

Examination of Coastal Scenery Issues

Oregon Ocean Plan and Local Government Issues Meeting

Newport, Oregon

September 16, 2011



Agenda

- Who is E & E? Who is MIG?
- History of visual assessment
- Framing the issue: develop framework to assess offshore visual impacts
- Apply visual framework to Oregon coast
- Discussion Points

Who is Ecology & Environment, Inc.?

- Founded Earth Day, 1970
- 40 offices in US, with single cost center
- Multi-disciplinary approach to projects
- Energy projects core part of E & E business--onshore and offshore regulatory success on “frontier” energy projects



ENGINEERING 180 Staff

- Chemical Engineers
- Civil Engineers
- Electrical Engineers
- Environmental Engineers
- Hydraulic Engineers
- Mechanical Engineers
- Mining Engineers
- Project Managers
- Sanitary Engineers
- Soil Engineers
- Structural Engineers
- Value Engineers



ENGINEERING SUPPORT 86 Staff

- Architects
- Construction Inspectors/Managers
- Cost Engineers/Estimators
- Draftsmen/CADD Operators
- Energy/Life Cycle Cost Specialists
- Technicians/Analysts
- Schedulers



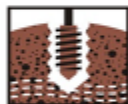
Staff Resources

E & E has over 1,150 staff in 85 disciplines.



ENVIRONMENTAL SCIENCE/ PLANNING 300 Staff

- Air Specialists
- Archaeologists
- Economists
- Energy Conservation/Sustainability Specialists
- Environmental Lawyers
- Environmental Scientists
- Noise Experts/Acoustical Engineers
- Planners: Urban/Regional
- Public Involvement Specialists
- Transportation Planners



GEOLOGY 113 Staff

- Geochemists
- Geologists
- Geotechnical Engineers
- Hydrogeologists
- Hydrologists
- Water Resources Engineers



SUPPORT 118 Staff

- Administrative
- Accountants/Financial Analysts
- Graphic Designers
- Technical Editors/Writers



NATURAL RESOURCES 172 Staff

- Biologists
- Botanists
- Ecologists
- Landscape Architects
- Restoration Specialists
- Wetland Scientists



HEALTH/ EMERGENCY PLANNING 80 Staff

- Chemists
- Emergency Planning Specialists
- Industrial Hygienists
- NIMS-ICS Training Specialists
- Risk Assessors
- Toxicologists/Health Scientists



INFORMATION MANAGEMENT 101 Staff

- Computer Programmers
- GIS Specialists
- IT Managers
- Remote Sensing Specialists
- Web Designers

E & E Expertise: Offshore

- Strong presence in Pacific, Mid-Atlantic, and Great Lakes regions
- Majority of projects in region are performed to satisfy NEPA requirements
- Consistently plugged into key stakeholders and NGOs
- Global clients:
 - Tidal: Chevron, OPT, Verdant Power;
 - Current: Anadarko;
 - Wave: Columbia Power Technologies (CPT), Wavebob, Pelamis; and
 - OTEC: Lockheed Martin



3-D Visualization and Animation Experience

Deliverables and analysis are used in the following manner:

- Presentations at community meetings to provide the viewer with a sense of the study area;
- Enactment of realistic scenarios;
- Demonstration of the interaction between data and environmental conditions;
- Viewshed or line-of-sight analyses; and
- Building surface models from any data.



