

Task Agreement Number: J1330090030 Park: Bryce Canyon National Park Cost: \$7,000.00

PI: David Maxwell Project: Complete GIS Infrastructure coverage

Start date: June 1, 2009 End Date: October 30, 2010 Project Number: SUU-16

Final Report: Brief Report Abstract - September 13, 2010

The following is a summary of the SUU/BRCA GIS infrastructure project for 2009-2010.

This project was designed to complete the GIS utilities infrastructure for Bryce Canyon National Park, which was started the previous year. Initial project organization included job safety review and integration with NPS personnel to coordinate access to the park. In addition we were required to request and obtain an "off trail" travel permit for the ATV on Forest Service property. The Forest Service access was required for property to the north and West of NPS boundaries along the power-line access regions. One student was assigned to this project (Clint Chappell) under the direction of the PI (David Maxwell) for the duration of the project. Our direct contact person was Laura Schrage of the NPS, who we coordinated with for most concerns related to the project and escorted when needed and gave access to locked gates and restricted areas to ease project completion. Many thanks to the NPS personnel who helped make this project a success.

The project required that the field work be collected early fall and late spring to avoid weather and any potential weather related ORV track. Field work was completed for all power poles west of the NPS boundary to the pump house and north of the NPS boundary to the power substation in Bryce. In addition several RV cleanouts were collected in the north and south campgrounds, as well as additional sewer lines and updates to abandoned leach fields, which updated the sewer utility infrastructure to its current status. The SUU student was able to spend time with BRCA NPS FM personnel in order to update any buried telecom, and power line locations based on the FM personnel qualitative input. This qualitative data was based on the hands-on knowledge when lines were installed and/or uncovered for work related service.

GPS data was collected with a Trimble Geo-XH and differentially corrected with H-Star technology and exported and stored in UTM NAD 83 zone 12 Projection in a file-based ESRI GeoDatabase. 2005-06 SmartCom data was converted to an ESRI GeoDatabase with associated metadata and included in map updates. An updated DS-Map Series book was completed, cartography updated and reviewed, exported to a pdf, and integrated into an 8-1/2x11 FM utilities book. The original 24x36 maps were also updated based on the new data collection for 2009-1010. Transportation was provided without cost to the NPS to and from project site and all equipment was provided by SUU for data collection and GIS processing and cartography. FGDC metadata was updated as need from the previous year to reflect new data and methods. The final project dataset was delivered via FTP to the NPS service in August 2010 and was validated as received from Laura Schrage of the NPS. There are no materials and or data that have yet to be returned to the NPS for completion of this project. All verbal verification has been received for project completion and all that remains is the receipt of this final report.