

Visual Case Study for Visual Resource Stewardship Conference Proceedings:
Landscape and Seascape Management in a Time of Change

On the Role of the Public in Visual Impact Assessment, with an Invitation for Reader Participation

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Abstract.—What should be the role of the public in assessing the visual impacts of proposed changes to landscapes? This question was the basis of a guided discussion session hosted by the authors at the 2017 Visual Resource Stewardship Conference. In this paper we summarize our arguments regarding the appropriate role of the public in visual impact assessments (VIAs) and outline key issues from the guided discussion that must be resolved in answering the question. One key issue is how the perceptions of untrained people compare with those of trained professionals who now conduct most VIAs. To help address this issue, we invite readers to evaluate photo-realistic simulations included as an appendix to this paper. Results will be presented at a follow-up conference proposed for 2019.

INTRODUCTION

Americans have long recognized the importance of protecting scenic values. Scenery and aesthetic values are specifically mentioned in federal legislation including the National Park Service Organic Act of 1916, the Wilderness Act of 1964, the Wild and Scenic Rivers Act of 1968, the National Scenic Trails Act of 1968, the National Environmental Policy Act of 1969, and the Federal Land Policy Management Act of 1976. While these and other laws serve to protect public rights to scenic resources, actual involvement by the public in determining scenic value and scenic impacts has been a contentious topic in assessment procedures that continue to rely almost exclusively on the judgment of professionals trained in esoteric procedures. An often-cited example of this conflict is expressed in aesthetic philosopher Allen Carlson's (1977) assertion that scenery management approaches

...which have to do with public opinion and with formalism are untenable as a part of an approach to the aesthetics of the natural environment. I suggest certain alternatives ... which involve expert opinion and non-formalist approaches. (p. 131)

In reply, social scientist Robert Ribe (1982) argues that empirical aesthetic assessments are necessary for

...the generation of evidence to support the relationships upon which aesthetic assessments are based. Such relations may legitimately involve particular aesthetic qualities, such as formal ones

... Furthermore, it is also valid to test assessment methods with operational criterion measures, such as public perceptions of landscapes, when such measures are relevant to the qualities and lands management interests that the aesthetic assessments are meant to serve. (p. 61)

While the debate about formal approaches to visual assessment has largely been settled by practice (e.g., U.S. Bureau of Land Management 1986, U.S. Forest Service 1995) and the courts (Churchward et al. 2013), the role of public perceptions in visual resource management and visual impact assessment (VIA) is still under contention.

The authors of this paper hosted a guided discussion concerning the role of the public in VIAs during a Plenary Session of the Visual Resource Stewardship Conference. Palmer presented his case for using on-site intercept surveys, which interview scenic resource users at potentially impacted viewpoints and ask them to rate the existing view as well as large format (e.g., 11" x 17") photographic representations of the existing and proposed conditions. In response, Sullivan presented his concerns about relying too heavily on user intercept surveys, and his case for the role of trained professional evaluations of scenic impacts. They then posed several questions for consideration and discussion by the audience.

The following sections of this paper summarize these arguments and outline key points raised in the guided discussions with audience members. But as the heart of this debate centers on how the perceptions of the public compare with those of trained professionals, we end the paper with a participatory exercise in VIA and invite readers to send us their evaluations of the simulated views included in the Appendix. This example relates to an ongoing case study and includes rating sheets and photographic representations of the existing and proposed conditions at six locations where the proposed Northern Pass Transmission Project (NPTP) in New Hampshire will be visible. Each of these viewpoints has been formally evaluated by staff professionals from two landscape architecture firms with established reputations for VIA. However, public perceptions were not sought as part of these evaluations and this experiment in reader participation provides a unique opportunity to gather reactions from a public audience uninvolved with the controversy surrounding the NPTP.

