Visual Simulations

Visual Simulations Overview

- **Definition…**
- **Uses…Why do we ask for them?**
- **Types….examples…pros/cons**
  - *Traditional vs. Computer-Generated*
  - 2d Image Editing
    - Adobe Photoshop
  - 3d Spatial Rendering
    - World Construction Set
    - Others
- **Summary**

Visual Simulation…. What is it?

FEDERAL LAND MANAGEMENT AGENCIES:

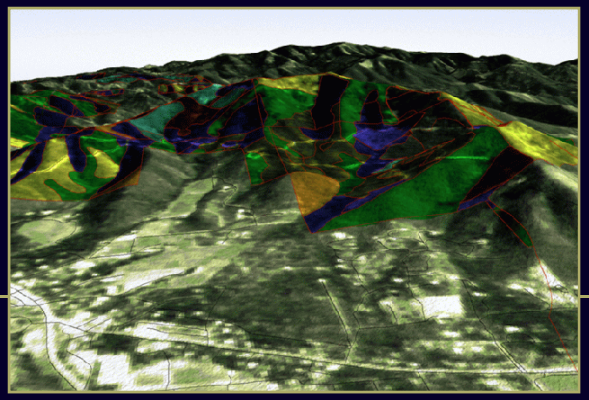
For This Class: *The use of illustrations, photographs, and computer-generated images designed to communicate the visible changes to the environment as a result of management activities or decisions.*

Before

After

What are the uses?

- Environmental consequences
  - Visual Resource Management (Contrast-ratings) See notebook
- Alternative studies / Project design
- Negotiations with project proponent
- Engage the public
- Internal communication
- Landscape level planning
  - Land Use Plan and Activity



So What? Why Use Visual Simulations?

- Do you know what these projects would look like?
  - Wind Farm
  - Solar Energy
  - Communication Tower
  - Gypsum Mine
  - Cooper Mine
  - Utility Corridor
  - Power Plant
  - Massive Burning Man Statue

  Surrounded by nak….

HELP KEEP
AREA CLEAN

DEAR NEIGHBORS,

PNM IS GOING TO PLACE **20 UTILITY POLES** IN OUR BEAUTIFUL ARROYO CHAMISO TO CONNECT YUCCA STREET AND CAMINO CARLOS REY

PLEASE HELP US STOP THIS BAD PROJECT BEFORE IT IS TOO LATE !!!

MAKE A PHONE CALL TODAY -- TELL THEM TO PUT THE LINES UNDERGROUND !!!

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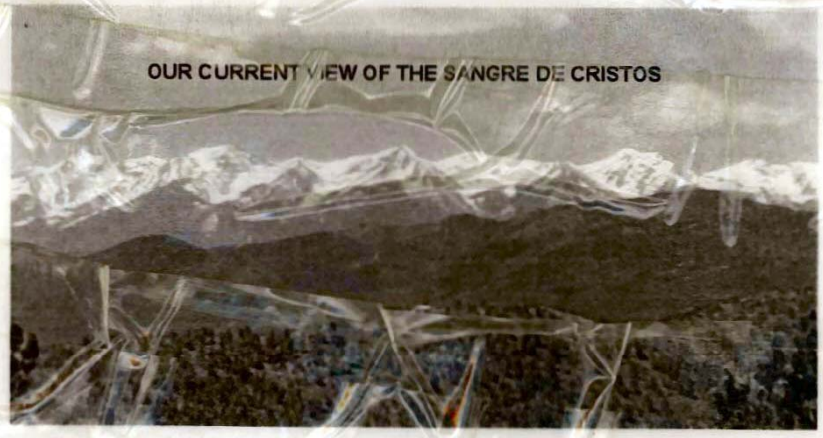
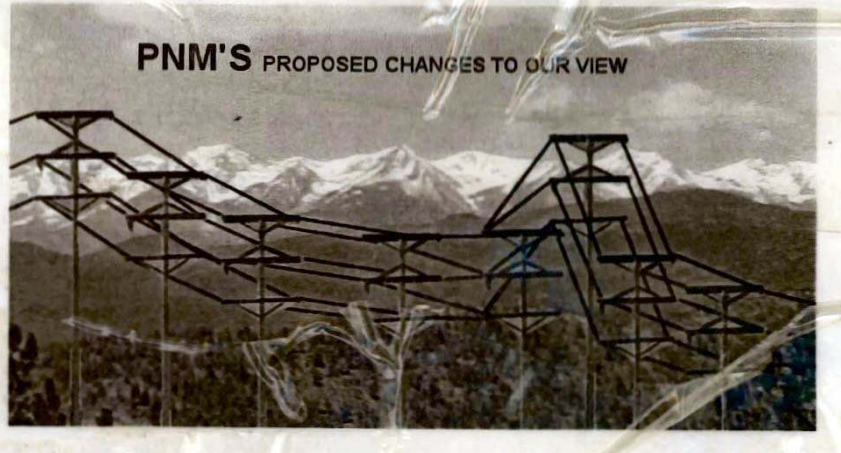
COUNCILOR MATT ORTIZ : 955-6817 mortizlaw@msn.com

