

## **Section 5 VISUAL RESOURCES**

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Key observation points (KOP) for the Modified Project, and the locations from which the photographs for visual simulations were taken, were selected to match those used in the Original Project Application for Certification (AFC) as closely as possible using GIS data and field-verification.

To ensure a high degree of accuracy in the visual simulations, computer-aided drafting and design (CADD) equipment, geographic information systems (GIS), and the use of a global positioning system (GPS) allowed for life-size modeling within the computer. This translated to using real-world scale and coordinates to locate Modified Project facilities, other site data, and the camera locations corresponding to three-dimensional (3D) simulation viewpoints.

A GIS site map was imported as a background reference. CADD drawings of Modified Project facilities were placed on top of the project site map in GIS. Locations of sensitive viewing areas are also input into GIS. The camera positioning information was then referenced to the 3D data set. The 3D massing models of the Modified Project (including ancillary facilities) are generated in real-world coordinates, scaled, and input into GIS.

Next, the photographs taken in the field were imported into the 3D database and loaded as an environment within which the view of the 3D model was generated. To generate the correct view relative to the actual photograph, the electronic camera was placed at a location (within the computer) from where the photograph was taken. From there, the 3D wire frame model was displayed on top of the existing photo so that proper alignment, scale, angle, and distance could be verified. When all lines of the wire frame model exactly matched the photograph, the camera target position was confirmed.

It should be noted that final simulations were created using CADD files obtained from the Project engineer to remain consistent with general project development engineering. Once field KOP location photos and coordinates for photo locations were gathered, these were incorporated into the final simulation production. The processes described above relate to general simulation construction and are included to assist the reader in understanding the procedures followed to create simulations.

The Visual Simulations are contained in Appendix B.