FLPMA's directive that management actions conform to the approved land use plan and must be set aside for that reason. We need not address Van Sant's NEPA arguments.¹⁵

As described above, the EA's analysis of the impacts to visual resources admitted that Caltrans' preferred alternative would not conform to VRM Class III standards from KOP #2 and #3 and delineated mitigation measures, which, if imposed, would ensure that the project conformed to RMP's VRM standards. Rather than adopting those measures, the Field Manager chose to modify them to such an extent that the approved amendment admittedly no longer met the VRM Class III standards and to rely on an exception to those standards to avoid conflicting with the RMP. The approved amendment, however, does not fall within the exception and the approved action therefore does not conform to the RMP and must be set aside.

¹³ Although the adequacy of the EA's visual impact analysis is a NEPA issue, the visual impacts' nonconformance to the RMP is actually a FLPMA, not a NEPA, issue.

¹⁴ Van Sant also complains that he did not receive proper notice of the proposed action and the EA. We note that BLM published notices of the availability of the EA, the requests for comments, and the scheduling of a public meeting in the *Inyo Register* on Feb. 13, Feb. 27, and Mar. 3, 2007, and posted the EA on both BLM's and Caltrans' websites, and placed copies of the EA in the Lone Pine, Independence, Big Pine, and Bishop public libraries, and that it claims that it mailed a copy of the EA directly to Van Sant. See DR at 5; EA at 26; BLM Answer, Att. 4.

¹⁵ We also need not address BLM's assertion that we may not consider certain arguments raised by Van Sant on appeal, pursuant to 43 C.F.R. § 4.410(c), because he failed to raise them in his public comments. As the visual impacts were the central feature of Van Sant's complaints, as identified in the EA, he clearly may present that argument on appeal.

[1] Section 202(a) of FLPMA, 43 U.S.C. § 1712(a) (2000), directs the Secretary of the Interior to “develop, maintain, and, when appropriate, revise land use plans,” which govern in part the use of the public lands, and section 302(a) of FLPMA, 43 U.S.C. § 1732(a) (2000) requires him to manage public lands “in accordance with” such land use plans. *See Forest Guardians*, 168 IBLA 323, 328 (2006). BLM’s implementing regulations also require all resource management authorizations and actions to conform to the approved land use plan. 43 C.F.R. § 1610.5-3(a). The regulations define “conformity or conformance” as meaning “that a resource management action shall be specifically provided for in the plan, or if not specifically mentioned, shall be clearly consistent with the terms, conditions, and decisions of the approved plan or plan amendment.” 43 C.F.R. § 1601.0-5(b); *Great Basin Mine Watch*, 159 IBLA 324, 340 (2003).

In this case, the parties agree that the Bishop RMP places the lands affected by the material site easement amendment into VRM Class III. The Field Manager correctly notes that the RMP permits a Field Manager to “allow temporary projects to exceed [VRM] standards in class 2-4 areas, *if the project will terminate within two years of initiation*,” and specifies that “[r]ehabilitation will begin at the end of the two year period. During the temporary project, the Area Manager may require phased mitigation to better conform with prescribed VRM standards.” Bishop RMP at 14-15 (emphasis added).¹⁶ The approved material site easement amendment, however, does not authorize a temporary project terminating within 2 years; rather the amendment as approved allows the use of the pit for a series of highway improvement projects over a 10-year period, and thus does not fall within the confines of the exception. The Field Manager attempts to avoid this conclusion by pointing out that each 4-lane project will be a separate and discrete project lasting less than 2 years and that the plants and consequent visual disturbance will not exceed 2 years. This justification ignores the facts that the approved amendment authorizes use of the pit for a series of projects over a 10-year period, not just for a single, individual highway project lasting less than 2 years, and that it not only does not preclude an overlap of individual highway projects, but, to the contrary, explicitly allows simultaneous operations with multiple plants on site. *See, e.g.*, EA at 3, 9, 22. Additionally, as the project is structured, rehabilitation will not begin at the end of the 2-year period because the pit will continue to be used for additional highway work; in fact, the DR relies on the continued lowering of the pit floor as a method to reduce visual impacts over time. *See* DR at 3-4. Similarly, the Field Manager’s statement that BLM will conduct a visual inspection 2 years after activities under the amended easement commence to determine if actions are necessary to meet VRM standards conflicts with the RMP’s requirement that the project *terminate* within 2 years of initiation. Accordingly, we conclude that the Field Manager’s approval of

¹⁶ Relevant excerpts from the Bishop RMP are included in the case file.

the material site easement amendment, as modified in the DR, does not conform to the Bishop RMP and must be set aside.

Accordingly, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, Caltrans' request to intervene is granted, BLM's and Caltrans' motions to dismiss are denied, Van Sant's request for oral argument is denied, and the decision is set aside and remanded.

_____/s/_____
Sara B. Greenberg
Administrative Judge

I concur:

_____/s/_____
Lisa Hemmer
Administrative Judge



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UNION TELEPHONE COMPANY, INC.

IBLA 2007-45

Decided February 14, 2008

Appeal from a decision of the Lander, Wyoming, Field Office, Bureau of Land Management, denying a communications site right-of-way application. WYW-154862.

Affirmed.

1. Federal Land Policy and Management Act of 1976: Rights-of-Way--Rights-of-Way: Applications--Rights-of-Way: Federal Land Policy and Management Act of 1976

An application for a communications site right-of-way is properly rejected as not in the public interest where BLM determines that granting the application would result in the unnecessary proliferation of communications sites and would adversely impact visual resources, that viable alternative sites exist, and that use of the site for general communication uses would be contrary to the purposes for which the public lands are managed.

APPEARANCES: Shirley S. Fujimoto, Esq., Christine M. Gill, Esq., and David D. Rines, Esq., Washington, D.C., and V. Anthony Vehar, Esq., Evanston, Wyoming, for appellant; Suzanne H. Lewis, Esq., Laramie, Wyoming, for Biodiversity Conservation Alliance and Wyoming Outdoor Council, Intervenor; Doug Thompson, Lander, Wyoming, for Board of County Commissioners of Fremont County, Wyoming, Intervenor; and John S. Retrum, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Lakewood, Colorado, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE ROBERTS

Union Telephone Company, Inc. (Union), has appealed from a November 2, 2006, decision of the Lander, Wyoming, Field Office, Bureau of Land Management (BLM), denying Union's application WYW-154862 for a cellular telephone

communications site right-of-way (ROW) on public lands in the Beaver Rim¹ area of Fremont County, Wyoming. Union sought an ROW for the following: (1) a 50-foot by 50-foot communications site containing an 80-foot-tall cell telephone tower, equipment building, generator building, and a 350-gallon propane tank; (2) a 6,720-foot by 16-foot area for a buried power line; and (3) a 1.97-mile long, 16-foot wide access road. In sum, the proposed ROW would disturb 6.246 acres of public lands. Statement of Reasons (SOR), Ex. 11. For the reasons that follow, we affirm BLM's decision.²

¹ The site is located in sec. 2, T. 30 N., R. 96 W., Sixth Principal Meridian, Fremont County, Wyoming. It is located immediately north of U.S. Highway 287 between the towns of Lander and Jeffrey City. See Lander Resource Management Plan and Environmental Impact Statement (RMP/EIS) at 152 (Map 3-27), 408 (Map 5-14). Beaver Rim, which is also known as "Beaver Divide," comprises of approximately 7,000 acres of Federal public lands.

² Biodiversity Conservation Alliance and Wyoming Outdoor Council (BCA/WOC) filed a Motion to Intervene in Union's appeal, which Union opposed. By order dated June 4, 2007, the Board denied BCA/WOC's Motion to Intervene, and granted them Amicus Curiae status. BCA/WOC filed a Petition to Reconsider the Board's order pursuant to 43 C.F.R. § 4.403, contending that "[i]f BLM grants Union's application, an 80 foot cell phone tower and its ancillary facilities (*i.e.*, roads and power-lines) will substantially adversely affect the recreational and aesthetic value of the Beaver Rim to Petitioners and their members." Petition to Reconsider at 7. We hereby grant their Petition. "In accordance with the practice of the Board to grant intervention to a person having an interest that would be adversely affected if the Board overturned BLM's action, [BCA/WOC's] motion to intervene is granted." *Las Vegas Valley Action Committee*, 156 IBLA 110, 112 (2001). BCA/WOC also filed a request for extension to file a response to Union's SOR, stating that the Board's ruling on the Petition to Reconsider will alter the substance of their brief. They have submitted an Amicus Curiae Brief, which we have considered in reviewing this matter and in affirming BLM's decision to reject Union's ROW application, and accordingly we hereby deny their request for extension as moot.

The Board of County Commissioners of Fremont County (County Commissioners) filed a Motion to Intervene as a party in this proceeding, asserting that "[t]he injury that would be suffered by the County Commissioners and the citizens of Fremont County if the Board were to uphold BLM's Decision are clearly 'real and immediate' and 'more than hypothetical.'" County Commissioners' Motion to Intervene at 7, quoting *El Paso Electric Co.*, 146 IBLA 145, 148 (1998). We grant the County Commissioners' Motion to Intervene and have considered their arguments in reaching our decision herein.

I. BACKGROUND

The Beaver Rim area where Union proposes to construct its communications tower and related facilities is within the Lander Resource Area and is subject to BLM's 1987 Lander RMP. On July 23, 1986, the Wyoming State Office, BLM, issued the RMP/EIS for the Lander Resource Area. The RMP/EIS identified 13 management subunits within the Resource Area, one of which is the Beaver Creek Management Unit. See RMP/EIS at 152 (Map 3-27), 408 (Map 5-14). The "Rim" runs about eight miles from north to south and is visible from U.S. Highway 287. The RMP/EIS documents the outstanding plant, wildlife, geologic, cultural, and scenic values present in the Beaver Rim area. See RMP/EIS at 31, 124 (Map 3-21), 131 (Table 3-13), 136, 139, 157, 159, 161, 172, 184, 186, 400, 407, 408, 409, and 412-13.³

On June 9, 1987, BLM issued a Record of Decision (ROD) for the RMP/EIS, selecting a preferred alternative under which "approximately 117,000 acres of the Lander Resource Area . . . will be designated as ACECs [Areas of Critical Environmental Concern] and will require intensive management of all surface-disturbing activities." ROD at 23 (emphasis added).⁴ One of the areas designated as an ACEC is the 7,000 acre area of Beaver Rim. *Id.*; see also *id.* at 38. The RMP provides that Beaver Rim was designated as an ACEC in order "to protect significant sites and segments along the Oregon/Mormon Pioneer Trail (e.g., ruts, swales, graves, campsites, pristine settings, etc.)." *Id.* at 38. In addition to ACEC designation, the ROD would protect Beaver Rim's values by, *inter alia*, placing no-surface-occupancy (NSO) restrictions on oil and gas and phosphates exploration and development leases; developing a management plan to identify and protect rare plants; and encouraging Beaver Rim's designation as an NNL. See RMP/EIS at 398-400, 407-13. The RMP permits the construction of "major utility systems throughout the Beaver Creek Management Unit," but it provides that such systems "will be concentrated in existing corridors *whenever possible.*" ROD at 36 (emphasis added).

³ The National Park Service proposed that Beaver Rim be designated as a National Natural Landmark (NNL) for its scenic beauty, geology, and other natural values. See RMP/EIS at 184, 186.

⁴ ACECs are defined by section 103 of the Federal Land Policy and Management Act of 1976 (FLPMA), 43 U.S.C. § 1702(a) (2000), as "areas within the public lands where special management attention is required . . . to protect and prevent irreparable damage to historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." Proposals for designating ACECs are made through BLM's land use planning process. See 43 C.F.R. § 1610.7-2.

On July 18, 2002, Union filed an initial application for a communications site ROW on and over Federal public lands within the Beaver Rim area, stating a need to provide enhanced cell telephone coverage for its customers. July 18, 2002, Application. To mitigate concerns over adverse impacts of the proposed communications facilities both on raptor nesting areas along Beaver Rim and also on Tribal cultural values, Union submitted a revised application dated October 31, 2003, which proposed an alternate site for the communication ROW at Beaver Rim, sometimes referred to as Beaver Rim #2, and stated a need to provide service from the “Lander/Riverton to Jeffrey City areas.” SOR, Ex. 9; BLM Answer at 7.

On January 23, 2004, a consultant, Western Archeological Services, Inc. (Western), issued a report concluding that Union’s proposed project would have no impact on Tribal cultural resources. *See* SOR, Ex. 9; SOR at 7-8; BLM Answer at 7. During 2003 and 2004, BLM conducted several other studies concerning the potential impact of Union’s proposed communications facilities at Beaver Rim on threatened or endangered species and determined that the project would have “no effect” on such species. *See* SOR, Exs. 9, 12 through 15; BLM Answer at 7.⁵

Union submitted revised applications dated February 2, 2004, and April 29, 2004, which proposed alternate sites for the communications facilities at Beaver Rim. *See* SOR, Ex. 11; BLM Answer at 7. This appeal concerns the April 29, 2004, revised application, which stated a need to provide cellular service along U.S. Highway 287 from Lander to Jefferey City.

Union indicates that it “investigated several options other than Beaver Rim” for a communications tower that would meet its needs, but concluded that these alternate sites are inferior. One such alternate site identified in Union’s April 2004

⁵ On Nov. 6, 2003, and Feb. 11, 2004, BLM biologists conducted evaluations of the proposed site, including a “T&E Section 7 Consultation” under the Endangered Species Act, 16 U.S.C. § 1537 (2000), with a breakdown of specific animal and plant species. Both evaluations concluded that there would be a “no effect” situation as a result of approving the project. *See* SOR, Exs. 12, 13, and 14.

On Jan. 23, 2004, Western completed a Class III Cultural Resource Inventory for the site and related access routes. According to the report, the project would not impact previously-identified cultural sites and no new cultural sites were discovered. The report, therefore, recommended cultural resource clearance for the final site, access road, and power line routes. SOR, Ex. 9 at 5.

A July 9, 2004, cultural and archaeological inventory report prepared by Western concluded that the potential for buried cultural remains in the project area is low, and recommended cultural clearance for the project. SOR, Ex. 15.

application is Cedar Rim.⁶ Cedar Rim, located approximately 10 to 12 miles to the northeast of Beaver Rim in Fremont County, Wyoming, is an existing ROW utilities corridor on public lands. In its 2004 application, Union stated that the Cedar Rim site did not meet its needs as well as the Beaver Rim site, and would provide insufficient coverage for a 12-mile stretch of U.S. Highway 287. Union now states that “a tower at Cedar Rim would be incapable of providing the cellular telephone coverage necessary in this area, and it would therefore not be possible to place the proposed tower at this location.” SOR at 2. Union acknowledges, however, that the Beaver Rim site is also not capable of full coverage and that approval of that site would require yet another tower at an unspecified location. SOR at 3.

Subsequent to Union’s April 2004 application, additional cultural and environmental studies of the proposed Beaver Rim site were conducted. Notably, on July 28, 2006, Jared Oakleaf, BLM’s Outdoor Recreation Planner, completed a Visual Contrast Rating Worksheet (Worksheet), finding that the proposed Beaver Rim ROW would not meet Class II Visual Resource Management (VRM) objectives. The Worksheet stated that “[r]elocating this site to an existing disturbed site [Cedar Rim] is the only option available to meet class [II] designation.”⁷ According to the

⁶ Box 13a of the application directs the applicant to “describe other reasonable alternative routes considered,” to which Union replied that “[o]ther alternatives looked at were the West and East Beaver Divide areas and the Cedar Rim Communication site area.” Union also identified Cedar Rim as an alternate site in the previous Feb. 2, 2004, ROW application.

⁷ The *BLM Manual*, 8410-1, “Visual Resource Inventory Handbook,” provides BLM managers with a means for determining visual values. The inventory process consists of a scenic quality evaluation, sensitivity level analysis, and delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual classes. These inventory classes represent the relative value of the visual resources.