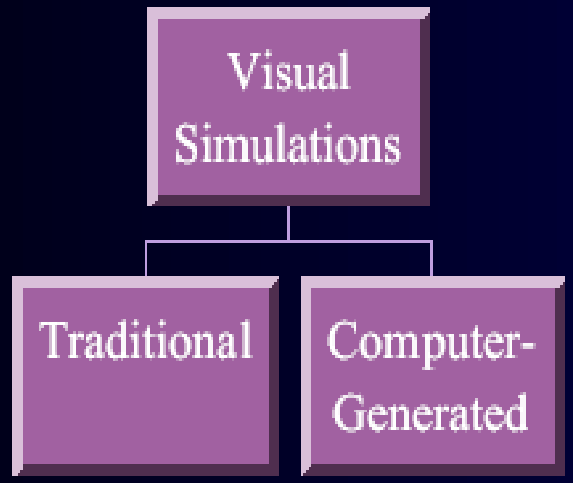
PNM REP TOM DOMINGUEZ : 473- 3209

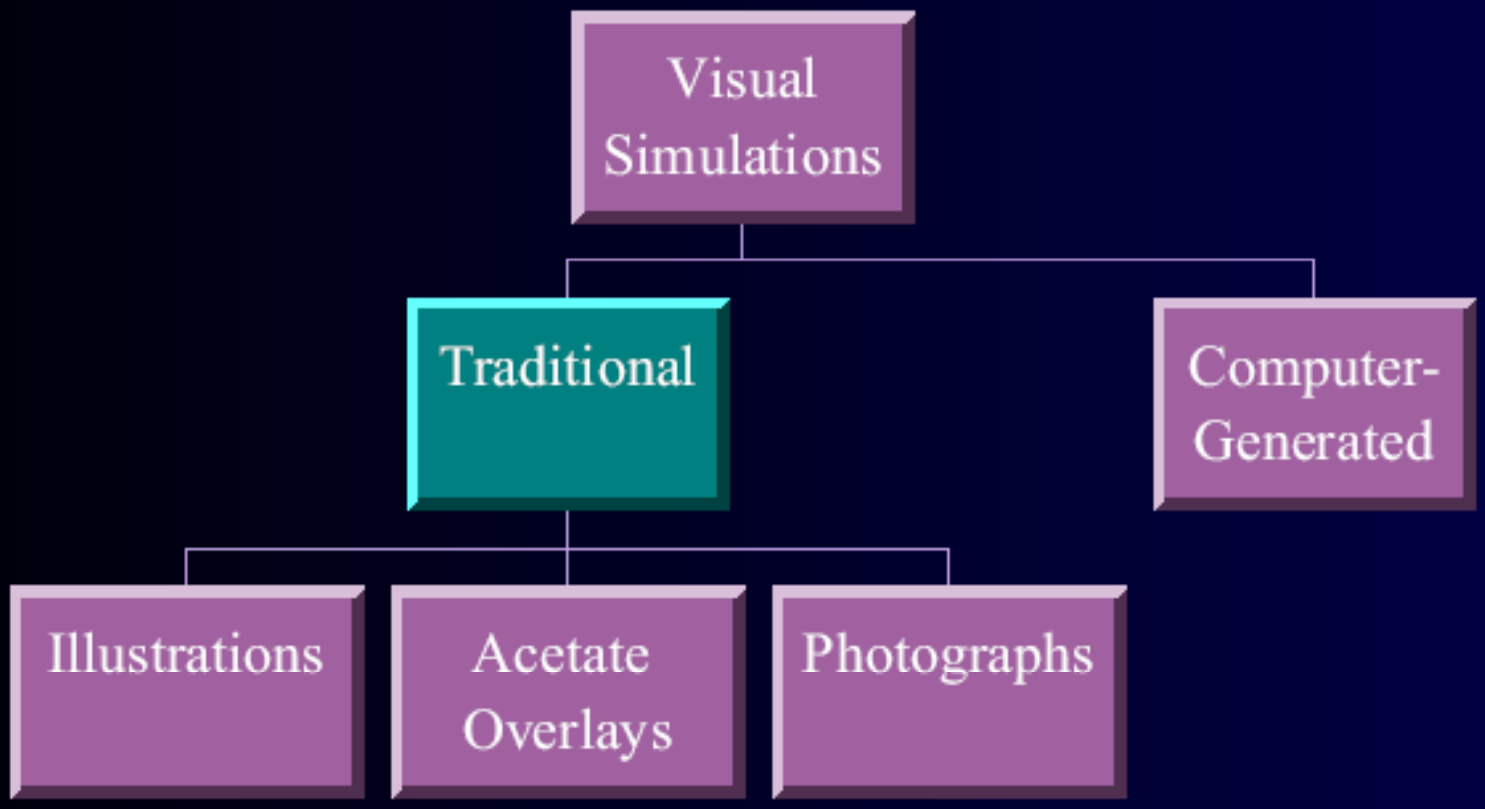
CONTACT ME : DAVID LAGASSE 988-9252 CAMINO CARLOS REY





Types of Simulations

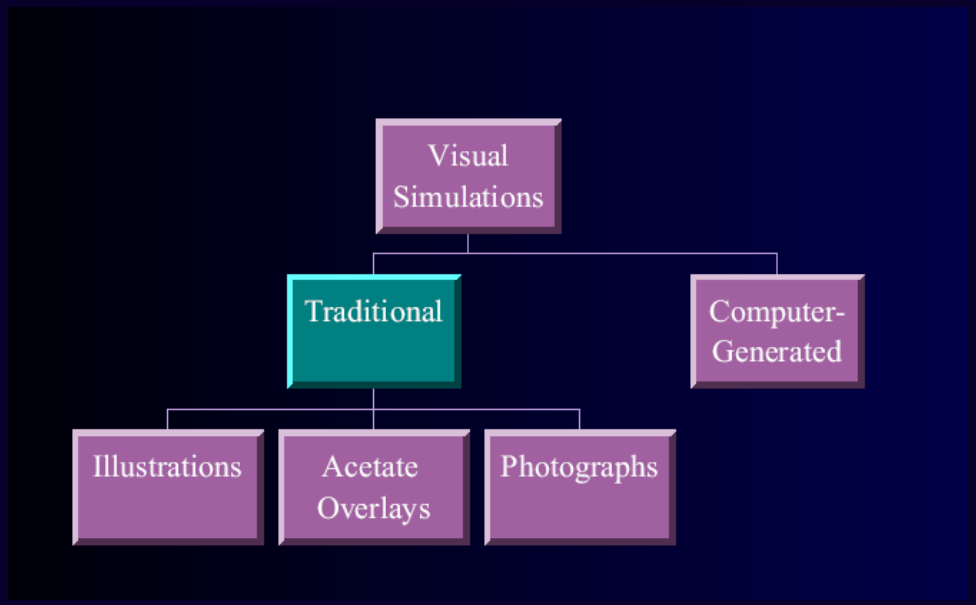



Visual Simulations
Traditional
Computer-Generated
Illustrations
Acetate Overlays
Photographs

Simulation Examples

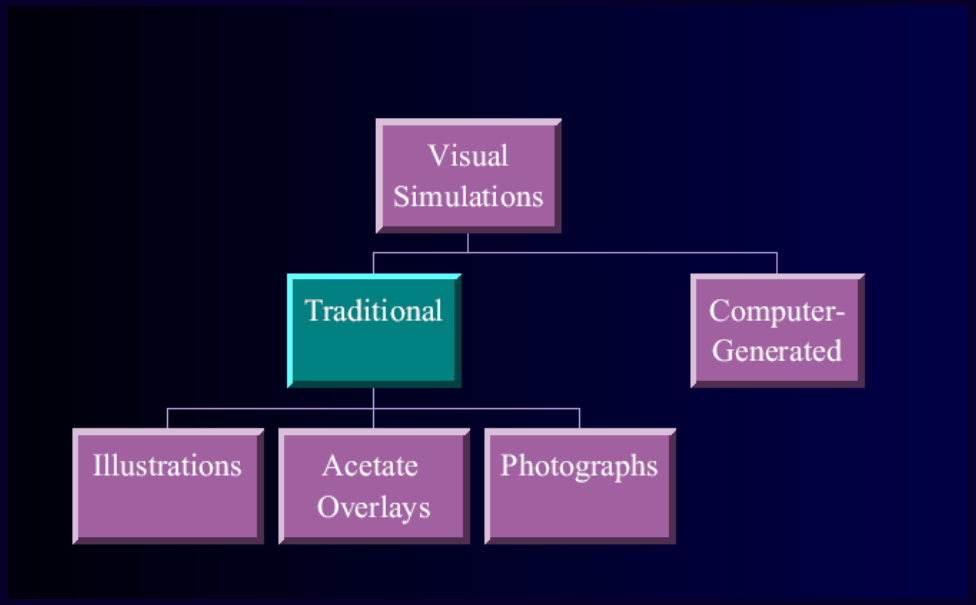
Traditional/ Photographs

Similar activities or actual site photos



Simulation Examples

Traditional/ Photographs



Simulation Examples

Traditional/ Photographs

Simulation Types

Photographs- Changes over Time

Simulation Types

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Simulation Types

