# CASE STUDIES FOR EVALUATING PHOTOSIMULATIONS FOR VISUAL IMPACT ASSESSMENT

### Principle
"Worst-case" view for a KOP

### Statement
All things being equal, the location and direction for a simulation photograph should represent a "worst-case" view.

### Explanation
A key observation point (KOP) is a localized area with potential views of a proposed project, selected to represent a particular scenic resource or landscape type.

The selection of a "worst-case" viewpoint within a KOP is based on a consideration of several criteria:

- It is the view where the project is most visible in extent and exposure.
- It is at a time of day and season when the project presents the highest visual contrast with its surroundings.
- It is a publicly accessible location chosen after considering the potential number of viewers and their sensitivity to the visual change.
- It considers the sensitivity of the viewpoint and viewed landscape to viewers and others.

The determination of the worst-case view is based on professional judgment. As such, the reasoning of the choice should be explained.

### Case Study. Deerfield Center Historic District
The Deerfield Center Historic District was placed on the Register of Historic Places in 2002. It includes 12 stylistically diverse historic buildings and many mature trees. A 115 kilovolt (kV) transmission line on 75-foot wooden poles is located outside the district's northern boundary. The proposal added a new 345 kV transmission line on 110-foot steel poles within the existing corridor.

Three visual impact assessments (VIAs) evaluated the impact of the proposed transmission line to Deerfield Center Historic District. The Deerfield Center Historic District KOP was selected because of its scenic and historic significance. The existing buildings and mature trees screened the existing and proposed transmission lines from many viewpoints within this KOP making it difficult to determine the "worst-case" view. Each of the VIAs identified a different view, as shown in Figure 1. The applicant and government selected locations in front of the Deerfield Town Hall looking toward the Deerfield Community Church. The applicant's viewpoint is located in the road, as if one were driving west on Church Street. The photosimulation of the new 345 kV transmission structure as shown in Figure 2 is colored brown and largely obscured behind a deciduous trees, even without their leaves. The government's viewpoint is located approximately 60 feet to the southwest, as if one were going to the Deerfield Town Hall. The simulation in Figure 3 shows the same transmission structure, which is clearly visible above the trees to the right of the steeple. The brown color, intended to represent rusted Corten steel, is interpreted slightly different in the two simulations. The oppositions group's viewpoint is approximately 375 feet to the west of the other two, near

the entrance to the Community Church parking lot. The 345 kV structure will also have greater exposure from this location, in particular the conductor wires will be more prominent and visible to the right. The opposition group's photosimulation may have other problems though. It appears to be created from more than one photograph and may have been cropped at the top or bottom. This makes it difficult to judge the angle of view and relative size of the structures. The transmission structure is not vertical, portions of it appear to be in front of the tree, and the "arms" do not appear perpendicular to the direction of the transmission conductors.

## Discussion

All three visual simulations represent potential views of the proposed transmission line, and in that sense represent the Deerfield Center Historic District KOP. However, the transmission structures are more visible in the government's and opposition group's viewpoints. It is worth noting that the structure was screened in the government's original photography (similar to the applicant's) and they returned to the site to document a viewpoint where the structure had greater visual exposure. All three viewpoints are publicly accessible, though it is to be expected that viewers at the applicant's and opposition group's viewpoints will be in vehicles. While the viewers at government's viewpoint may be standing outside (for instance taking photographs of the historic buildings), it is to be expected that there will be fewer viewers than at the other viewpoints. All of the viewpoints are within the historic district, which is a sensitive location.

**FIGURE 1.** Aerial photo the eastern half of the Deerfield Center Historic District. The red diamonds in the upper left corner are the visible proposed transmission structures. The three simulation views located along Church Street are identified by their Figure number.



**FIGURE 2.** The photosimulation of the new 345 kV transmission structure from the applicant's chosen viewpoint is colored brown and largely obscured behind a deciduous trees, even without their leaves.



**FIGURE 3.** The viewpoint chosen for the government agency's photosimulation of the 345 kV transmission structure provides a similar view to Figure 2, but with greater exposure.



**FIGURE 4.** The viewpoint selected by the opposition group is near the entrance to the Community Church parking lot. The 345 kV transmission structure will also have greater exposure from this location.



**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.