The *BLM Manual* provides the following standards for the management of an area designated as Class II:

The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

BLM Manual, H-8410-1, at 6.

(continued...)

Worksheet, “[t]he Beaver Rim feature creates a strong lateral line across the viewshed; as a result any horizontal disturbances to this line will create a strong contrast with the existing visual environment.” *Id.*

On August 14, 2006, BLM issued a Scoping Notice requesting public input on Union’s ROW application.⁸ *See* SOR, Ex. 20. The vast majority of the comments received in response to this notice strongly opposed the project due to its potential adverse impact on scenic and environmental values. The Wyoming Game and Fish Department (WGFD) opposed the Beaver Rim site because of its likely adverse impact on raptors and crucial big game winter range habitat. *See* Letter from WGFD to BLM dated Sept. 18, 2006. Both the Eastern Shoshone Tribe and the Northern Arapaho Tribe opposed the site because of its likely adverse impact on cultural and environmental values. *See* Letter from the Eastern Shoshone Tribe to BLM dated Oct. 19, 2006; Undated Letter from the Northern Arapaho Tribe received by BLM on Oct. 23, 2006. On October 13 and 16, 2006, BLM met with the elders of the Tribes for consultation and to visit the Beaver Rim Site as proposed by Union. The elders preferred that Union’s communications site be located at Cedar Rim because of concerns over adverse impacts on cultural values. *Id.*; *see also* SOR at 10. The County Commissioners, on the other hand, supported the site because improved cell phone coverage provided by the site would benefit public safety. *See* Letter from County Commissioners to BLM dated Nov. 1, 2006.

⁷ (...continued)

When the level of impact which may result from management activities can no longer said to be “low,” where it “attracts the attention of the casual observer,” as in this case, such activities are properly prohibited, in BLM’s discretion.

⁸ The notice reads:

The [proposed] action may improve cellular service to a 40-mile portion of highway 789/287 between Jeffrey City and Lander. The action would occur within an Area of Critical Environmental Concern (ACEC). This particular area was designated as an ACEC to protect significant sites and segments along the Oregon/Mormon Pioneer Trail. The intent of the designation was also to identify, protect, and maintain the habitat and population of rare plants and the Beaver Rim cushion plant and related successional plant communities within the Beaver Creek Management Unit. A previously developed telecommunications site is located near the proposed site and could also serve the objectives of this project as well.

SOR, Ex. 20 at 1.

By decision dated November 2, 2006, BLM denied Union's application for the proposed project at Beaver Rim as not in the public interest. This appeal followed.

II. BLM's DECISION

BLM denied Union's ROW application because it determined that the proposed location is inconsistent with the "significant plant, animal, cultural, and paleontological resources" of the Beaver Rim ACEC, and that construction of the 80-foot tower would compromise the "highly scenic resources along Beaver Rim." Decision at 2. BLM stated that management of the Beaver Rim ACEC favors the alternative site at Cedar Rim, "an area already disturbed by several communication sites overlooking the Big Sand Draw Oil Field." *Id.* BLM stated that maps provided by Union "show that differences in the anticipated Beaver Rim and Cedar Rim service areas would be small." *Id.*

BLM emphasized that the Beaver Rim area was designated an ACEC in order "to identify, protect and maintain the habitat and population of rare plants," as well as "to protect raptor habitat and nesting sites." *Id.* BLM points out that "[b]ecause of these overlapping important resource values, the Beaver Rim area is identified in the Lander RMP as a 'no surface occupancy' area for oil and gas development," see Lander RMP, Map 17, and that "Wyoming BLM policy considers 'no surface occupancy' to apply equally to other, non-energy construction activities, if those activities would have similar adverse effects on resource values." Decision at 2.

In discussing the visual impact of Union's communications tower on the Beaver Rim area, BLM explained that the "project fails to meet highly scenic, visual resource management 'Class II' objectives for the Beaver Rim area," which "are aimed at retaining the existing landscape while allowing low levels of landscape change that don't attract attention." Decision at 3. BLM stated that "[t]he estimated annual average daily traffic level on U.S. Highway 287 is 2,173 vehicles," and that "[t]he proposed cell phone tower would be visible to those vehicles traveling along the highway for approximately 30 minutes, and would be highly visible during some of the most scenic portions of the drive." *Id.*

BLM argued that "the proposed action has the potential to adversely affect birds of prey which nest in the walls of Beaver Rim," and that locating the communications tower at Beaver Rim could significantly impact "[s]everal Wyoming BLM-listed sensitive plant species." *Id.* In support, BLM cites numerous comments from members of the public opposing the Beaver Rim site. More specifically, BLM noted that WGFD recommended that the tower be built at Cedar Rim, an alternative that comports with the Wyoming Bird Conservation Plan, stating: "Co-location of multiple telecommunications facilities on the same tower or clustering of towers in one

location restricts threats to birds to a single location, and reduces the cumulative footprint and habitat loss that would be otherwise incurred.” *Id.* at 4-5.

In addition, BLM stated that on October 13 and 16, 2006, it met with Arapaho and Shoshone Tribal representatives at the proposed tower site at Beaver Rim, the alternative site Beaver Rim #2, and the Cedar Rim site. BLM indicated that “[t]he proposed site was not viewed favorably by either tribe because of concerns over known spiritual or sacred sites.” *Id.* at 5. The Arapaho elders deemed the site at Beaver Rim #2 acceptable, but the Shoshone elders objected “because of its proximity to the important part of the Rim, and the potential for disturbing known and unknown cultural resources.” *Id.* Both Tribes “thought that the site they were shown on Cedar Rim was the most appropriate, since it has been disturbed already with many towers in place.” *Id.*

BLM evaluated Union’s application against the “importance of the scenic resources associated with the Beaver Rim area, as well as the importance of plant, wildlife, and cultural and traditional values in that specific area,” and concluded that “[g]uidance contained in the Lander [RMP] is weighted heavily in favor of avoiding disruption of these values whenever alternative development plans and proposals are available.” *Id.* at 6. BLM determined that designation of the Beaver Rim ACEC as an NSO area for oil and gas development is, as a matter of BLM policy, a factor favoring denial of Union’s application. BLM concluded that Union’s proposed project is not in the public interest.

III. ARGUMENTS ON APPEAL

A. Union’s SOR

Union argues on four bases that BLM failed to consider all relevant facts and factors in denying its application for a communications ROW at Beaver Rim, as follows: (1) BLM “erred in determining that Cedar Rim is a suitable alternative (an error that effectively tainted other determinations in the Decision)”; (2) BLM “disregarded the extensive factual record developed in this case”; (3) BLM “failed to conduct proper consultations with affected Native American tribes”; and (4) BLM improperly applied the Lander RMP’s NSO restriction to the proposed project. SOR at 13. We will briefly review these arguments in turn.

1. The Cedar Rim Alternative

Union’s principal argument is that “BLM committed a fundamental error that affected every aspect of its November 2, 2006, Decision by concluding that Cedar Rim is a suitable alternative to a site at Beaver Rim,” and that “BLM consistently ignored the very purpose of the entire project—to provide and improve communications

coverage along the US Highway 287 corridor.” SOR at 14. Union argues that the coverage in the Highway 287 corridor potentially achieved by placing the communications tower at Cedar Rim “would be . . . degraded by the topography and terrain features between this site and Highway 287.” *Id.* at 17. Union asserts that “the majority of the coverage that would be provided from Cedar Rim would be of areas that are already largely covered by existing Union cell sites in the Riverton area,” that “construction of a tower at Cedar Rim would . . . fail to provide coverage in the area where it is needed.” *Id.*

Union states that BLM’s alleged failure to understand the facts before it was “likely based on a mistaken, non-expert reading of the initial coverage maps requested from Union in September 2002 which . . . were so confusing to BLM staff that they requested simplified coverage maps focusing just on Beaver Rim and Cedar Rim less than two months later.” *Id.* at 20.⁹ Union claims that its “site-specific maps . . . plainly show that any coverage of US Highway 287 provided by either a fifty-foot or eighty-foot tower at Cedar Rim would be highly scattered and thus inadequate for the provision of any reliable communications . . .” *Id.* at 21; *see* Exs. 2 and 3. Union asserts that “it is not possible to achieve the objectives of Union’s proposal . . . by locating the tower in the existing Cedar Rim corridor.” SOR at 22. Union concludes that BLM’s decision “is not based on a reasoned analysis of all relevant factors, entirely fails to consider important aspects of the problem,” and accordingly is arbitrary and capricious under *Motor Vehicles Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co. (Motor Vehicles)*, 463 U.S. 29, 43 (1983). *Id.*

Union further avers that BLM’s error regarding Cedar Rim tainted and undercut the validity of the public scoping process, as demonstrated by the August 14, 2006, Scoping Notice, which reads in pertinent part: “A previously developed telecommunications site is located near the proposed site and could also serve the objectives of this project as well.” SOR at 23, *quoting* Ex. 20 at 1. SOR at 23; *see* Ex. 1 at 3-4. Union likewise argues that 2006 Tribal consultations were tainted due to the same error, as Cedar Rim was presented to Tribal leaders as a suitable alternative site. SOR at 24-25.

2. BLM Disregarded the Extensive Factual Record

Union argues that BLM’s decision disregarded the factual record, including numerous discussions, site visits and studies, which Union catalogs, as well as Union’s attempts to mitigate the potential impact on environmental and cultural resources of

⁹ Union argues that BLM should not have relied on the 2002 maps because they do not adequately depict the amended Beaver Rim location in the 2004 application. Notably, however, Union itself relies upon those propagation maps in its 2004 application.

the proposed project.¹⁰ Union claims that “[c]omments opposing Union’s application due to the perceived impact of the project on plants and wildlife, which were based on inaccurate and incomplete information from BLM, were then used by BLM to support the determinations it made in its Decision.” *Id.* at 34.

Union argues that it was not given the opportunity to review, respond to, or mitigate BLM’s concerns regarding the project’s failure to “meet highly scenic, visual resource management ‘Class II’ objectives for the Beaver Rim area.” *Id.* at 36, *quoting* Decision at 3. Union states that “[e]ven if it were appropriately within BLM’s discretion to determine that the public interest in scenic or other values outweighs the public interest in reliable communications for the safety of travelers in a remote area, no such determination has been made in this case, nor was this factor ever analyzed or even taken into consideration.” SOR at 39, *citing* section 503 of FLPMA, 43 U.S.C. § 1763 (2000).

3. Consultation with Native American Tribes

Union asserts that BLM arbitrarily excluded it from the opportunity to participate in the October 2006 on-site visit by, or in any discussions with, Tribal representatives in violation of the *BLM Manual*, H-8120-1.¹¹ Union asserts that “the tribal representatives were provided with incomplete and inaccurate information concerning many relevant aspects of Union’s proposal, including the fact that Union had proposed a total of four different sites on Beaver Rim by the time the final site location was selected.” *Id.* Union argues that it has no information regarding the visit or conversations with tribal representatives, but infers that the site they were shown was, in fact, a site initially proposed and abandoned several years previously. *Id.* at 42-43. Union states that, because of its exclusion from the Tribal consultation

¹⁰ Union notes that in order to avoid or mitigate specific concerns of the consultants and BLM’s specialists, Union moved the cell tower approximately 300 feet northeast of the location initially proposed. SOR at 28-33. Moreover, Union points out that, after discussing the initial site with Tribal leaders, it again moved its proposed tower site 2300 feet to the northeast of the original site to avoid completely the identified Native American cultural sites and to provide a quarter-mile buffer requested by the Tribal representatives. To the best of our understanding, Union did not, subsequent to 2002, provide BLM with propagation maps of this location.

¹¹ According to this provision, “[a]ll such consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals.” *BLM Manual*, H-8120-1, “Guidelines for Conducting Tribal Consultation” at V-7, *quoting* Executive Memorandum, “Government-to-Government Relations with Native American Tribal Governments,” Apr. 29, 1994.

process, BLM has prevented Union from explaining mitigation efforts that could resolve the Tribes' concerns.

Moreover, Union argues that BLM failed to document any of its consultation efforts, as required by the *BLM Manual*, H-8120-1, at I-1.¹² "Without such documentation," contends Union, "BLM's decision cannot be upheld because there is insufficient evidence in the record to support its conclusion." SOR at 45, citing *SMR Network, Inc.*, 131 IBLA 384, 386 (1995); *Glenwood Mobile Radio Co.*, 106 IBLA 39, 41-42 (1988); *Coy Brown*, 115 IBLA 347, 356 (1990). Union concludes that "BLM has either failed to document its consultation efforts as required . . . or BLM has failed to disclose any such documentation to Union, meaning that . . . as a simple matter of due process, this documentation (if it exists) cannot serve as the basis for its initial decision or for a decision on appeal." *Id.* at 47, citing *BLM Manual*, H-8120-1, at IV-3; 43 C.F.R. § 4.24(a)(4).

4. The "No Surface Occupancy" Restriction

Finally, Union objects to BLM's application of the oil and gas NSO to the proposed ROW. In fact, argues Union, BLM's statement that the oil and gas NSO designation applies to all construction activities, including its planned communication site, appears for the first time in the November 2, 2006, decision. SOR at 48. Union argues that this action "has unfairly denied Union, through its consultants, any opportunity to conduct any type of independent analysis of how various mitigation measures, such as seasonal restrictions on access, could address BLM's previously unannounced concerns relating to surface occupancy." *Id.*

More specifically, Union argues that the Lander RMP does not, in fact, include an NSO policy for utility rights-of-way, including communications sites. Union points to the language of the RMP, which states that except for three areas not at issue in this case, "construction of major utility systems throughout the Beaver Creek Management Unit will be allowed." *Id.* at 49, quoting Lander RMP at 36. The only limitation on utility system construction is that such systems be concentrated in existing corridors "whenever possible." *Id.* Union argues that BLM effectively broadened the scope of the NSO designation beyond what is set forth in the RMP, in

¹² The *BLM Manual*, H-8120-1, at V2, states that, "[w]hatever method is chosen, all consultation activities should be carefully documented in the official record." *BLM Manual*, H-8120-1, at V2. The *BLM Manual* provides: "Field Office managers and staffs shall consult with affected tribes to identify and consider their concerns in BLM land use planning and decision-making, and shall document all consultation efforts." *BLM Manual*, § 8120.06(E), "Tribal Consultation Under Cultural Resource Authorities."

violation of section 553 of the Administrative Procedure Act (APA), 5 U.S.C. § 553 (2000). Union argues that this “policy decision” operates as a rule adopted without public notice and comment proceedings in violation of the APA. Further, Union argues that BLM has unfairly denied it the opportunity to conduct independent analysis of how various mitigation measures could address BLM’s concerns relating to surface occupancy.

B. The County Commissioners’ Motion to Intervene

The County Commissioners support Union’s application to construct the communications tower and related facilities at the Beaver Rim site. They state that “[t]he southeast portion of Fremont County, which includes a major section of US Highway 287, currently has large gaps in coverage for communications services,” and that they “have long been concerned about the limitations these coverage gaps impose on their ability to quickly respond to fires, accidents, and other life-threatening emergencies in the area.” County Commissioners’ Motion to Intervene at 2. They catalog the numerous public safety and emergency situations that demonstrate the need for effective cell phone service in the area. *Id.* at 2-4. By letter to BLM dated November 1, 2006, they submitted comments to BLM expressing the view position that “public safety takes higher priority than occasional visual enjoyment, especially in this situation.” Nov. 1, 2006, Letter at 2.

C. BLM’s Answer and BCA/WOC’s Amicus Curiae Brief Supporting BLM’s Decision

In its Answer, BLM states that its denial of Union’s ROW application was based upon a reasoned analysis of the factors involved and that its decision was made with due regard for the public interest. BLM states that it weighed the relevant factors and “rejected Union’s preferred ROW communications site at Beaver Rim because the site was incompatible with the values of the Lander Resource Area RMP and alternative sites were available for providing feasible coverage, including but not limited to the existing ROW corridor at Cedar Rim.” Answer at 14. Further, BLM states that its decision is “rationally based on the RMP which establishes that the significant surface values of Beaver Rim should be protected from surface disturbance and utility systems should be concentrated in existing ROW corridors wherever possible.” *Id.* at 14, *citing D.J. Laughlin*, 154 IBLA 159, 163-66 (2001).

