Best Management Practices for 4-H Community Mapping Projects
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The Oklahoma 4-H program received four 2006 ESRI Community Mapping Software Grants. The purpose of this research was to identify factors contributing to successful 4-H community mapping projects and to identify a set of Best Management Practices for use by other organizations conducting community mapping projects. An expanded version of this paper, including case studies for each project, is available in the 2007 ESRI Education User Conference Proceedings, available at gis.esri.com/library/userconf/educ07/index.html.

The research was conducted using qualitative research methodology. Data was collected from artifacts related to the projects, including grant applications, project report summaries, personal communications with the author, and project visits by the author. The data was summarized into case studies and analyzed for common themes regarding the strengths and weaknesses of the projects. All identifying information was removed to maintain the anonymity of the participants. Brief project descriptions projects are provided, followed by the analysis and conclusion, including a set of Best Practices for Community Mapping Projects.

Project A

Recipient A worked with a group of about 30 youth in the 6th through 9th grades. These youth voluntarily participated in an after-school program which provides technology based educational programming and childcare. This program planned to map the hiking trails in the nearby wildlife refuge, partnering with the refuge staff to create a map for the public. A long term goal was to develop a website for downloading GPS data for each trail for use by hikers.

Project B

Recipient B planned to locate historical Native American sites within tribal lands and map historical locations important to the XXXXX (Tribal) Nation. The XXXXX Nation Museum curator would help the club identify and locate sites with cultural and historical importance, including cemeteries, stomp grounds, home sites, council grounds, battle fields, etc.

The target population for this project was 25-30 youth, ages 13-18 years old, primarily from three small rural schools with limited resources. The long range plan for the Club is to continue developing mapping projects, with suggestions for further activities taken from the students. This project plan also included expanding the GIS program into new 4-H clubs, with the original students doing the teaching.

Project C

The third project planned to map XXXXX Lake Recreational Areas. The plan included partnering with the Corp of Engineers to create maps for the public, identifying facilities at the lake. Teenage youth from local 4-H clubs will collect data and work with the agency partner to create useable maps. These maps would be posted and made available to hand out at the gated entries to the lake. This project also includes a website containing information about the project.

Over the past several months this project has taken a new direction. The commisioners of XXXXX County asked the project club to help them map the bridges of the county for the Oklahoma Department of Transprotation Bridge Inspection Information Program. This involves mapping over 200 bridges in the county plus recording the age, load rating, structure type, material, and a digital picture of each bridge.

Project D

In 2001, a small Oklahoma community was hit by a tornado that caused extensive damage. One of the areas destroyed was the County Fairgrounds, including the 4-H Building. Through this incident, local 4-H members realized that no storm procedures were posted at public meeting places and people from outside the area had no idea where to go in case of a tornado. The 4-H members chose to map public storm shelters in the county for their project.

After completing this project, the team started an additional project. 4-H members in cooperation with another youth organization, local rural development agency, the Oklahoma Department of Environmental Quality, and USDA Rural Development, conducted an Identifying Illegal Dumpsite Project. They created brochures, PowerPoint presentations, an elementary recycling education program, and a speaker's notebook. This information was given to the county commissioners and also presented at a Regional Recycling Workshop.

Project Analysis and Future Applications

Identified Issues in Implementing Community Mapping Projects

Through these four projects, factors influencing success and failure can be identified. The first issue is time. Three of these projects (A, B, & C) have the potential to be successful but have not had time to mature. The ESRI grants are based upon a one year time frame, which may not provide enough time for a project facilitator to develop a team of youth and adult partners, train the participants, and carry out the work.

The second issue identified is youth participation. Youth should be involved in selecting the project. If they are not involved from the beginning, they may not take an interest in completing the project. If the youth are excited about the selected project, they are more likely to complete it.

The third issue is partnerships. These types of projects require adults and youth committed to working together to meet the community need. Projects need a facilitator, someone willing to organize the project, youth, willing to work on the project, and finally, the projects need additional adults, such as teachers, local agency personnel, or volunteers to work with the youth and share their expertise.

Youth-Adult Partnerships as a Best Management Practice

> Youth-Adult partnerships are a fostered relationship between youth and adults where both parties have equal potential in making decisions, utilizing skills,

> mutual learning and promoting change through civic engagement, program planning and/or community development initiatives (Jones & Perkins, 2004, p.5).

Youth-Adult partnerships are particularly applicable in community mapping projects. In addition to involving youth in project selection, the unique needs of youth must also be considered. These needs are scheduling, transportation and financial constraints (Innovation Center, 2003).

Community organizations (such as 4-H) can also benefit from these partnerships. Communities benefit by developing youth who are more prepared to become active members in their communities (Wright, 2000). The participating adults experience the competency of youth first hand and begin to perceive them as legitimate contributors to society and the decision making process (Innovation Center, 2003).

Best Management Practices

Project D can serve as an example of best management practices in community mapping projects. The following five steps contributed to the success of this project:

1. **Forming quality partnerships with youth, adults, and experts in the field** – this team consisted of youth from two organizations, two local agencies, and a school district. Each partner, including the youth, had a specific purpose and value in the project.

2. **Securing adequate funding to support the project** – through the partnerships, this team used multiple funding sources to provide financial support for project expenses.

3. **Involving the public to create excitement and awareness** – the team involved the public in identifying storm shelters and illegal dumpsites. By adding public awareness, participants felt like they were contributing to the welfare of the community.

4. **Developing an educational program to present project outcomes to multiple audiences**- the team created programs for schools and public organizations to raise awareness of the issues they selected for their project.

5. **Evaluating the project to determine impact** – the team found it important to look back and see their accomplishments. This also gave the team the opportunity to 'showcase' their accomplishments to the community.

Implementing these Best Management Practices should enhance any community mapping project.

References

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