ABSTRACTS

GIVING LANDSCAPES A VOICE: THE USE OF SOCIAL MEDIA AND WEB-BASED SURVEYS IN BLM'S VISUAL RESOURCE INVENTORY PROCESS

Allysia Angus, Landscape Architect/Land Use Planner, Bureau of Land Management[1]
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Abstract.—In the early 1980s, the Bureau of Land Management (BLM) developed a Visual Resource Management Program to inventory and set management objectives for scenic resources on BLM lands. The visual resource inventory (VRI) provides the foundation for managing the visual landscape at a regional scale and for planning projects and activities. One of the three components of conducting a VRI is gathering information to measure or evaluate concern for scenic quality or sensitivity to change within the visual environment. Historically, this sensitivity assessment was comprised of six factors evaluated and rated by BLM staff based on their knowledge of the area and interactions with the public. As VRIs have evolved, discussions have led to creating a more comprehensive and inclusive process for obtaining sensitivity information from both the public and BLM staff.

As society has gravitated toward increased online interaction and expectations for Web-based information, the wealth of data worth analyzing and collecting has grown. As part of the Grand Staircase-Escalante National Monument (GSENM) VRI, a Web-based platform was developed to augment the sensitivity level rating process. The multi-pronged approach focused on efficient collection of BLM staff knowledge while also exploring public perceptions and attitudes about the GSENM landscape via social media platforms. A Web-based interactive survey platform was developed to capture information from GSENM staff. The project team supplemented staff survey responses with information about GSENM captured from social media and travel Websites.

Reviewing quotes, photographs, and locations shared online by the public improved the team's understanding of place-based visual sensitivity amongst social media users. When combined, the social media information and local BLM knowledge about the public provided a more robust dataset for the GSENM VRI.

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VISUALIZING LANDSCAPE IMPACTS: THE DEVELOPMENT AND APPLICATION OF A NEW SPATIAL ANALYSIS TOOL

Brent C. Chamberlain, Assistant Professor, Utah State University[1]

Abstract.—Balancing cultural and ecological planning objectives can be simultaneously rewarding and exceedingly challenging. This work highlights a custom viewshed analysis tool that has been applied in conjunction with: 1) an ecosystem service-oriented spatial analysis method to investigate the relationship between visual aesthetics, cultural significance, and ecological value of the landscape; 2) operational forest planning over large landscapes; and 3) assessing differences between highway scenic routes within the United States. The tool enables a nuanced representation of visual quality, providing a very different result than the standard (binary) representation. It combines concepts of visual magnitude, a computationally efficient algorithm, and a representation of the continuous experience, to help planners and scientists better evaluate potential visual impacts or opportunities stemming from planning projects. Visual magnitude creates a normalized value of potential impact and, when coupled with a route, offers a significant improvement over traditional viewshed methods for evaluating impact across large spaces. The tool also calculates perceived horizon and ridgelines (as opposed to geographic ridgelines). These analyses enable planners and scientists to identify possible visual obstructions or unsightly changes to important physical features, offering an expedient way to estimate possible visual impact. Currently, these analyses are often done using three-dimensional (3D) visual renderings, which can be cumbersome and expensive. Overall, this presentation provided insights learned through practical application and vetted through scientific peer-review with the aim of providing new tools to support visual resource stewardship.

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A VISUAL ANALYSIS METHODOLOGY APPLIED IN URBAN ENVIRONMENTS: PUBLIC PARTICIPATION AND ALTERNATIVES ANALYSIS

Darrin Gilbert, Senior Project Manager, POWER Engineers, Inc.[1]

Jason Pfaff, Manager of Innovation, POWER Engineers, Inc.

Abstract.—We presented a process for evaluating visual impacts and engaging the public for projects in urban areas. Currently, much of the focus on visual resource analysis is on natural or pristine landscapes. However, the greatest need and some of the most intense opposition comes from projects located in urban environments where over 80 percent of the population lives, works, and plays. Having a defensible methodology and engaging the public in the evaluating visual resources helps to inform project design and is critical not only to obtaining state and local permits, but in helping to protect our sensitive developed landscapes. We presented a case study review involving the development of a 230 kV transmission line.

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EMERGING TECHNOLOGIES FOR VISUAL RESOURCE MANAGEMENT

Shawn Jackson, Senior Project Manager, POWER Engineers, Inc.[1]

Jason Pfaff, Manager of Innovation, POWER Engineers, Inc.

Abstract.—We presented the latest tools and emerging technology for visual resource managers. Augmented reality, virtual reality, drones, and advanced visualization technology can help analyze, design, and plan for new projects in the seen environment. When used with traditional visual management systems—in the field or for desktop review—these tools can promote best practices and facilitate better communication with the public and regulatory agencies.

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3D-DSS: A NOVEL DECISION SUPPORT SYSTEM FOR COMMUNITY DIRECTED GREEN INFRASTRUCTURE DESIGN

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Abstract.—Green infrastructure (GI) can have a positive ecological and social contribution in urban environments and is also seen as an essential component in efforts to rebuild the resilience of legacy cities. Despite the recognized importance of GI, there is a missed opportunity to more fully involve residents in GI planning and design, which can lead to more successful and resilient outcomes. Integrating the concept of ecosystem services (ES) into public participation processes can enhance outcomes but requires robust decision support systems (DSS) that can more effectively incorporate community needs. Complicating this integration is the challenge that the value of specific urban ES will vary greatly both between and within cities, influenced by the environmental and socioeconomic characteristics of the community in question. As such, collaboration and engagement with community members to specify the ES that are important and meaningful to them must be a part of any GI initiative and requires a DSS that is flexible and adaptable to different communities and contexts. Our presentation described the development of a novel DSS that uses structured decisionmaking to identify stakeholder needs which are then incorporated into a three-dimensional (3D) visualization-based DSS using the Unity game engine. The DSS is evaluated in the context of a greenway planning and design project Detroit, MI, that included multiple stakeholders with varying interests.

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