With regard to Union’s contention that construction of the communications facilities at Beaver Rim would be less difficult and less expensive than at Cedar Rim, BLM responds that “[t]he Board has held that this is not sufficient reason to disturb a BLM ROW decision.” Answer at 15, *citing D.J. Laughlin*, 154 IBLA at 165. BLM asserts that Union has failed to establish error in BLM’s determination that Cedar Rim is a suitable alternative. BLM states that “the record contains only Union’s propagation maps and Union’s conclusion, based on the maps, that Cedar Rim is

not suitable,” and that “Union did not submit, and the record does not contain, the studies upon which the maps are based.” Answer at 15. BLM states that it “interprets the maps differently from Union and has concluded that the difference in coverage provided by the Beaver Rim and Cedar Rim sites is ‘small.’” *Id.*

BLM contends that “Union’s argument that BLM failed to consider Union’s efforts to mitigate potential adverse impacts of the proposed communications project on the cultural, plant, wildlife, and scenic values of the Beaver Rim area (SOR at 26-35) misconstrues the record and the gravamen of BLM’s reason for rejecting Union’s ROW application.” Answer at 16-17. BLM makes clear the basis for its decision:

Whether or not Union could have mitigated the potential adverse impacts to some degree was not central to BLM’s reasoning. Rather, the gravamen of BLM’s reasoning was that it was in the public interest to avoid *any* scenic and environmental damage to the Beaver Rim ACEC where Union’s use of alternate sites, one of which is an existing ROW corridor, were feasible. Clearly, if nothing else, it is in the public interest to avoid placement of an 80-foot tower on the unbroken horizon of the scenic Beaver Rim ACEC which serves as ‘emphasis’ to the pioneer values of the nearby Oregon/Mormon Pioneer Trail. This reasoning is in accord with Board decisions. *See, e.g., SMR Network*, 131 IBLA 384, 386 (1995) (“Avoiding the unnecessary proliferation of rights-of-way and associated structures on public land, especially where to do so minimizes environmental damage, is undoubtedly in the public interest.”).

Id. at 17.

In response to Union’s arguments regarding the site visit to Beaver Rim, BLM states that “[t]here is no provision in the referenced BLM Manual which requires BLM to invite the ROW applicant, Union, to participate in the site visits,” that Union was free to communicate with the Tribal elders about its proposed project, and that the *BLM Manual* is designed to protect the Tribes’ participation in public land decisions that could affect Tribal interests, rather than to support a party’s opposition to a Tribe’s views.

In responding to Union’s contention that BLM improperly applied oil and gas NSO restrictions to Union’s proposed project at Beaver Rim, BLM states that “[t]he NSO protections afforded by the RMP would be wholly negated if BLM readily

allowed development activities other than oil and gas to disturb the surface values to be protected by the NSO.” *Id.* at 19.¹³

In their *Amicus Curiae* Brief (*Amicus Brief*), BCA/WOC contend that BLM rendered a “well-reasoned decision of all the relevant factors with due regard for the public interest in Union’s project.” *Amicus Brief* at 5, *citing* 43 C.F.R. § 2804.26(a); *SMR Networks, Inc.*, 131 IBLA at 386. They maintain that “[t]he construction and placement of an 80 foot cell phone tower, and the tower’s ancillary facilities, [are] not compatible with the management of an ACEC.” *Amicus Brief* at 7.

Citing Oakleaf’s report, BCA/WOC agree with BLM’s finding that construction of the tower will conflict with Class II resource management objectives for Beaver Rim. *Amicus Brief* at 10, *quoting* ROD at 3. They argue that “[t]he cell tower *could not be reasonably blended into the landscape* to mitigate the injury to the aesthetics of the landscape.” *Amicus Brief* at 11 (emphasis in original). Specifically, they cite the report by Oakleaf, BLM’s Outdoor Recreation Planner, who stated that “re-locating the site to an existing site is the only option available to meet Class 2 designation.” *Amicus Brief* at 11, *quoting* SOR, Ex. 25.

In particular, BCA/WOC argue BLM’s rejection of Union’s ROW application is “on all fours” with the Board’s reasoning in *SMR Networks, Inc.*, 131 IBLA at 387, *i.e.*, that “avoiding the unnecessary proliferation of rights-of-way and associated structures on public land, especially where to do so minimizes environmental damage, is undoubtedly in the public interest.” *Amicus Brief* at 14. They assert that minimizing environmental damage in the Beaver Rim area, which has received ACEC and NSO designation, “is ‘undoubtedly in the public interest’ more than the company’s economic situation.” *Id.*; *see SMR Networks, Inc.*, 131 IBLA at 387.

¹³ Union filed a Reply to BLM’s Answer in which it states that BLM has indicated, for the first time, “that the data and materials provided by Union—at BLM’s request—may not have been sufficient.” *Id.* at 4. Union states that it “reasonably believed that BLM had all the necessary information regarding coverage, particularly since the coverage maps were prepared and provided in response to specific requests from BLM staff.” *Id.* at 5. Union calls this “newly-stated position . . . misleading at best, and in any event cannot serve as an excuse for BLM’s implausible interpretation of the coverage maps provided.” *Id.* Contemporaneously with its Reply to Answer, Union filed a Request for Hearing to address issues related to the suitability of Cedar Rim. In light of our disposition of this appeal, we hereby deny Union’s Request.

IV. ANALYSIS

[1] At the outset, we note that BLM enjoys considerable discretion in approving or rejecting an application for an ROW. *See, e.g., Teton Communications*, 142 IBLA 117, 119 (1998); *SMR Network, Inc.*, 131 IBLA at 386. A BLM decision approving or rejecting an application for an ROW will ordinarily be affirmed by the Board when the record shows that the decision is based on a reasoned analysis of the factors involved, made with due regard for the public interest, and no sufficient reason is shown to disturb BLM's decision. *See, e.g., George Bernadot*, 121 IBLA 138, 139-40 (1991); *Glenwood Mobile Radio Co.*, 106 IBLA at 41-42; *High Summit Oil & Gas, Inc.*, 84 IBLA 359, 364-65, 92 I.D. 58, 61-62 (1985).¹⁴

In this case, BLM concluded that the public interest did not favor Union's proposed ROW in and through the Beaver Rim ACEC, because of the project's failure to meet VRM Class II objectives for the area because of the potential disruption of environmental and cultural values, and because of the availability of alternative options. It is well-settled that avoiding the unnecessary proliferation of ROWs and associated structures on public land, especially where to do so minimizes environmental damage, is undoubtedly in the public interest. *See* 43 C.F.R. § 2802.4(a)(2); *see also Glenwood Mobile Radio Co.*, 106 IBLA at 41-42; *SMR Network*, 131 IBLA at 386. Section 503 of FLPMA expressly provides: "In order to minimize adverse environmental impacts and the proliferation of separate rights-of-way, the utilization of rights-of-way in common shall be required to the extent practical." 43 U.S.C. § 1763 (2000); *see also* 43 C.F.R. § 2800.0-2; *Ben J. Trexel*, 113 IBLA 250, 253 (1990); *Arnold E. Hedell*, 37 IBLA 22, 24 (1978); *Jicarilla Apache Indian Tribe*, 29 IBLA 57, 60, 64-65 (1977).

Our review of the record confirms that, contrary to Union's argument, BLM considered the relevant factors in rejecting Union's ROW application, as required by *Motor Vehicles*, 463 U.S. at 43. We agree with BCA/WOC that the Board's decision in *Teton Communications, Inc.*, provides clear authority for BLM's decision. In *Teton Communications, Inc.*, the area selected for a telecommunications tower was managed by BLM to protect "the highest and outstanding visual qualities," with the

¹⁴ The Departmental regulation at 43 C.F.R. § 2802.4 lists reasons for denying an application for a ROW to use public lands. The application may be denied if (1) the proposed ROW would be inconsistent with the purpose for which the public lands are managed; (2) the proposed ROW would not be in the public interest; (3) the applicant is not qualified to hold the ROW; (4) the ROW would otherwise be inconsistent with applicable laws; or (5) the applicant cannot demonstrate the technical or financial capacity to hold the ROW.

“management objective . . . being to retain the existing characterization of the landscape.” *Id.* at 118. Teton argued that BLM’s decision was arbitrary and capricious because BLM did not fully consider whether other sites would accommodate the type of service the company planned on providing. The Board stated that the factor of widespread public opposition, plus “the possible impact on visual and aesthetic values associated with allowance of the application, could be sufficient to justify rejection of the application, regardless of whether or not the type of coverage which Teton sought to supply was readily obtainable from other services.” *Id.* at 119. We conclude that those same factors “provided more than adequate justification for [BLM’s] rejection of the instant application.” *Id.* at 120; *see also SMR Network, Inc.*, 131 IBLA at 387; Amicus Brief at 21.

We see no basis for Union’s argument that BLM disregarded the factual record in reaching its decision, or failed to give sufficient weight to certain evidence. It is well-settled that the decision of the fact-finder need not mention every fact placed in evidence. Omissions of reference to particular testimony or exhibits do not constitute *per se* failures to consider the evidence. *E.g., United States v. Chartrand*, 11 IBLA 194, 212, 80 I.D. 408, 417 (1973); *United States v. Zerwekh*, 9 IBLA 172, 175 (1973). The decision as written provides a detailed factual basis for the conclusions reached. Based upon the record before us, we conclude that BLM appropriately determined that the proposed ROW with an 80-foot tower in the scenic Beaver Rim ACEC was not in the public interest.¹⁵ Even assuming, as Union argues, that the project would not have an effect on threatened or endangered species or on cultural resources, the clear impact on visual and aesthetic values within the subject VRM Class II area constitutes a sufficient factual basis for BLM’s decision to deny Union’s ROW application. *See Visual Contrast Rating Worksheet*, July 28, 2006.

We have considered Union’s argument that BLM conducted consultation with Tribal representatives in violation of *BLM Manual* guidelines. We are persuaded, however, that BLM was properly guided by the paramount objective stated in the Lander RMP, *i.e.*, that it manage the Beaver Rim ACEC so as to protect its scenic and other cultural values. BLM’s decision to deny the ROW application was reasonable in light of this purpose. Further, provisions of the *BLM Manual*, unlike regulations, do not have the force and effect of law. 1 C.F.R. § 305.92-2; *Pamela S. Crocker-Davis*, 94 IBLA 328, 332 (1986). Even assuming, *arguendo*, that BLM erred as argued by Union, that error would not mandate reversal of BLM’s decision because sufficient basis exists for affirming BLM’s decision, as set forth above. The Board is not limited

¹⁵ The record also documents BLM’s concern about proliferation of ROWs; the record includes a letter from Union’s ROW Engineer to BLM suggesting that another company would seek to join Union by locating communications facilities at the Beaver Rim site if Union’s application were granted. Letter from R.W. Headd to Jack Kelly, BLM (Oct. 5, 2005), SOR, Ex. 17.

to reasons or theories asserted in the decision under review or in the parties' filings. See, e.g., *Wyoming Outdoor Council*, 160 IBLA 387, 397-98 (2004); *United States Fish and Wildlife Service*, 72 IBLA 218, 220 (1983).

We likewise reject Union's argument that BLM improperly applied an oil and gas NSO to the proposed communications tower. A review of BLM's decision shows that BLM invoked the NSO status of the Beaver Rim ACEC to emphasize the need to protect its "significant plant, animal, cultural, and paleontological resources," as well to protect the "highly scenic resources along Beaver Rim." Decision at 2. BLM stated that its "policy" is to evaluate non-energy proposals, such as utility construction, in view of the NSO designation of the area. Application of this policy does not dictate denial of Union's ROW application, but does suggest that any decision to approve the application would have been subject to an appropriate level of environmental review under section 102(2)(C) of the National Environmental Policy Act of 1969, 42 U.S.C. § 4332(2)(C) (2000). See, e.g., *Center for Native Ecosystems (CNE)*, 170 IBLA 331, 344-45 (2006), and cases cited. The Lander RMP's designation of the Beaver Rim ACEC as an NSO area was a factor that BLM rightly took into consideration in denying Union's application as not in the public interest.

BLM concluded that the public interest did not favor the construction of an 80-foot communications tower on the scenic Beaver Rim ACEC, particularly given Union's indication that alternate sites would provide the coverage Union sought.¹⁶ Union argues that, contrary to BLM's decision, the Cedar Rim site is not a viable alternative to its proposed site at Beaver Rim. As noted, in its decision, BLM states, *inter alia*, that "the Cedar Rim site would provide a roughly equivalent increased coverage area to lands that are north and west of the Cedar Rim location, including coverage to the Big Sand Draw Oil Field." Decision at 2. In its SOR, Union states that BLM's determination that Cedar Rim would provide roughly equivalent coverage is based upon a misunderstanding of the propagation maps it provided with its application and in response to BLM's request for clarification. We see merit in BLM's assertion that its conclusion regarding the difference in coverage "is not inconsistent [with] Union's statement that, under prime conditions, its cell phone towers have a theoretical broadcast range of up to 20 miles, because the 12-mile stretch of U.S. Highway 287 sought to be covered by Union is within a 20-mile radius of the Cedar Rim site." *Id.* However, based upon our review of the maps and other documents submitted by Union and purportedly relied upon by BLM in reaching its decision, we are unable to fully confirm the validity of either Union's assertions or of BLM's reading of those documents.

¹⁶ We find no objective evidence that Union was misled or pressured by BLM into listing Cedar Rim as a viable alternate site on its applications.

We are left with Union's statements that "an advantage to the Beaver Rim location is that it would require the construction of only one additional site to cover the final gap between the Beaver Rim coverage area and Wyoming Highway 28"; that it "investigated several options other than Beaver Rim, but determined that, due to the topography of the region, it would require construction of two or even three separate new sites – at a minimum cost of \$200,000 per site – to obtain coverage that would be equivalent to the coverage that a single site at Beaver Rim would provide"; and that "depending on the location of these multiple sites, more than one new site may be necessary to cover the remaining segment of US Highway 287 to Wyoming Highway 28." SOR at 3-4. While Union indicates that other potential sites will involve greater expense, the Board has held that an applicant does not gain entitlement to a particular ROW because alternate access may be more difficult or expensive. *See D.J. Laughlin*, 154 IBLA at 165.¹⁷

Notwithstanding the ambiguity in the record regarding the extent of coverage from the Cedar Rim site as compared to the location at Beaver Rim, it appears that there are alternative options, as acknowledged by Union. On the other hand, the record is clear that the ROW sought by Union would impact the visual and resource values of the Beaver Rim ACEC, also a VRM Class II area. Concern about such impacts constitutes a sufficient factual basis for BLM's decision to deny Union's ROW application regardless of the viability of any other site. We conclude that BLM properly found Union's proposed ROW not to be in the public interest for this reason.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the decision appealed from is affirmed.

James F. Roberts
Administrative Judge

¹⁷ Notably, though Union asserts in its SOR that additional sites would cost \$200,000, its application maintained that such costs would be \$100,000 per site. Union concedes that even a Beaver Rim tower must be supplemented with another undisclosed tower, a fact not mentioned in its application. A party may not obtain a factual hearing by generating an appeal on an ambiguity in its own facts of record.

I concur:

Lisa Hemmer
Administrative Judge

SOUTHERN UTAH WILDERNESS ALLIANCE ET AL.

IBLA 98-144, 98-168, 98-207

Decided May 20, 1998

Separate appeals from decisions of the Utah State Office, Bureau of Land Management, rejecting appeals from approval of an application for permit to drill and removal of a visual resource stipulation from a Federal oil and gas lease. SDR UT 98-3; UTU-75058.

