PROTECTING AMERICA'S TREASURED LANDSCAPES: AN OVERVIEW AND UPDATE OF THE NATIONAL PARK SERVICE VISUAL RESOURCE PROGRAM

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Abstract.—With a central mission to "… conserve the scenery and the natural and historic objects and the wild life therein … by such means as will leave them unimpaired for the enjoyment of future generations," the National Park Service (NPS) has been entrusted with some of the most spectacular and historically significant landscapes throughout the country (National Park Service Organic Act 1916). The NPS has successfully addressed visual resource issues at multiple park units but each had to develop its own approach. Over the last several years, NPS has developed a program that establishes service-wide support to parks for managing visual resources. The program includes: conducting inventory and evaluation of visual resources; providing guidance on assessing the visual impacts of projects; assisting parks with incorporating visual resources in park planning documents; and developing policy and guidance documents to assure consistency of visual resource management across the service.

INTRODUCTION

The National Park Service (NPS) Organic Act of 1916 states that the purpose of the NPS is to "… conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." With this central mission, the NPS has been entrusted with some of the most spectacular and historically significant landscapes throughout the country. Each area in the NPS has special visual characteristics that are often central to the park area's management and visitor experience, and visitors consistently identify scenic views as a major reason for visiting parks. In a review of nearly 100 surveys performed at a wide variety of parks from 1998 to 2011, scenic views were identified as important or extremely important by 90 percent of visitors (Kulesza et al. 2013).

The USDA Forest Service (USDA FS) and the Bureau of Land Management (BLM) are two Federal agencies that developed visual resource programs for managing the scenic values of land that they manage (Bureau of Land Management 1984, 1986; USDA FS 1974, 1995). Other agencies such as the U.S. Army Corps of Engineers and the Federal Highway Administration also have their own systems for assessing the value of the visual landscape and the potential impacts of projects to those values. In each case, the systems were developed to meet the management needs of their respective agency missions.

In recent years, there has been rapid development of energy facilities, especially utility-scale renewable energy projects, electric transmission lines, and oil and gas facilities adjacent to or crossing parks, national trails, wild and scenic rivers, and other NPS areas. The growth of communities and other types of development are likewise pushing ever closer to NPS-administered lands and waters. These developments are changing sometimes previously undisturbed views from park areas. In this context, NPS recognized the need to develop a comprehensive approach for assessing visual landscape qualities in and near park areas, understanding their value to the visitor experience, and determining how best to protect them as a resource for future generations.

The Air Resources Division (ARD) of the Natural Resource Stewardship and Science Directorate has developed a Visual Resource Program (VRP) to help address visual resource issues throughout the NPS. The VRP is a comprehensive inventory, planning,

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and park assistance program covering visual resource management. It helps parks identify and understand their visual resources to better enable them to develop conservation strategies for scenic views through best management practices and collaborative efforts with stakeholders such as Federal, State, and local agencies and private landowners. There are four general components to the program:

- Inventory – A systematic method to describe views, assess scenic quality, and assess other values.
- Planning – Provide support to parks for incorporating visual resources into park planning efforts such as foundation documents and Resource Stewardship Strategies.
- Technical Assistance – Provide assistance to parks in understanding the potential visual impacts of proposed projects and land management actions, and in identifying mitigation measures that may help reduce impacts.
- Policy and Guidance – Develop guidance documents and policy to help ensure consistency across the NPS in addressing visual resource management.

VISUAL RESOURCE INVENTORY

The Visual Resource Inventory (VRI) system is the primary tool in the VRP that helps park areas understand their visual resources and communicate the visual resource values to partners and stakeholders in a consistent and credible way. The inventory process is a systematic description of the visual elements of important views inside and outside National Park System areas (NPS areas), their scenic quality, and the importance to NPS visitor experience and interpretive goals.

