CASE STUDIES FOR EVALUATING PHOTOSIMULATIONS FOR VISUAL IMPACT ASSESSMENT

Principle
Base-photograph veracity

Statement
Digital editing in photosimulations should be limited to project-related changes.

Explanation
A substantial part of a photosimulation's perceived legitimacy is derived from the expectation that the base-photograph is a truthful representation of the landscape context. We all have seen the results of powerful digital methods that create fictional photo-realistic images. Nonetheless, we are all conditioned to believe photographic evidence, which is why photosimulations with high quality and integrity are critical to accurately communicating proposed visual changes to the visual assessment experts, the public, and decision makers.

Case Study. Mountain Top Inn
Mountain Top Inn (MTI) is a four-season vacation and event destination located on 700 acres in central Vermont with sweeping views of a mountain lake and the Green Mountain National Forest. It provides diverse accommodations, including rooms in the main lodge, cabins, and guest houses.

In 2015, MTI submitted an application for an additional 34 room stand-alone lodging facility referred to as the Annex. Visual impact assessments are a normal part of the environmental permit application in Vermont. Several photosimulations were presented, included the summer view across the lake in Figure 1. After reviewing the application materials, the reviewing agency required the applicant to submit an additional "leaf-off" photosimulation. The applicant noted that it was inappropriate to stop the process for six months to obtain leaf-off photography. It was suggested that leaf-off conditions could be digitally simulated. The simulation expert made it known that this was not a best professional practice, but complied by preparing Figure 2.

The simulation in Figure 2 is created by digitally "painting" leaf-off conditions taken from digital photographs of seasonally and regionally appropriate forested hillsides. There are a variety of potential sources of error with this approach. It is unavoidable that the lighting conditions, exposure, image resolution, viewer position, etc. in the summer base-photograph are different than the fall images used for digital painting. In this particular simulation, which is probably more accurately called an illustration, the leaf-off changes did not include the cloud shadows on the hillside and use only a generic representation of a forest without leaves. As such, the illustration does not include the actual conditions around the project such as evergreen species versus deciduous species, and this may affect the apparent contrast of the proposed facility with its surroundings.

Discussion

It is possible to verify many aspects of the project's visual character in a simulation — location, scale, color, etc. However, it is much more difficult to verify the accuracy of changes to the surrounding landscape, which provides the context necessary to evaluate visual contrast and character compatibility with that context. This is why best professional practice limits changes to the base-photograph to those required by introduction of the project.

In this case study, the government asked for the additional seasonal simulation. Because it was unreasonable to delay the permit review, the seasonal condition was simulated. A better practice would be for the government to make it known that permit applications shall include leaf-off and leaf-on simulations, and not require such a submission in the middle of the permit application without prior notice.

FIGURE 1. Photosimulation across Chittenden Reservoir toward the Mountain Top Inn & Resort. The main lodge is to the left, centered on the hillside. The Annex is the less conspicuous longish structure in the center of the photograph, below the individual houses.



FIGURE 2. These fall leaf-off conditions are simulated by digitally "painting" them over the base-photograph in Figure 1.



Statement of Limitations: The simulations presented here were entered into the public record as part of a permitting process. They were prepared to be printed on 11-by-17-inch paper. However, in the process of distribution as PDFs they may have been substantially compressed. The figures presented here were clipped from these PDFs, converted to high quality JPGs and their resolution reduced. The original photosimulation has been substantially changed and as presented here should be used only as learning material.

Source: The figures used in this case study are taken from materials submitted to the Vermont Natural Resources Board.