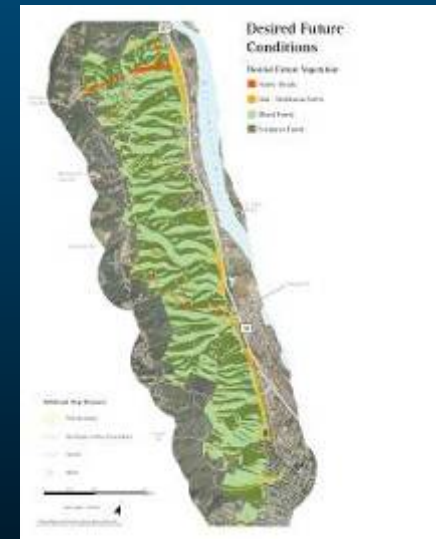
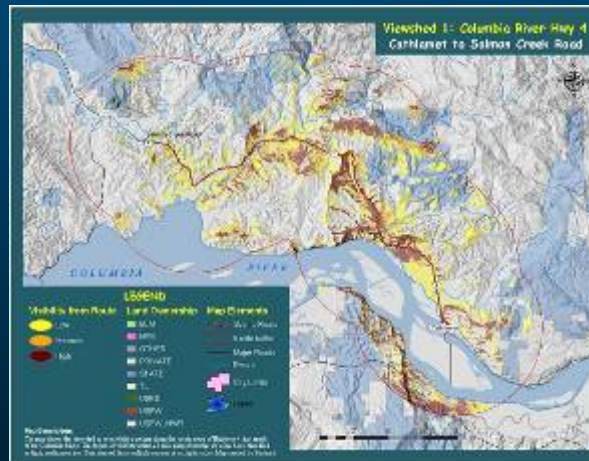
Preliminary photosimulation of a portion of the wind turbine array at the proposed Shiloh Wind Farm produced using WindPro software.



This 3-D rendering of the Welsbach project area was integral to the successful study of subsurface contamination.

Who is MIG?

- Founded in 1981
- 8 offices in U.S., headquarters in Berkeley
- 100 employees, 16 in Oregon