Photographs- Changes over Time

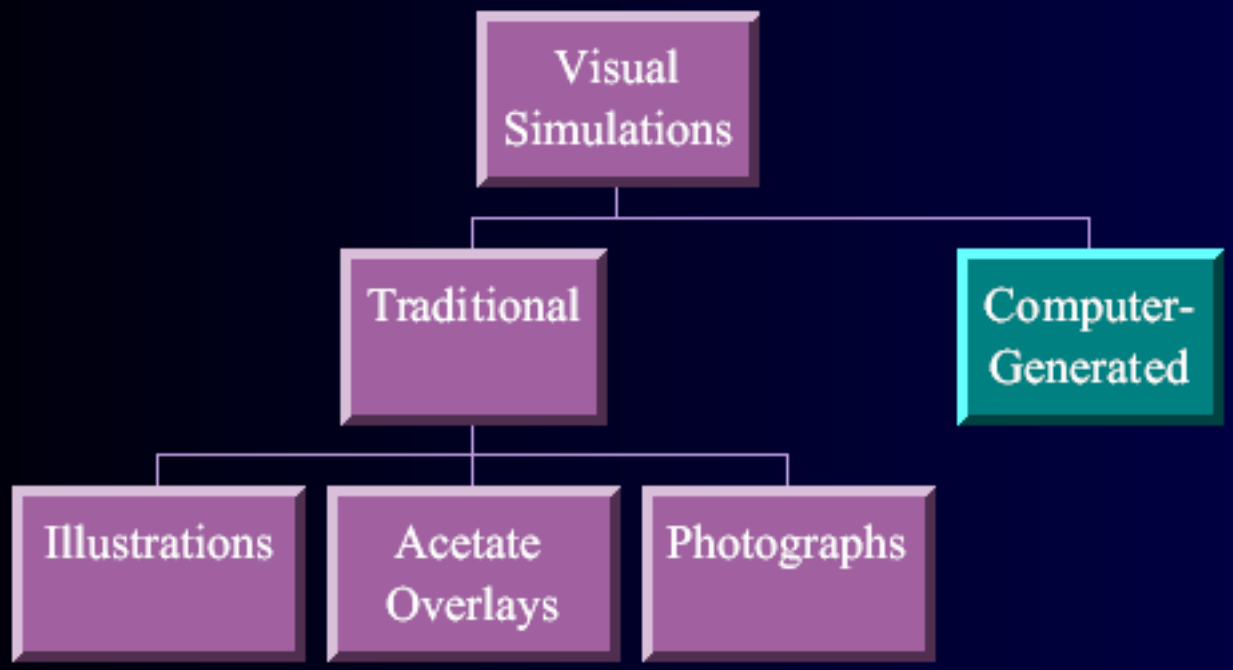
Traditional Simulations

Using Photographs: Summary

- It IS reality
- Connects loop w/monitoring
- No graphic expertise necessary; IN-House
- May be best "bang for buck"
- Requires time commitment and follow-up

Simulations

What are the types?



Simulations

What are the types?

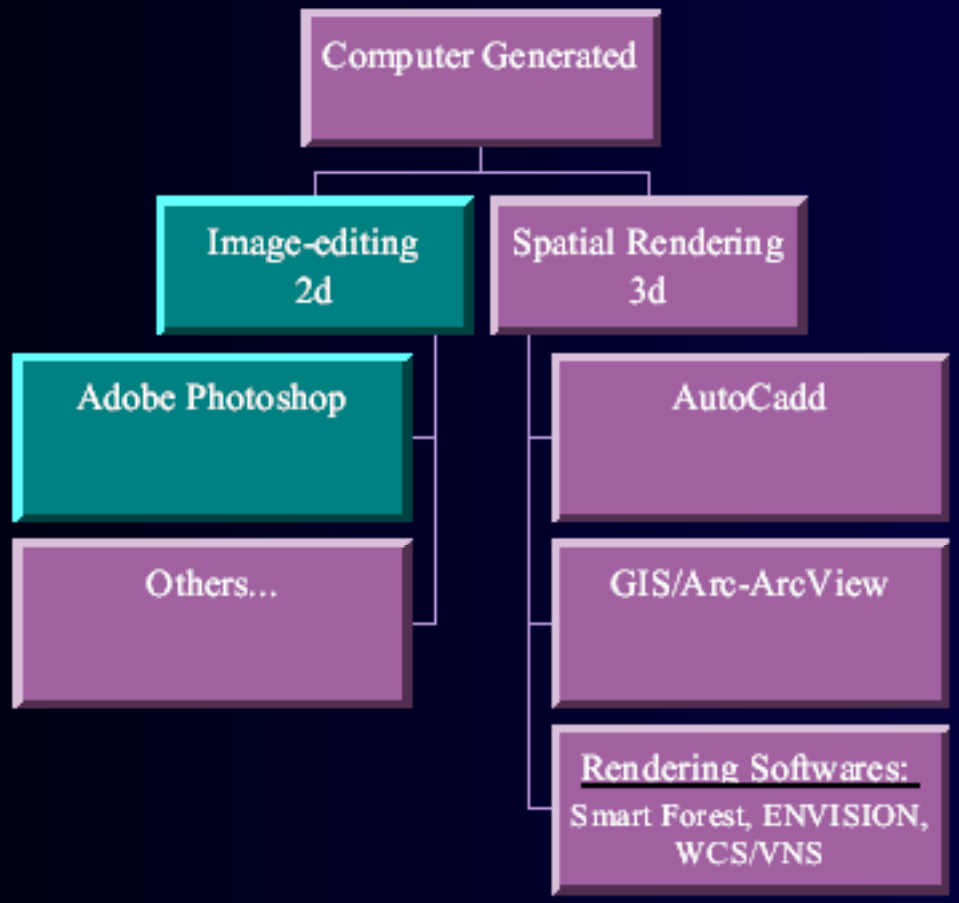


Image Editing

Photoshop Basics

- Process:
  - INPUT: (Photographs, Scan, Digital...)
  - EDIT: (Software)
  - OUTPUT: (Print, video...)
- System Requirements…
- Considerations:
  - Source Imagery
  - Editing Guides- G.I.S.
  - Ultimate Application

