

# Floodplain Management Program Notes

By Bill DeGroot, P.E., Manager, Floodplain Management Program

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## Cooperating Technical Partner

The District was the first organization to sign a Cooperating Technical Partner (CTP) agreement with FEMA, and we continue to be one of the most active CTPs. Our recent activities under this program are described below.

## DFIRM conversion projects

In late 2003 we began Digital Flood Insurance Rate Map (DFIRM) conversion projects for the City and County of Denver and Northern Douglas County. For the Denver project FEMA provided a \$150,000 grant, and the District and Colorado Water Conservation Board (CWCB) each contributed \$25,000. Our contractor was Merrick and Co. We finished our scope of work in April, and the post processing work is now underway by Michael Baker, Jr., FEMA's National Service Provider.

For Douglas County we divided the project into the area located within the District and the area outside. FEMA contributed \$240,000 and the District and CWCB \$30,000 each for the District portion of the county, which includes Lone Tree and Parker. Our contractor was Icon Engineering. The CWCB is managing the conversion of the rest of the county. The contractor is URS Corporation. We completed our scope of work and turned our work products over to URS in May. URS is handling the post processing.

The Boulder County DFIRM conversion is being managed by the CWCB. The contractor is PBS&J. FEMA is contributing \$200,000, the CWCB \$25,000 and the District \$5000. Completion is scheduled for June, 2005. The City of Boulder, FEMA, CWCB and the District are also working on a hydrology and hydraulic study of South Boulder Creek in Boulder and Boulder County

In September, 2003, FEMA provided funding for updating flood data for seven miles of Plum Creek and East Plum Creek in Douglas County. The

District managed the study, and Icon was the contractor.

FEMA contributed \$75,000 and the District \$25,000. The work products were digital flood hazard data that was provided to URS for inclusion in the Douglas County DFIRM, and the District's standard Flood Hazard Area Delineation report.

Earlier this year we received FEMA DFIRM conversion grants of \$480,000 each for Adams County and Arapahoe County. The District will contribute \$70,000 for each county and the CWCB will contribute \$50,000 each.

The contractor for Adams County is Icon Engineering, and for Arapahoe County it is Merrick and Co. The Adams County project began in September and Arapahoe County began in October. Both are scheduled for completion in September, 2005.

The City and County of Broomfield DFIRM became effective on August 18, 2004. This DFIRM conversion was a joint effort between the District and FEMA (Michael Baker Jr.), and is the first true DFIRM in Colorado.

Realistically, by mid-2006 we should have all of the District's area covered with DFIRMs. That includes a Jefferson County DFIRM completed by Michael Baker, Jr. in 2003. Our next challenge will be to obtain the responsibility for maintaining all aspects of the DFIRMs for the District's seven counties, including base map revisions, Letters of Map Revision (LOMRs) and new floodplain delineations..

## LOMC pilot project

On July 1, 2001 we began a pilot project with FEMA to assume the responsibility to review requests for Letters of Map Change for the 32 communities within the District that are participating in the National Flood Insurance Program. We are now three months into the fourth year of the project. Our reports on the results of the first two years are available on our web site.

We have recently added a DFIRM maintenance pilot project to our scope of work. We will be using the Broomfield DFIRM to get a feel for what is involved in map maintenance, including incorporating new LOMRs into the DFIRM, adding new information to the base map, adding a new floodplain to the DFIRM and adjusting to receipt of more accurate data. We will prepare a report at the end of the pilot which will document lessons learned.

## Other program activities

The other major activities within the program are flood warning, maintenance eligibility, flood hazard area delineation and master plan implementation by others. Kevin Stewart continues to assure that we have the best possible flood detection and warning system, and he continues to be in demand as an expert in this field. See Kevin's column elsewhere in this issue. Our maintenance eligibility program continues to flourish under David Mallory's direction. See David's column elsewhere in this issue.

## Floodplain delineation

We completed four flood hazard area delineation (FHAD) studies this year: Ralston and Leyden Creeks in Arvada; Kinney Creek and Fonder Draw in Douglas County (as part of an outfall systems planning study); a re-study of the South Platte River through Adams County and the previously mentioned Plum Creek and East Plum Creek.

We have FHADs underway for Clear Creek through Adams County, Massey Draw and SJCD (South) in Jefferson County, and Upper Goldsmith Gulch in Arapahoe County. The latter two are part of outfall systems planning efforts for the two watersheds

All of these studies are prepared in digital form compatible with FEMA's DFIRM specifications, and will be incorporated into the appropriate DFIRMs.