- Multi-disciplinary planning, urban design, landscape architecture, public facilitation
- Energy projects emerging part of MIG work—transmission lines, wind, solar, & pipelines



MIG's Scenic Resource Portfolio

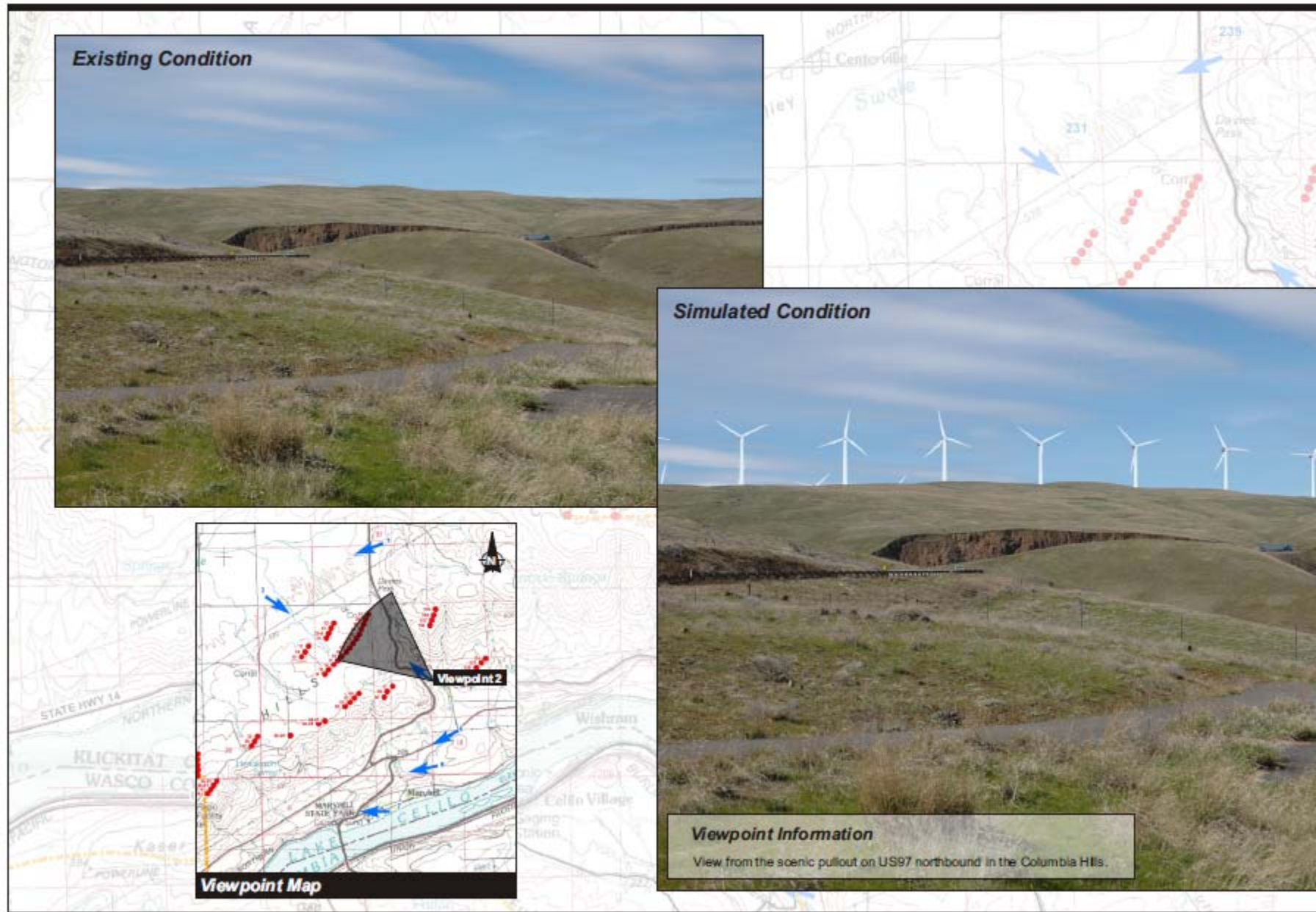
- Damascus Scenic Survey
- Washington Forestry Scenic Impacts
- San Luis Valley transmission line
- Cascade Crossing
- Blue Bridge Pipeline
- Columbia Gorge Wind Projects
- Oregon Energy Facility Siting Council Review Contractor