2d: Photoshop Basics

2d: Photoshop Basics

2d: Photoshop Basics

2d: Photoshop Basics

2d: Photoshop Examples

Existing Situation

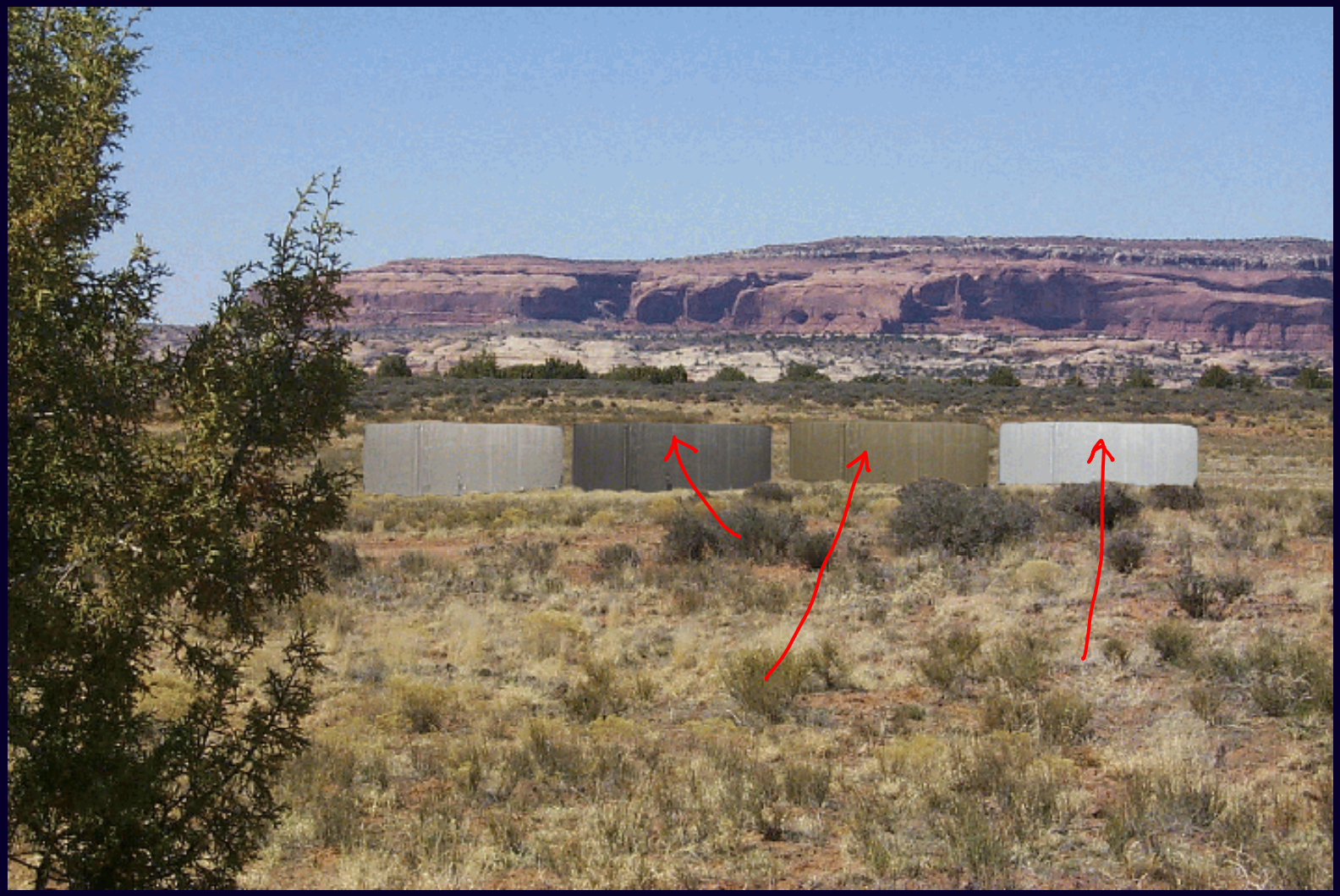
Expanded Pipeline

2d: Photoshop Examples

Existing Situation

Buried Pipeline

2d: Photoshop Examples



2d: Photoshop Examples

2d: Photoshop Examples

Existing Situation

2d: Photoshop Examples

Simulation: Short-term

2d: Photoshop Examples

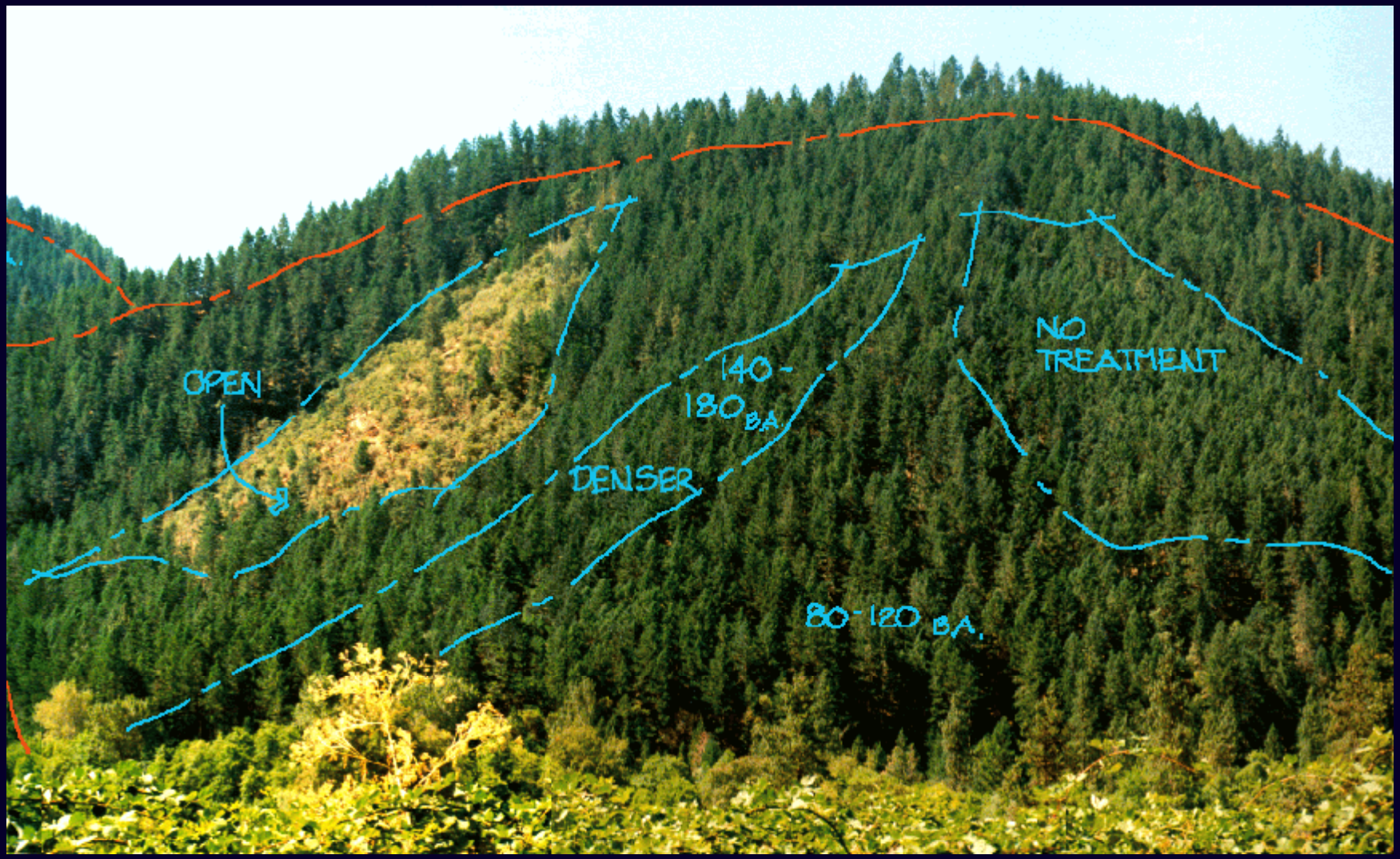
Simulation: Long-term

2d: Photoshop Examples

2d: Photoshop Examples

2d: Photoshop Examples

2d: Photoshop Examples



2d: Photoshop Examples

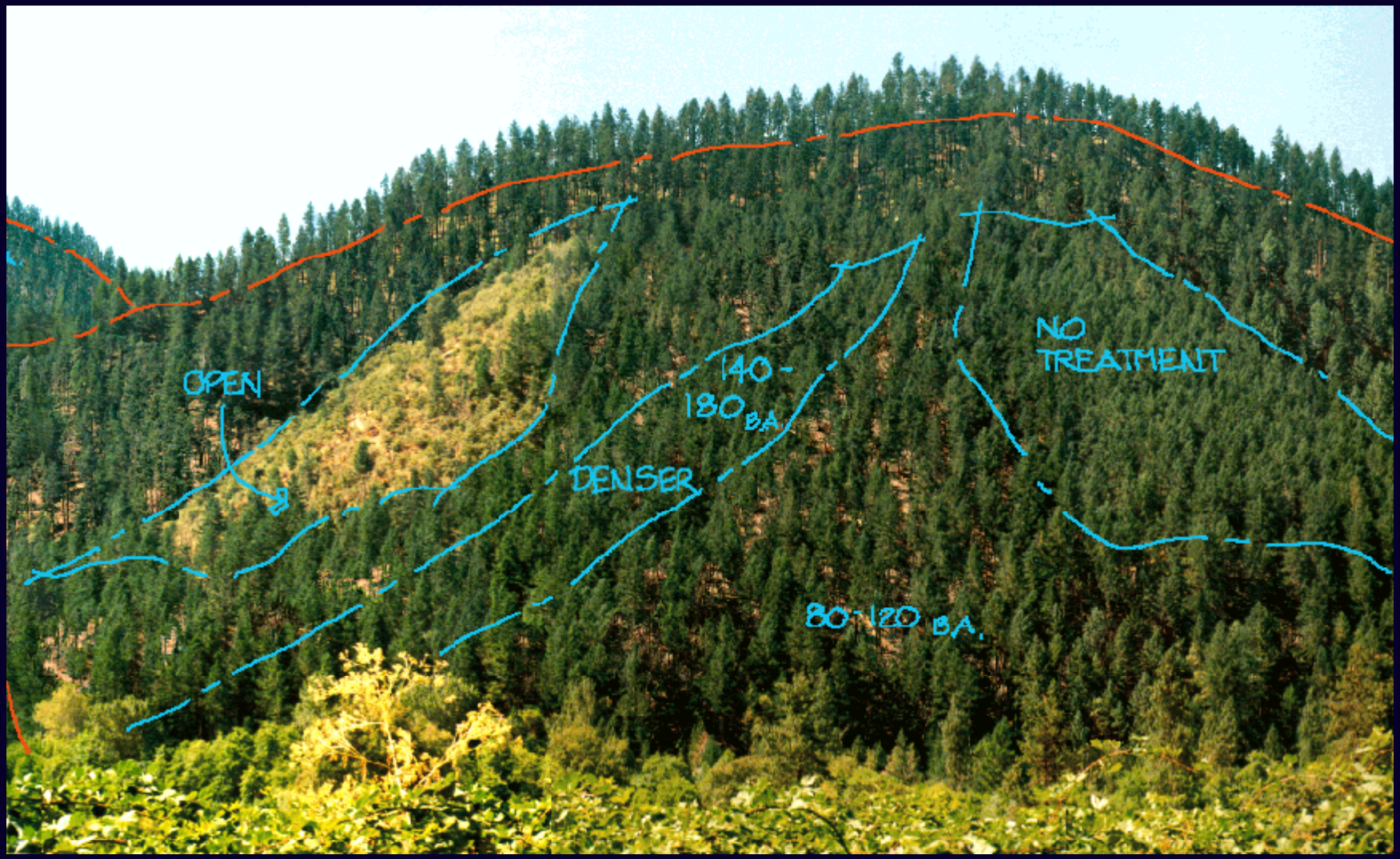


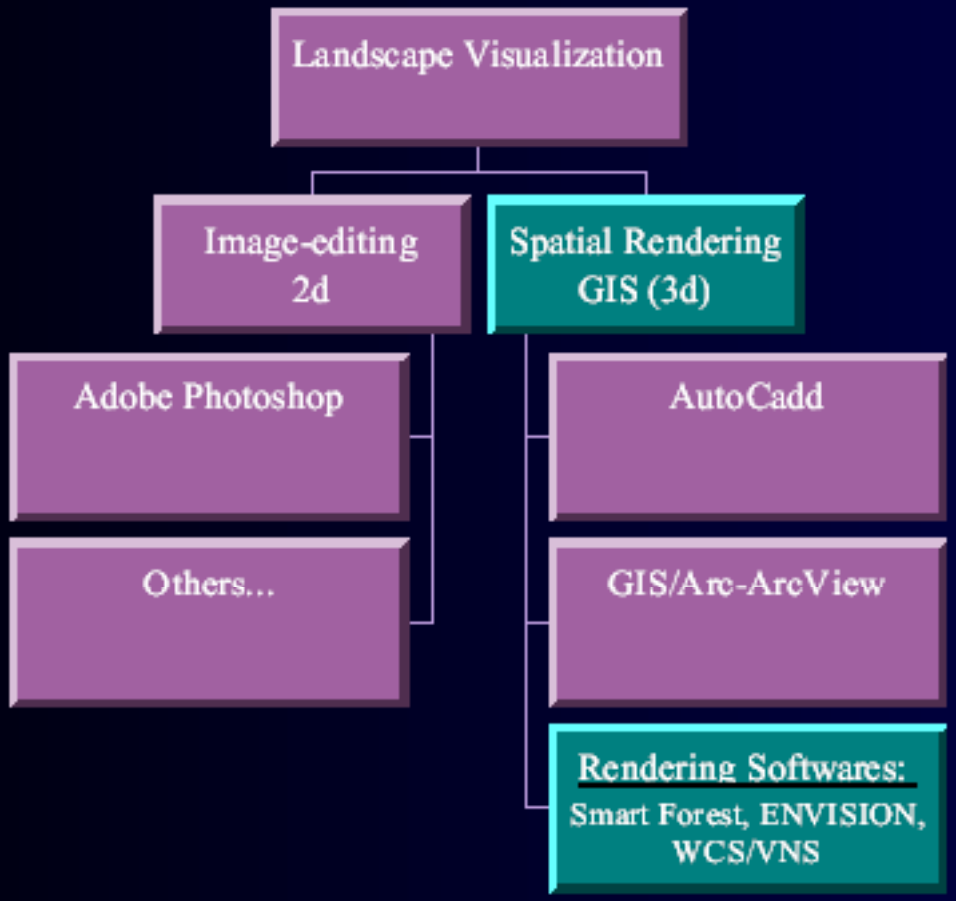
Image Editing

2d: Photoshop Summary

- Most realistic visualization
- Artistically-generated
- Can use G.I.S. to guide
- Public skepticism- "Powder Project ex."
- Labor Intensive
- 2-dimensional- static

Simulations

What are the types?

