

# Methods For Visual Impact Analysis (VIA) and Potential Methods for Defining Areas of Potential Effect (APE)

This section provides a recommended framework for a modern VIA of a proposed mine. This framework is advocated in literature and includes the methods that regulatory agencies should use in the Environmental Impact Statement (EIS) process. This basic framework may also be suitable for developing Areas of Potential Effect (APE) that are a necessary component of the evaluation of impacts to cultural features.

Visual impacts of industrial activities have been recognized as major concerns in Environmental Impact Assessments (EIA) (Morris and Therivel, 1996; Smardon, 1983). This recognition is based largely on the fact that natural and undisturbed landscapes contribute to the desirability of an area (Clay and Daniel, 2000). Furthermore, visual character may be the most important factor in the quality of a tourist/recreational experience (Daniel and Vining, 1983). The Corps must determine the identity that local populations assign to the landscape where the proposed mine would be built (e.g. cultural resource area, tourist/recreational area, residential area, conservation/natural area). It is this locally defined landscape identity that is the most important criteria for evaluation of visual impacts (Krause, 2001). In addition, the Corps must define the landscape identity from the perspectives of both tribal and non-tribal populations. This is because these two groups may assign different identities to the landscape.

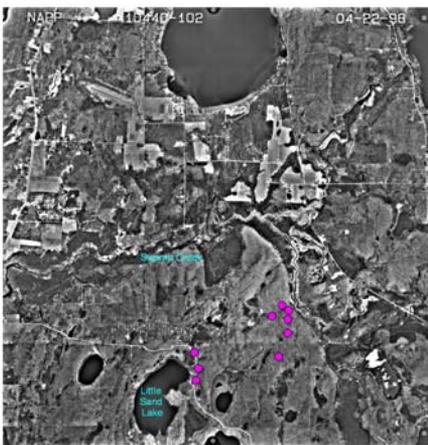
The first step in VIA involves a determination of baseline conditions. Baseline information includes socioeconomic data, land use, and land ownership information. This information provides an indication of the prevailing identity that local residents assign to the landscape. The data used in baseline determination include historic aerial photography and land use data (Morris and Therivel 1996; Magill, 1990). This type of information for the proposed Crandon mine should be readily available to the Corps.

The second step in VIA involves the determination of sensitive viewpoints around the area of the proposed project (Morris and Therivel 1996). Sensitive viewpoints are determined through a survey of historic sites and maps showing areas of special interest (i.e. historical markers, wild and scenic areas) in the context of the local topography (Magill, 1990).

The third step in VIA involves renderings or diagrams of the proposed project features set against the existing landscape (Morris and Therivel 1996; Magill, 1990). Traditionally this step has involved artistic drawings of the proposed features. However, GIS and three-dimensional visualizations have become widely used and recommended tools in the development of the data needed for this step (GLIFWC, 2002; Pullar and Tidey, 2001; Batty et al., 1998; Bishop and Hulse, 1994; Lange, 1994; Hadrian et al., 1988).

The fourth step in VIA involves measuring the level of concern for potential visual impacts through surveys of the attitudes of local residents. As stated by Magill (1990 pp. 1), "In essence, managers need to know where landscape alterations such as clear cuts, road cuts, mine tailings, or microwave stations may attract attention." Information on the public's visual sensitivity with relation to viewing distance, object size, object form, and color must be obtained through surveys of the local population (Pullar and Tidey, 2001; Magill, 1990; NPS 2002). The surveys of the attitudes of local residents must be conducted on both the tribal and non-tribal population. This is because tribal peoples have a landscape ethic that is tied to their specific religious and cultural worldview (Nesper et al., 2002), which may be different from the non-tribal population. This step provides the data necessary to determine significant impacts.

## Step 1: Baseline Determination



This aerial photo provides an indication of current land use patterns. It is evident that forest cover is highly fragmented by logging, road construction, and clearing for housing and agriculture.

Photo was taken by the USGS  
Date Flown: 4-22-1998  
Scale: 1:40000

Approximate Tree Line  
GLIFWC observations of logging activity

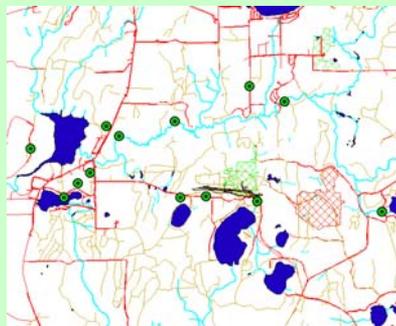


This aerial photo shows that much of the watershed of the proposed Crandon mine was logged during the 1930's.

Photo was taken by the USDA  
Date Flown: 5-23-1939  
Scale: 1:20000

Approximate Tree Line

## Step 2: Sensitive Viewpoint Determination



## Step 3: Visualization of Proposed Project

