

VIII. LIST OF AUDIO-VISUAL AIDS

MEASURING THE VISIBILITY OF HIGH-VOLTAGE TRANSMISSION
FACILITIES IN THE PACIFIC-NORTHWEST

Available through: Bonneville Power Administration
Portland, Oregon, and

Jones & Jones
Seattle, Washington

This is a presentation of two visual resource evaluation studies sponsored by Bonneville Power Administration. These studies were undertaken to help in the planning, design and construction of high-voltage transmission facilities with minimal visual impact upon the landscape, and represent a segment of B.P.A.'s ongoing program of visual resource management. The initial target audience was B.P.A. management and professionals in transmission planning and design in B.P.A. and other electrical utilities. The presentation has also been well received by university audiences and professional staff of land management and regulatory agencies.

The slide show begins by introducing the concept of visual resource management. Its application to high-voltage transmission facilities is illustrated by a brief summary of the prototype visual assessment performed by B.P.A. in Northwest Montana/North Idaho to locate additional transmission for Libby Dam. The need to consider both visual resources and viewer response is emphasized. The relative visibility of alternative corridors is a key element in viewer response, and the Libby project demonstrates an extensive visible-area (or "viewshed") analysis utilizing VIEWIT.

B.P.A. specialists programming the Libby VIEWIT analysis asked, "How far should we look?" Initially, this question revolved

around computer time and cost. It became apparent that understanding the relationship between transmission visibility and distance would help to resolve a broad range of visual issues in facility planning and design. These range from study area definition to selection of measures to mitigate visual impacts. B.P.A. therefore undertook a field study of transmission line visibility across its entire service area to provide visibility information for its full range of transmission types and voltages.

The balance of the slide show illustrates the procedure and results of this study. Ten commonly used transmission configurations in fifteen landscape setting types throughout the Pacific Northwest are examined. The visual angle subtended by transmission tower and/or right-of-way is established as a principal factor linking visibility and viewer distance. Figure-field contrast also affects visibility, and this is related to tower design characteristics and right-of-way/landscape relationships.

The slide show concludes by applying the study results to matters such as determining the visual benefits of double-circuit towers versus parallel construction and establishing parameters for the selection of improved appearance towers. The practical applications of the study clearly demonstrates the usefulness of visual resource management approaches for transmission planning and design decisions.

SITING OF UTILITIES

Available through: U.S.D.A., Forest Service
Division of Recreation
Washington, D.C.

Opening with scenes of excellently designed and located utilities, as well as those causing undue impact upon the environment, this film depicts new architectural and engineering techniques for installation of utilities. These utilities are planned and designed not only to serve the increasing needs of society, but are in harmony with, or subordinate to, the landscape.

The focus of the film is on the momentous challenge faced by the nation to safeguard the resources of its forests while at the same time providing for the public's ever-expanding needs for energy transmission and communication systems. Specific reference is made to agriculture Handbook No. 478, National Forest Landscape Management, Volume 2, Chapter 2, Utilities, that can be used as a follow-up text should the audience require additional information.

A hypothetical example is used to graphically illustrate a potential utility line from "A" to "B". Considerations varying from topography to wildlife habitats are presented and alternative corridors shown.

A final selection is illustrated, taking into account three concepts:

1. Socioeconomic--maximum benefit to the consumer at minimum cost.
2. Engineering--engineering and construction feasibility.
3. Environmental--minimum ecological and visual impact.

The film presents several graphic tools, such as computer-generated perspectives and three-dimensional models, which can be used to aid understanding between consumers, technical people, and company and government agency officials. It then focuses upon three actual projects that present on-the-ground solutions to many of the problems previously discussed.

The first is a 10-inch gas pipeline crossing 65 miles of mountainous terrain on National Forests in Colorado. Several low-environmental-impact installation methods are shown. Among these are pipe bending, "pulling" pipe into place by cable, burying pipe in road rights-of-way, laying pipe beside a railroad trestle, etc.

The last project is a microwave system, also in the Rockies, constructed to provide both telephone and television service to remote areas. Special architectural design for necessary buildings and towers is shown as are methods of least-impact site selection and low-visibility installation.

Most utility studies concentrate upon route analysis and selection. The film deals with these items, too. It primarily focuses, however, upon the problems of facility design and installation for the least possible environmental impact. It assists utility people, forest officers and the public in understanding some of the problems that occur and the possible solutions offered when providing for the energy and communications needs of an environmentally conscious public.