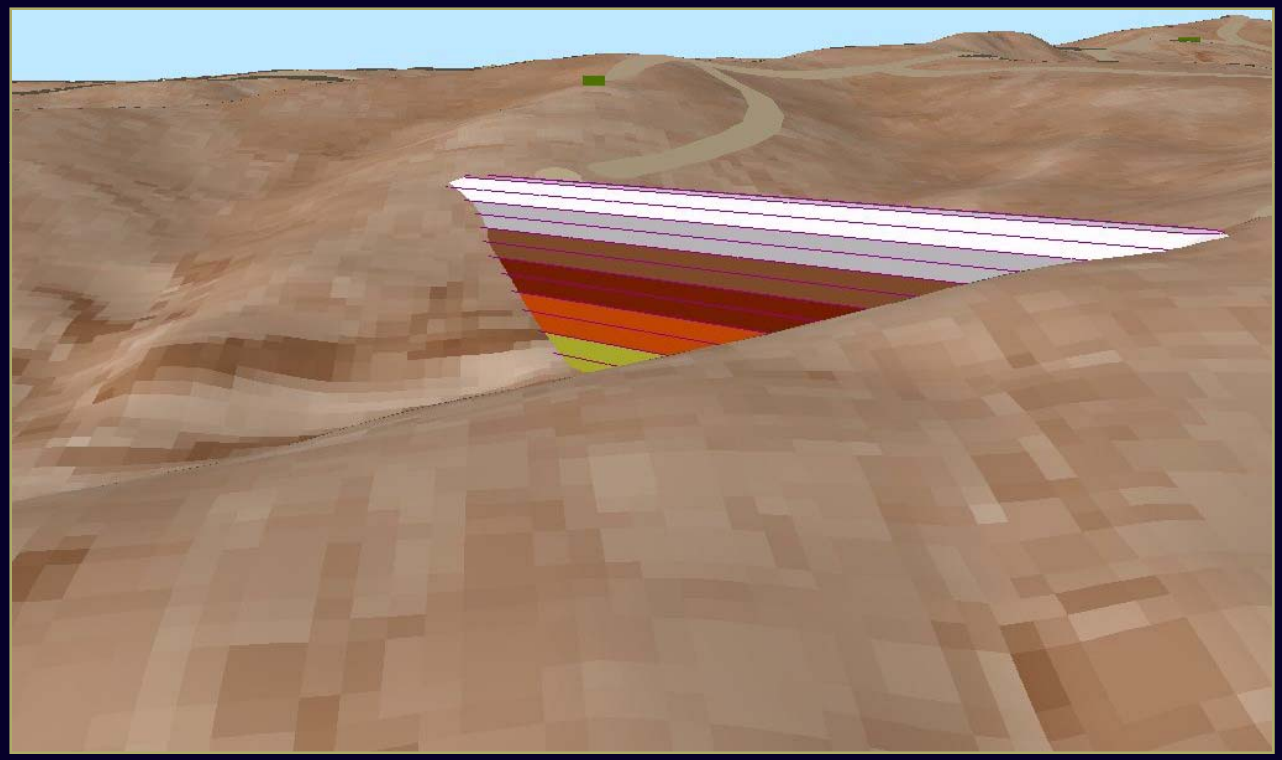


CAD Models

Start With a Case Study to Help Visualize the Project

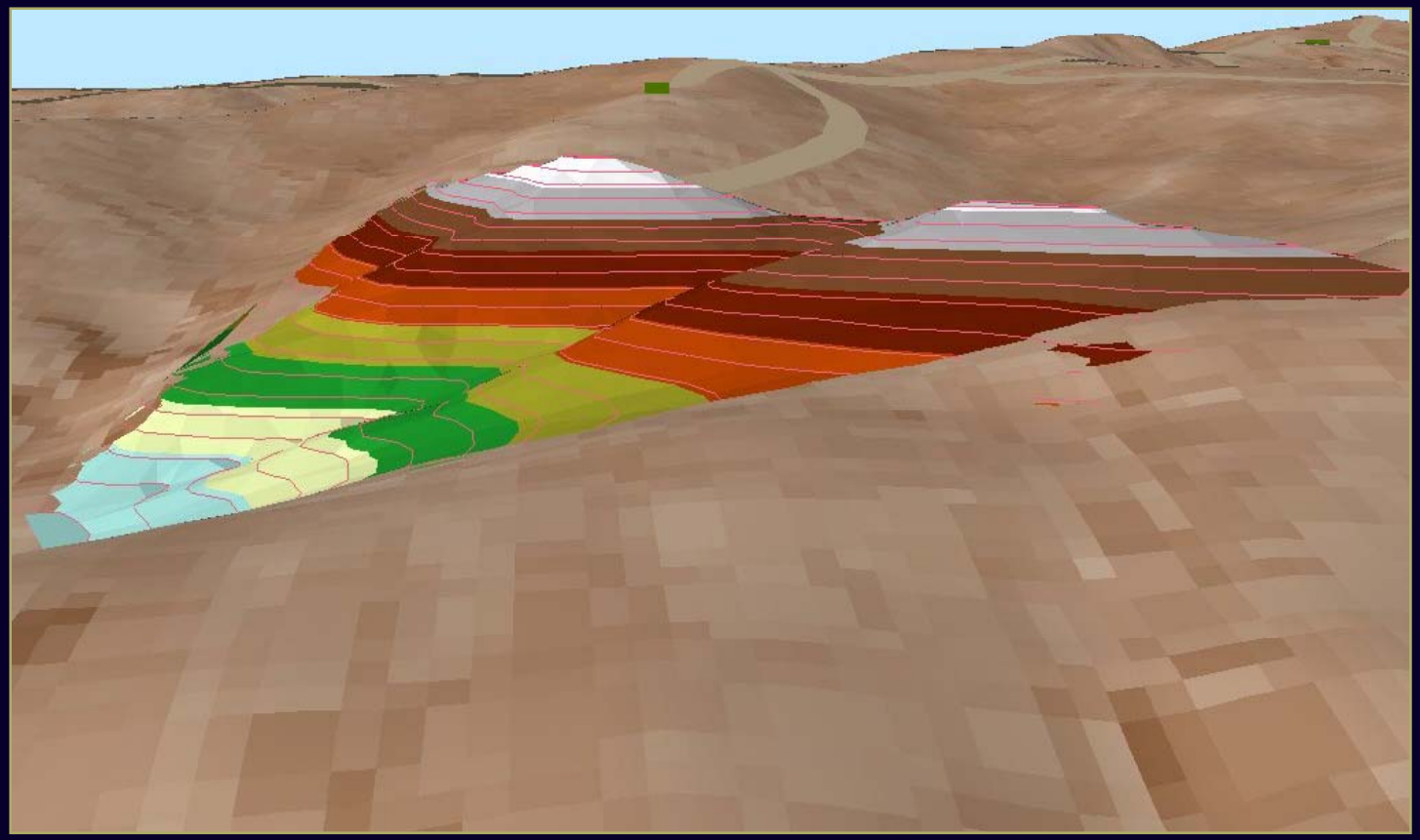
CAD Models

Using Contour Info
Create a Line Drawing in 3D of the Proposed Action



CAD Models

Create Alternatives



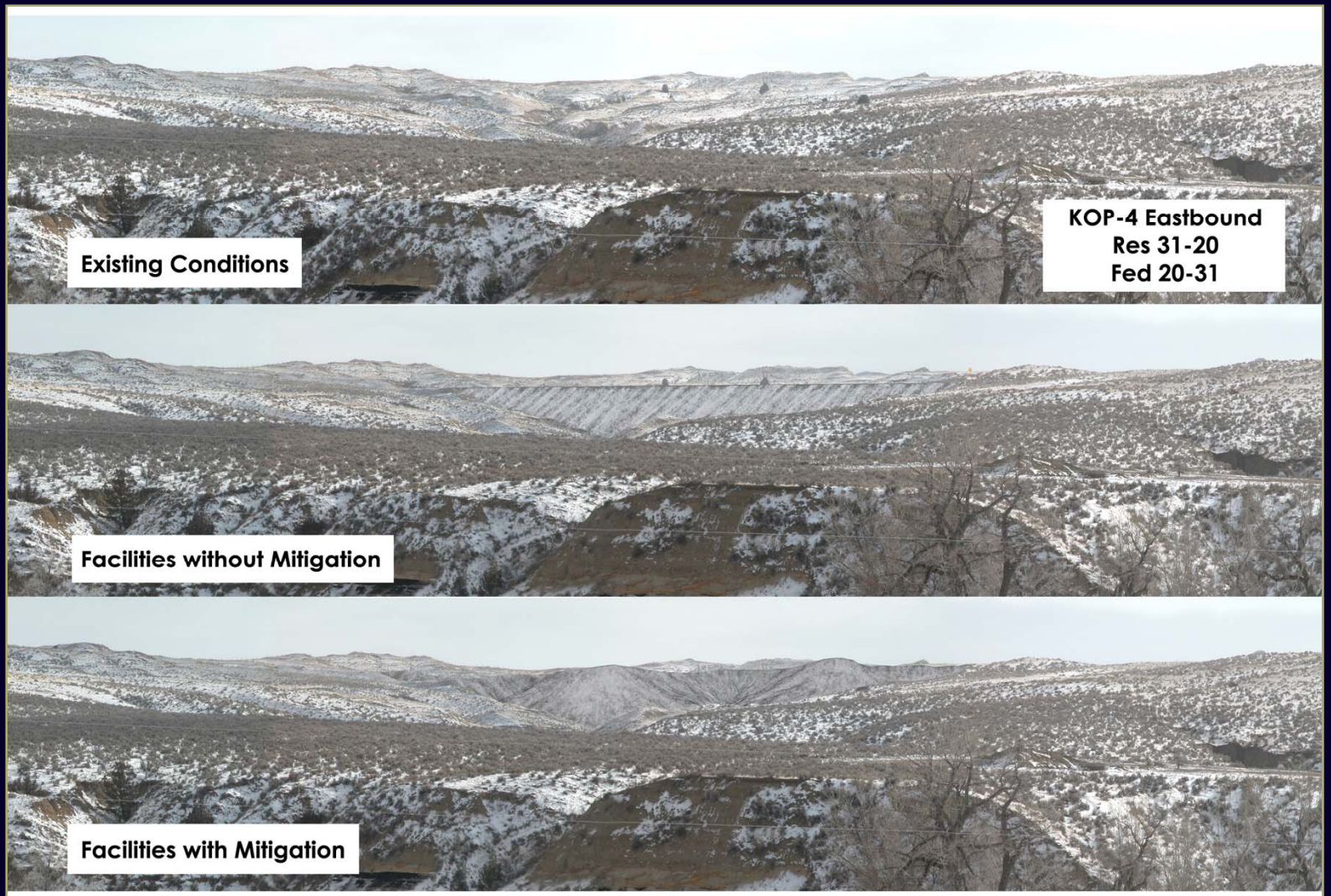
CAD Models

Prima Wild Turkey Project Site
Key Observation Point #1

Photo of existing project site from KOP #1

Computer model of proposed reservoir 31-19 from KOP #1

CAD Models Become Photo Simulations

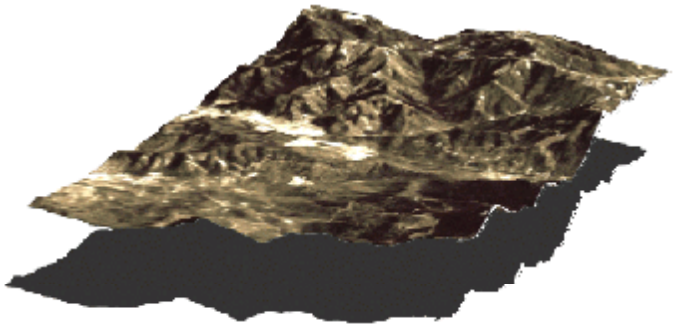


Mitigation Strategies: VMP-1A, VMP-1B, VMP-3A, VMP-4D, VMP-5A.