Example Methodology for Onshore Projects: Windy Flat West Visual Simulation



Windy Flat Wind Project Visual Simulation

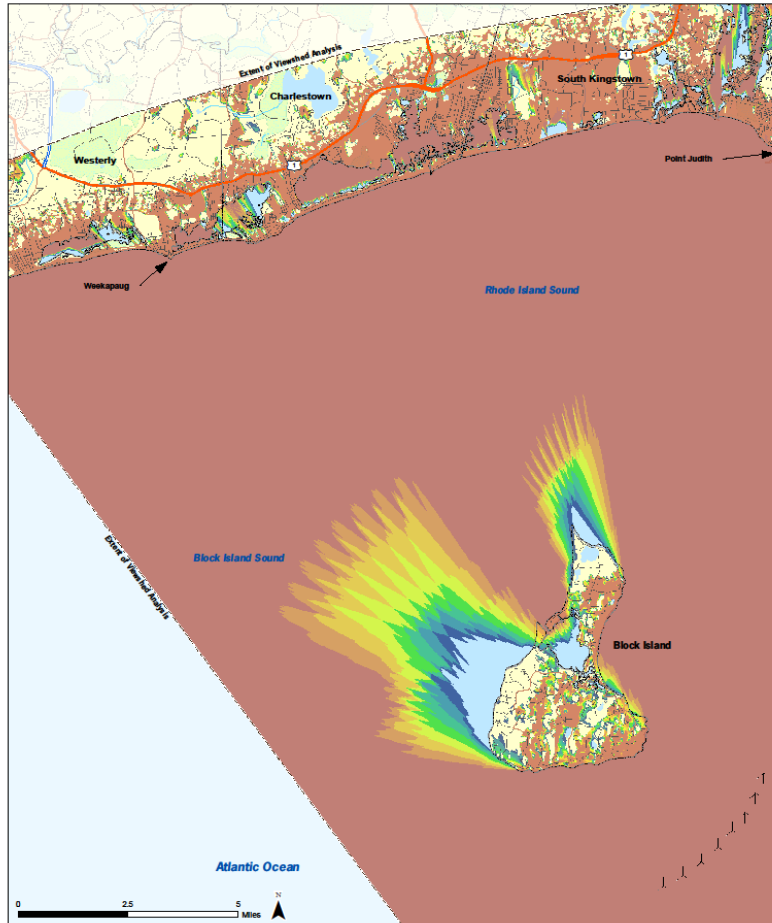


Example Methodology for Offshore Projects: Block Island, RI Visual Simulation



Simulation produced by EDR

Example Methodology: Block Island, RI Viewshed Analysis



BLOCK ISLAND WIND FARM

Topographic Viewshed Analysis

November, 2009

KEY

- ↑ Preferred Proposed Turbine Location
- Extent of Viewshed Analysis
- Municipal Boundary

Number of Turbines Visible

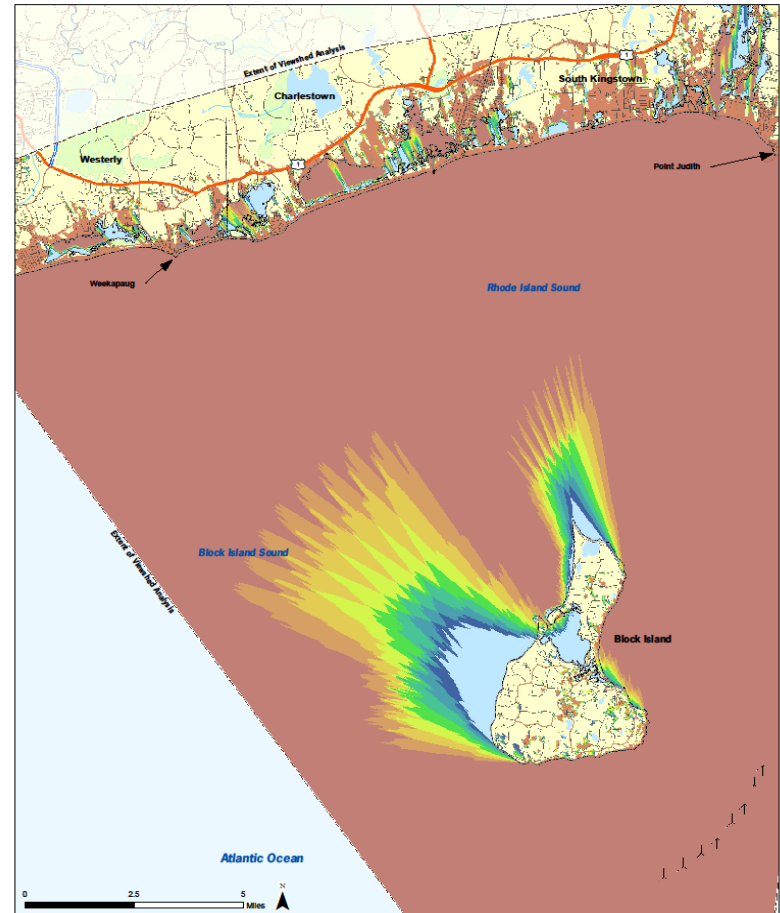


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BLOCK ISLAND WIND FARM

Vegetated Viewshed Analysis*

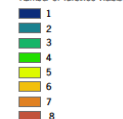
*Assumes a uniform tree height of 15 feet in places of dense tree growth within coastal areas.