The NPS inventory system has been developed specifically to meet the agency's mission. It is based on the fundamentals of VRI developed by the BLM and USDA Forest Service as well as systems developed for particular NPS units such as the Draft Scenery Conservation System for Blue Ridge Parkway (National Park Service 2008). It has been designed to work for many types of NPS areas and in multiple types of landscapes and visual settings. Park areas often encompass specific scenic places or historic settings and are also part of the broader landscape that includes areas outside park boundaries. The inventory considers the context of a park area's visual setting and provides a framework for understanding and protecting the scenic values within that context.

NPS areas range from nearly pristine wild landscapes to intensely developed urban areas, and park landscapes often have cultural and historic values in addition to scenic quality. Any or all of these values can be diminished if a park is subject to management or development activities that affect the condition of scenic resources and the quality of visitors' scenic experience. While NPS does not own or manage adjacent lands in shared viewsheds, this does not diminish the value of the adjacent lands for the park visitor or the park area. Numerous park resources including air quality, water quality, night skies, soundscapes, wildlife corridors, and cultural landscapes have documented cross-boundary impacts from development, and scenic resources may be impacted as well. The inventory approach of assessing the overall landscape both within and beyond park boundaries helps conserve scenic values for park areas and their visitors while retaining NPS support for the economic health of nearby communities, and providing for the responsible development of energy and other resources.

Goal and Guiding Principles

The VRI was developed to enable the NPS, its partners, and other stakeholders to better understand and protect scenic resources both within the park and within view but beyond park boundaries. The VRI capitalizes on elements of existing visual resource inventory and management systems but includes procedures suited to the unique mission of the NPS. The following principles served as a frame of reference for the overall VRI process as well as the individual inventory components.

- The inventory process should help parks answer three key questions:
  - Where are the important views?
  - What are visitors looking at and what are the characteristics of the view?
  - Why is the view important?

- The process should be able to include inventory of park views regardless of whether the viewed lands are inside or outside park boundaries.
- The inventory should incorporate cultural and historic values.
- The scenic values of a park area should be considered in the context of the park area and its regional surroundings and landscapes; park areas should not be compared to one another.
- The process should be suitable for wide application in NPS without the need to rely on visual resource specialists for implementation. With proper training, the system should be implementable at the park level using available staff and volunteers.

In the NPS approach to VRI, the concept is to capture the scenic values from the visitor perspective. To accomplish this, the unit of inventory is a view as perceived from a specific viewpoint. The inventory identifies key information about a view including a description of the visible components, its aesthetic values (scenic quality), and the value (view importance) of the view to NPS and its visitors. The inventory process leads to the determination of a Scenic Inventory Value (SIV) that can then be used to develop protection strategies. The information gathered in the inventory process is stored in a geospatial database available to parks along with other natural resource data.

Determining the scenic value of important views and identifying views at risk for loss of scenic values are core components of developing protection strategies that preserve the views' valued characteristics. Scenic values of views are based not only on the aesthetic attributes of the landscape, but also on their value to the overall visitor experience and the NPS mission. A more detailed discussion of the VRI process and the specific elements considered in scenic quality and view importance can be found in Peters et al. (this proceedings) and Sullivan and Meyer (2016a, 2016b). When the results of the VRI are combined with the planning component of the VRP, the two become integrated into an overall process for understanding and protecting scenic views.

The results of the inventory form the foundation for protecting scenic views in park planning documents. With an inventory in hand, parks will have critical information needed to guide management of the visual landscape in conjunction with other park resources and values. Additionally, park areas that use the NPS methodology gain a systematic and defensible dataset of scenic values that can be a valuable tool when working with local partners and stakeholders in collaborative efforts outside of a formal planning process.