A ROAD IN THE FOREST

Available through:

U.S.D.A., Forest Service
Division of Recreation
Washington, D.C.

Opening with scenes of recreational pursuits within easy reach of forestry roads, A Road in the Forest depicts the development of techniques and equipment to meet the ever-increasing demands for faster, safer transport -- from serpentine trails built from brawn at the turn of the century to modern, skillfully engineered highways.

The focus of this film is on the momentous challenge today in building roads which will have the least impact on our impoverishing environment. The answer is in careful analytical planning.

Road planners must consider all aspects of a road's impact on environment. Scenic and visual aesthetics should be in their best possible perspective. Ecology, concern for the vanishing wilderness and the vital and delicate relationship between people and nature, is a paramount issue. These considerations become difficult indeed in the fact of the steadily increasing trek of Americans in search of unmarred woodlands, hills and water.

While service (utility), safety, beauty, and economy are stressed as basic requirements in the design of all roads, each road should also be envisioned in harmony with its landscape, giving

due consideration to form, line, color and texture.

The film tells how these complex demands of modern road planning can be met through analytical team effort, utilizing the Land-
scape Management Handbook* and bringing together the knowledge of landscape architects, engineers, foresters, hydrologists, soil specialists, and other experts. With each coping with specialized problems in his or her field, together they can work to solve the overall management problems in a road development project.

Analytical tools are depicted, showing computer perspectives, transparent overlays, map read-outs, photos, sketches, and other graphic presentations. These are valuable tools in the analysis, but not as decision makers in themselves. In the final analysis, it is the job of the planning team to study and evaluate all data and offer the decision maker workable alternatives.

*Agriculture Handbook No. 483,
National Forest Landscape Management, Volume 2, Chapter 4,
Roads.

BLM VISUAL RESOURCE MANAGEMENT (slide-tape)

Available through: Bureau of Land Management
U.S.D.I., Recreation
Washington, D.C.

(ABSTRACT UNAVAILABLE AT TIME OF PUBLICATION)

VISUAL ABSORPTION CAPABILITY (VAC)

Available through: Lee Anderson
Geoffrey Chandler
Jerry Mosier
U.S.D.A., Forest Service
Klamath National Forest
Yreka, California

During the last decade, scenery has become a recognized resource of the National Forests of the United States. The public continues to demand amenity values in the National Forests, as well as a supply of products, such as timber and range. The National Forest Management Act of 1976 stresses the need to manage the forest for goods, services, and amenities such as scenery.

This exhibit will present a slide show and graphic exhibit dealing with the land's ability to absorb activities and attain desired future visual quality levels. This concept is called Visual Absorption Capability (VAC).

The slide show utilizes two projectors, lasts about 30 minutes, and has a canned audio presentation. It initially discusses some theoretical concepts about VAC and then graphically portrays the process currently being applied on the Klamath National Forest.

The updated slide show will include a section on the Visual Management Support System (VMSS) and its applicability and usefulness as a tool in VAC mapping. VMSS is a computer program which allows us to overlay maps, using a standard topographic base. We will discuss VAC's effectiveness in dealing with visual management

problems as well as indicate how we have integrated it with land management planning.

We will bring sample maps, flow charts, and handouts to help graphically portray VAC premises, factors, and mapping techniques as well as specific examples of work done on the Klamath National Forest.

The VAC slide tape program has been presented to Regions 5 and 6 landscape architects in addition to the Klamath National Forest staff group. The VAC booklet has been widely distributed throughout the country. We hope to present an updated version of the VAC booklet as a paper to be presented in the conference proceedings as well as a handout to be included as part of our exhibit.

We feel that our exhibit dealing with visual absorption capability will provide us with valuable feedback to make further improvements and refinements in the VAC system. It will also illustrate to conference participants a descriptive approach to aid in solving problems in landscape assessment and planning.

OFFSHORE OIL: COMMUNITY PERSPECTIVE

Available through: Texas General Land Office
United States Department of the Interior
Geological Survey
Reston, Virginia

This film, prepared by the Texas General Land Office, compares the impact of offshore drilling in Morgan City, Louisiana, an established OCS community, with the experience of Port O'Connor, Texas, an unincorporated area which recently began OCS

development. The film focuses on interviews with residents of both localities and documents the differing attitudes they hold toward development and its effect on their community.

OUR VISUAL RESOURCE

Available through: U.S.D.A., Forest Service
Division of Recreation
Washington, D.C.