November, 2009

KEY

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Number of Turbines Visible



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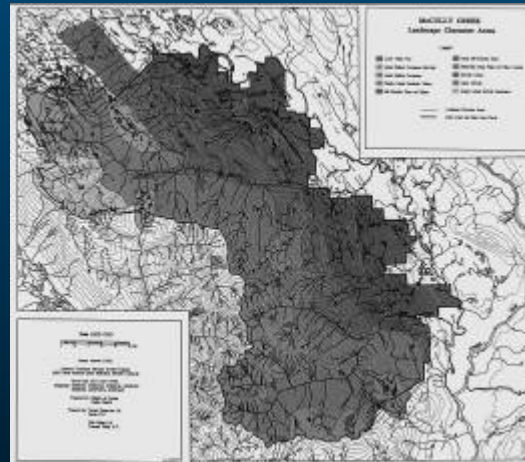
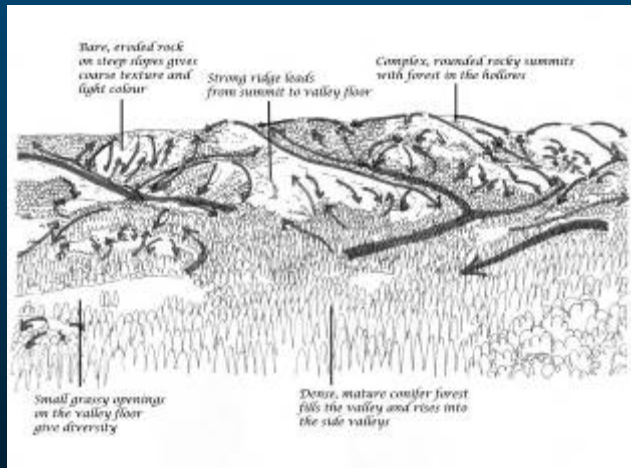
History of Scenic Resource Conservation

- 14th Century: First known visual sim (Sienna, Italy) showed alternative outcomes as frescos
- 18th century Britain: “picturesque landscapes” used “watercolor sims” to convey ideas
- 1960s: Dame Sylvia Crowe in Britain
- 1965: Federal Highway Beautification Act
- 1969: National Environmental Policy Act
- 1972: Coastal Zone Management Act
- 1976: Federal Land Policy & Management Act



Scenic Resource Assessment Overview

- Evaluate landscape or seascape visual character
- Determine visibility and sensitivity
- Establish public preferences and tolerance
- Zone for desired level of protection



Comparison of US and EU: Zoning for Scenic Conservation

In US, 3-5 levels:

- Preservation
- Project not evident (barely noticeable)
- Evident but not dominant (visually subordinate)
- Dominant but borrows from natural character
- Anything goes

Comparison of US and EU: Zoning for Scenic Conservation (cont'd)

In Britain and EU, focus is on good design, appropriate to place.

- Guidelines
- Best practices
- Impact assessment
- No zoning per se, but recognized high value areas

Scenic Management In Oregon

- USFS lands
- BLM lands
- Goal 5 (optional)
- Columbia Gorge NSA
- Cascade Head NSA
- Scenic Byways and corridors
- Wild and Scenic Rivers