Status

NPS has initiated VRIs in over 30 parks to date and additional parks continue to inquire about scheduling an inventory. While not intended to be a stand-alone product, the inventory information has immediate value and it is not necessary to "complete" the inventory for the park to use the information. For example, Gates of the Arctic National Park and Preserve and the Mojave National Preserve quickly used their inventories to develop more detailed studies and to engage with other agencies to address potential visual impacts of proposed projects. Gates of the Arctic inventoried a very small portion of the park where an industrial mining road was planned. The inventory information was subsequently used for a detailed viewshed analysis by Argonne National Laboratory that will serve as the basis for developing the visual impact analysis for the road. Mojave also completed an inventory for only a small portion of the park and immediately used the information to engage with the BLM regarding the potential for wind development on the boundary of the park.

One of the primary purposes of developing the inventory is to provide the basis for determining the potential visual impacts of projects. To further this goal, the NPS and Argonne recently began developing a visual impact assessment (VIA) methodology that will be incorporated into the NPS process. Similar to the inventory, the VIA process will provide a standardized approach to evaluating visual impacts and result in consistency across the NPS in how we communicate those impacts. In its early draft form, the VIA methodology directly ties to the information collected during the inventory, including a visual contrast assessment based on components such as form, line, color, and texture. It also assesses changes in the qualitative components of the inventory such as landscape character and vividness. Testing and rollout of the NPS VIA process is planned for mid- to late-2018.

PLANNING

Park planning helps define the set of resource conditions, visitor experiences, and management actions that, taken as a whole, will best achieve the mandate to preserve resources unimpaired for the enjoyment of present and future generations. The planning component of the VRP includes assisting parks in recognizing and understanding their unique visual resources so that they can incorporate them into planning documents.

Similar to the inventory process, the planning component should also assist parks in addressing key questions.

- From an NPS perspective, what is an appropriate visual resource management objective?
- How could NPS promote protecting the characteristics of important views, especially on lands it does not own, manage, or administer?

The wide variety of NPS unit types requires a flexible approach to planning in order to meet the many individual missions of resource protection, interpretation, and visitor use. The NPS has adopted a framework for parks to develop a portfolio of planning documents to meet specific needs and plan for long-term park management (Fig. 1). The NPS planning division describes the approach in the following way:

> "Each unit of the National Park System is required to have a formal statement of its core mission that provides basic guidance for all planning and management decisions, the park foundation document. A foundation document establishes the basis for all future planning and is the core element of each park's planning portfolio. The planning portfolio is the assemblage of individual plans, studies, and inventories, such as climbing management plans, general management plans, visitor use studies, and cultural landscape inventories, which guide

