

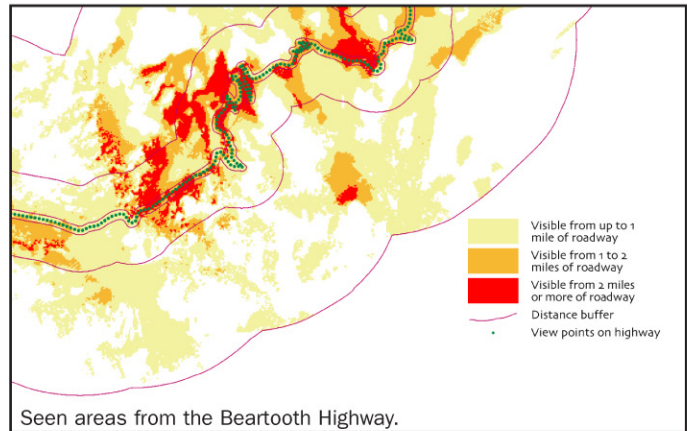
SCENIC BYWAY IMPROVEMENTS VISUAL IMPACT STUDIES

Beartooth Highway, Wyoming & Tarryall Highway, Colorado

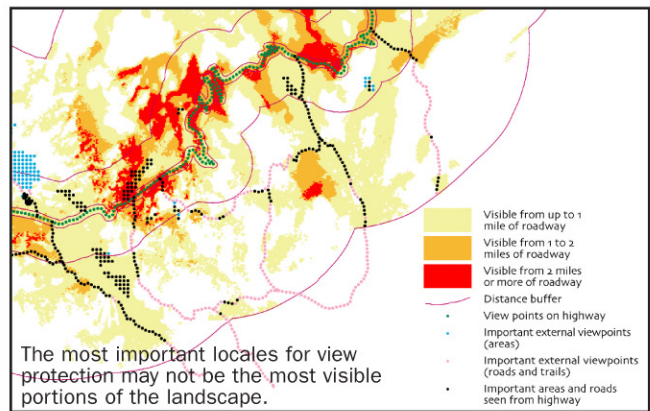
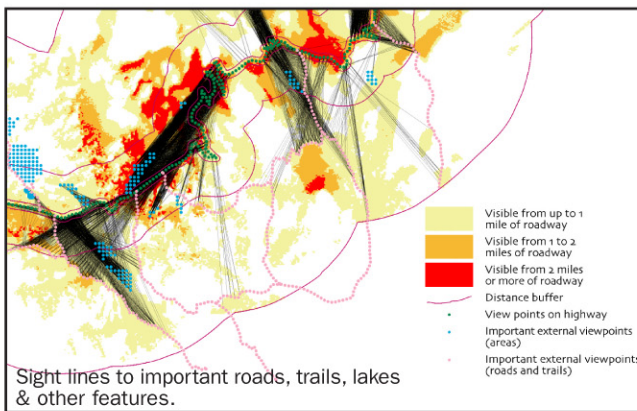
New construction or improvements along nationally-designated scenic byways require that Environmental Impact Statements (EIS) be conducted to ensure compliance with the National Environmental Policy Act (NEPA). Visual impact studies play a vital role in EIS compliance, since visual resources are so integral to the scenic byway experience.

These visual impact studies typically have a qualitative component, assessing factors such as scenic quality and landscape character, along with a quantitative component to assess external visibility. For two recent projects, CTM developed specialized visual analysis tools to improve the analytical results over those achieved using simple viewshed mapping.

The typical external visibility modeling scenario involves estimating the visibility of a segment of roadway from a variety of external viewing platforms such as roads, trails or overlooks. Since many scenic byways have heavily wooded sections, view blocking from trees (usually derived from aerial photographs or satellite images) as well as topography is important. In addition, since the visual impact of a disturbance diminishes with distance from that disturbance, distance zones are also important.



In the end, for each segment of roadway, the reviewer wishes to know: 1) how many external observation points “see” this segment; 2) at what distances from the segment; and 3) in what directions. Simple viewshed mapping is a cumbersome tool for this analysis since it illustrates only the seen area from an observation point. Other tools, such as point in polygon, distance and direction applications are required to fully answer the questions.



CTM has developed special software to directly derive the needed information. Sight lines are constructed between roadway segment points and external observation points and quantities listed above (number of points, distances, directions) are tabulated and made available in both “spreadsheet” and mapping formats.

This software has proven to be extremely useful on the Beartooth Highway in northwestern Wyoming and the Tarryall Highway in central Colorado. Results were produced much faster than in the past and could be readily field checked by reviewers.



Computer Terrain Mapping, Inc.