

## **Project Summary**

### **Rocky Mountains Cooperative Ecosystem Studies Unit**

**Project Title:** Heritage Partnerships Program 3D Digital Documentation Best Practices

**Discipline:** Cultural  
**Type of Project:** Technical Assistance  
**Funding Agency:** National Park Service  
**Other Partners/Cooperators:** University of Colorado at Denver  
**Effective Dates:** 8/15/2012 - 12/31/2013  
**Funding Amount:** \$48,555

**Investigators and Agency Representative:**

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**Project Abstract:** Throughout the architectural, engineering and survey industries several new digital imaging technologies have emerged to produce precise 3D point clouds and 3D models of a diversity of resources ranging from expansive oil refineries to entire interstate highways. These "reality capture" technologies include aerial, terrestrial, and mobile LiDAR (3D Laser Scanning), digital photogrammetry and reflectance transformation imaging (RTI). These imaging technologies have become ubiquitous today in the commercial architectural, engineering, and construction market and are able to capture tens-of-thousands to hundreds-of thousands of data points per second to accuracies within microns or centimeters. The detail, accuracy, and completeness of the data collected represent a quantum leap over traditional survey methods.

However, aside from a few governmental entities such as the Federal Highway Administration and Smithsonian Institute, the federal government and, specifically, the National Park Service has been slow to adopt these new technologies. Nonetheless, numerous NPS units have already undertaken digital documentation projects within the Intermountain (IMR) and Pacific West (PWR) regions over the last 5 years. Within IMR, it is estimated that at least 25 parks have completed some form of digital documentation. Unfortunately, no NPS guidelines or Best Practices currently exist to help parks choose the most appropriate technology, develop cost effective and up-to-date scopes-of-work, disseminate the information to a broader audience, and to archive the digital data in a readily retrievable format. In the same way, NPS partners - such as State Historic Preservation Offices, statewide preservation organizations, other federal agencies, and academic partners - are also seeking guidance on Best Practices for digital documentation.

The purpose of this agreement is for the University of Colorado Denver to assist the NPS in two ways: 1) to develop best practices for digital documentation and 2) to jointly develop recommendations for the development of a digital documentation program within IMR.

**Outcomes with Completion Dates:**

Completion of Draft Technical Report: March 15, 2013; completion of Final Report due May 15, 2013.

**Keywords:** National Park Service, Intermountain Region - Heritage Partnerships Program, University of Colorado at Denver, digital data, 3D technology, best practices, cultural resources