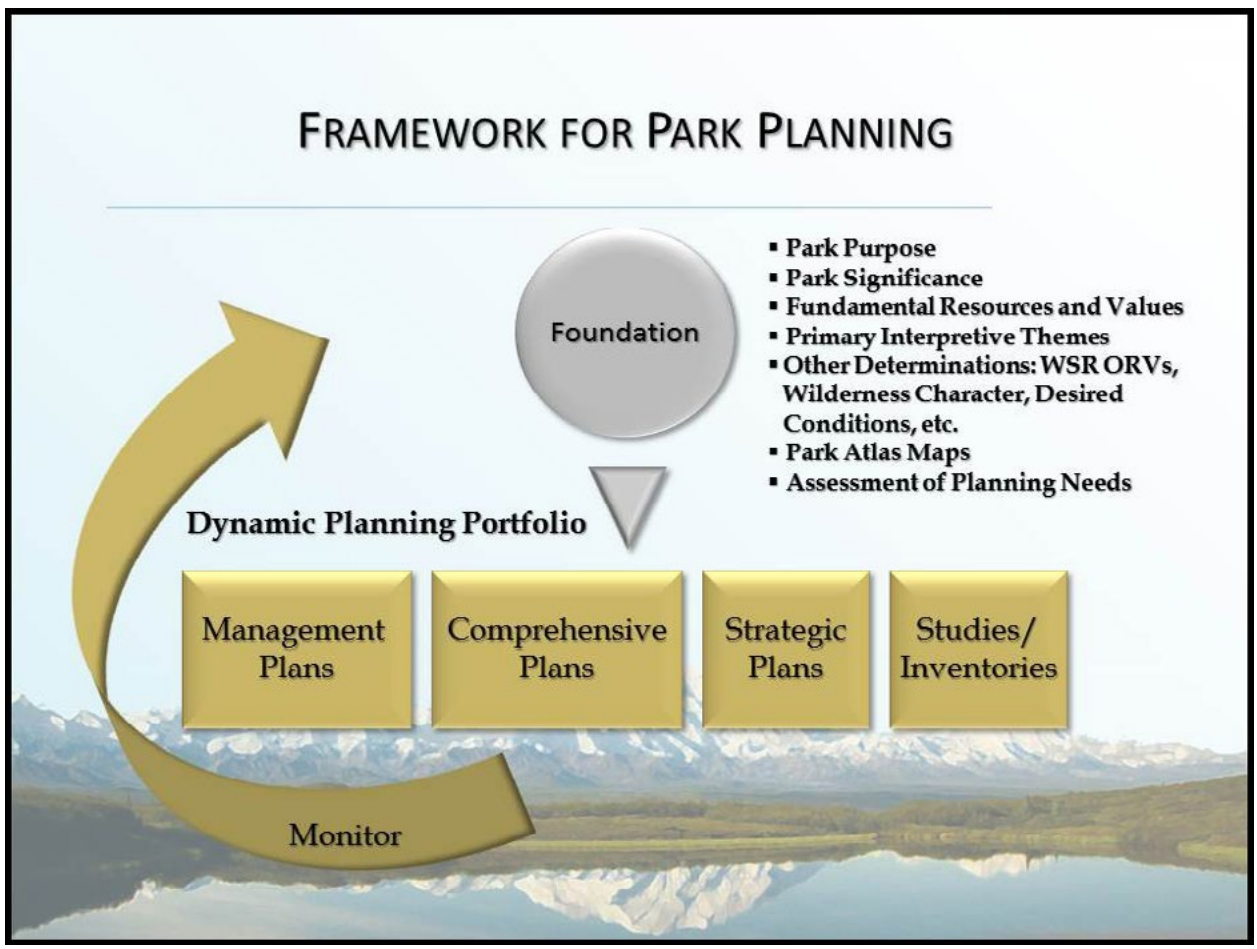

Figure 1.—National Park Service planning framework.

park decision making. The portfolio structure encourages the use of targeted, small-scale planning products to meet a broad range of park planning needs" (National Park Service 2018a).

The VRP has concentrated its efforts to assist parks in incorporating visual resources into their planning processes during development of foundation documents and resource stewardship strategies (RSS). As noted, foundation documents identify the fundamental resources for which a park is established. By providing information to parks during preparation of the park's foundation document, the VRP has been successful in getting multiple parks to include visual resources as a resource to manage into the future.

For parks that have identified visual resources as a fundamental value in their foundation documents, the VRP has continued to work with them to plan inventories and develop management actions for inclusion in their RSS. Park units use the RSS as a long-range planning tool to achieve their desired natural and cultural resource goals as derived from relevant laws and NPS policies identified in a park's foundation document, general management plan, or other park plans. As part of a park's planning portfolio, the RSS serves as a bridge between the park's foundation document and everyday management of its natural and cultural resources.

To date, staff at over 140 parks have expressed their intent to include some level of visual resource assessment in foundation documents and almost 40 parks have indicated that this as a high priority. In addition, nearly 100 parks have identified a need for some level of visual resource management across the various types of planning documents in their planning portfolios.

Stakeholder Collaboration

While the Organic Act directs the NPS to manage and protect park areas so as to "leave them unimpaired for current and future generations," many aspects of NPS policy and guidance speak to the value of developing integrated, collaborative approaches to accomplishing this goal. The NPS mission specifically states that the agency "cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout the country and the world" (National Park Service 2018b).