This 14-minute 16 mm film points out that on the National Forests the "visual" is recognized as a resource; it is identifiable, measurable, and can be managed. The film depicts the visual resource as an enduring heritage as varied as the geographic areas spanned by the National Forest System. It is not static. It is as changeable and evolving as the vegetation which covers the land. Can we manage this inevitable change to protect esthetic values while using the many resources so necessary to a technological society?

The Forest Service has a legislative mandate and administrative direction to manage the visual resource as a fully integrated part of the land management

process. The film briefly describes how this is done. It illustrates the inventory and analysis of the landscape by quantifying landscape character and people's relative concern for it. The different Visual Quality Objectives are examined, as is their role in the final land management plan. New tools for inventory and analysis are examined, such as computer-drawn oblique views of proposed timber harvest projects.

The film presents examples of various projects accomplished to meet visual quality objectives. These include utility lines, roads, timber harvests, and other land management activities.

SCS LANDSCAPE ARCHITECTURAL TRAINING:
"SEEING THE LANDSCAPE" (MODULE I)

Available through: Landscape Architect
Engineering Division
U.S.D.A., Soil Conservation Service
Washington, D.C.

This is an 18-minute programmed audio/slide presentation that is part of a 90-minute training program. The training program was designed for in-agency use only. The trainees are field personnel who have had no visual education

and have little awareness of landscape architecture. The intent of this first training was to demonstrate that the visual aspects of the landscape can be handled systematically and logically.

STREET GRAPHICS (film)

Available through: William R. Ewald
ACCESS, Inc.
Santa Barbara, California

(ABSTRACT UNAVAILABLE AT TIME OF PUBLICATION)

THE APPLICATION OF VIEWIT ON THE WILD AND SCENIC
UPPER MISSOURI RIVER IN MONTANA

Available through: Bureau of Land Management
Billings, Montana

This slide-tape program explains, in a generalized manner, how VIEWIT, a computerized program which maps seen areas, was used to determine the scenic boundaries and the visual vulnerability of the Wild and Scenic Upper Missouri River in Montana. This program is aimed at the public sector, contains a simple explanation of how the computer can

map the seen area, and how the observer positions were selected. The determination of distance of viewing from each key observer point is also discussed. This slide-tape features some of the key features and highlights of the scenery on the Upper Missouri River.

THE ENVIRONMENTAL SIMULATION LABORATORY
UNIVERSITY OF CALIFORNIA, BERKELEY (film)

Available through: Donald Appleyard, Professor,
Institute of Urban and Regional Development
University of California, Berkeley, or

Kenneth H. Craik, Professor
Institute of Personality Assessment and Research
University of California, Berkeley

The environmental simulation laboratory is a research and teaching facility devoted to improving visual communication of future environments. It is for use in public planning, education, community participation, and psychological research.

The laboratory possesses an environmental simulator which has as its centerpiece a remotely guided periscope with a tiny movable lens (1/10-inch radius). Supported by a gantry and control system, the periscope can "fly", "walk", or "drive" through physical models of buildings and landscapes under either operator or computer control.

It projects images onto closed-circuit television, videotape, super-8 or 16 mm colored movie film. Colored slides or still photographs can be taken in multiple sequences or from different viewpoints. During these journeys, the periscope can look in any direction and can follow different routes at any desired speed. The laboratory has its own audio-visual, editing, projecting, and computer facilities. Animated films with moving vehicles, time-lapse movies, and photomontage presentations are also made in the laboratory.

VAIL PASS I-70 (slide-tape)

Available through: Erik J. Martin
Landscape Architect
U.S.D.A., Forest Service
White River National Forest
Glenwood Springs, Colorado

(ABSTRACT UNAVAILABLE AT TIME OF PUBLICATION)

OUR NATIONAL LANDSCAPE: (slide-tapes)

Eisenhower Consortium
for Western Environmental Forestry Research
Rocky Mountain Forest and Range Experiment Station
U.S.D.A., Forest Service
Fort Collins, Colorado

The Eisenhower Consortium for Western Environmental Forestry Research has developed slide-tape packages covering the major visual resource management problems and applied solution techniques presented at the Conference on Applied Techniques for Analysis and Management of the Visual Resource. If you are interested in purchasing one or more of these packages, please send your name to:

Merlyn Paulson
Landscape Architecture Program
Colorado State University
Fort Collins, CO. 80526

or

Dr. Gordon D. Lewis
Rocky Mountain Forest and Range
Experiment Station
U.S.D.A., Forest Service
240 West Prospect
Fort Collins, CO. 80526

APPENDIX B

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