Decisions in IBLA 98-144 and 98-207 affirmed; appeal in IBLA 98-168 dismissed; petitions for stay denied as moot.

1. Appeals: Generally--Appeals: Jurisdiction--Oil and Gas Leases: Drilling

A decision approving an application for a permit to drill an oil and gas well under 43 C.F.R. § 3162.3-1 is first subject to administrative review by the appropriate BLM State Director in accordance with 43 C.F.R. § 3165.3(b). Where an individual fails to exercise his right to seek State Director review, he may not appeal a subsequent decision of the State Director, issued to a third-party, affirming the action taken by the authorized officer.

2. Administrative Practice--Environmental Quality: Generally--Federal Land Policy and Management Act of 1976: Land-Use Planning--Oil and Gas Leases: Stipulations

Where, as a result of a resource management planning process, resource allocation decisions are made which will result in impacts inconsistent with the visual resource inventory classification assigned to a parcel of land, that classification should be changed to reflect the visual resource management classification appropriate to the resource allocation decision.

3. Administrative Practice--Environmental Quality: Generally--Federal Land Policy and Management Act of 1976: Land Use Planning--Oil and Gas Leases: Stipulations

Where an analysis of an RMP indicates that the resource allocation decisions are inconsistent with the visual

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resource management classification assigned to the parcel of land, and the record further indicates that the visual classification was assigned in error, the Board will affirm the implementation of the resource allocation decision.

4. Administrative Practice--Environmental Quality: Generally--Federal Land Policy and Management Act of 1976: Land-Use Planning

Where the factual predicates upon which a decision involving resource allocation in a resource management plan was based cease to exist, the proper course of action is to amend or revise the resource management plan to reflect the new realities.

5. National Environmental Policy Act of 1969: Environmental Statements--Oil and Gas Leases: Generally

A finding that an application for a permit to drill will not have a significant impact on the human environment and, therefore, that no environmental impact statement is required, will be affirmed on appeal where the record establishes that relevant areas of environmental concern have been identified and the determination is the reasonable result of environmental analysis made in light of measures to minimize environmental impacts.

APPEARANCES: Scott Groene, Esq., Salt Lake City, Utah, and W. Herbert McHarg, Esq., Moab, Utah, for Southern Utah Wilderness Alliance; Kimberly A. Tempel, Esq., and Constance E. Brooks, Esq., Denver, Colorado, for Legacy Energy Corporation; Craig C. Halls, Esq., San Juan County Attorney, Monticello, Utah, for the San Juan County Commission; Elaine England, Esq., Office of the Field Solicitor, Salt Lake City, Utah, for the Bureau of Land Management.

OPINION BY ADMINISTRATIVE JUDGE BURSKI

Southern Utah Wilderness Alliance (SUWA) has appealed from a decision of the Utah Deputy State Director, Bureau of Land Management (BLM or Bureau), issued on January 16, 1998, affirming a December 5, 1997, decision of the San Juan Resource Area (SJRA) Manager which had approved an application for permit to drill (APD), filed by Legacy Energy Corporation (Legacy). This appeal has been docketed as IBLA 98-144. The San Juan County Commission (the County) has also filed an appeal from the Deputy State Director's decision. That appeal is docketed as IBLA 98-168. Finally, SUWA has separately challenged the February 5, 1998, letter from the Associate State Director rejecting its protest to the Notice issued on December 9, 1997, that BLM was removing a special stipulation relating to

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visual resource management standards from Federal oil and gas lease UTU-75058 on the grounds that it had been improperly attached to that lease. This appeal is docketed as IBLA 98-207.

Together with its notices of appeal, SUWA has requested that the Board issue a stay pursuant to 43 C.F.R. § 3165.4(c) with respect to both IBLA 98-144 and IBLA 98-207. Additionally, Legacy has filed a motion for leave to appear as amicus curiae in IBLA 98-144. Finally, the County has filed a request for an extension of time in which to submit a statement of reasons in IBLA 98-168, and, subsequently, a statement of reasons for appeal. For the reasons provided below, we hereby recognize Legacy as an amicus curiae in these proceedings, dismiss the appeal of the County, affirm the decisions of the Utah State Office in denying the appeals submitted by SUWA, and deny the request for a stay on the grounds of mootness.

A detailed knowledge of the factual background in which these appeals arise is a predicate for understanding our actions herein. The approved APD, under challenge herein, authorized, subject to various conditions, the drilling of the Lockhart Federal No. 1 well on a site located in sec. 5, T. 29 S., R. 21 E., Salt Lake Meridian, Utah, within noncompetitive Federal oil and gas lease UTU-75058. This lease had issued effective April 1, 1996, and had been committed to the Lockhart Canyon Unit on March 6, 1997. Together with the standard lease stipulations, the lease was impressed with a special Visual Resource Management (VRM) stipulation advising that "[t]he area has high quality visual resources," and notifying the lessee that "[e]xploration, drilling, and other development or production activities must meet the objectives of VRM Class II."

Legacy submitted its APD on March 31, 1997, designating a drilling location in the SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 5, with an estimated drilling depth of 5,400 feet. Pursuant to this request, SJRA conducted an environmental assessment (EA). See EA UT-069-96-029, dated June 16, 1997. As a result of concerns raised in the development of the EA, various conditions of approval (COA's) were attached to the APD, and Legacy agreed to relocate the well site within sec. 5 to minimize impacts on the desert bighorn sheep. See Decision Record/Finding of No Significant Impact, dated August 26, 1997 (DR/FONSI I).

Of particular note were the concerns raised with respect to possible impacts of the proposed action on desert bighorn sheep as well as the effects the proposal might have on visual resources, particularly as viewed from various vantage points within nearby Canyonlands National Park. In response to the concerns related to impacts on desert bighorn sheep, COA No. B-3 provided:

All initial construction activity and well drilling operations shall be prohibited from April 1 to August 31 and October 15 to December 31 to avoid desert bighorn sheep lambing and rutting periods and the dry summer months when the Lockhart

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Basin sheep herd is dependent upon the permanent spring as a source of drinking water.
[1/]

In addition, COA No. B-8 required the installation of a gate and fence across the access road to prevent recreational vehicular access along the road to the well site. The only COA which dealt with effects on visual resources required that all production facilities be painted brown. See COA No. B-9.

The APD, with the COA's delineated in DR/FONSI I, was formally approved on August 27, 1997. However, approval of the APD was subsequently challenged by SUWA and the County, both of whom sought State Director review (SDR). Though each of these entities focussed their challenge on COA No. B-3, they proceeded from opposite perspectives. Thus, SUWA contended that COA No. B-3 provided inadequate protection to the desert bighorn sheep, while the County assailed BLM for the drilling restrictions which it had imposed on Legacy, arguing that they exceeded the limitations allowed under 43 C.F.R. § 3101.1-2. 2/

By decision dated October 24, 1997, the Deputy State Director set aside the approval of the APD and remanded the DR/FONSI to the SJRA for

1/ We note that the DR/FONSI I rejected a further proposal to require that all workover activities and transportation of crude oil and produced waters be prohibited during lambing and rutting periods based on the conclusion in the EA that "these activities would be less impacting on desert bighorn sheep than initial drilling operations because they would be repetitious and predictable" and "[s]tudies show that desert bighorn sheep will habituate to human activity if the activity is predictable and non-threatening." (DR/FONSI I at 2.)

2/ This regulation provides that a lessee has the right to use so much of the leased lands as are necessary to the exploration for and extraction of the leased resource, subject to stipulations in the lease and "such reasonable measures as may be required by the authorized officer to minimize adverse impacts to other resource values, land uses or users not addressed in the lease stipulations at the time operations are proposed." Id. The regulation recognizes that such measures must be consistent with the lease rights granted but notes:

"At a minimum, measures shall be deemed consistent with lease rights granted provided that they do not: require relocation of proposed operations by more than 200 meters; require that operations be sited off the leasehold; or prohibit new surface disturbing operations for a period in excess of 60 days in any lease year."

Id. This last provision is referred to by the County as the "200 meter/60-day" rule.

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further analysis and consideration. See SDR UT 97-11. In this decision, the Deputy State Director noted that the lease contained no special stipulation respecting the desert bighorn sheep and that the SJRA Resource Management Plan (RMP), which had authorized the issuance of leases for the area without protective stipulations, had not been amended by the subsequent Desert Bighorn Sheep Management Plan. From this, the Deputy State Director concluded that "[b]y issuing the lease, BLM accepted the possibility of impacts to the sheep," only subject to such reasonable measures as BLM might impose under 43 C.F.R. § 3101.1-2 to minimize adverse impacts to other resource values. (Decision at 2.)

The Deputy State Director noted that, under current BLM policy, restrictions to "existing" leases in excess of that delineated in the regulations (see note 2, supra) could only be imposed upon a finding that they were necessary to prevent unnecessary and undue degradation of public lands and their resources. While the SJRA Manager had, in fact, indicated that BLM's decision to relocate the well site within sec. 5 and to impose limitations on the periods in which drilling would be allowed were necessary in order to avoid unnecessary and undue degradation of the public lands, the Deputy State Director complained that "complete analysis supporting that decision is not included in the EA." Id.

The Deputy State Director was equally critical of the EA's discussion of alternative drilling sites and production methods. Id. at 3. Based on the foregoing, the Deputy State Director directed the SJRA Manager to "revisit the analysis presented in the EA in conjunction with the requirements of" current BLM policy and to supplement the analysis of alternative well sites and production methods.

In conformity with the Deputy State Director's decision, the SJRA subsequently expanded its environmental analysis, particularly with respect to the impacts on desert bighorn sheep which could be reasonably expected to occur as the result of Legacy's APD. See EA UT-069-97-029, dated Dec. 5, 1997. Because of the importance of this issue in the matter of a stay, we will set forth the EA's analysis in some detail.

Initially, the EA described the existing environment as it related to desert bighorn sheep. In doing so, it provided a historical framework which illuminates many of the problems which these appeals present:

The Lockhart Basin area was not identified as, or included within, "Seasonal Wildlife Protection Areas" as a "Bighorn Lambing And Rutting Area" for the protection of crucial desert bighorn sheep habitats and the continued existence of bighorn populations. At the time the San Juan RMP was approved, the SJRA did not have the information subsequently gained from UDWR [Utah Division of Wildlife Resources] radio telemetry data and, additional desert bighorn sheep observations within the

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Lockhart Basin area. The bulk of this data was collected after the San Juan RMP was approved. In effect, this constitutes a special circumstance since data collected after the approval of the San Juan RMP have found that the dynamics of this bighorn population are changing. The population is increasing, and the existence of a key spring which is fundamental to the continued existence of this bighorn population has been verified.

The Lockhart Basin desert bighorn sheep herd is contiguous with the Needles (Canyonlands National Park) and North San Juan herds. These three bighorn herds could be considered a single population because there are no geographic barriers to prevent movement and gene flow between the three units. At one time, the North San Juan bighorn herd was the largest in Utah and the source from which many transplants were made. However, this bighorn herd declined drastically in the mid 1980's due to a disease problem. By 1989, only 8 bighorn were counted on the aerial survey of this unit. The unit still remains at low population numbers.

Little was known about the Lockhart Basin bighorn population, and biologists assumed that they had met the same fate as that of the North San Juan population. Because of this assumption, the San Juan RMP left the Lockhart Basin area open to oil and gas exploration and leasing with no stipulations for desert bighorn sheep conservation.

EA UT-069-97-029, at 20-21. The EA then described how, after a visitor reported a sighting of a group of desert Bighorn sheep in Lockhart Basin in 1989, subsequent aerial surveys by UDWR confirmed the existence of a small, but growing, healthy bighorn herd. As the EA noted "[t]his was a very important finding, because these bighorn had survived the disease outbreak" and could help repopulate adjacent areas, particularly if the Lockhart Basin herd had some resistance to the disease which had decimated the desert bighorn sheep in adjacent areas. Id. at 21.

The EA explained that recent radio telemetry and aerial surveys had indicated a herd size of between 75 to 100 sheep, a sufficient number to make the herd viable under present scientific estimates. Of equal importance, a permanent spring near the base of the cliff had been identified as being the key permanent water source used by the Lockhart Basin herd. Indeed, the EA stated that this spring "has been determined by the UDWR and BLM, to be essential to the long term survival of the Lockhart Basin bighorn, especially during dry and drought periods." Id. This spring was located 3,000 feet east of the proposed well pad's revised location. As

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the EA had earlier noted, the well pad could not be moved any further to the west without requiring directional drilling by Legacy. Id. at 17. ^{3/}

Moreover, the EA noted that the adjacent talus slope contained "critical spatial and/or escape terrain, rutting, lambing, migration and foraging habitat for the desert bighorn sheep." Id. at 22. This talus slope was particularly heavily utilized during the rutting and lambing periods (October 15 through December 31, and April 1 through July 15, respectively). The proposed drilling pad would be located approximately 1,000 feet southwest of the toe of the talus slope. Id.

In discussing anticipated impacts of the Legacy proposal, the EA noted:

Site preparation and drilling operations taking place during the critical lambing and rutting periods (April 1 through July 15 and October 15 through December 31, respectively) would interfere with bighorn rutting, lambing, lamb rearing and migration. In addition, animal access to the key spring would be reduced, which would result in risk to the long term survival of the area's desert bighorn sheep herd.

Research has documented the importance of space as a critical habitat requirement for desert bighorn sheep. When bighorn are forced to move to other sources of water then increased animal densities around these water sources could occur. Catastrophic die-offs have occurred in Utah, New Mexico, Arizona, California and throughout desert bighorn sheep range as a result of disease transmission when populations have become concentrated or exceeded carrying capacities. Scabies, blue tongue, sinusitis, and other diseases have caused these die-offs, but usually only after population levels have exceeded a critical threshold. It is also important to mention that populations which fall below "viable population numbers" are at risk of disappearing from their range within 50 to 70 years.

* * * * *

[K]ey water sources are crucial to the continued existence of bighorn populations throughout the dry months (April 1 through August 31 in the Lockhart Basin area), especially during drought

^{3/} The EA had also noted that the well site had already been moved 360 feet southeast of Legacy's original proposal in order to avoid excessive cut and fill requirements and to maximize the distance from the talus slope used by the desert bighorn sheep. Id.

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years. In non-drought years desert bighorn sheep may not be as dependent upon perennial water sources if free water is temporarily captured at other locations [4/], allowing animals to range greater than 2 miles from key perennial water sources. If the proposed well is drilled during a year of low precipitation, and free water has not been temporarily captured at other locations, the dependency of bighorn on the key spring for water is amplified. The opposite effect would be realized during a year of above normal precipitation, resulting in the temporary capture of free water accessible for bighorn consumption.

[F]lat areas within 0.385 miles of talus slopes and areas within 0.75 miles of permanent water sources are [considered] critical habitat for desert bighorn sheep. Studies of desert bighorn sheep within the Greater Canyonlands/Arches National Park area have found that lactating ewes require a continuous source of water within 0.6 miles of lambing areas. Studies of desert bighorn sheep in Canyonlands National Park found that 94% of observations for all ewe groups were within 0.75 miles of permanent water sources during dry periods. The site preparation and drilling operation could interfere with desert bighorn sheep trailing along the talus slope to access water at the key spring. If bighorn access to the key spring is denied for a period of a few days (3 days or more) during the rutting and lambing seasons or during a dry period, then long term impacts to the Lockhart Basin desert bighorn sheep population would occur. These impacts would range from abandonment of habitat to increased bighorn mortality, without limitation as to age or sex group. If dominant or alpha rams are prematurely lost to the population, then the genetic integrity of the affected segment of the population would suffer long term decline. The genes of these animals would not be passed on to succeeding generations.

Id. at 25-27 (citations omitted; emphasis supplied).