Often, the protection of important views might require conserving a visual landscape that is beyond the park's boundary, and collaboration will be key to developing planning strategies to achieve that goal. As directed by the NPS mission and driven by the desire to be an integral part of the community, many parks already engage with multiple partners and stakeholders to cooperatively address a wide variety of issues concerning protection of park resources. In these cases, developing a collaborative group that focuses on protecting important park views within these existing relationships may be the best way to integrate this aspect of resource protection into the ongoing management of the park. Having sound inventory information and clear planning strategies for protecting valued resources can better inform these efforts and serve as the primary tools to support collaborative conservation.

Monocacy National Battlefield was one of the first parks to initiate a VRI to help address ongoing development pressure. The park subsequently developed a Visual Resource Protection Plan and used the inventory data to develop guidance and recommendations for working with stakeholders to protect the valued characteristics of the landscape surrounding the park.

TECHNICAL ASSISTANCE

The VRP began with a central focus on helping parks address concerns about the potential visual impacts of large-scale renewable energy projects on nearby areas. Currently, the VRP continues to provide support to assess the potential visual impacts from a wide variety of threats beyond a park unit's boundaries. This support can range from document review and preparation of comments to participating in multi-agency meetings and conference calls at the park, regional or National level. Examples of support efforts include:

- Reviewing environmental documents, preparing comments, and assisting with agency coordination for potential renewable or conventional energy development, mining, transportation, and other land use changes or projects near parks.
- Reviewing visual simulations of offshore or on-shore wind development, utility-scale solar facilities, conventional power plants, transmission

lines, and other facilities that could affect the visual setting of parks.

- Reviewing and commenting on visual resource aspects of programmatic or regional planning documents such as the Desert Renewable Energy Conservation Plan.
- Preparing draft scopes of work for parks to use in requesting visual impact assessments, simulations, and other analysis of proposed projects.

To date, the VRP has helped over 40 individual parks review projects that could have impacts on visual resources. Proposed projects have included pipelines that could affect the scenic values of the Blue Ridge Parkway and Appalachian National Scenic Trail, oil and gas development that could affect the cultural landscape at Chaco Canyon National Historical Park, and transmission lines that could affect the cultural landscape settings at Pea Ridge National Military Park in Arkansas and Captain John Smith Chesapeake National Historic Trail and Colonial National Historical Park in Virginia. Staff at Pea Ridge and at Chaco Canyon National Historical Park subsequently initiated the VRI process to better inform the engagement and discussions with other agencies and project proponents.

POLICY AND GUIDANCE

The first VRP guidance document produced in response to the proposed development of large renewable energy projects in the last few years is the "Guide to Evaluating Visual Impact Assessments for Renewable Energy Projects" (the Guide) (Sullivan and Meyer 2014). The Guide was authored by Argonne National Laboratory and NPS and can be found on the BLM Wyoming Visual Resource Clearinghouse Website, along with many other NPS VRP/VRI documents, at http://blmwyomingvisual.anl.gov/. The Guide presents detailed information to assist park and regional resource managers in evaluating the adequacy of VIAs covering proposed utility-scale renewable energy projects, and it helps NPS managers identify and understand the potential impacts those projects may have on nearby scenic views.

Beyond the grassroots efforts to establish credible visual programs and a consistent inventory methodology, ARD also continues to try to preserve the visitor experience through protection of scenic resources as a service-wide policy. An NPS Director's Order (DO) establishes service-wide direction on resource management based on current Management Policies. ARD is in the very early stages of developing a DO for visual resources and has sought input from regions and various parks that have participated in the inventory process.

CONCLUSION

Visitors have consistently identified scenic views as major reasons for visiting America's National Parks and historically NPS has successfully worked to protect important visual resources in multiple situations. Because the NPS has not had a comprehensive approach to managing visual resources, individual parks have had to develop their own approaches for assessing scenic values and potential impacts. The visual resource program developed by ARD provides a comprehensive and consistent approach to protecting parks' important scenic views through inventory, planning, and engagement with stakeholders. As a result, park managers will be better able to conserve important park scenery for the enjoyment of current and future generations.

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