# NEMO Power Tools Session
## Tuesday, October 21, 2008, 8:30 am

**The Stormulator**: **An Interactive User-Friendly Calculator For Matching Pre-Project Storm Water Runoff Volume And Rate**
Timothy Lawrence, CA WALUP

Low Impact Development (LID) appears in virtually every storm water permit in California. Controlling hydromodification is one of California's top priorities; and by January 2009 most new development and redevelopment will be required to match pre-project storm water runoff volumes and rates. This will require a rapid shift in how storm water is managed. Planners, landscape architects, architects, developers, and other professionals need user-friendly, effective tools to plan, design, and implement alternative approaches for managing storm water. This presentation demonstrates an interactive spreadsheet model that allows planners and designers to determine how much runoff they need to store, retain and treat, and what scale and size of LID features to place on a site. The calculator provides automatic calculations on runoff rates and volumes based on place-specific soil types, rainfall events, rates of infiltration and the use of alternative storm water management techniques. It allows for customization for any type and size of site.

**Arizona GIS & Web Tools: NEMO Wet/Dry & WEPPCAT**
Kristine Uhlman and Phil Guertin, University of Arizona, AZ NEMO

Arizona NEMO has developed a mapping protocol and GIS data management and processing methodology to record the changing perennial reaches of Arizona Rivers.  Built on a local community volunteer monitoring program that has gathered on the third Saturday of June since 1999 to record where water flows in the San Pedro River, NEMO Wet/Dry has formalized the volunteer monitoring program and expanded the activity across Arizona. The goal of yearly monitoring is to create a long-term record of changes in river flow - while the record of any single year is interesting it is a record for multiple years that may tell what is really happening to the flow in the river.   In addition, the goal of Wet/Dry is to build community participation, provide outreach education on the importance of long-term monitoring of our natural environment, and foster understanding of and responsibility for the health of Arizona watersheds.  This presentation will include the 8-minute NEMO training video, GIS mapping protocol and GPS training documents, example field data sheets, and an overview of the monitoring results on several rivers in Arizona.

The Water Erosion Prediction Project - Climate Assessment Tool (WEPPCAT) is a web-based erosion simulation tool that allows for the assessment of changes in erosion rates as a consequence of user-defined climate change scenarios. The tool is based on the USDA-ARS Water Erosion Prediction Project (WEPP) erosion model.  Global warming is expected to lead to a more vigorous hydrological cycle, including more total rainfall and more frequent high intensity rainfall events. These rainfall changes, along with expected changes in temperature, solar radiation, and atmospheric $CO_2$ concentrations, will have significant

impacts on soil erosion rates. WEPPCAT allows users to assess the impacts of land management on hillslope erosion under different climate change scenarios. The presentation will review the science behind the impacts of climate on erosion rates, and will illustrate the application of the WEPPCAT tool for assessing climate change impacts on erosion.

**Buildout Analyses**
John Rozum, CT NEMO
A much ballyhooed tool in the planning community is the buildout analysis, which allows the crafty NEMOid to estimate what a town, county or watershed would look like if every available piece of land were to be built upon, given certain constraints.  What exactly is entailed in doing a buildout?  How accurate is it?  What software (if any) and data do you need?  And, is it: (a) the magic planner elixir to cure all ills; (b) the tree-hugger's all-purpose tool, meant to lock out all development, or; (c) none of the above?   This presentation will take you on a trip through buildout world, and lead a discussion of educational uses, limitations, and pros and cons of this tool.

**New Local Decision Maker Decision System for Communities**
Robert McCormick, Indiana-Illinois Sea Grant, Purdue Extension, and POWER

A new web-based GIS decision system called Local Decision Maker is available for use by planners and natural resource groups in Indiana.  Its purpose is to improve comprehensive planning, resulting in a final plan that matches a community's economic, ecologic, social, and cultural resources and future development.  To date, we have focused our efforts on inventory and analysis because it forms the foundation of every plan.  Users follow a standard format that guides them through the inventory categories and gives them the opportunity to use a GIS map service to display and understand existing conditions and create *pdf* files for using in plans.  During the second half of 2008, our efforts will shift to other parts of the comprehensive planning process.  Local Decision Maker is a joint effort among Illinois-Indiana Sea Grant and Purdue University's Centers for the Environment and Regional Development and Extension.   The program's website is
http://ldm.agriculture.purdue.edu