The EA also noted that single animal or group wariness to human contact would increase if the well proved productive. However, the EA noted that studies had also indicated that desert bighorn sheep can habituate to a variety of human influences and intrusions, so long as the activity is predictable and nonthreatening in nature. The EA concluded that, provided

^{4/} The EA had earlier noted that, in 1997, four guzzlers had been developed in the Lockhart Basin to provide supplemental water supplies in nondrought periods. The EA noted, however, that "[t]hese guzzlers are not designed to replace the key spring or reduce its importance to the Lockhart Basin desert bighorn sheep herd." Id. at 22.

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that the drilling and site preparation activities did not occur during the critical rutting or lambing periods, allowance of the operation would not jeopardize the Lockhart Basin desert bighorn sheep in either the short or long run. Id. at 29.

Based on its analysis of anticipated impacts, the EA then recommended various mitigating conditions prerequisite to allowance of the Legacy proposal. These generally paralleled those suggested in the original EA. However, this EA also provided:

If the Lockhart Basin area receives well above average precipitation which significantly increases the availability of free water for desert bighorn sheep usage during a particular year, then the well could be drilled after the lambing season (July 15). The allowance of drilling after July 15 would be dependent upon actual "ground truth studies" conducted to assure that desert bighorn sheep water requirements are not compromised by drilling the proposed well during the dry time of the year, or in years of average or low precipitation.

Id. at 32.

On December 12, 1997, the SJRA Manager issued a second Decision Record/Finding of No Significant Impact (DR/FONSI II) approving the APD subject to attached COA's. While the COA's were renumbered, they generally tracked the content of the original COA's approved on August 27, 1997, with two important exceptions. Consistent with the discussion in the EA relating to the possibility of conducting initial site preparation and well drilling operations during periods of above normal precipitation, COA No. B-1 provided, inter alia, that "[t]he BLM Area Manager may grant an exception which would allow these operations to occur between July 16 and September 1, if it is determined the precipitation has provided free water at locations other than the key spring and, the free water sources are sufficient to ensure that bighorn water requirements are met." Second, original COA No. B-10 had simply provided that "[p]rior to installation of production equipment and facilities, the operator shall notify the BLM to schedule an on-site inspection." This provision was significantly expanded in the revised COA's where it appears as COA No. B-6. As revised, this COA provided:

Prior to installation of production equipment and facilities, the operator shall notify the BLM to schedule a pre-work conference. The BLM will determine, at that time, reasonable measures necessary to mitigate the visual impacts to the maximum extent practical. These measures shall include, but are not

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limited to, use of natural topography to screen facilities, orientation of specific production equipment, flare pit design and construction, artificial screens, etc.

Thereafter, the APD was approved on December 16, 1997, subject to the revised COA's.

SUWA then filed a second request for SDR. As noted above, by decision dated January 16, 1998, the Deputy State Director affirmed the approval of the APD and rejected SUWA's appeal. See SDR UT 98-3. He noted that there were three main areas of concern upon which SUWA premised its objection and he addressed them seriatim. Initially, the Deputy State Director dealt with SUWA's claims that approval of the APD violated the SJRA's prescriptions for visual resources. The objections by SUWA were premised on the Class II VRM designation of Lockhart Basin in the RMP and SUWA's assertion that allowance of the proposed action did not conform to the RMP. Moreover, SUWA pointed out that the lease contained an express stipulation which mandated protection of the VRM classification.

The Deputy State Director dealt with this challenge in two discrete ways. First of all, he noted that, in fact, the EA did address the impacts of the proposed action on visual resources. While the EA identified changes in texture and color of the landscape that would be evident as a result of drilling and production operations, the Deputy State Director argued that VRM objectives are, in fact, essentially guidelines which did not constitute absolute requirements, and that, when viewed in this context, the actions approved were consistent with the RMP prescriptions. Second, with respect to the lease stipulation, while he admitted that a VRM Class II stipulation had been attached to the lease, he asserted that this had been done inadvertently since the RMP provided that lands in Lockhart Basin were open to lease without protective stipulations. In this regard, he noted that "[i]n December 1997, BLM initiated steps to remove the stipulation from the lease." (SDR UT 98-3, at 2.)

Next, the Deputy State Director responded to SUWA's claims that the proposed action violated management prescriptions found in the RMP and in both the Moab District and the Utah Statewide Desert Bighorn Sheep Management Plans. 5/ In response, the Deputy State Director declared:

5/ While neither the Moab District nor Utah Statewide Desert Bighorn Sheep Management Plans have been submitted to the Board, we have obtained a copy of the Rangewide Plan for Managing Habitat of Desert Bighorn Sheep on Public Lands (Rangewide Plan). The Rangewide Plan identified the Lockhart Basin area as a Class II area, i.e., a habitat area with remnant herds capable of supporting viable populations in which the express BLM policy was to "enhance" the habitat. See Rangewide Plan at 11, 41.

In all critical respects, the Rangewide Plan supports SUWA's description of the management prescriptions recommended for the Lockhart

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As stated in the EA, Federal lease UTU-75058 was issued in 1996 in conformance with the San Juan Resource area RMP. The area containing the lease was not designated for protection of sheep via special lease stipulations. The Desert Bighorn Sheep Management Plan was implemented in 1987, and did not amend the oil and gas leasing categories/stipulations of the RMP. By issuing the lease, BLM accepted the possibility of impacts to bighorn sheep. The EA addresses reasonable alternative well locations that could afford protection to desert bighorn sheep. Additionally, mitigation has been developed to prevent undue and unnecessary degradation.

(SDR UT 98-3, at 2 (emphasis supplied).)

Finally, the Deputy State Director rejected SUWA's assertion that BLM's failure to adequately analyze the environmental consequences of post-drilling development violated the National Environmental Policy Act of 1969. The Deputy State Director relied upon the fact that this was an exploratory well and found that the EA sufficiently analyzed the impacts which production from the Lockhart Federal No. 1 well might be expected to generate. He noted that, under present BLM policy, analysis of the impact of full field development need not occur during exploratory activities. Id.

Subsequent to the receipt of the decision of the Deputy State Director, SUWA filed its appeal and request that the Board stay activities under the approved APD pending resolution of its appeal. Shortly thereafter, the County filed a notice of appeal with BLM, also seeking review of SDR UT 98-3. And soon following that, SUWA's formal appeal from the determination of the SJRA Manager to delete the VRM stipulation was filed with the Associate State Director, and upon his subsequent rejection of this appeal, a separate appeal was filed with the Board.

[1] We will first deal with the appeal filed by the County (IBLA 98-168) since it is most readily disposed of. As is apparent from our recitation of the history of this appeal, the County has been concerned with matters related to this lease for some time. Indeed, it initiated SDR

fn. 5 (continued)

Basin area in the Moab District and Utah State plans. See Rangewide Plan at 17-20. Thus, this document provides, inter alia, that "[c]rucial areas, such as lambing grounds, migration routes, mineral licks, and areas within 1 mile of permanent water sources will receive maximum habitat protection" and that "[i]mpacts to desert bighorn sheep or their habitats will be mitigated to the extent possible on all mineral or fossil fuel exploration and development proposals." Id. at 18, 19.

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of the original approval of the APD and DR/FONSI I, arguing that the limitations placed on the Legacy lease were violative of 43 C.F.R. § 3101.1-2. It was primarily as a result of these concerns that approval of the APD was set aside and the matter remanded to the SJRA. The reasons for implementing seasonal restrictions beyond those provided in the regulation were explored at length in the revised EA. Yet, while the record indicates that the County was duly served with a copy of the revised EA and DR/FONSI II, the County never sought SDR of this decision. Rather, it waited until a decision had issued in response to SUWA's request for SDR and filed an appeal from that decision. This is not permissible practice.

The Board has expressly held that challenges to decisions approving APD's are subject to the provisions of 43 C.F.R. § 3165.3(b) which requires a party adversely affected by an order of the authorized officer to seek SDR as a precondition to any subsequent appeal. See Southern Utah Wilderness Alliance, 122 IBLA 283 (1992). Furthermore, we have held that, where a party either files a late petition seeking SDR or fails to seek SDR at all, a subsequent appeal is properly dismissed. See, e.g., Wyoming Wildlife Federation, 123 IBLA 392 (1992); Global Natural Resources Corp., 121 IBLA 286 (1992); Han-San, Inc., 113 IBLA 362 (1990). Finally, we have also held that where an individual or organization is afforded the opportunity to protest actions proposed by BLM but fails to do so, it has no standing to appeal the denial of a protest filed by some other individual or organization. See In re Pacific Coast Molybdenum Co., 68 IBLA 325, 331 (1982). Applying the foregoing principles to the instant facts, it is clear that the County's purported appeal must be dismissed.

Thus, while the County did, in fact, seek review by the State Director of the original approval of the APD by the SJRA Manager, which review resulted in a setting aside of the original APD and the DR/FONSI I, it did not file a request for SDR after the issuance of the December 12, 1997, DR/FONSI II or the approval of the APD on December 16, 1997. This failure is fatal to its present appeal. If the County desired to relitigate its concerns with the SJRA's actions, it was required to first seek SDR of the decision approving the APD. Having failed to do so, it may not now appeal from a decision of the Deputy State Director addressing issues raised by SUWA in its request for SDR. The County's appeal of the Deputy State Director's decision must be dismissed. 6/

6/ In addition to the failure to properly seek SDR, the appeal by the County might also be subject to dismissal on the ground that, given the fact that the lessee (Legacy) had not objected to the COA's attached to its APD, the County could not independently maintain an appeal as to their imposition since it was not adversely affected thereby. However, in light of our disposition of the County's appeal, we need not further explore this question.

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Turning to the SUWA appeals, we note that the one concern represented by both IBLA 98-144 and IBLA 98-207 is visual resource management. We will, therefore, discuss that issue first. ^{7/}

Initially, we would note that while the impact on visual resources which would result from approval of the APD on December 16, 1997, did not vary from that expected when the first APD issued on August 27, 1997, SUWA did not directly raise the issue of the impact of the proposal on VRM objectives in its initial request for SDR. While the Deputy State Director did, in fact, set aside the decision approving the APD, he did so solely on issues relating to the adequacy of the EA's consideration of alternative well sites and production methods and the absence of any justification for imposing limitations on the lessee's surface use greater than that delineated in 43 C.F.R. § 3101.1-2. See SDR UT 97-11, at 3.

In view of the foregoing, we believe the Deputy State Director would have been justified in rejecting SUWA's subsequent attempts to raise the VRM issues on the ground that these matters had been waived in SUWA's original request for SDR. In point of fact, however, the Deputy State Director examined the substance of SUWA's complaints as to visual impacts. For that reason, we believe it appropriate that we do the same. Cf. United States v. Feezor, 130 IBLA 146, 187-89 (1994).

In essence, SUWA argues that approval of the APD violated both the VRM prescriptions contained in the RMP as well as the express stipulation contained in Legacy's lease. Thus, SUWA notes that Lockhart Basin received a VRM Class II designation in the RMP and that approval of the APD violated this classification on two different bases. First, while in some aspects it was admitted that some adverse visual impacts would occur, the EA failed to adequately explore mitigation of these impacts. Second, in other areas, the EA inadequately explored other impacts on visual resources. See Statement of Reasons (SOR) at 8-12. Thus, as an example of the former situation, SUWA complains that while the EA did refer to the possibility of increased dust levels resulting from road usage during drilling, the EA did not explore possible mitigation of this problem such as requiring watering of the road. As an example of its latter complaint, SUWA asserts

^{7/} At the outset, we note that we have some concern that, while BLM has sent the Board a significant volume of materials, we do not have full and complete copies of a number of the documents involved, including the Draft RMP/Environmental Impact Statement (EIS) (May 1986) and the Draft RMP/Final Environmental Impact Statement (FEIS) (September 1987). We realize, of course, that these documents are quite extensive and involve numerous issues which in no way impact upon our present appeals. We have, therefore, decided to proceed with adjudication of the instant matters under the assumption that BLM has, in fact, submitted all documentation relevant to the issues involved herein.

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that the EA failed to consider the visual impacts on scenic air tours and incorrectly assumed that the entire access route to the drill pad will be reclaimed when, in fact, BLM has no authority to require reclamation of that part of the access route which crosses state lands. Id. SUWA also points out that, contrary to the BLM Manual, no contrast rating form was completed.

In response, BLM admits that the Lockhart Basin was, in fact, assigned a VRM Class II status in the inventory of lands. The Bureau argues, however, that, notwithstanding this inventory rating, the RMP determined that the land would be subject to leasing without any stipulations to specifically protect visual resource values and that the APD approved herein was fully consistent with the RMP.

Moreover, BLM emphasizes that, in any event, VRM objectives are ultimately in the nature of guidelines and are not meant to be inflexibly imposed without exception. The Bureau notes that the Draft RMP/EIS had explicitly stated that "by the year 2000, in 271 cases, visual contrast rating scores would exceed the VRM class objectives for that area." (BLM Answer at 10, citing 1986 Draft RMP/EIS at 4-71.) Thus, BLM asserts, the RMP clearly contemplated that management policies would be implemented, consistent with the RMP, which would result in a lowering of the assigned VRM rating for the land in question and which would, therefore, not allow BLM to achieve the VRM objectives for that parcel.

With respect to the impacts involved in the APD herein, BLM admits that no visual rating contrast worksheet was prepared, but discounts the importance of this failure by pointing out that a contrast evaluation was performed by the visual resource specialist and that assessment was considered in the EA. See BLM Answer at 13. The Bureau then quotes from the EA's discussion of the visual impacts both of initial drilling and subsequent development should the drilling be successful and directly challenges SUWA's assertions that it had ignored either delineating impacts which could not be mitigated or attempting to mitigate those which could. Id.

Thus, BLM not only points to revised COA Nos. B-6 and B-7 as evidencing the particular mitigation measures which the SJRA was imposing on the APD, but it also emphasizes that under the "standard operating conditions" which apply to any actions in the SJRA, matters such as trash control and dust abatement would also be subject to regulation. While it admits that the VRM Class II objectives would not be met when viewed from County Road No. 122, BLM points out that the EA had concluded that they would be met from the four primary viewpoints within the Canyonlands National Park. See BLM Answer at 14. In short, BLM argues that it fully complied both with the RMP and with its responsibilities with respect to visual resources.

In our view, there is a certain inconsistency in BLM's arguments. Thus, on the one hand, BLM asserts that the RMP overrode any restrictions

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which result from the land's classification as VRM Class II, while, on the other hand, it argues that the VRM objectives are essentially guidelines which need not be met in every circumstance. This latter contention, however, is clearly undercut by BLM's actions in removing the special stipulation relating to VRM Class II objectives from lease UTU-75058 on the ground that it is inconsistent with the RMP's direction that the land be open to leasing without any restrictive stipulations.

[2] Initially, we note that, while an analysis of the RMP tends to support BLM's assertion that the oil and gas prescriptions were intended to override the inventory classification of the land as VRM Class II, it is difficult to reconcile this approach with the BLM Manual. ^{8/} Thus, the BLM Manual provides that "[v]isual management objectives (classes) are developed through the RMP process for all Bureau lands. The approved VRM objectives shall result from, and conform with, the resource allocation decisions made in the RMP's." BLM Manual 8400.0-6A.2 (emphasis supplied). It seems clear from the foregoing that what the Manual intends is for the resource allocation decisions to determine the VRM classification. It is not contemplated that the RMP resource allocation systems will contravene the VRM classification found in the RMP as BLM apparently contends herein. In other words, if SJRA made the policy decision to allow leasing without any protective stipulations in the Lockhart Basin, it should have expressly altered the VRM classification to the level which would be consistent with that determination.

