



Unified Sewerage Agency of Washington County

Full Mitigation Best Practice Story

Washington County, Oregon

Washington County, OR -- On May 12, 2000, the Unified Sewerage Agency of Washington County, Oregon (USA), signed a Partnership Agreement with FEMA under the Cooperating Technical Communities (CTC) initiative (now the Cooperating Technical Partners [CTP] initiative). Under that Agreement, USA and FEMA agreed to work together to ensure flood-hazard information for the incorporated and unincorporated areas of Washington County served by USA is kept up to date and accurate.



The first mapping activity being undertaken by USA and FEMA is a revised study of the 166-square-mile Tualatin River. Under its agreement with FEMA, USA will perform detailed hydrologic and hydraulic analyses and prepare floodplain and floodway mapping for the Tualatin River and its tributaries.

According to USA, the project will result in the development of numerous products that will be of value to the community officials and residents of Washington County, including:

- Ecological inventory and condition ranking of stream reaches using the Rapid Stream Assessment Technique modified for Tualatin River Basin conditions. This information will help USA to set priority and proportion to enhancing stream conditions, based on the anticipated benefit to water quality and/or aquatic species. City and County officials may use the technical information as part of their required natural resources inventory work for land-use planning.
- Hydrologic modeling along all mainstream and major tributary reaches. A consultant to USA will use the U.S. Army Corps of Engineers' (USACE) Hydrologic Engineering Centers – River Analysis System (HEC-HMS) event-based model with basin-specific rainfall distribution information. The resulting models will be used to determine where critical low flow or flooding conditions may exist along the stream system. Design engineers will use the flow information for hydraulic modeling.
- Hydraulic modeling along all mainstream reaches and the Tualatin River where FEMA has identified and mapped floodplains. A consultant to USA will use the FEMA-approved USACE Hydrologic Engineering Centers – Hydrologic Modeling System (HEC-RAS) model with flows derived from the HEC-HMS model above or from previously developed USACE models as appropriate. The models will be used to properly size infrastructure crossing the stream, provide flood-management guidance, identify critical velocity areas and help determine fish passage through structures. The cities and county may use the model information to map any changes to the floodplain boundaries and determine culverts in need of repair.
- Ground-surveyed topographic mapping of the stream corridors using Year 2000, GPS-controlled aerial mapping for base maps. This information is necessary to build the hydraulic model and will be used during the design of enhancement and sanitary sewer projects that are in the floodplain. The mapping will serve as the base to which all inventory information will be linked.
- Identification of stream/floodplain enhancement needs and aquatic species migration barriers. Prototype design concepts and unit cost estimates will be developed through a charette (workshop) process with the technical consultants, early in the project. The prototype design elements will then be identified for application in the field by the consultants. The information will help USA further understand the extent of enhancement needed, as well as assist with setting priority and proportion to the efforts we undertake for Clean Water and Endangered Species Act response.

FEMA will use the digital topographic, hydrologic, and hydraulic data and mapping to produce a new Digital Flood Insurance Rate Map (DFIRM) for all of Washington County. This will mean up-to-date flood hazard information for residents in the Cities of Beaverton, Cornelius, Forest Grove, Hillsboro, King City, Lake Oswego, North Plains, Portland, Rivergrove, Tigard, Tualatin and Wilson; the Towns of Gaston and Sherwood; and the unincorporated areas of Washington County will be shown on one FEMA flood map.

Activity/Project Location

Geographical Area: **Single County (County-wide)**

FEMA Region: **Region X**

State: **Oregon**

County: **Washington County**

Key Activity/Project Information

Sector: **Public**

Hazard Type: **Flooding**

Activity/Project Type: **Cooperative Technical Partner Activity; Flood Study Map Rollout/ Map Modernization; Floodplain Management**

Structure Type: **Concrete, Reinforced**

Activity/Project Start Date: **05/2000**

Activity/Project End Date: **Ongoing**

Funding Source: **Cooperating Technical Partners (CTP)**

Activity/Project Economic Analysis

Cost: **Amount Not Available**

Activity/Project Disaster Information

Mitigation Resulted From Federal Disaster? **Unknown**

Value Tested By Disaster? **Unknown**

Repetitive Loss Property? **Unknown**

Reference URLs

Reference URL 1: http://www.fema.gov/plan/prevent/fhm/ctp_main.shtm

Reference URL 2: <http://www.oregonemergency.com/>

Main Points

- The first mapping activity being undertaken by USA and FEMA is a revised study of the 166-square-mile Tualatin River.
- According to USA, the project will result in the development of numerous products that will be of value to the community officials and residents of Washington County.
- FEMA will use the digital topographic, hydrologic, and hydraulic data and mapping to produce a new Digital Flood Insurance Rate Map (DFIRM) for all of Washington County.