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## **Floodplain (continued from page 7) Implementation efforts**

Implementation of portions of our master plans, particularly regional detention facilities, is always a challenge. We are currently negotiating an Intergovernmental Agreement (IGA) with Denver and the Rocky Mountain Arsenal (RMA) for the construction, operation and maintenance of a number of facilities on the RMA. We are also negotiating an IGA with Denver and Aurora regarding the implementation of

regional detention facilities in the Upper Second Creek watershed.

The biggest private sector accomplishment of the year was the construction by Oakwood Homes of the Highline detention pond on Pena Boulevard right-of-way and an open channel from the pond to Tower Road. These facilities are part of the Irondale Gulch Outfall Systems Plan.

## **Check these out on our web site**

We have a photo album showing what we consider to be good examples for others to emulate. We also have an Activity Summary map that identifies all District studies completed or in progress. We update the status of all our studies quarterly. It would be a good idea for anyone working on a drainage study in the District to check this map for existing or on-going studies that might affect their work.

## **Stormwater Permitting Support Activities**

**By John T. Doerfer, Project Hydrologist, Master Planning Program**

All municipalities in the District that are required to obtain stormwater discharge permits from the state of Colorado have received them. Now the management activities stipulated in permits must be implemented. To help with these efforts, the District continued to assist local governments with these stormwater permit implementation activities in 2004.

### **Phase I Municipalities**

In 1990, the cities of Denver, Aurora, and Lakewood joined forces with the District to form the "Joint Task Force" (JTF). This group continues to work together on permit-related stormwater activities. The three cities are "Phase I" Municipal Separate Storm Sewer Systems (MS4s) under Environmental Protection Agency (EPA) regulations because their populations are greater than 100,000. The three cities submitted their first permit applications in 1992 and were issued permits by the Colorado Water Quality Control Division (WQCD) in 1996. The cities fully implemented all of their original permit requirements by 2001 and were issued permit renewals for a second 5-year term on March 20, 2003.

In addition to other implementation tasks, the JTF developed a brochure on Best Management Practices (BMPs) for industrial sites in 2004. This brochure will be printed and distributed in 2005. In April of 2004, EPA conducted a comprehensive evaluation of Denver's stormwater management program which resulted in some recommendations but no Clean Water Act violations. Stormwater monitoring and assessing the effectiveness of management

programs continue to be an on-going activity of the JTF.

### **Phase II Municipalities**

"Phase II" municipalities are defined in EPA regulations as cities, towns, districts, and unincorporated parts of counties in urban areas with less than 100,000 population and responsibilities for managing stormwater. Most of the cities and counties in the District are Phase II entities. The District hosted a total of five meetings for Phase II municipalities in 2004. In addition to local governments within the District, a number of other MS4s throughout Colorado actively participated in these meetings.

Also, a number of "grassroots" associations have formed among the Phase II municipalities during the past few years. These include separate groups centered around Boulder, Douglas County, Arapahoe County, Jefferson/Adams Counties, Mesa County, and El Paso/Pueblo Counties. During 2004, the District helped with an effort to have public education brochures printed for each of these groups. These were based upon three brochures originally developed by the JTF (see also [www.udfcd.org/SWQ\\_brochures.htm](http://www.udfcd.org/SWQ_brochures.htm)), resulting in significant cost savings for all groups from this approach.

Other topics discussed among the Municipal Workgroup this year included development of a Municipal Operations BMP training video (to be finalized in February 2005); Douglas County's GESC (grading, erosion and sediment control) manual; discharges

from mobile pressure washers; Boulder County WASH (Watershed Assessment of Stream Health) project and 3ME (media, message, and mascot) grant; and a special meeting on proposed permit fee increases by WQCD. Initial topics to be addressed in 2005 include BMP Operation & Maintenance needs and inspection procedures.

Phase II MS4s have 5 years to fully implement their programs. The District will continue to assist the local governments within its boundaries upon request from them. The District's Board of Directors supports these efforts and has expressed how significant cost savings can be achieved through these joint activities and how water quality can be better improved when all jurisdictions cooperate. We plan to organize and sponsor four quarterly meetings of the MS4 groups in 2005.

### **Stormwater Monitoring**

A storm-event monitoring program of the South Platte River and tributaries is managed by the District and is conducted by the U.S. Geological Survey. Water quality data collection in 2004 was more active compared to drought conditions in previous years. Water quality samples were obtained for a total of seven storms in 2004. This program is a Phase I permit requirement.

Results from the District's program to test structural BMPs were reported at the District's conference in April 2004 (see [www.udfcd.org](http://www.udfcd.org)). The District will put more emphasis on monitoring and testing of porous pavement sites in 2005.