CASE STUDIES FOR EVALUATING PHOTOSIMULATIONS FOR VISUAL IMPACT ASSESSMENT

Principle
Determining visibility

Statement
Photosimulations will represent views of a project.

Explanation
Visibility is normally determined by a viewshed analysis, which indicates potential visibility but not what project locations may be visible. The visible portion of a project may not be the closest to the viewer.

Case Study. Lagace Beach on Webster Lake
Webster Lake is a recognized scenic resource that is 606 acres surrounded by forest lands with two public town beaches. Lagace Beach is at the southern end of the lake, as shown in Figure 1. Its facilities include a bath house, boat ramp, picnic facilities, and paved parking. An existing 115 kV transmission line on 52 ft wooden H-frame structures runs north to south along the east of the lake. The closest structure is approximately 1,500 ft from the beach. It is proposed to add a new 345 kV transmission line on 75 ft lattice structures within the existing corridor.

The viewshed analysis indicates that there will be visibility of the project throughout most of the area in Figure 1. The applicant recognized that when looking down the lake, "the top of three structures will be visible above the trees at a distance of 1.7 to 1.8 miles, but will not break the horizon line." However, the submitted photosimulation shown in Figure 2 is oriented along the beach to the northeast. The view description on the photosimulation states that from the "view from Lagace Beach, located on the southeaster shoreline of Webster Lake, the proposed structures are behind trees in the foreground and will not be visible from this location."

As part of its review, the government submitted the simulation in Figure 3, which shows the visible structures looking down the lake. The approximate angle of view for the simulation is indicated by the white lines in Figure 1. The lattice towers are indicated by pink triangles. From the right, the first two will not be visible but the next three will be. Figure 4 is an enlargement to more clearly show the structures.

Discussion
It is intended that key observation points (KOPs) are at locations where the project will be visible, which was known to be the case from Lagace Beach. As a general principle, photosimulations should represent the "worst-case" view from a KOP. While the "worst-case" is often in the direction that the project is closest to the viewer, this is not always the case.

The applicant should have presented the photosimulation in Figure 3 and included the photograph in Figure 2 as part of a description of the site context, explaining that the surrounding forest will screen foreground views of the transmission structures.

FIGURE 1. Lagace Beach on Webster Lake. The red dots in the transmission line right-of-way are existing wooden H-frame structures that will remain; the pink diamonds are new lattice towers. The white lines show the cone of vision for the simulation in Figure 3.



FIGURE 2. The applicant's photosimulation looks east toward the closest proposed structures, which are heavily screened by intervening vegetation from this location.



FIGURE 3. The government's photosimulation from Lagace Beach looks north. Though not prominently visible, the tops of three proposed galvanized structures would be visible above the trees just in front of the background mountain at center-right.



FIGURE 4. An enlargement of the visible transmission line from Figure 3.



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 U. S. Department of Energy and the New Hampshire Site Evaluation Committee.