

**“GPS Mapping and Community Development”**

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## Final Report Narrative

Name of Project: GPS Mapping and Community Development Grant Period: February 1, 2012 – June 30, 2013

Grantee Name: U of Pittsburgh at Bradford Project Director: Dr. William Schumann

### Description of Project:

The GPS Mapping and Community Development project is a teaching project (through ANTH 0250: Applied Anthropology; instructor: Dr. William Schumann) that is intended to provide Pitt-Bradford students with applied learning experiences through campus-community research partnerships that build sustainable community development capacity. Specifically, Pitt-Bradford students and faculty would develop walking trail user application data for mobile devices that would serve public use and educational purposes in Smethport, PA. This project is developed in partnership with the Allegheny National Forest Visitors Bureau, the school board and local government of Smethport, Pitt-Bradford's Center for Rural Health Practice, and the Potato Creek Trail Association of Smethport. The GPS mapping project relies on widely available, user-friendly mapping and data entry technologies available through Google maps and related digital photography software. This project is innovative for developing a program of classroom-based learning that would fully integrate and apply the principles of place-based studies, project management, and student-led research as the central means of conveying course information on applied anthropology.

### Activities:

In addition to the conference presentation, poster, and other activities, please include details regarding the following requirements from the Scope of Work:

Methodology (general): Students in Applied Anthropology would: (1) physically map and digitally photograph trails to identify ideal points for natural and/or historic data entry; (2) compile natural scientific and historic data (text and photography for the first phase of project development) on Smethport to upload onto the trail application maps so that trail users can access this information via handheld devices such as smart phones. Thus, trail users would have access to on-site, informational resources that would enhance the walking experience and (in principle) set the tourism assets of McKean County apart from those of other areas. Students in a second class, EDUC 0230, Family and Community Relationships, led by Dr. Reece Wilson, will design GPS-based lesson plans for different age groups in the Smethport Area School District on trails adjacent and accessible to area schools. Thus, students would be exposed to place-based learning

in the sciences and humanities with the capacity to promote a longitudinal curriculum (i.e., measuring tree ring growth or water quality over time). Students in two computer software design courses led by Mr. Jeremy Callinan provided software support for the development of an interactive smart phone application that would allow users to view the GPS data. The methodology includes:

- Plot trail routes in Google maps software programs by walking trails with GPS data recording equipment.
- Mark key points of interest per latitude and longitude, which serve as points of reference for the future collection of information related to those specific locations. Develop and upload additional data (text, images, and/or audio files) onto these GPS coordinate points via an administrative interface, including STEM-specific lesson plans.
- Link data-rich trails to application software for IOS and Android smart phones, which users can access via internet download, QR code scan, or real-time streaming.
- Store and promote public use trail data on the Allegheny National Forest Visitors Bureau website to maximize public use; store lesson plan data and scientific inventories of trail species on web pages of the Allegheny Institute for Natural History at Pitt-Bradford.
- Link additional data about locally-owned businesses adjacent to the trail system to promote area environmental tourism.
- Create web- and classroom-based tutorials to instruct area trail associations and schools about how to maintain, upgrade, and extend Smethport's digital environmental trail network.

In addition:

Activities with community partners (include partner name(s), dates and locations of meetings, topics of focus-group discussions, etc.) included

May 2012, Smethport, PA project partners meeting (mayor, school board representatives, trail association representatives)

Oct 2012, Smethport, PA mapping exercises, including field interviews with trail association, local historical society, and mayor.

Dec 2012, Smethport, PA town hall meeting (approx. 30 community members attending) to present the application to the community.

In addition to the community-based presentation (above), students participated (or are set to participate) in the following events:

2013 "Mapping Campus-Community Partnerships with GPS Tools." Innovations in Technical Education to Advance Sustainability Conference. Alfred State University, Alfred, NY, forthcoming June 6-8.

2012 Invited lecture. "Using GPS technology to create trail assets." Land & Water Trails Conference, Pennsylvania Wilds Program (Pennsylvania Department of

Conservation and Natural Resources). University of Pittsburgh at Bradford, Oct.  
4.

### **Project Outcomes:**

Construction of a digital infrastructure to support public education, local businesses, culture, and history, and public health. Multiple presentation and publication opportunities.

### **Problems Encountered:**

A large-scale endeavor. While promising, the project potential has meant a considerable amount of time networking with local and state officials, multiple project partners, and potential funders. As this was a pilot year it is expected that partnerships and support will be easier to manage in future years of the project.

A legal context for community development. At the advice of state officials and project partners, information about the smart phone application was submitted as an "invention disclosure" to the main campus of the University of Pittsburgh. It was learned through this process that (a) students will have to sign away intellectual property rights to participate in future projects (b) legal language is required to protect project partners from potential lawsuits by users. Due to additional circumstances, the sum of the process is that (a) the application will remain as an open source tool at no/low cost to user groups (b) ownership and licensing rights will stay with the two principle project creators (Schumann and Callinan) and (c) a range of legal protections are being created for the GPS project by intellectual property lawyers before the application can go live.

### **Program Continuation and Sustainability:**

PA Department of Environmental Protection Grant to support phase II of mapping in Bradford, Pa (fall 2013). Project goals are refining the mapping tutorial tools and the application user interface.

### **Conclusions and Recommendations:**

The ATP has been an excellent incubator for this project. Given the GPS project's potential as an educational and economic development resource, the long-term future of the project greatly depends on funding and other forms of support; however, a low-scale mapping process and be replicated in northwestern PA for the foreseeable future.

### **Attachments (in PDF format):**

With regrets, Dr. Schumann's hard drive crashed in early March 2013 and all data were lost with regard to electronic documents requested for this section. However, an annual project newsletter will be developed after the remaining legal hurdles with the project are met.