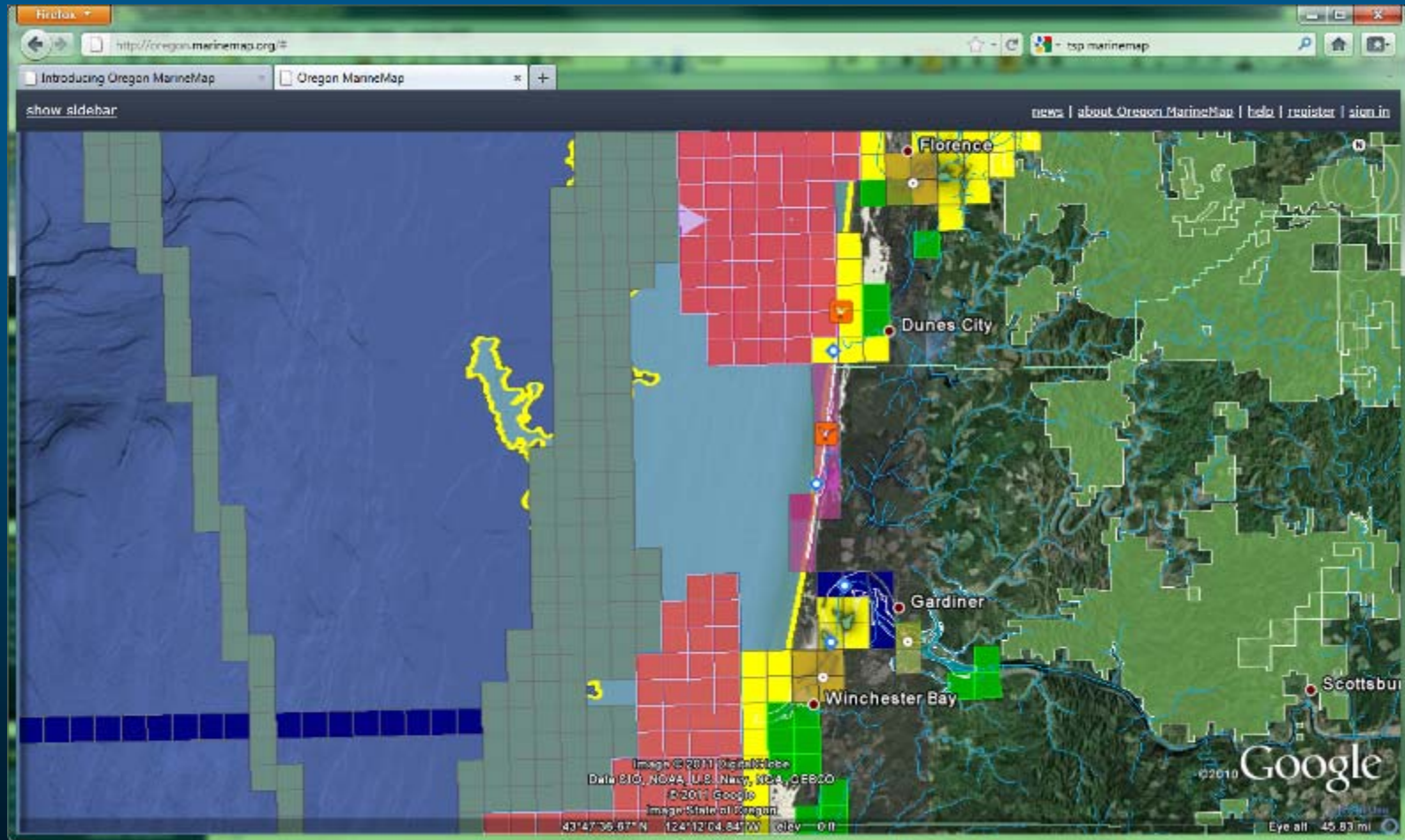
Scenic Resource Assessment Approach at Project Level

- Require projects to avoid being seen, or to fit the scene
- Test through simulations, but understand limits
- Analyze the results: contrast, composition, scale
- Modify the design to meet the objective
- Or...mitigate as a last resort