PALMER: THE CASE FOR PUBLIC INTERCEPT SURVEYS

VIA professionals are primarily trained in landscape design. While it is assumed that design training is relevant to VIA, there is no evidence to support this. Most landscape architects involved in VIA have little or no formal training in VIA (Churchward et al. 2013) and cannot support their VIA practice with knowledge of empirical research. Further, VIA professionals are not trained to investigate or evaluate how visual changes affect people, even though there are long established methods for this that are well supported by empirical research (Churchward et al. 2013).

During their design education, landscape architects are taught to consider visible attributes intrinsic to the landscape including formal design elements such as form, line, color, texture, and scale, or perhaps landscape features such as relative relief or percent water cover. However, scenic value is not intrinsic to landscape, but is based on the perception of intrinsic visible attributes and is affected by associated memories, attitudes, etc. For instance, Anderson (1981) found that how a forest view was labeled (e.g., commercial timber stand or national park) had a significant effect on scenic quality judgments.

VIAs are justified by the belief that significant negative visual impacts affect the public's enjoyment and sense of a place. This is a complicated effect and we do not have empirically derived and validated models for evaluating the significance of this effect. In the absence of valid evaluation models, it is necessary to estimate the effect of visual change to viewers by engaging them directly. This is most appropriately done at the affected sites using intercept surveys of people engaged in their normal activities.

In addition, it is my belief that:

- It is the public's right to be meaningfully involved in the VIA.
- Public meetings create a record that is often not analyzed or otherwise considered in the VIA.
- Insincere and deceitful "public involvement" contributes to distrusting the VIA analysis.

SULLIVAN: THE CASE FOR PROFESSIONAL JUDGMENT IN VIA

Intercept surveys rely on simulations and individuals' predictions of their future actions based on incomplete knowledge of the future. Are these a sound basis for VIA? Furthermore, is VIA limited to the question of public acceptance of the proposed project? I think there are more issues that must be considered in the conduct of a VIA, and that full consideration of all the issues in a VIA requires knowledge, skills, and experience that a *properly trained* VIA professional will have, but the public will not.

In normal practice, simulations are "snapshots" of the approximate appearance of a facility in one set of lighting conditions from one viewpoint. Simulations have not been proven to be good representations of the total visual impact of a project. They "can never exactly match what is experienced in the field" (Scottish Natural Heritage 2006). There are a number of obvious limitations to using photomontages, including:

- They cannot show motion, known to be an attractant of visual attention (Benson 2005, Sullivan et al. 2012).
- They cannot show flashing lights (Sullivan et al. 2012).
- They cannot correctly depict glare (Sullivan and Abplanalp 2015).
- As used in practice, they often do not show the detail the human eye can perceive (Sullivan and Meyer 2014).
- They cannot show the full range of contrast that the human eye can perceive (Scottish Natural Heritage 2006, Green 2013).
- They are subject to a variety of display problems (Benson 2005, Green 2013).

Members of the public inherently believe what they see in photos, and they can react to what they see in a photo, but little else (Green 2013). Properly trained VIA professionals are aware of the limitations of visual simulations, and can factor these limitations into their judgments about the likely impacts of a proposed project.

Looking beyond issues related to the use of simulations, VIA is not limited to a simple comparison of before and after simulations as a basis for acceptance of a project; it requires an understanding and consideration of cumulative impacts, indirect impacts, project phases, view sequences, and other technical issues that the public is unlikely to understand.

Members of the public can provide a response about how they would react to a proposed project, but there is no evidence that they will really react that way, or that their reaction will not change over time. Respondents to an intercept survey can only speak for themselves, and how they feel about it at that particular time. Properly trained VIA professionals routinely must consider a broad range of potentially affected viewers (preferably by direct consultation), and are also much more likely to be aware of the changes in the type and magnitude of a project's visual impact over time. VIA professionals are typically more familiar with a proposed project's "real" visual qualities. They are likely to better understand the impacts to views not depicted in simulations. The public is not trained to, and is typically not asked to, consider impacts to cultural/historic or landscape character values, but VIA professionals consider these impacts routinely.