Visual Nature Studio

Basic Building Blocks

Topography



Spatial Data

Foliage Images

Spatial Rendering

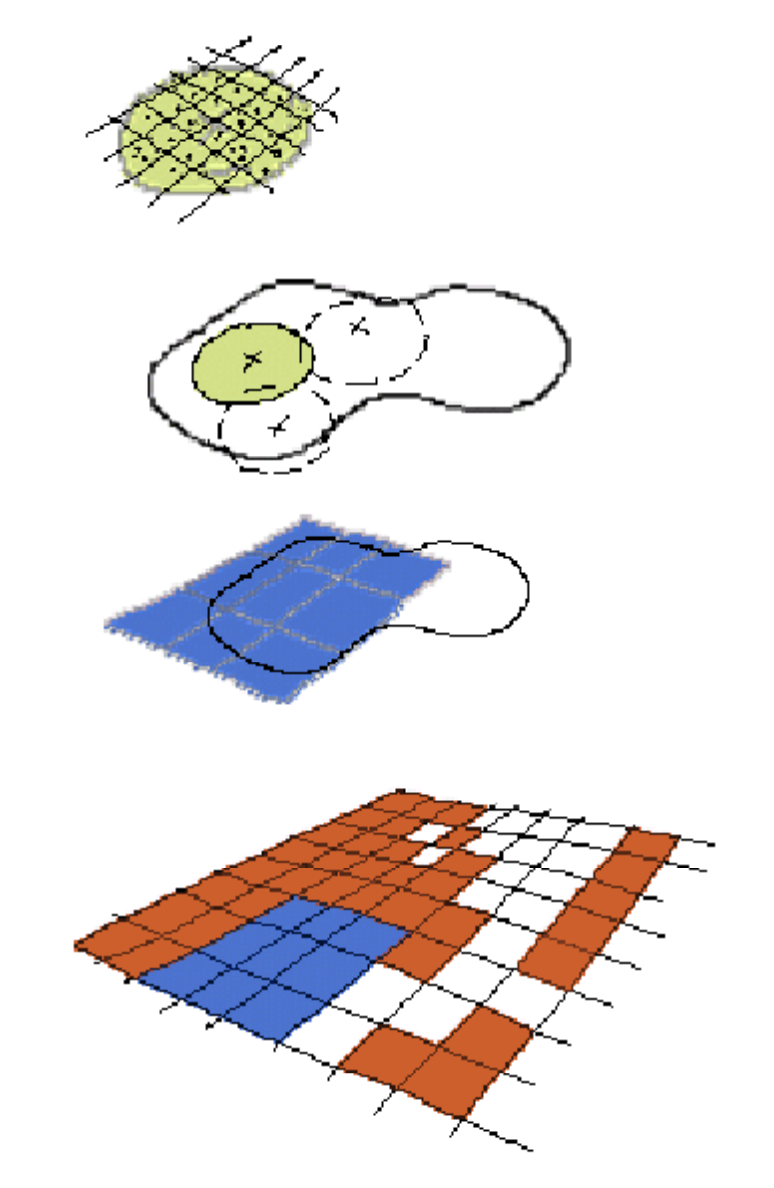
Spatial Data Scales

Individual Tree Data

Plot Level Data

Stand Level Data

Remote Sensing Data



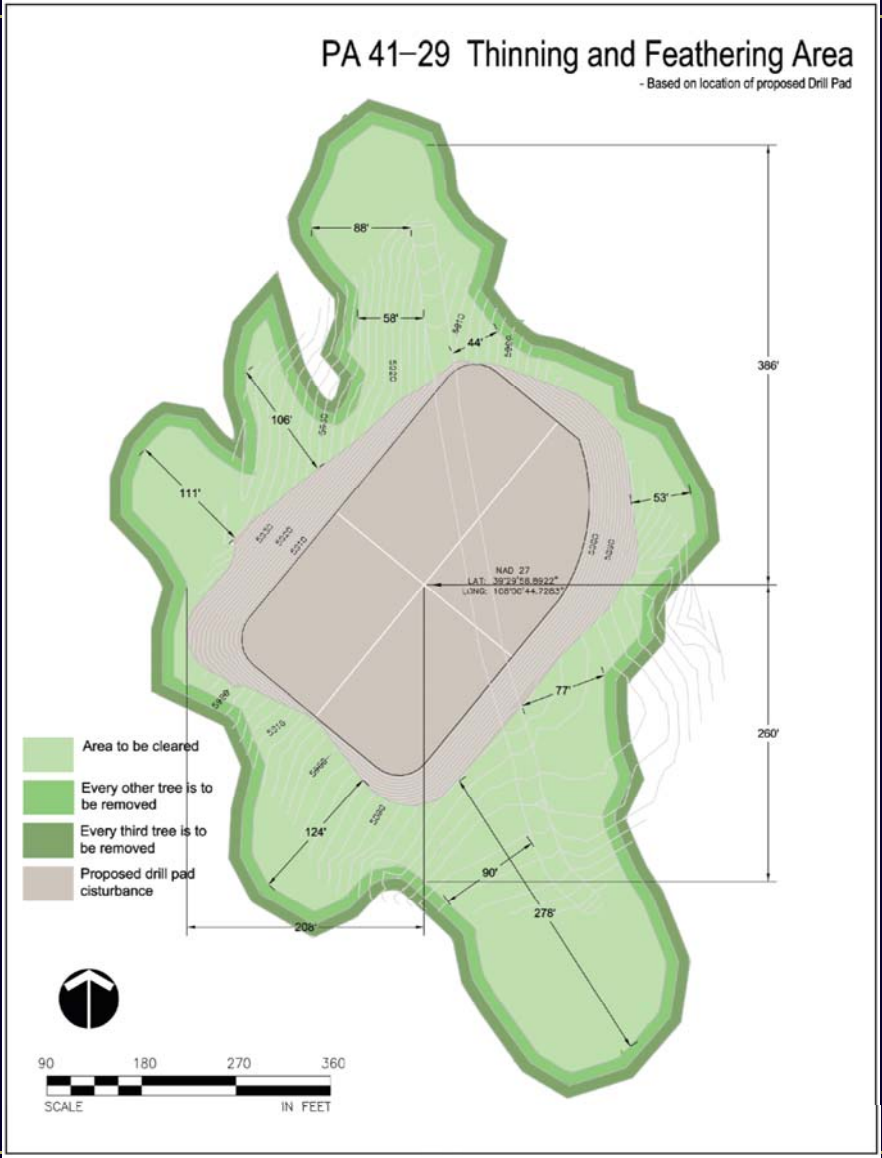
Spatial Rendering

CAD Design Data

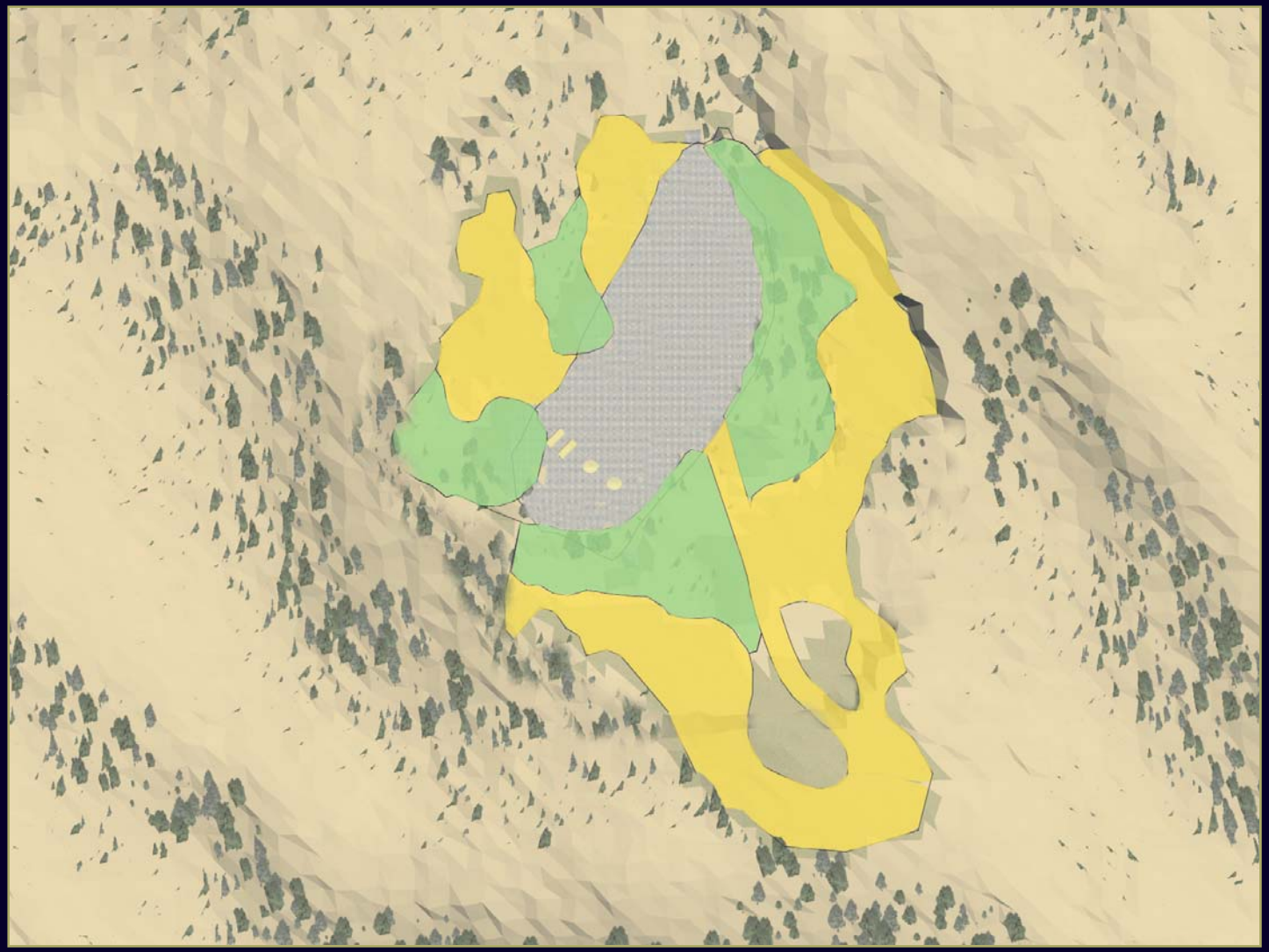
Referenced with GPS

May Have Multiple Designs

What Does It Look Like?