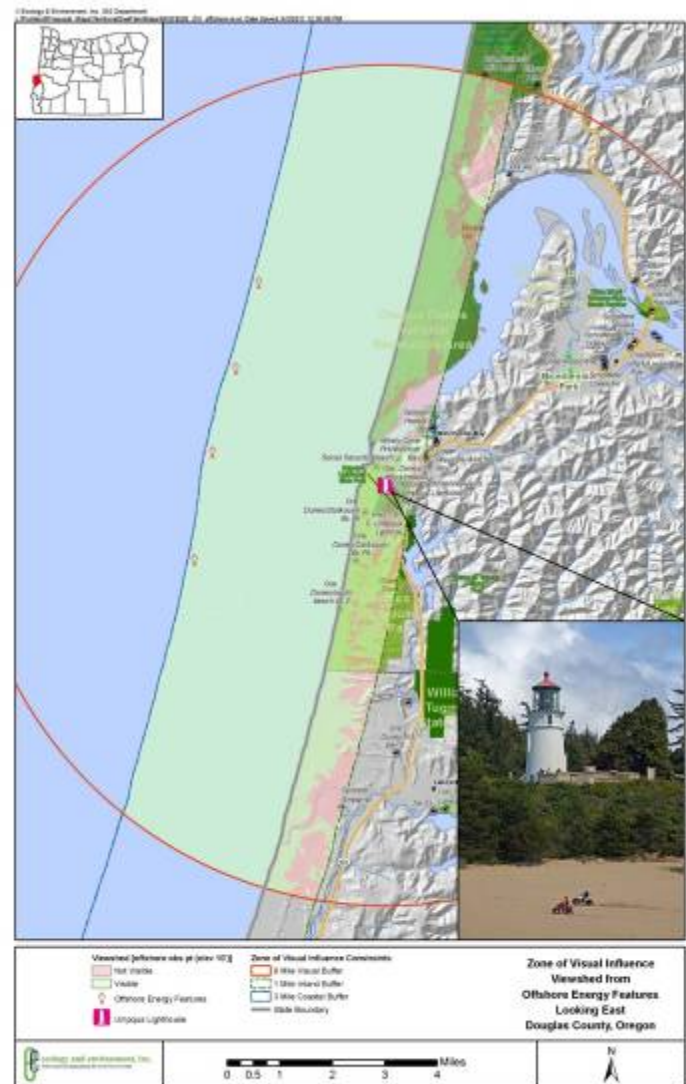
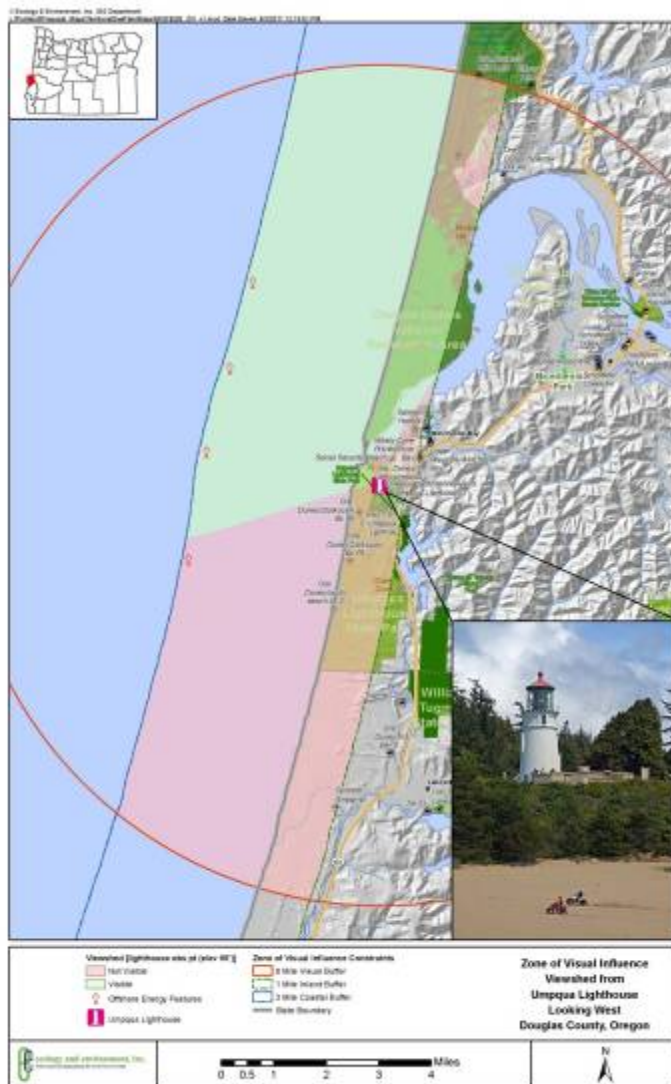
Factors Influencing Visual Framework