This is clearly what the BLM Manual intends. For example, the Visual Resource Inventory Handbook (BLM Manual Handbook 8410-1) provides:

The visual resource inventory process provides BLM managers with a means for determining visual values. The inventory consists of a scenic quality evaluation, sensitivity level analysis, and a delineation of distance zones. Based on these three factors, BLM-administered lands are placed into one of four visual classes. These inventory classes represent the relative value

^{8/} Moreover, while we do not find this issue to be dispositive, we also believe that the failure to complete a contrast ratings worksheet is difficult to justify. First, we note that, given the presumed VRM Class II rating, use of the contrast rating system was clearly required. See BLM Manual 8431.14L. And, while BLM asserts that its expert used the contrast ratings system but simply failed to complete the form, the BLM Manual Handbook provides that an individual completes the contrast rating "from key observation point(s) using Bureau Form 8400-4 - Visual Contrast Rating Worksheet." (BLM Manual Handbook 8431-1, at 2.) Clearly, the BLM Manual considers completion of the visual contrast rating worksheet to be an integral part of implementation of the contrast rating system.

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of the visual resources. Classes I and II being the most valued, Class III representing a moderate value, and Class IV being of least value. The inventory classes provide the basis for considering visual values in the resource management planning (RMP) process. Visual resource management classes are established through the RMP process for all BLM-administered lands (see also Manual 1624.3). During the RMP process, the class boundaries are adjusted as necessary to reflect the resource allocation decisions made in RMP's. Visual management objectives are established for each class. (See Section VB.)

(BLM Manual Handbook 8410-1, at 1.) Once the visual resource management classes are established, however, they are more than merely guidelines. Rather, having been developed through the RMP process, meeting the objectives of each of the respective visual resource classes is as much a part of the RMP mandate as any other aspect of the resource allocation decisions made in the RMP.

A review of the Draft RMP/EIS clearly shows that, rather than alter the visual resource inventory ratings to reflect visual resource management decisions, the RMP simply promulgated the inventory ratings as if they were management ratings. Thus, the Draft RMP/EIS provided:

Inventory work in the SJRA under the VRM system was begun in 1978 and completed in 1984. All three resource allocations have been mapped on 1 inch to the mile maps at the MDO [Moab District Office]. VRM classes are shown in figure 3-18. Acreages are shown in table 3-18.

(Draft RMP/EIS at 3-81.) Table 3-18 clearly delineated the Lockhart Basin as a VRM Class II. But while this table was labelled "Visual Resource Management Classes," what it actually represented was the "inventory" rating not the ultimate "management" rating.

If it were assumed, as the Draft RMP/EIS explicitly stated, that under the RMP resource allocation decisions the "visual contrast rating scores would exceed the VRM class objectives" for a number of areas, the proper response would have been to delineate those areas and expressly lower the VRM inventory rating to reflect the RMP's resource allocation decisions in those areas. More particularly, where acreage which had been inventoried as VRM Class II was thereafter determined to be best suited to leasing without any restrictive stipulations and BLM realized that a result of this resource allocation decision would be an inability to manage that acreage as required under VRM Class II, the VRM classification should have expressly been adjusted to at least VRM Class III. This was not done.

Instead, the RMP noted that the visual resource management classes "have been identified based on inventory work in the SJRA." See RMP at 80. It is clear that, in preparing the RMP, rather than identify areas where

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the existing inventory visual resource classes could not be maintained under the selected resource allocation decisions, SJRA simply repromulgated the inventory classes as if they represented the management determinations when, in fact, they did not. ^{9/}

It is because of the failure of SJRA to differentiate between inventory and management visual resource classes in preparing the RMP that it has been forced to take the position in the instant appeal that VRM class objectives are something that can be contravened under the RMP. This is also not correct.

VRM objectives properly designated in the RMP process are as binding on the SJRA as are any of the other resource allocation decisions made in the RMP. Thus, for example, VRM Class II objectives provide:

The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

(H-8410-1, at 6.) Obviously, the Class II objectives allow for some minimal level of impact to be apparent from management activities. But, where that level of impact which may result from management activities can no longer be said to be "low," where it "attracts the attention of the casual observer," such discretionary management activities are prohibited until the RMP VRM classification can be changed.

Of course, where the activities which impact upon the visual resources are not "discretionary," as, for example, in the case of valid existing rights, these impacts must be allowed after due efforts, consistent with those valid existing rights, are made to minimize the adverse impacts. But the RMP does not contemplate that such valid existing rights will be

^{9/} That this was an improper use of the inventory process is made clear from the BLM Manual Handbook for Visual Resource Inventory. Thus, it notes:

"Inventory classes are informational in nature and provide the basis for considering visual values in the RMP process. They do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities. * * * The assignment of visual management classes is ultimately based on the management decisions made in RMP's."

(H-8410-1, at 6.)

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created, after the adoption of the RMP, by the issuance of oil and gas leases since the very act of lease issuance is, itself, discretionary.

[3] The problem which this case thus presents is that the RMP, as adopted by the SJRA, embraces two inherently contradictory positions. First, in its resource allocation decisions, it clearly intends to allow oil and gas leasing in certain areas, including the Lockhart Basin, even if these activities result in adversely affecting the existing visual resources. On the other hand, by essentially adopting the visual resource inventory results as its management prescriptions, SJRA has, in effect, committed to maintaining the status quo so far as visual resources are concerned. As the instant case shows, these two positions can be mutually exclusive.

We believe that the proper way to resolve this conflict is to give force and effect to those management resource allocation decisions clearly made in the RMP. While its visual resource analysis is, as noted above, fairly muddled, the RMP's desire to permit oil and gas leasing in the Lockhart Basin, even if it resulted in degradation of the visual resources, is clear. Indeed, as BLM points out on appeal, SUWA expressly commented on what it perceived as the inadequacy of the protection which would be afforded to Lockhart Basin under Alternative E (the preferred, and ultimately selected, alternative). See Proposed RMP/FEIS at 2-148, to 149. We believe it altogether consistent with both the clear intent of the RMP, as well as the understanding of those who provided comments thereto, to enforce the resource allocation decisions even where they conflict with the visual resource determinations. Accordingly, we hereby reject SUWA's challenge to the approval of the APD on the ground that it violated the VRM classification for the subject lands. Moreover, to the extent that SUWA argues that the EA failed to adequately consider either the impacts upon visual resources or possible means of mitigating such impacts, our review of the record fails to sustain its allegations. Rather, we find that BLM not only fully considered the relevant impacts but also attempted to mitigate, to the extent possible given the RMP's resource allocation determination, the impacts that might result to visual resource values.

The foregoing discussion, however, brings the issues involved in IBLA 98-207 into sharper focus. While, under our above analysis, the RMP would not require that Legacy adhere to VRM Class II objectives, the inclusion of a stipulation into its lease could independently require the same result. Legacy and BLM both assert that inclusion of this stipulation was an inadvertent mistake which they mutually desire to rectify, while SUWA contends that the stipulation was required by the RMP. Compare BLM's Answer at 16-19 with SUWA's Supplemental Memorandum at 2. Clearly, in light of our above analysis, SUWA's argument cannot be sustained. With respect to the position espoused by Legacy and BLM, we note that, while situations might occur in which BLM and a prospective oil and gas lessee jointly agree to the application of a stipulation to a lease which is more

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stringent than that which is otherwise required, there is no indication in the record that such is the case herein. Accordingly, we will affirm BLM's decision removing the VRM Class II stipulation from lease UTU-75058. ^{10/}

The next issue to be decided, i.e., the allowability of the APD in view of its possible impact on desert bighorn sheep, is, in many ways, the most problematic. Unlike the situation with respect to visual resources, the problem here is not one of a failure of the original RMP process. Given the facts then assumed to exist, namely that the Lockhart Basin desert bighorn sheep herd had been wiped out by disease, the failure of the RMP to provide protection for desert bighorn sheep in the Lockhart Basin was altogether understandable. What is more difficult to comprehend is the subsequent failure to amend the RMP to affirmatively provide the protection mandated for the herd by the Rangeland Plan for Managing Habitat of Desert Bighorn Sheep on Public Lands (Rangeland Plan), after information had been obtained showing that the Lockhart Basin herd had, in fact, survived. See note 4, supra.

[4] The argument proffered by BLM on appeal that neither the Moab District nor the Statewide Desert Bighorn Sheep Management Plans amended the RMP ultimately begs the question of why action was not undertaken by the SJRA to formally amend the RMP once it became obvious that the RMP management prescriptions failed to accurately reflect the presence of bighorn sheep in Lockhart Basin. This is either a failure of communication (between the individuals responsible for wildlife and those responsible for oil and gas leasing or, alternatively, between the SJRA and the Utah State Office) or a failure of management.

An RMP is not to be viewed as some static document which, once adopted, remains fixed for all time. On the contrary, for an RMP to have any ultimate vitality, it must be seen as a management tool which is necessarily circumscribed by the values and knowledge existing at the time of its formulation. Certainly, there is a reasonable expectation that, considering the amount of effort and analysis which goes into its development, an RMP would normally be expected to remain in place for at least some duration. But, as is true in virtually all areas of public land management, situations can also be expected to arise in which an RMP no longer accurately reflects the factual knowledge available to BLM decisionmakers on a matter ultimately critical to the resource allocation decisions

^{10/} This does not, of course, mean that it is improper for BLM to endeavor to minimize visual impacts beyond that required by a VRM classification below level II. On the contrary, as the Manual itself notes, "[s]ince the overall VRM goal is to minimize visual impacts, mitigating measures should be prepared for all adverse contrasts that can be reduced" and this includes "reduction of contrast in projects which have met the VRM objectives." (BLM Manual Handbook, Visual Resource Contrast Rating, 8431-1, at 6.)

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implicit in the RMP. When such a situation arises, it becomes the obligation of the appropriate BLM officials to initiate actions leading to the revision or amendment of the RMP. And this is true regardless whether the knowledge becomes available 10 years or 10 months after the RMP is adopted.

The consequences which can result from a failure to so act are manifest in the case before us. Thus, we have a situation in which the revised EA, prepared in 1997, clearly demonstrates the importance of the Lockhart Basin herd. Yet, only 2 years earlier, in 1995, BLM issued an oil and gas lease to Legacy which contained no protection for bighorn sheep beyond that which BLM might impose to prevent unnecessary and undue degradation. While SJRA has, indeed, attempted to mitigate impacts on the herd, it has admittedly not fully enforced the limitations prescribed in the Rangewide Plan since these limitations would either make drilling impossible or prohibitively expensive. 11/ Before this Board, BLM justifies its actions by arguing that it is merely recognizing valid existing rights held by Legacy as it is required to do.

It is true, of course, that all management plans routinely recognize that the management prescriptions being devised can only be implemented "subject to valid existing rights." But, it is almost restating the obvious to observe that the "valid existing rights" to which these management plans refer are rights existing at the time the management plans are adopted. In other words, it is not expected that BLM officials will authorize the creation of future rights whose exercise would be inimical to the very values which a management plan seeks to foster. 12/

Herein, once BLM was apprised of the survival of the Lockhart Basin desert bighorn sheep herd it should have, at a minimum, immediately suspended the issuance of oil and gas leases in the basin. Instead, BLM proceeded to issue such leases, without any restrictions aimed at protecting the herd. While BLM now asserts that it was required to do so by the RMP, this is simply not true.

11/ For example, the Rangewide Plan provides that "[c]rucial areas, such as lambing grounds * * * and areas within 1 mile of permanent water sources, will receive maximum habitat protection." (Rangewide Plan at 18.) Yet, if BLM were to attempt to enforce this on lease UTU-75058, it would either require that the drill pad be located off-lease or at such a distance away from the target formation that directional drilling would be required at a prohibitive cost.

12/ Admittedly, in certain areas, such as the mining laws, future valid existing rights can come into being without any action by BLM. Such, however, is not the case with rights obtained under the Mineral Leasing Act of 1920 since, until such time as an oil and gas lease issues, one generally does not acquire any rights enforceable against the United States.

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Until such time as a lease actually issues, BLM always reserves the right not to lease at all. See, e.g., Harris-Headrick, 95 IBLA 124 (1987). Nothing in the adoption of the RMP diminished this discretionary authority. The most that the RMP can be seen as requiring is that if BLM chose to lease it could do so without restrictive stipulations. The adoption of the RMP did not, however, constitute a determination that BLM would automatically issue an oil and gas lease should any applicant so desire. Thus, BLM was not compelled to issue a lease to Legacy. Rather, BLM chose to do so in this case, just as the Grand Resource Area Office (GRA) chose not to permit issuance of a lease for adjacent lands in sec. 5 because of its concerns that the GRA RMP had become outdated because of its treatment of desert bighorn sheep. ^{13/} See Letter dated May 1, 1997, from Legacy Energy Corporation to Assistant District Manager, Moab District Office.

We think that, under the facts of this case, there is little question that, had issuance of the lease to Legacy been challenged on the ground that inadequate protection was afforded the desert bighorn sheep herd, this Board, at least, would have sustained the challenge. However, no such protest was filed or pursued and Legacy obtained its lease without any stipulations for the protection of bighorn sheep attached to it.

There is no indication in the record that Legacy was ever other than forthcoming in its dealings with BLM and it seems likely that Legacy acquired lease UTU-75058 in relative ignorance of the problems described above. Thus, notwithstanding the various serious deficiencies apparent in BLM's actions with respect to the Lockhart Basin desert bighorn sheep herd, we must conclude that Legacy has acquired valid rights under lease UTU-75058 which must be recognized.

It also seems clear that SJRA has recognized, albeit somewhat belatedly, the problems with respect to the existing RMP's treatment of the desert bighorn sheep herd in Lockhart Basin since it has now initiated the process of amending its RMP. See SUWA's SOR, Ex. E (Letter dated Jan. 28, 1998, from Moab District Manager to SUWA). While this course of action could be expected to obviate future problems, it is still necessary to deal with the problems attendant to the present appeal.

Regardless of our views as to how BLM should have handled Legacy's original application to lease, the fact is that it granted Legacy a lease which had no special stipulations for the protection of the desert bighorn sheep. In doing so, while the State Office may have acted in technical

^{13/} We note that the boundary of the San Juan and Grand Resource Areas is the canyon rim which runs through sec. 5. Thus, areas west and below the rim are in the SJRA while the areas to the east and above the rim are in the GRA. One of the consequences of the issuance of the lease by SJRA and the refusal to issue a lease by GRA is that Legacy is being forced to drill a well with open acreage almost immediately adjacent to its well-site.

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compliance with the RMP, the result was a considerable erosion in the protection which the Rangewide Plan intended to provide for the Lockhart Basin herd. To a large extent, BLM has, with Legacy's concurrence, attempted to mitigate adverse impacts on the herd to the maximum extent possible, given the exigencies of Legacy's drilling program. Our own analysis convinces us that these restrictions, if observed, would likely result in minimal, if any, impacts on the Lockhart Basin herd, at least during the initial drilling program. And, we expect that the monitoring of any impacts will be a matter of some priority in the SJRA.

Given the legal framework in which this appeal has arisen, we are constrained to recognize that the approved APD, with the COA's designed to ameliorate the impacts that drilling might be expected to cause, probably represents the fairest and most desirable outcome now obtainable. The challenges which SUWA mounts on this issue are, therefore, rejected.

[5] Finally, SUWA argues that an EIS is needed because of the substantial impacts that drilling of a well and any ultimate production therefrom will have on both the visual resources of the area and the Lockhart Basin desert bighorn sheep herd. We have noted many times in the past that a FONSI determination that no EIS is required for a specific project will be affirmed on appeal where the record establishes that BLM has taken a hard look at relevant areas of environmental concern and has concluded that, taking into consideration measures designed to minimize environmental impacts, no significant impact on the human environment will result. See, e.g., Southern Utah Wilderness Alliance, 141 IBLA 85 (1997); Southwest Resource Council, 96 IBLA 105, 94 I.D. 56 (1987). In our view, when the proposed action is viewed in the context of the special restrictions imposed by BLM, it seems reasonably clear that the proposed action will not significantly impact upon the human environment and, therefore, an EIS is not needed. Appellant SUWA may disagree with BLM's conclusions with respect to some of the measures which it has directed be taken, but simple disagreement is insufficient to show error in BLM's determination.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the decisions in IBLA 98-144 and IBLA 98-207 are affirmed, the appeal in IBLA 98-168 is dismissed, and the petitions for stay in IBLA 98-144 and IBLA 98-207 are denied as moot.