Spatial Rendering



Spatial Rendering

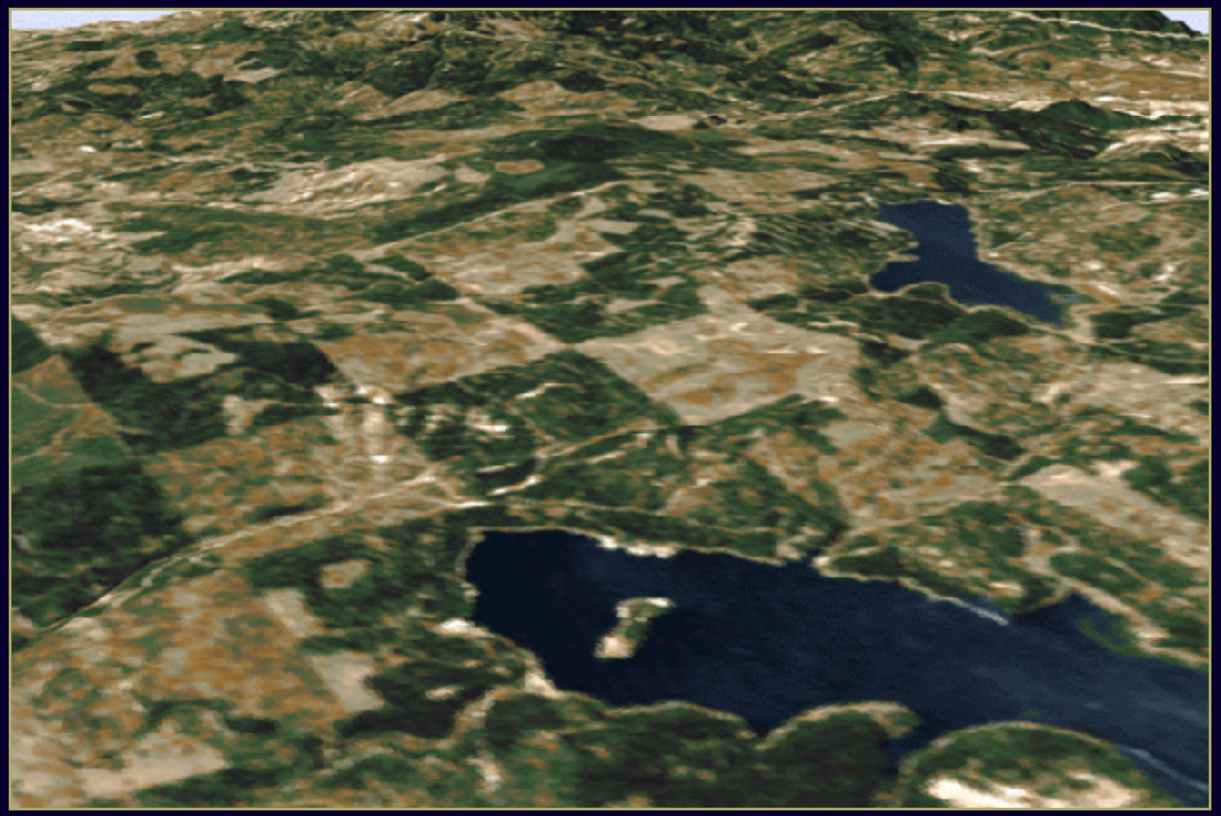
Spatial Rendering

Spatial Data Scales

Spatial Rendering

Remote Sensing Data

- Satellite
- Digital Ortho-quads
- Aerial Photographs

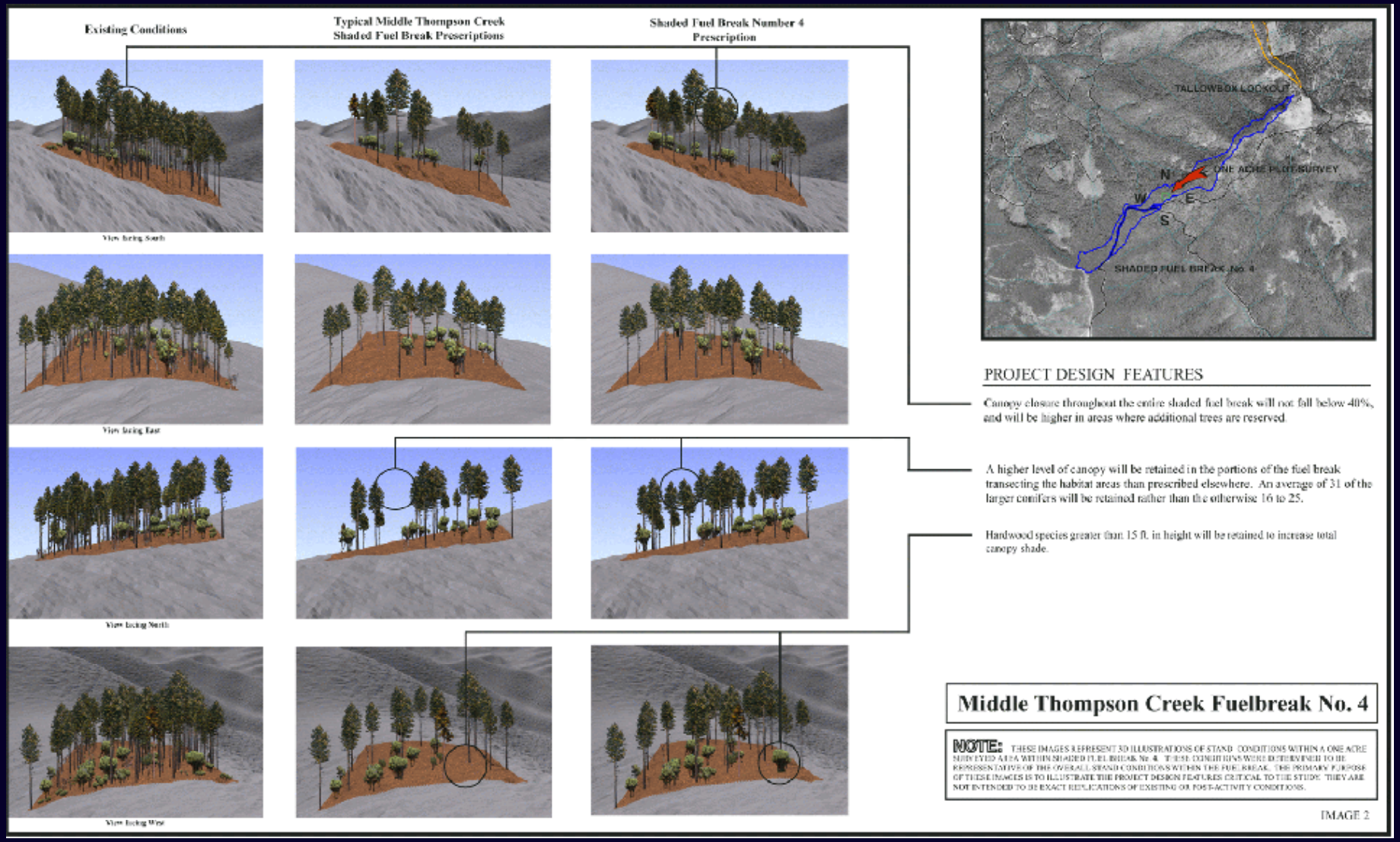


Photographic Panorama

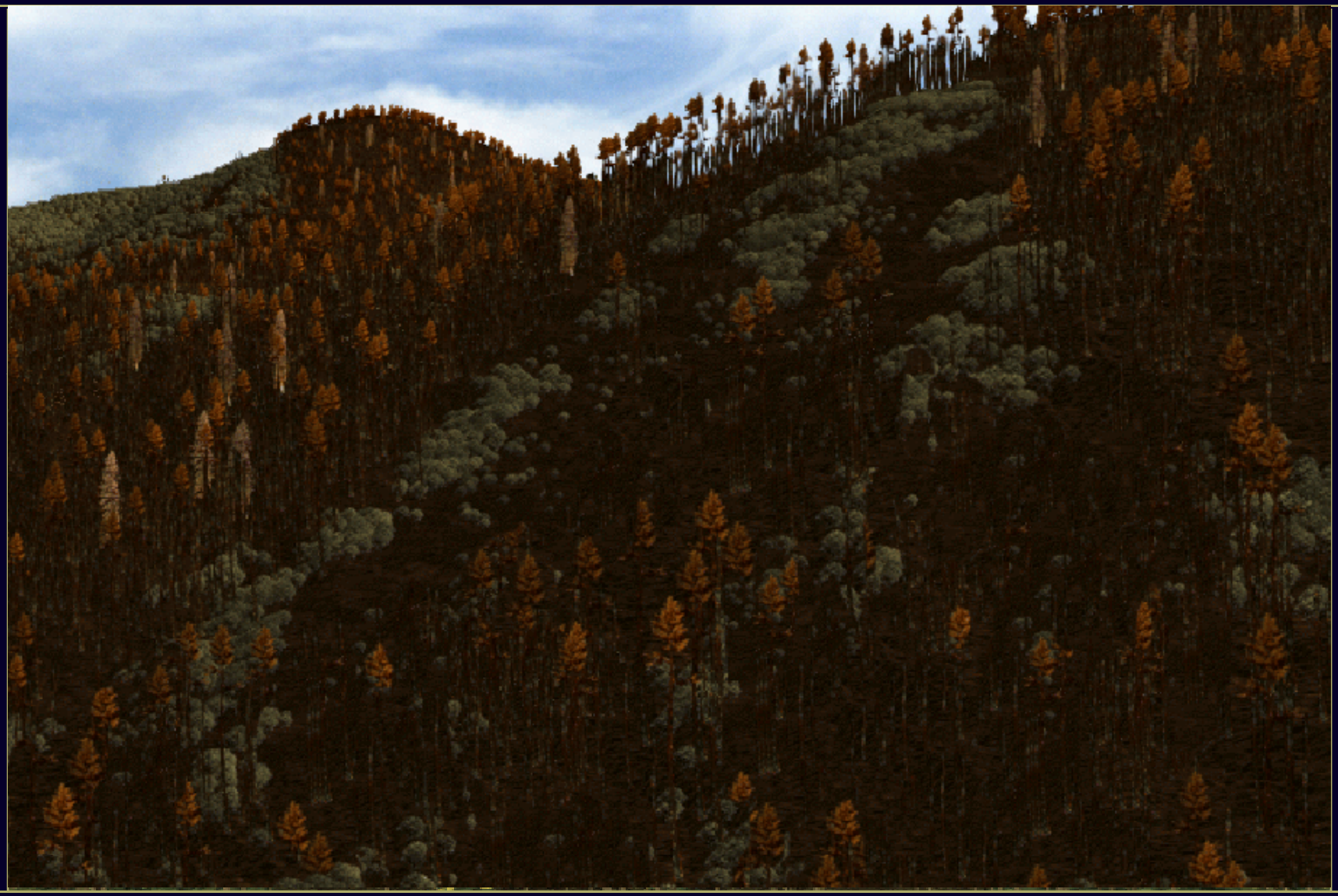
World Construction Set Rendering

Spatial Rendering

Public Meeting and EA



Fire



Seasons

Mid-Summer's View

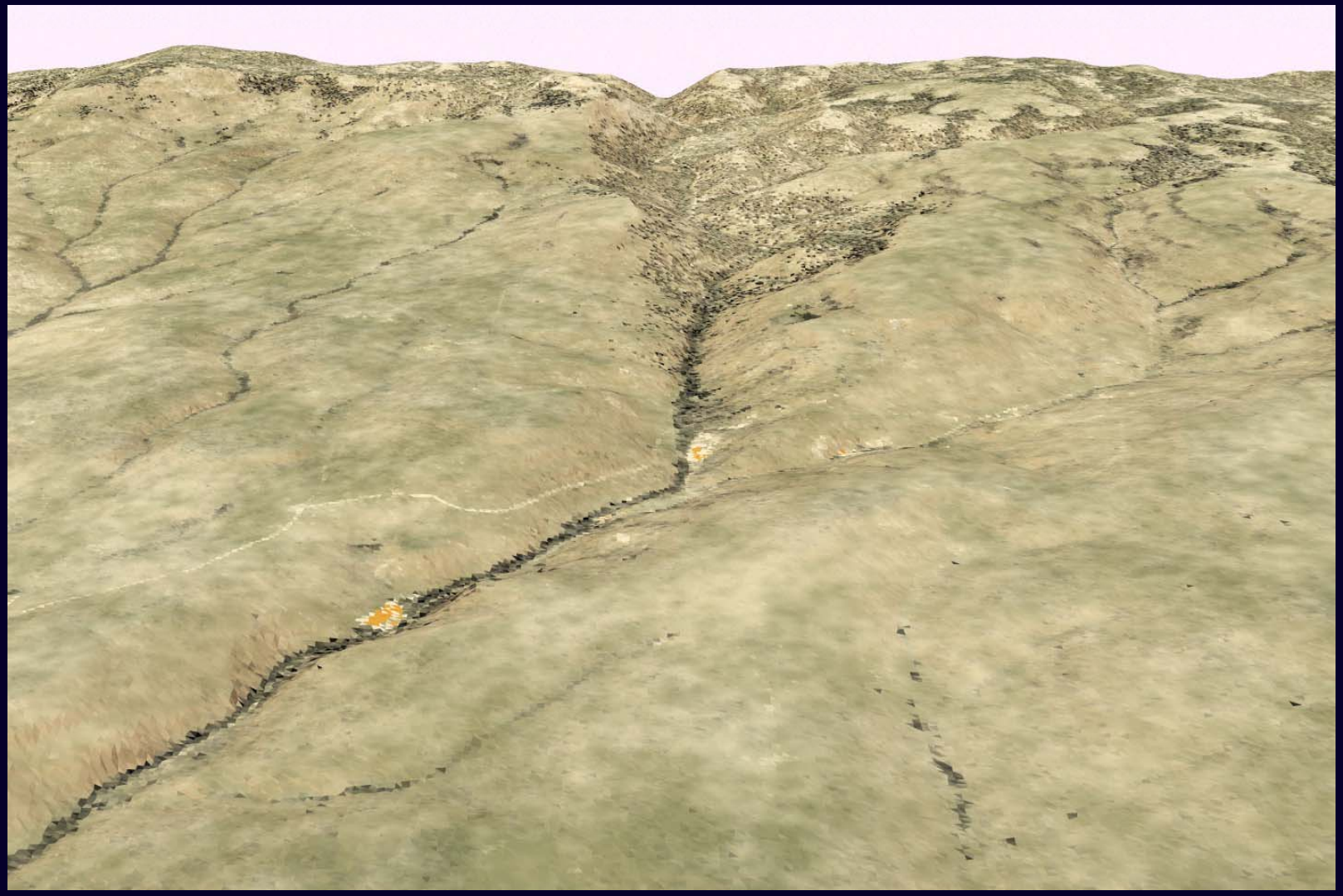
Seasons

Early Winter

Seasons

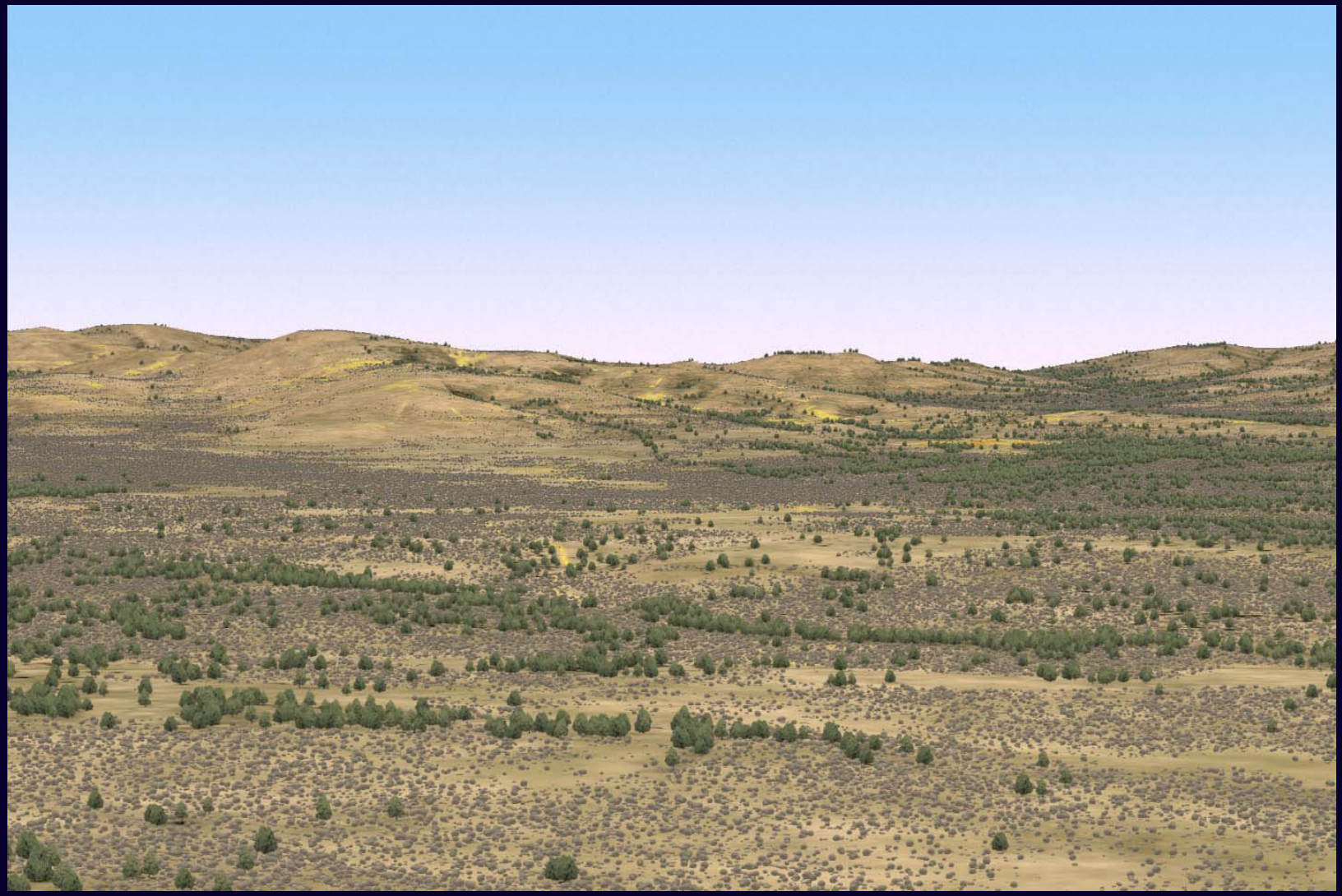
Winter Frost

Example