- Context of the viewer;
- Number of viewers;
- Duration of the view;
- Viewer level of concern;
- Contrast between the existing viewshed and the modified viewshed;
- Seasonal variations;
- Distance of the viewer to the proposed objects;
- Weather variations;
- Scenic attractiveness;
- Shoreline urbanization and attractiveness; and
- Known scenic viewpoints.

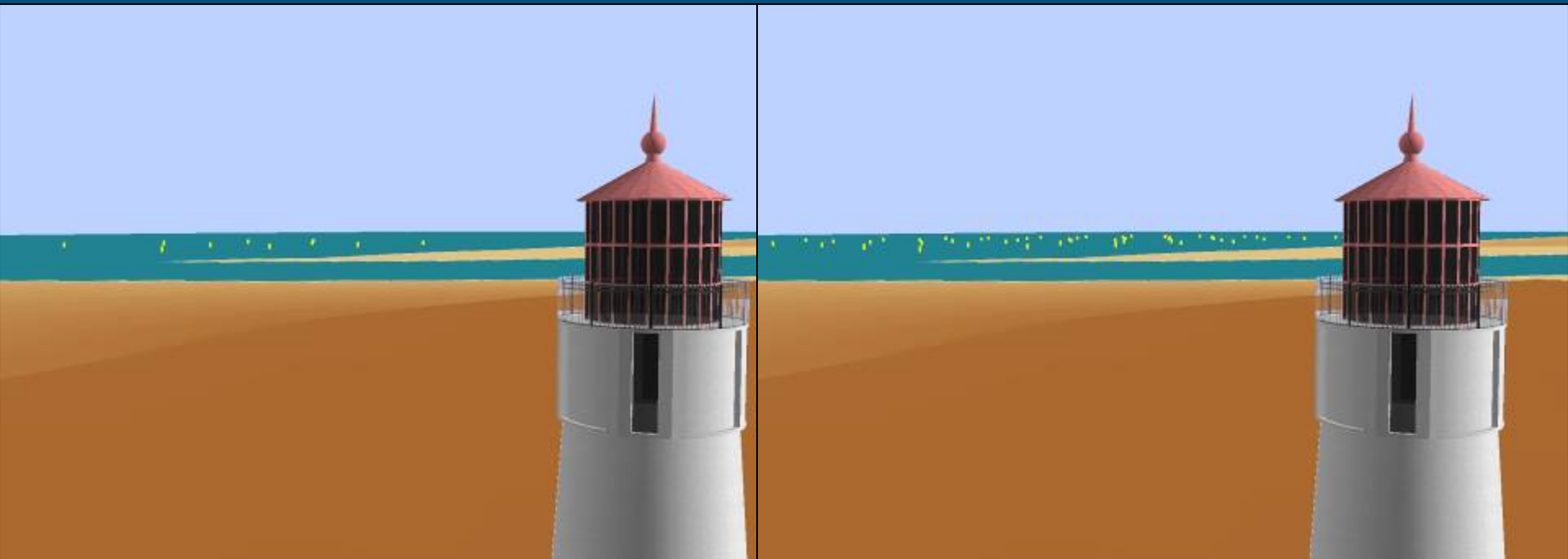
Apply Visual Framework to Oregon Coast



Viewshed Analysis



Scaled 3-D View



Scaled 3-D View



Discussion Points

- Oregon coast is a special place
- Need to research public perceptions
- No existing tools for coastal aesthetics
- Identify thresholds of acceptable change
- Consistency with Oregon land use goals
- Integrate framework with MarineMap
- Schedule and cost

Thank you.

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