James L. Burski
Administrative Judge

I concur:

C. Randall Grant, Jr.
Administrative Judge

144 IBLA 91

VRM Inventory for the New Millennium

From December 11th through 14th, Chris Horyza of the Phoenix Field Office, Russ Jackson of the Branch of Photogrammetric Applications, National Science and Technology Center (NSTC), with guidance from Rich Hagan Landscape Architect, WO, met to discuss how to use current GIS and Image processing technology to facilitate new Visual Resource Management (VRM) inventories, or improve on existing inventories.

During this meeting, several assumptions guided the process:

First, we assumed that different offices possess differing levels of technical expertise, and the process needs to be flexible enough to allow for that.

Second, we assumed that regardless of the offices' level of GIS expertise, some minimum level exists and will be made available, since GIS has been decided on as a tool for storing, analyzing, and producing map products from geospatial information for all upcoming land use plans.

Third, that any process devised must address the inventory method in Handbook H-8410-1.

And finally, with 41 planning starts in the Bureau in Fiscal Year 2001, an acceptable procedure, data standards, and general guidance for them needs to be provided to the field as soon as possible.

To address all of these, we decided on a three-stage approach, what we referred to as a "three model approach."

Model "A" could be called the "Low Tech" model. This model represents a process guided primarily by a traditional VRM inventory, using GIS basically as a storage and map production medium. Some fairly simple overlay analysis and reporting may be done, but most would require only basic training in GIS applications and could even be provided by state office, NSTC, or contract experts on a periodic, or on a "as needed" basis. This model requires local inventory labor (may be labor intensive) and some local GIS support (possibly by resources specialist(s) with GIS ability or as-needed off-site support). Also, some data preparation would be necessary prior to any GIS analysis being performed. If these skills already exist, this too could be accomplished by existing field office staff. If not, it could be provided by state offices, NSTC, or by contract.

Examples of GIS analysis that may be conducted: buffers at various distances; view-shed analysis (for visible or not visible); conversion of polygon data to grids and adding multiple grids together; conversion of grids back to polygons (conversion to shape files;) overlay (intersection or clip) to assess acreage; and the production of some map products for field or office use.

Examples of data preparation that may be needed; digitizing or scanning of overlays; registration of those same overlays; acquisition of digital elevation models; and the projection or re-projection of data.

Model "B" could be described as the "GIS Based" model. In this model, collection of various components of the VRM inventory rely on GIS or image analysis techniques for initial data, and field verification to finalize the classifications. This model assumes a fairly high level of GIS expertise at the local office and the necessary hardware and software (ArcView and Arc Info) to support it. This model recognizes that some aspects of VRM inventory are very subjective and cannot be adequately represented by objective analysis, so must still involve simple mapping and digitizing of those factors. Use of the

procedures in this model, when perfected, should reduce field time necessary to conduct a VRM inventory, reduce the overall cost of VRM inventory, produce a more “repeatable” product that is more “accurate” than traditional inventory.

Examples of GIS analysis that may be conducted: analysis described under model “A” and; view-shed analysis with a frequency option; neighborhood analysis on grids generating statistical products; some image processing and analysis.

Model “C” could be described as the “Developmental Model” or the “High Tech” model. In this model, most analysis techniques would mirror model “B” above, but additional techniques, which require expertise not commonly found in a local field office, would be required. This model takes further advantage of “state-of-the-art” geospatial and visualization technology to reduce field time, make landscapes that change seasonally or over many years more easily visualized, to demonstrate visually “What if?” scenarios, and to expand the audience for these to a larger “community.” This model has a risk of seeming to reproduce a real world landscape in a “virtual” setting. It remains imperative that people with local knowledge be always involved and field verification of classified products be conducted to ground any results in the real world.

Examples of analysis for model “C”: like model “A” and “B” and including 3D visualization of the project area like might be done in World Construction Set or similar 3D visualization software.

These models not only represent various technological levels, they also represent a staged approach to getting VRM Inventory guidance to the field. Since Model “A” is a slightly modified version of the traditional VRM inventory necessary guidance to support field data collection (data standards and support data requirements) could be provided in a fairly short time frame. It is our goal to provide documentation to the field to be able to begin inventories in this manner by February 15, 2001.

Model “B” incorporates some analysis techniques that have not been perfected. These should be tested in various landscapes and a prototype process developed. It is our goal to conduct these tests and have a field-available prototype within 18 months (or by about June 2002.) To accomplish this goal, we will need additional assistance from the GIS

and Image Processing community, or a formalized project, which would allow shedding enough current workload to conduct the necessary tests unfettered.

Model “C” is based in the analysis of Model “B”, and on developing expertise in the technology of 3Dimensional Landscape Visualization. Since this 3D visualization technology is maturing rapidly and only recently has become practical on computer systems found commonly in BLM, it will require extensive testing of its capabilities and to develop VRM inventory techniques that can take advantage of it. It is our hope that we can have a prototype process for early 2003. As in Model “B” above, additional assistance will be needed to achieve this goal.

As stated above, a basic assumption of these three models is that they address the VRM inventory as described in H-8410-1. It may be argued that some adjustments to the VRM inventory procedure are made with each model. Handbook H-8410-1, Section I, Implementation Options states that adaptations to the inventory method may be made if they “(1) provide a more cost-effective way to complete a quality inventory, and (2) keep the conceptual framework of the Visual Resource Management (VRM) system intact.” We feel the inventory process models described here accomplish this. But in fact, if no

savings in time or dollars is demonstrated, the model must be either discarded or modified. The following is a discussion of the components of the VRM inventory and how each model addresses it.

In all of the models, some decisions must be made before any major analysis or mapping is done. First, a decision must be made on what the management objectives of Visual Resource management will be, and these will be expressed by the selection of “Key Observation Points or Areas” (KOP.) Much of the analysis and mapping will be based on the locations of these KOPs and they should be selected at the beginning of the process. How this selection is made may vary from model to model. Second, a decision must be made as to the “minimum mapping unit size” which is a way to express what the smallest manageable VRM unit can be. This is important because GIS can generate a large number of very small areas (or polygons, or pixels) that, in a practical sense, are not manageable. By deciding at the beginning of the project what is the minimum size area that is practical to manage, techniques in GIS can be used to keep the product maps as simple as possible and to reflect realistic management objectives. Of course, these two decisions will be based on the unique characteristics of the inventory area and the objectives driving the management of the visual resources. Since these will vary from office to office, and possibly between inventories within offices, one would expect that, even with inventory and data standards, inventories conducted by different offices, or by different teams at different times, may not seamlessly fit together in a larger map if one attempted to do so.

SCENIC QUALITY RATING

For evaluating the Scenic Quality component of the VRM inventory, it was decided to evaluate each of the rating factors separately, allowing the combination of these factors to define the boundaries of differing “Scenic Quality Rating Areas.” Though the handbook calls for defining Scenic Quality Rating Units before rating the evaluation factors, even in

its most rudimentary application, GIS can assist with the complex overlay analysis required to allow the landscape to define the units. Each rating factor and the model solutions will be discussed.

Landform

The characteristics of landform that is quantified in this factor are described by the statement (from Handbook H-8410-1) “Topography becomes more interesting as it gets steeper or more massive, or more severely or universally sculptured.”

Model “A”

The ID team evaluating the inventory area would map areas according to their landform rating as described on the “Scenic Quality Inventory and Evaluation Chart.” Mapping would be done at 1:100,000 scale, or larger, as appropriate to the inventory area. These overlays would then be digitized or scanned and converted to grid (cell, or raster) data for later analysis.

Model “B”

In model “B”, emphasis is placed on deriving topographical variety. Landform can be analyzed by conducting a statistical neighborhood analysis of digital terrain models. It is recommended that the 30 meter Digital Elevation Models, mosaiced together for the inventory area, be used for all analysis using terrain models. For landform, the analysis would be to use a large roving window (75x75

cell window up to as large as 125x125 cells) and create a new cell map of the variance of the roving window. If you cannot calculate the variance directly, the analysis can use the standard deviation, then square the resulting map to create a map with variance values. When the variance map is displayed in three standard deviation categories, the landscape is divided into three classes, which can be attributed as the three landform classes. The product will vary with changes in roving window dimensions and several attempts may need to be run to determine the best size for the particular landscape being classified.

An alternative analysis method may be to use the Terrain Ruggedness Index value as defined by Riley et. al. in their article titled "A Terrain Ruggedness Index that quantifies topographic heterogeneity" in the *Intermountain Journal of Science* (vol. 5, no. 1-4, 1999) and used by Jacek Blaszcynski (BLM National Science and Technology Center) for various landscape analysis techniques.

Model "C"

Analysis in Model "C" may be the same as in "B", but the reference data may be more precise and generated from sources other than USGS DEM. Other terrain data sources (ex. Radar, lidar, etc.) should be assessed and the affect on the roving window dimensions, or other analysis variables should be described. Further, Model "C" could include additional subjective input from people viewing 3-dimensional landscape representations in workshop settings.

Vegetation

Vegetation characteristics that are quantified in this factor are described in Handbook H-8410-1 as, "...consideration to the variety of patterns, forms, and textures created by plant life."

Model "A"

Vegetation is classified as described in the traditional inventory method on the "Scenic Quality Inventory and Evaluation Chart" and mapped on 1:100,000 scale overlays (or a scale appropriate to the inventory area.) The overlays are digitized and converted to grid for later analysis.

Model "B"

In model "B", emphasis is placed on methods to derive vegetation variety. Several possible analytical techniques could be tried, or possibly combined to derive this factor.

One possibility could involve using existing vegetation data, reclassified according to its visual characteristics and a roving window analysis similar to the landform discussion above to derive vegetation variety.

Another possibility is to use image processing on natural color, black and white, or false color infrared imagery to create textural communities. Electro-optical (E/O) imagery should be used to mimic as near as possible what is seen on the ground. This process might involve:

- 1) Unsupervised classification
- 2) Use of variance analysis on the product

Or

- 1) On original imagery (or vegetation maps) attempt to capture vegetation variety.

The technique developed in model “B” could increase the repeatability and reliability of mapping this factor, and reduce the time and people commitment to its compilation for final VRM inventory classification.

Model “C”

Analysis similar to model “B”, except might be able to add analysis of vegetation relief. Model “C” could also incorporate 3 dimensional landscape visualization for simulating vegetation changes over seasons, or long-term as one might expect in various land treatments like timber harvests, range seedings, annual wildflower displays, prescribed burns or wildfires, etc.

Water

The characteristics of water to consider in the Scenic Quality rating are described in the H-8410-1 handbook as “That ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration in selecting the rating score.”

Model “A”

Manual mapping of areas rated for the dominance of visible water’s contribution to the scene as described above. This is mapped on 1:100,000 scale maps and digitized, then converted to grid for later analysis.

Model “B”

For purposes of deriving this factor, the elements of distance and visibility are emphasized in the analysis. Water bodies (streams, lakes, waterfalls, etc.) are mapped as points, lines or polygons as appropriate. The team defines distances from these waters that allow us to infer dominance i.e. The closer the observer is to the water body, the greater that feature dominates the scene. View-shed analysis is then conducted from these water bodies at the various dominance inferred distances and combined to derive an overlay reflecting the water factor.

Model “C”

Include and analyze visible motion of water bodies and infer a higher level of dominance in the landscape. Use 3 dimensional representations to assist with the classification of dominance. The 3D representations, if realistically rendered, can reduce field time and aid in viewing features that may be difficult to get to on the ground. Furthermore, they can allow us to share these features with a much wider audience than is usually possible in a normal field visit.

Color

The H-8410-1 handbook describes color as “...the overall color(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.) as they appear during seasons or periods of high use.” Key factors to use when rating “color” are variety, contrast, and harmony.”

Model “A”

Based on knowledge of ID team and field visits as necessary, map areas of rich color contrasts, and variety and rate them as described on the Scenic Quality Inventory and Evaluation Chart. This mapping, at 1:100,000 scale will be digitized and converted to grid for later analysis.

Model “B”

Analysis techniques would emphasize the elements of color contrast and variety. By using natural color imagery, may be able to use a neighborhood analysis technique similar to that described for landform, to derive an index of color variety. Also, there may be ways to use image analysis to derive contrast and richness from the color values of hue, saturation, and intensity (or value) or the

Red-Green-Blue values, or the Cyan-Yellow-Magenta-Black values as plotted in a 3 dimensional color space. If analysis techniques fall short of deriving the inherently subjective key factors for color, mapping as described for model “A” may be required. Even if analysis techniques show promise in capturing some aspects of rating color, adjustments to the overlay boundaries based on local knowledge may be necessary to fully characterize this factor.

Model “C”

Analysis techniques like in model “B” may be done, but use of realistic 3 dimensional landscape renderings can help to view more areas in the inventory area, visualize those landscapes with more realistic colors, and share those landscapes with a much wider audience than the other two models. Inherently subjective characteristics of color and the temporal changes caused by seasons or vegetation aging after human or natural treatments can be better described and shared in a virtual environment.

Scarcity

The H-8410-1 handbook says that the scarcity factor “...provides an opportunity to give added importance to...scenic features that appear to be relatively unique or rare...” Rating scores are based on the degree of the feature’s rarity and on the opportunity for consistent exceptional wildlife or wildflower viewing. This is the only key factor that allows a rating score higher than 5 with written justification.

Model “A”

Landscape features that are unique or rare in the physiographic region are mapped and rated according to the criteria in the Scenic Quality Inventory and Evaluation Chart. These overlay(s) are digitized and converted to grid for later analysis.

Model “B”

Scarcity may be difficult, if not impossible, to derive from GIS and Image processing analytical techniques. For now, model “B” is the same procedure as model “A”.

Model “C”

Model “C” may not have any new analysis techniques, but using a realistic 3 dimensional landscape visualization tool, scarce features can be rendered and shared with a larger audience. This could help to build consensus on the contribution of scarce features to the aesthetic landscape, and therefore, to their management prescriptions.

Cultural Modifications

These are described in the H-8410-1 handbook as “Cultural modifications in the landform/water, vegetation, and addition of structures... may detract from the scenery...

or complement or improve the scenic quality of a...” landscape. This is the only Scenic Quality key factor that can receive a negative score, reducing the overall scenic rating.

Model “A”

A view-shed analysis could be run from the identified Key Observation Points/Areas. Existing cultural modifications can be mapped in the “visible” area and, based on local knowledge and field visits where considered necessary, landscapes can be mapped and rated according to the visual impact of those features. These overlays would be digitized and converted to grid for later analysis.

Model “B”

An analysis similar to the model “B” example for Water could be devised. In this analysis, all cultural modifications would be scored (or, the analysis could be simplified by using only the cultural modifications within the view-shed of the KOPs as in model “A”) according to their potential affect on the scenic quality rating. These scores could be distance based, such as a range fence could score a –2 up to 30 meters away, -1 from 31 to 100 meters, and 0 beyond 100 meters. Or a rustic cabin may score a –2 up to 100 meters away, and +2 from 100 to 3000 meters and 0 over 3000 meters. View-shed analyses could be run from these features and controlled by the coded distances and ratings assigned to the results according to the coded rating scores. If conducted on all cultural modifications, this could reduce the dependence of the final VRM classifications on visibility from set Key Observation Areas.

Model “C”

An analysis process as described in model “B” may still be employed, but a realistic 3 dimensional landscape rendering tool could assist the ID team, and a larger audience as well, to visualize the cultural modifications being analyzed and reach a consensus on rating scores.