In general, it is my belief that the public has a right to be meaningfully involved in the VIA process, and I agree that insincere and deceitful "public involvement" contributes to distrusting the VIA analysis. I believe that public meetings are necessary, but clearly they are not always sufficient. While user intercept surveys have value and should be considered in VIA, they must not dominate the VIA's findings. In addition, there are several other ways for the public to contribute meaningfully to VIAs, including scoping, key observation point selection, landscape character assessment, and by providing constructive comments during Environmental Impact Statement (EIS) review.

Finally, the public has not been shown to be any better at VIA than professionals. In the absence of valid evaluation models, it is not better to replace the current system with one that also is not necessarily based on a valid model. While currently it is the case that many VIAs conducted by professionals are deficient, even woefully inadequate in some cases, instead of turning the VIA over to the public we should instead develop guidelines and standards that improve expert-based VIA practice. VIA professionals must be better trained to consider and articulate visual values and to incorporate direct input from the public in the VIA process.

GUIDED DISCUSSION TOPICS

These two statements were followed by a moderated discussion that guided the audience through a discussion of the following topics.

Considerations to meaningfully involve the public in VIAs

- What is the appropriate standard for public evaluation?
- What information does the public need?
- How should people be involved?

What is the appropriate standard for public evaluation?

For instance:

- Change in scenic value
- Effect on expectation and enjoyment
- Effect on continued use
- Acceptability

What information does the public need?

For instance:

- Simulations—lots of questions about the "best" approach for various circumstances.
- Additional information—sound, changes in use, other environmental impacts related to the visual experience (e.g., frequency of wildlife sighting).

How are people involved?

For instance:

- Method of selection
 - o Open public meetings held at night
 - o Intercept surveys at effected viewpoints
 - o Random sample of residents, voters, or property owners
 - o Marketing panel--say of active outdoor recreationists
 - o Web surveys open to the world
- Method to record their response

The discussion was lively, and this Plenary Session clearly tapped into a timely topic that needs further consideration. Unfortunately, it was not recorded. However, one of our observations was that we need to increase our understanding of the similarities and differences between how different publics and VIA professionals assess landscape change.

DEMONSTRATION OF PUBLIC RATINGS OF VISUAL SIMULATIONS

Toward that end, we now solicit each reader's assessment of the scenic quality of 12 photographic visualizations prepared for the US Department of Energy's EIS of the Northern Pass Transmission Project (NPTP) (U.S. Department of Energy 2017, T. J. Boyle Associates 2017). NPTP is a 1,090-megawatt high-voltage electric transmission line running for approximately 192 miles from the Canadian border to southern New Hampshire. The project is buried for approximately 52 miles through the White Mountain National Forest and shares an existing transmission corridor for much of its overhead route.

This demonstration is less than ideal. First, this is not an intercept survey; as respondents you are not familiar with the surrounding landscape or engaged in the types of activities that will be affected. Second, the simulations are presented in PDF form without control over how they are viewed, while the originals were printed as 11-by-17-inch full color images at 1,200 dpi on a Xerox WorkCentre7845 printer. These are both significant challenges, but with your cooperation we will make due. Our intent is to report back the results of your ratings, as well as VIA ratings of two professional landscape architecture firms that evaluated these same viewpoints at the next Visual Resource Stewardship Conference, proposed for fall 2019.

General Instructions

We acknowledge that you are not being interviewed at the viewpoint and are unfamiliar with the project setting. The project is located in northern New England; the predominant land cover is northern hardwood forest, with a couple major rivers and many smaller streams. Open fields are a minor but important land cover. The area is generally accessible by paved or dirt roads. There are many small communities and a couple of urbanized areas within the project's viewshed. If it helps, you may imagine the area to be one that looks similar but with which you are familiar.

