To Dam or Not To Dam

STEM Summit

February 2012

**Goal** (Enduring Understanding)

**LS2E**-Investigations of environmental issues should uncover factors causing the problems and relevant scientific concepts and findings that may inform and analysis of different ways to address the issues.

**APPE**-Scientist and engineers often work together to generate creative solutions to problems and decide which ones are most promising.

**APPH**-People in all cultures have made and continue to make contributions to society through science and technology.

**General Project Outline**-Each activity can have the expectations adjusted for MS, HS or College level.

* Using internet to research topographic data for the area using GIS software and flood plain information from the US Army Core of Engineers and information from the USGS/NOAA (Science Technology & Engineering)
* Using internet to research amount of water is being held back by dam in the reservoir and how much water is being released and how that would affect the flood plain? (Technology, Math & Engineering)
* Ask students to research the issues surrounding adding or removing a dam (pros and cons of adding or removing a Dam for the local ecosystem) (Science, Technology, Engineering, & Math)
* Identify careers of individual involved in the decision making process for adding or removing a dam. (Science, Technology, Engineering, & Math)
* Expert presenters from different areas, examples being Dept. of Fish and Wildlife, Tribal Leaders, Power Utilities, College Professors, Industries, USGS, Dept. of Ecology, Community Businesses, Engineers (Science, Technology, Engineering, & Math)
* Research the water cycle (Science, Technology, Engineering, & Math)
* Smart grid technology help reduce the power needed in the area? (Science, Technology, Engineering, & Math)

**Instructional Activities**-Place students in random (not so random teacher selected) groups.

Choose one of the following groups projects to present your learning to the class

* + Town meeting
  + Debate
  + Commercial
  + Research paper
  + Poster
  + Play
  + Brochure

**Assessment**

Investigate a local environmental issue by defining the problem, researching possible causative factors, understanding the underlying science, and evaluating the benefits and risks of alternative solutions.