



FEMA

High Marks for Accuracy: Tracking Flood Levels in Lewis County

Lewis County, WA - Lewis County, Washington has a long history of damaging floods originating from three major rivers (the Chehalis, Cowlitz, and Nisqually) as well as numerous tributaries, including the Newaukum and Skookumchuck Rivers.

“Past floods have really taught us a lesson,” said Martin Roy, a senior engineer and surveyor for the Lewis County Department of Public Works.

On December 1st, 2007 Lewis County was again inundated by a flood of record proportions. This time, the Chehalis River overflowed its banks and poured huge amounts of water into the streets and structures of several Lewis County communities. Water levels were recorded as high as nearly ten feet above the Chehalis’ normal flood stage in some areas.

Having learned the lesson from delays in previous floods, Martin Roy and his team did not hesitate to act. “The flood occurred on a Monday,” said Mr. Roy. “On Tuesday afternoon, as the water was still receding, we were out marking peak water elevations.”

The procedure to capture water elevation data is initially simple. A series of points are marked throughout an impacted community. These can take the form of marks made on walls, nails driven into telephone poles, and other similar methods of indicating how high the water actually reached. At each point, a Global Positioning Satellite (GPS) reading is taken and a description of the area and marking is noted.

After durable markings are placed and catalogued, surveyors can return at a later date to determine the elevation of the high water marks using precise instruments.

Previously, high water mark collection in Lewis County was funded by matching grants provided by the Washington Department of Ecology’s Flood Control Assistance Account Program (FCAAP), resulting from a channel migration study. This year the Department of Ecology is assisting directly in the high water marks study with the contribution of equipment and personnel.

“We’re teaming up with the Cities, the State’s Department of Ecology, and the Federal Emergency Management Agency (FEMA) to complete the collection of elevations,” said Matt Hyatt, Lewis County’s Geographic Information System (GIS) Manager. “Our GIS Division is acting as the central location for collecting and distributing the maps and information that will aid in the planning effort. Once all the elevations have been surveyed by the different agencies, we’ll compile them into a single map which will demonstrate the extent and depth of the inundation area, and assist analysis by the flood engineers and specialists to better understand the exact nature of this event.”

Having such data improves the quality and accuracy of flood hazard mapping, flood insurance studies, and flood risk analysis. Greater detail in high water mark tracking assists in the approval and success of grant applications and helps with prioritization of elevation and acquisition projects.



Lewis County,
Washington



Quick Facts

- Year: **2007**
- Sector: **Public**
- Cost: **Amount Not Available**
- Primary Activity/Project: **Cooperative Technical Partner Activity**
- Primary Funding: **Cooperating Technical Partners (CTP)**