The survey form and 12 views are in Appendix A. It would be best if you printed out the rating sheet and viewed the landscape scenes expanded to fill your computer monitor in order to provide the greatest possible resolution. You will need to note the length of the visualization's diagonal measurement, then view the visualizations from that same distance to accurately represent the transmission structures' proper scale and scope. In your PDF reader, click the "Maximize" button at the top of the document window (upper right for Windows, left for MacOS) to maximize the size of the picture, measure the simulation diagonal's length, and view the simulation from that distance. Consider the visualizations one at a time and rate the overall scenic quality of the view. Then go through the visualizations again and rate the visual impact of the transmission structures.

When you have finished, please send your responses as an email attachment with the subject "NPTP Ratings" to james@tjboyle.com. Or you can mail it to: James Palmer, T. J. Boyle Associates, 301 College Street, Burlington, VT 05401.

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APPENDIX A: LANDSCAPE RATINGS

1. Did you view the simulations: ☐ 1 on a computer, or ☐ 2 printed in color or, ☐ 3 black & white?

2. What is the diagonal measure of the simulations you viewed? _____ (cm or inches?)

LANDSCAPE SCENIC VALUE

You are going to rate the scenic quality of 12 visualizations using a 9-point scale where “9” is extremely high scenic value, “1” is extremely low scenic value, and “5” is ordinary scenic value. Before you begin, we would like you to imagine the ends of this scale.

3. Where is the most beautiful landscape that you have seen? On a 9-point scale, this would be a “9” for extremely high scenic value.

4. Next, where is the ugliest landscape (i.e., outdoor place) that you have seen? On a 9-point scale, this would be a “1” for extremely low scenic value.

SCENIC VALUE RATING

Think about the most beautiful and ugliest places you just identified as the end-points of a 9-point scale to rate scenic value. Mark your scenic value rating for each of the following 12 views, where “9” is extremely high scenic value, “1” is extremely low scenic value, and “5” is ordinary scenic value.

	EXTREMELY LOW				ORDINARY		EXTREMELY HIGH		
VIEW A	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW B	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW C	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW D	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW E	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW F	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW G	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW H	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW I	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW J	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW K	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9
VIEW L	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6	☐ 7	☐ 8	☐ 9

VISUAL IMPACT RATING

Look through the views again, taking particular notice of the visual effect of the transmission line—its structures, wires and the cleared corridor—on the surrounding landscape. Then mark the visual impact of the transmission line on each of the 12 views, where “9” is an extremely positive visual impact, “1” is an extremely negative visual impact, and “5” is no visual impact.

	EXTREMELY NEGATIVE				NO IMPACT		EXTREMELY POSITIVE			
VIEW A	1	2	3	4	5	6	7	8	9	
VIEW B	1	2	3	4	5	6	7	8	9	
VIEW C	1	2	3	4	5	6	7	8	9	
VIEW D	1	2	3	4	5	6	7	8	9	
VIEW E	1	2	3	4	5	6	7	8	9	
VIEW F	1	2	3	4	5	6	7	8	9	
VIEW G	1	2	3	4	5	6	7	8	9	
VIEW H	1	2	3	4	5	6	7	8	9	
VIEW I	1	2	3	4	5	6	7	8	9	
VIEW J	1	2	3	4	5	6	7	8	9	
VIEW K	1	2	3	4	5	6	7	8	9	
VIEW L	1	2	3	4	5	6	7	8	9	

DEMOGRAPHICS

Finally, a bit about yourself:

Year born: _____

Gender: Male Female Other

Highest degree: _____

ZIP code (or country outside US): _____

Knowledge of VIA practice: None A little A lot

Knowledge of this project: None A little A lot

Comments: _____

SUBMITTING YOUR RESPONSES

Send your responses as an email attachment with the subject “NPTP Ratings” to james@tjboyle.com. Or mail them to James Palmer, T. J. Boyle Associates, 301 College Street, Burlington, VT 05401.

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