

# Truckee Meadows Flood Control Project

## July 2004 Newsletter



### Welcome!

This is the debut issue of our monthly newsletter designed to keep you informed about the progress of the Truckee Meadows Flood Control Project. Your suggestions are welcome. Just let us know by contacting us at [jerry.w.fuentes@usace.army.mil](mailto:jerry.w.fuentes@usace.army.mil)

### The Truckee Meadows Flood Control Project At A Glance

The project began solely as a flood control project. However local interest in restoring the Truckee River sparked the preparation of a general reevaluation report (or GRR in Corps-speak). The project is now a multi-purpose project with project purposes of flood damage reduction, ecosystem restoration and recreation with Washoe County as the non-Federal sponsor. The County will be cost-sharing the project in construction. By expanding the project purposes, it has also become necessary to expand the project's study area from the downtown Reno and Truckee Meadows area studied in the 1980s and 1990s to the entire reach of the Truckee River from just upstream of Booth Street in Reno to Pyramid Lake. For the ease of study, the Corps has broken down the area into three reaches (Downtown, Meadows, Downstream of Vista). In the last year, the Corps has been busy accumulating data from this expanded study area that was not previously studied and the results of these technical studies are coming in.

### Downstream Hydrology Complete

On June 17, the Corps of Engineers invited the Community Coalition, stakeholders from Washoe and Storey Counties, and other interested parties to a presentation on the completion of the downstream hydrology and revised downtown Reno hydrology.

On July 6, the Corps of Engineers met with Storey County Building Planner Dean

Haymore, who was unable to attend the June briefing, to present the results of the downstream hydrology. Representatives from Rainbow Bend were also present at the presentation in Virginia City. The Corps provided a brief presentation of the of the baseline hydrology needed for evaluation of project alternatives. The baseline hydrology will be used in the hydraulic models to delineate the 1% chance and other frequency floodplains as they exist today under without-project conditions. These floodplains will be compared to with-project floodplains for various alternatives to determine economic benefits or adverse effects. The hydrology is comprised of two important determinations: peak flow frequency and concurrent local tributary runoff. The January 1997 event produced the highest historic peak flows along the entire Truckee River with an estimated 21,000 cubic feet per second at the Vista gage. This flood was very close to the 1% chance event (estimated to be 20,000 cfs at Vista) The Corps determined the flow frequency curves for the lower Truckee River by analyzing historic streamgage records. Hydrologists also examined the possibility of concurrent local tributary runoff. It was determined to be unlikely that the 1% event would occur on a major tributary like Long Valley Creek (10,000 cfs) at the same time a 1% event is occurring on the Truckee River. During the 1997 flood, the USGS estimated that Long Valley Creek had a peak of 1,600 cfs.

Exceedence Frequency/ Equivalent Year	At Vista*	Near Tracy	Below Derby Dam	Near Wadsworth	Near Nixon
5%	10,00	10,50	9800	9800	9700
2%	14,50	15,30	14,20	14,100	14,300
1% - 100 yr	20,20	21,50	19,90	19,600	20,100
0.5% - 200 yr	29,30	31,40	28,90	28,200	29,400
0.2% - 500 yr	52,00	55,90	51,30	49,900	52,700

Above is a table of flow frequencies at specific places along the Truckee River for several events. The flow totals are in cubic feet per second.

The Corps also did some conceptual water surface calculations specifically at Rainbow Bend with existing topography and the new hydrology. We determined that for every additional 1,000 cubic feet per second in the Truckee River at Rainbow Bend, the water surface could be expected to go up by approximately 2.5 inches.

**1,000 cfs = ~2.5 inches**

### Hydraulic Modeling is Next!

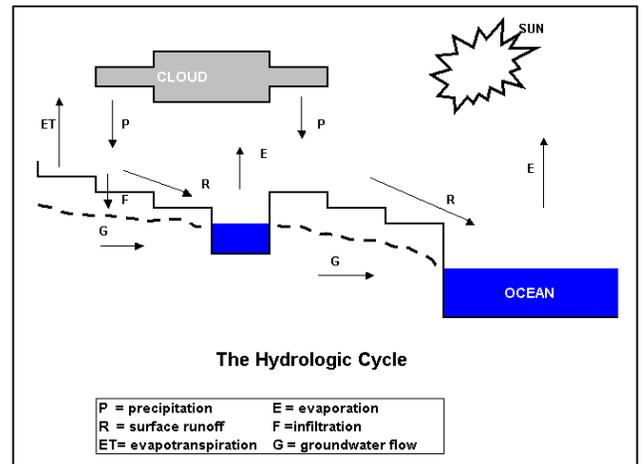
The U.S. Army Corps of Engineers hydraulic designers will be taking the recently completed hydrology and feeding it into a hydraulic model later this month. The hydraulic model will generate floodplains and flood depths for both existing conditions and a variety of with-project scenarios to determine if the flood control project upstream of Vista will have an effect on downstream resources and structures.

A public workshop will be held once the hydraulic modeling results are completed. This workshop will be held to discuss with downstream stakeholders the results of the modeling and seek input for possible solutions to any adverse affects to the residents by the upstream project. The workshop will likely be held in early October. A meeting notice will go out 30 days in advance to give ample time for interested parties to arrange their schedules and participate.

### What's the Difference Between Hydrology and Hydraulics?

In general, *hydrology* is the when and where of water. The hydrologic cycle is key to hydrology, measuring rainfall and runoff. A simplified diagram of the hydrologic cycle is presented below.

*Hydraulics* is the mechanics of water movement through a system like a river, canal or pipe. Precise measurements of velocity and volume are often used in hydraulics. Hydraulic models generate floodplain maps for determining damages.



### Habitat Evaluation Nearly Complete

In cooperation with the Reno office of the U.S. Fish and Wildlife Service, the Corps is nearing completion of the Habitat Evaluation Procedure (commonly called HEP) for the Truckee Meadows Flood Control Project. This process evaluates the relative value of existing habitat along the Truckee River. The process also helps the Corps evaluate the expected results of various restoration scenarios through the Truckee Meadows reach and in 11 other reaches downstream of Vista. Restoration is a key component to this multi-purpose project and provides important habitat to support the Living River Concept for the Truckee River. More on this important evaluation in upcoming newsletters and on the website!

### Next Newsletter

Coming up next month, more on the HEP, results of the hydraulic model in downtown Reno, and an update on the hydraulic model in the Meadows reach!