Adjacent Scenery

The H-8410-1 handbook describes adjacent scenery as “The degree to which scenery outside the scenery unit being rated enhances the overall impression of the scenery within the rating unit.” It goes on to say that “This factor is generally applied to units which would normally rate very low in score, but the influence of the adjacent unit would enhance the visual quality and raise the score.” In a practical sense, since the Adjacent Scenery key factor can add from 0 to 5 points to a scenic quality rating, a preliminary Scenic Quality Rating score must be between 7 and 11 for this factor to have an effect on the overall Scenic Quality Rating for a particular landscape. Regardless of the analysis model, the scores for the other Scenic Quality key factors should be added together first, and if the Scenic Quality total score is between 7 and 11, only then should the Adjacent Scenery Key Factor be analyzed, scored, and added to the Scenic Quality total score.

Model

“A”

For those areas determined to have a preliminary Scenic Quality Rating of “C”, but close enough to the “B” rating to potentially benefit from an Adjacent Scenery score, the team can adjust the Scenic Quality rating based on consensus of the influence of adjacent scenery. This is a subjective rating and adjustments to the GIS database would be done manually.

(Note: Here’s a proposed methodology to get to this point. First, the grids that were created throughout the model “A” discussions above are mathematically

added together. Second, the product grid can be reclassified into 3 categories based on the Scenic Quality Rating guidance in H-8410-1 where scores of 0 to 11 = C scenery, 12 to 18 = B scenery, and scores of 19 and above = A scenery. Third, areas with scores of 7 to 11 can be extracted separately for consideration of the Adjacent Scenery key factor. And finally, once a final Scenic Quality Rating grid is made, it can be vectorized and any polygons smaller than the agreed upon minimum mapping unit absorbed (eliminated) into the larger surrounding units. Or, the grid may be analyzed for clumps of cells of similar value which total less than the agreed upon minimum mapping unit size and those can be absorbed into the majority surrounding rating unit. This small area elimination process could wait until the final VRM Inventory classification is done but may keep the overall process “cleaner” if it is done here. At any rate, a grid should be the product of Scenic Quality for later analysis with the other major VRM components)

Model “B”

Analysis of Adjacent Scenery would be essentially the same for model “B” as in model “A”. The main difference is the way the previous six key factor “overlays” are derived. The Note under model “A” applies as well.

Model “C”

Overall analysis of Adjacent Scenery would be as in the previous two models, except a realistic 3 dimensional landscape visualization tool could improve the ability of the ID team, and a larger audience too if desired, to assess the influence of adjacent scenery to those units for which it may contribute to its overall Scenic Quality Rating.

(Note: It should be noted that a realistic 3 dimensional landscape visualization, or essentially a virtual reality rendering, of inventory landscapes is a common thread throughout this model. It should be stated that the degree of realism is a critical factor to the contribution of this technology to the VRM inventory process. Because these renderings will most likely be developed at a site remote to the field office conducting the VRM inventory, the realism of the product(s) must be assessed by people with extensive local knowledge and validated in the field. There exists a risk of biasing the computer generated landscapes to make them look better (or worse) than they really are. As with any influential technology, it MUST be applied with integrity and frequently validated and verified in the field by knowledgeable people.)

SCENIC SENSITIVITY RATING

For evaluating Scenic Sensitivity, we agreed the ratings were potentially very subjective. Because of the level of GIS expertise needed to characterize the landscape for this component of the VRM inventory, the differences between Models “A” and “B” are greater than with the Scenic Quality component. However, some offices may find an analysis methodology that is somewhere between the model “A” and model “B” suggested here.

Model “A”

Using traditional techniques to assess Visual Sensitivity, delineate Sensitivity Level Rating Units (as described in Handbook H-8410-1 at 1:100,000 scale) and

score their sensitivity. Digitize these overlays and convert to grid for later analysis with the other two VRM inventory component overlays.

Model “B”

Design for model “B” is similar to that for Scenic Quality, i.e. constructing a separate overlay for each key factor to be rated, and then combining those overlays to create an overall Scenic Sensitivity Rating overlay. The following is a discussion of each of the key factors for rating Visual Sensitivity and how they could be addressed using GIS in a model “B” philosophy.

Type of User

Meetings would be held and informal contacts made with different user groups. At these meetings, maps would be made of the areas they use and discussions would be geared toward how they would react to various kinds of possible activities happening in the areas they use. In this way, we could map where the fisherman go, where hunters go, where OHV users go, where backpackers go, and, from the discussions on reactions to activities, gauge their sensitivity to activities we might entertain. It must be remembered that in the context of VRM, the area of use extends beyond the places people camp or the roads and trails they use to the landscape that is visible from those camps, roads, and trails. So, this being the case, once the areas people go to are mapped, view-shed analysis is conducted to derive the landscape that is being inventoried for sensitivity. The results of the various view-sheds can be added together to derive a map showing areas of high, moderate, and low use, (high given a score of 5, moderate a score of 3, and low a score of 1) which can then move forward for later analysis in derivation of a final Visual Sensitivity rating.

Amount of Use

This layer is mapped in the context of visual use. To begin this process, use data from various existing sources (car counters, visitor registers, etc.) to derive overlays of use levels for features in the inventory area, and distinguish them as High, Moderate, or Low using the visitation standards described in Handbook H-8410-1, Illustration 8, page 2, “Table for Classifying Amount of Use.” View-shed analysis is then run from these features to define the visual landscapes that are

represented. These are then coded as to the use category and combined so high, moderate and low use areas are all on the same Visual Use overlay.

One way to combine them would be to add them together and reclassify the cell values so values > 4 are assigned the value of 5, values of 2 and 3 are assigned 3, and the value of 1 remains 1. ***Chris -- QUESTION – Why break it here? How many cell values would/could there be? Can you clarify?***

Sensitivity Levels

Sensitivity Level is an attempt to map the publics’ interest in the visual landscapes within the inventory area. Some of this will be done in conjunction with collection of Type of User information. Other ways to collect this information are:

1) Informal contact with land users in community gathering places. Take maps of the inventory area to these gathering places and have people show you (actually draw on the map) where they like to go and where their “special” places are. Get

as many of these contacts as possible. If it would be useful, could show pictures of different kinds of possible activities to get peoples' reactions.

- 2) Have public workshops and invite locals who spend time in and around the inventory area to show on maps their "special" areas. As in 1) above, show pictures or slides of possible activities to get peoples' reactions.
- 3) Put maps on the internet along with pictures of possible activities. Have people delineated the areas that they consider "special" and get information similar to 1) and 2) above.

All the maps collected in the process above would be aggregated into a single layer of public interest and coded with 5 for high, 3 for moderate, and 1 for low.

Adjacent Land Uses

Identify land uses adjacent (or within five miles) of the inventory area that might have an effect on the visual sensitivity of the inventory area. For example, residential areas from which BLM lands are visible may have high sensitivity to visual changes on those lands. Parks or recreation areas adjacent to, or near, BLM lands may infer high sensitivity to visual changes on the lands visible from them. These possible sources of sensitivity should be identified and mapped. View-shed analysis would be run from them to identify the visible landscape affected. If several view-shed analyses are run, they should be aggregated and coded with 5 for high sensitivity, 3 for moderate sensitivity, and 1 for low sensitivity. **Chris – another question – what criteria do you suggest to base the sensitivity on? Number of viewers? Density of homes? Number of visitors to adjacent parks?**

Special Areas

Special management areas such as wilderness, wilderness study areas, wild and scenic rivers, **(Chris, do you know how the new monuments and NCAs are to be classed?)** and others with special Visual Resource Management objectives are mapped and coded according to their visual sensitivity. Some special management areas, such as historic trails, may have visual objectives for the landscape visible from them as well as within the special management area. For these, view-shed analysis should be conducted from them to derive the affected landscape.

*Note: In most cases, the sensitivity ratings for this key factor will be high and will supercede any lower rating from other key factors. When the key factor overlays are combined, the other 4 or 5 should be done first, then the Special Areas overlay can be combined with the product for a final Visual Sensitivity overlay. Or, the Special Areas overlay can be added together with the others at the same time if a numeric value is assigned to the mapped Special Areas that will assure a high sensitivity rating. (For example, if all special management areas were coded with a "20," the sensitivity would automatically fall into the high range.) Or, especially in the case of Wilderness Areas, which are managerially mandated as VRM Class I, keep these as a separate overlay for combination at the end of the process.

Other Factors

If there are other factors that were not considered in the previous 5 key factors, that affect public sensitivity to changes in the visual landscape, they could be mapped and coded here. Assign values to the landscapes as in the other key factors with 5 for high sensitivity, 3 for moderate sensitivity, and 1 for low sensitivity. Be sure to identify and justify these additional factors. Care should be taken to not use this miscellaneous category to justify personal, or special interests to achieve a predetermined solution.

Model “C”

The common thread with model “C” throughout this discussion has been development of realistic 3 dimensional landscape representations. For sensitivity analysis, this could be used as a presentation tool to great advantage. This tool could be used by the inventory team to possibly reduce field time, but primarily as a presentation tool for the public and for management. “What If” scenarios can be viewed showing various management activities that may change the visual landscape. Temporal changes of season or of longer term can be portrayed so sensitivity portraying short and long term changes can be assessed. And, if done well, the cumulative effect of activities over the years could be assessed. Realistic 3 dimensional representations would make potential management activities more real to the public than the traditional slides and photographs. And the audience reached could be expanded beyond the Bureau’s traditional constituents by placing these representations on Bureau websites for wider distribution.

In conclusion, each of the key factors for rating the Sensitivity Levels would be represented by a coded raster overlay. These overlays could be added together (see note under Special Areas) and sensitivity classes extracted from the product by reclassifying as:

Values greater than or equal to 19 = high,

Values 9 to 18 = moderate,

Values less than or equal to 8 = low.

Chris – suggest we use different numeric ranges than what is found on the Scenic Quality Inventory and Evaluation Chart. As this is an arbitrary numbering scheme, how about less than 5 = low, 6 – 10 = moderate, 11 - 15 = high? We can look at this closer as we get further into the Model B analysis. But right now, I’m concerned that having the same values as Scenic Quality, reviewers of this document will be confused about the scoring of Sensitivity as opposed to Quality.

DISTANCE ZONES

The basic assumption of distance analysis is that visual change is more significant the closer it is to the observer. In the traditional approach to this VRM component, key observation points or areas are defined at the beginning of the inventory and this component is analyzed from those. The question was asked if we could do analysis to account for future key observation areas? Though it is theoretically possible, this would result in one of two outcomes. First, analyzing for varying distance zones from any possible key observation area would result in a volume of data beyond the storage capacity of most computers. Or, the entire landscape would be treated as foreground/middle ground (the near-observer class) and the Visual Resource Management classes may not accurately reflect reasonable management prescriptions. In a sense, Scenic Quality and especially Visual Sensitivity are components of the VRM

inventory that emphasize protection of landscapes from visual change. The distance zone analysis brings the inventory into context with the visual management objectives for the studied landscape and ameliorates the possibility of excessive restrictions.

Use of GIS technology, even in the model “A” concept can result in considerable timesavings and a more accurate representation of the visible landscapes from pre-mapped Key Observation Points and Areas. The result of this analysis, if documented, is also more repeatable than traditional methods of calculating this component.

Model “A”

Key Observation Areas are defined and mapped. Distance buffers are run from these consistent with guidance in handbook H-8410-1. View-shed analysis would then be conducted using medium resolution terrain data (30 to 90 meter) to define the Seldom Seen class. The products of the distance buffers and the seldom seen analysis would be combined for a final Distance Zone overlay.

Model “B”

Key Observation Areas defined and mapped as in model “A”. Then, view-shed could be run from these using the frequency method and controlled distances for a

more detailed “visibility” analysis. The landscape could be divided further than in model “A” by defining a “not visible” class, a “seldom seen” class, and low, moderate, and high visibility within the various distance ranges based on the frequency value. (The frequency value product of this analysis is the number of Key Observation Points the particular cell in the product map is visible from. For example, if a cell has the value of 5, that place on the ground is visible from 5 Key Observation Points. View-shed analysis handles areas such as roads or the surface of a lake as a set of points, each of which would be considered a Key Observation Point for this analysis.) The product grid could be reclassified so that if the value of the cell is 0, it is considered “not visible.” If the value is less than 5% of the total Key Observation Points defined, it could receive a classification of “seldom seen.” Other visibility classes could be defined if they help to refine Visual Resource Management objectives, or they could be handled the same as the distance zones in the handbook guidance.

Model “B” could also incorporate varying Minimum Mapping Unit sizes into the process. (*Note: These minimum mapping units are a measure of our ability to manage VRM in potentially isolated islands. It characterizes the possibility that small areas of either high visual sensitivity, or low visibility (therefore low sensitivity) close to the observer may be important enough to warrant managing for very small land areas.) For example, from 0 to 1.5 miles away from the Key Observation Area, classifications as in the previous paragraph would be retained for areas over 2.5 acres. But, from 1.5 to 3 miles, the minimum area size would need to be more than 5 acres. From 3 to 5 miles away, the minimum mapping unit could be 25 acres, and in excess of 5 miles, 100 acres.

Model “C”

Model “C” could incorporate algorithms that account for varying distance zones based on observer viewing time. For example, if a Key Observation Area is an interstate freeway, travel speed narrows the distance zones of the viewer and reduces the time a particular point on the landscape is visible. However, if delays

such as traffic bottlenecks commonly occur in some places, speed slows (or maybe even stops) and observers have more time, widening the distance zones and increasing viewing times. Distance zones could be fluid based on these kinds of inputs.

Model “C” might be able to address ridge top skylines also. Activities that may not be particularly visible on the face of a slope may stand out if conducted on a ridge top as viewed from a Key Observation Area or Point. At present, Model “B” has no good way to analyze this.

VRM INVENTORY CLASS DELINIATION

The process of defining the VRM Inventory classes is the same with models “A” and “B.” Using raster processing capability, the overlays for the three components (and

Special Management Areas if there are any) are added together or re-combined for the final classes. Two possible methods are described here.

Method 1

- 1> Assign the value of 1000 to all features of the Special Management Areas (Wilderness) overlay.
- 2> Assign values to the Scenic Quality where “A” scenery = 500, “B” scenery = 300, and “C” scenery = 100.
- 3> Assign values to Visual Sensitivity where High = 50, moderate = 30, and Low = 10.
- 4> Assign values to the Distance Zones where foreground/middle ground = 5, Background = 3, and Seldom Seen = 1.

Then, add the reclassified raster maps together and reclassify the product as follows:

- 1> Values greater than or equal to 1000 = VRM Class I.
- 2> Values greater than or equal to 355 but less than 1000 = VRM Class II.
- 3> Values of 155, 335, and 353 = VRM Class III.
- 4> The value of 351 is VRM Class III if it is adjacent to VRM Class III, II, or I. If adjacent to Class IV, it is Class IV.
- 5> Values of 111, 131, 133, 135, 151, and 153 = VRM Class IV.

Method 2

If the GIS supports Boolean analysis, the cell values are not as important as in Method 1, as long as they can be defined by their appropriate class. A Boolean formula, such as follows, could be written to define the VRM Inventory classes from the separate overlays.

If Special Management Areas = yes, VRM Class I.

Or, if Scenic Quality is “A”, VRM Class II,

Or, if Scenic Quality is “B,” and Sensitivity is “high,” and Distance is “foreground/middle ground”, VRM Class II,

Or, if Scenic Quality is “B,” and Sensitivity is “high,” and Distance is “background,” VRM Class III,

Or, if Scenic Quality is “B,” and Sensitivity is “medium,” and Distance is “foreground/middle ground,” VRM Class III,

Or, if Scenic Quality is “B,” and Sensitivity is “high,” and Distance is “seldom seen,” and adjacent to VRM Class I, II, or III, VRM Class III,

18. Appendix B. Manuals and Handbooks

A. Manual 8400 Visual Resource Management

B. Handbook 8410-1 Visual Resource Inventory

C. Handbook 8431-1 Visual Resource Contrast Rating

19. Appendix C

VRM Forms

- A. Form 8400-4 Visual Contrast Rating Worksheet**
- B. Form 8400-1 Scenic Quality Field Inventory**
- C. Form 8500-5 Scenic Quality Rating Summary**

20. Appendix D.

Miscellaneous Handouts

