CMaP PROJECT
Jane Barfuss, Washington County School District
Price 2009

Project Title: Roundabout Safety

Essential Question(s) -Spatial Issue	Can students use technology to make a difference in their communities?
Project Description	In the Washington County School District, there is a homeschooling option called Washington Online Schools. The teacher offers technology classes to interested students (grades 4 – 8) once or twice a month. Teaching GPS and mapping would be a natural extension of the types of project-based learning offered. The class meets in the district computer lab that is right next to a roundabout. Even though there are yield signs and sidewalks, parents and other teachers have expressed concern about the safety of walking through or driving around that area. Although roundabouts are built to improve safety in intersections, the vegetation that is allowed to grow in them may decrease visibility and increase danger of accidents. Students could make suggestions to the city about making these roundabouts safer. Since there is a second roundabout two blocks north, it would be very feasible to walk the group of students to both places to take pictures, make calculations, gather coordinates, discuss safety issues, and present their ideas.
Community Issue or Problem Selected -How project evolved?	Inconsiderate drivers have been a concern for safety of teachers and students coming and going from the district offices. There is bronze artwork in the area that can distract both drivers and pedestrians, so tall or dense vegetation adds to the hazards. By working on the project, the students will raise their awareness of safety issues and learn how to become involved in community issues.
Community Partner(s)	Washington Online Schools City of St. George
Project Objectives	Raise student awareness of safety and the power they have in encouraging change in their community. Understand how to use GPS and GIS to map local areas. Use digital cameras to photograph the roundabouts.

Utah Core Standards/Objectives	Students will understand the world in spatial terms. Students will collect and interpret geographical data using maps, charts, and GIS (Geographical Information Systems). <u>Educational Technology</u> - (Grades 4 - 8) Standard 4: Use content-specific tools, software and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research. Standard 5: Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum. Standard 6: Design, develop, publish and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom. Standard 7: Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom. Standard 8: Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems. Standard 9: Demonstrate an understanding of concepts underlying hardware, software, and connectivity, and practical applications to learning and problem solving. <u>Health Education</u>, 5th grade: Standard 5: The students will adopt behaviors to maintain personal health and safety and develop appropriate strategies to resolve conflict. Objective 1: Describe potential hazards, safety procedures, and first aid within a variety of circumstances. Identify and avoid potential hazards in a variety of situations. Standard 7: The students will understand the value of service and effective consumer practices.

Project Timeline (include a step by step Procedures)	Co-teachers will line up all materials before school begins in August. During the first couple months of school, we will schedule two long class periods for this project: 1 hour to learn how to use GPS. 2 hours to walk to/from roundabouts, take photos, and gather data. 2 hours using computers to download GPS points, place on map, to create/edit data tables, and insert pictures. 1 hour to create PowerPoint presentation or website with photos and data. ½ hour to present data to an audience--parents and/or a city official.
Resources Needed	Digital cameras available from district media center. GPS units available from district media center. Clipboards and data table handout for outdoor group work. File management folders created and organized ahead of time. For software, we will use MapWindow, ArcGIS, or Google Earth, which are free or already installed on the computers in Woodward Lab where this class meets. St. George aerial image file.
Skills Required	Show students how to save data. Take photos with digital camera and download. Make math calculations. Use GPS unit to gather coordinates. Use coordinates to make map. Make presentation in PowerPoint or in a website.
Project Team Member Roles	**Teacher(s):** Line up meetings with City of St. George, provide cameras and GPS units, teach how to use GPS units, help with math calculations on vegetation, prepare computers and lesson plans to each ArcMap or Google Maps. Help design presentation as website or PowerPoint. **Students:** Take photos of the vegetation in the roundabouts. Estimate height of vegetation using angles. Help map the roundabouts and take screen shots of them. Help design a website and/or PowerPoint to make a presentation to adults. **Partner(s):** The City of St. George will be asked to provide information about roundabouts and listen to our proposal for change.
Project Products	Photos taken of vegetation in downtown roundabouts. Measurements taken of roundabout and vegetation and shown in appropriate map form.

	A website showing the results of our study and/or a verbal presentation for parents and/or city official.
Assessments (rubrics, scoring guides)	Field work and group work observations. Field data tables with GPS waypoints. Completed PowerPoint, website, or other form of presentation.
Celebration/Presentation	Presentation for adults to understand the student concerns—parents and/or city official.
Plans for Future CMaP Activities	As a district professional development specialist for technology, I will help with future trainings in the district for GPS, GIS, and CMaP. I will also support teachers who want to work with their students to design and complete a project.