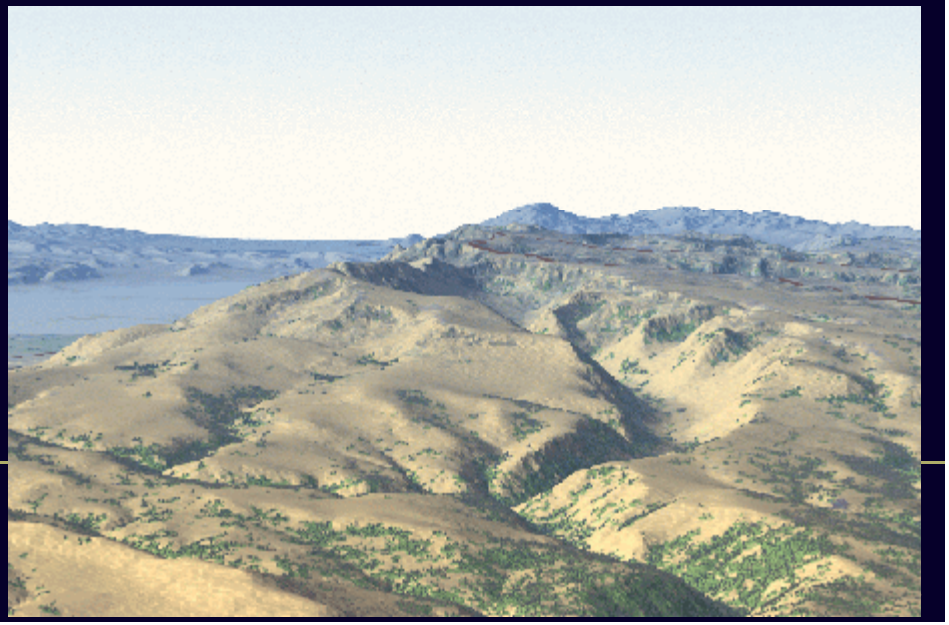
Example

Example



WCS Examples

Landscapes…



Atmospheric

Near-photo realistic

Spatial Rendering

World Construction Set Summary

- Near-photorealistic rendering
- Data-generated (can link to corporate data)
- 3d (Spatial)
- Extremely flexible, dynamic
- Combine w/other visualization

Summary

- Use in combination
- Contract vs. In-house
- Spatial Relationships
- Disclose environmental consequences …VRM
- Graphically illustrate land use allocations/ decisions
- Establish dialogue
- Better informed decisions
- Build credibility

ONE LANE
BRIDGE
ESCALANTE
RIVER