Master Planning Program Notes

by

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Planning Projects

As listed in "Status of Planning Projects" table, we completed five master planning projects in 2001; 13 projects are in progress and vary in completion from 5% to 90%; five have mapping completed or are being mapped, awaiting the start of engineering studies; and four we hope to begin in 2002. The planning activities with our city and county partners continue to be vigorous and challenging.

We now have a total of over 110 watershed-level major drainageway and outfall system plans in our inventory. And, as you can see, we will be adding another 29 within the next two to three years. These master plans help guide the District's capital projects and land development activities by the cities and counties within the District. They also serve as a resource of information about each of the watersheds and drainageways that were investigated and can provide local governments and the private sector with vital information on drainage and major drainageway (i.e., receiving water) system condition and needs.

In addition, all of the newer outfall system plans contain specific recommendations for stormwater water quality facilities and stream stability. They help to continue this region's national leadership in addressing the important question of how to mitigate the impacts of urbanization on receiving waters.

STATUS OF PLANNING PROJECTS

Project	Sponsor(s)	Consultant	Status
Cottonwood Area Catchment OSP	Parker & Douglas Co.	Farnsworth & Polk	Completed in 2001
Holly Hills Trib. To Harvard Gulch	Arapahoe Co. & Denver	SEC	Completed in 2001
Lower Box Elder OSP	Adams Co. & Denver	Wright Water	Completed in 2001
Sulphur & Tallman Gulches Outfall Plan	Douglas Co. & Parker	Kiowa	Completed in 2001
Town of Erie OSP	Town of Erie	Love & Associates	Completed in 2001
Broomfield & Vicinity MP Update	Broomfield & Westminster	Kiowa	90% Complete
Lower First Cr. OSP Update	Adams County & Commerce City	Turner Collie & Braden	90% Complete
Basin 4100, DFA 0054 & 0056 Update	Thornton & Adams Co.	Kiowa	75% Complete
Four Mile Canyon Cr.	Boulder & Boulder Co.	Love & Associates	75% Complete
Plum Creek OSP - FHAD	Douglas Co.	WRC	75% Complete
Todd Creek & DFA0052	Adams Co. & Thornton	Kiowa	60% Complete
Applewood OSP	Jefferson Co.	Kiowa	50% Complete
Upper Piney Cr. & Tribs	Aurora	Kiowa	50% Complete
Unnamed Tributary to W. Toll Gate Creek	Arapahoe Co., ECCV & Aurora	Kiowa	50% Complete
Oak Gulch & Stroh Ranch	Parker & Douglas Co.	Knight Piésold	50% Complete
Horse Creek OSP	Adams County & Aurora	n/a	35% Complete
RMA 815 & Adj. Areas	Commerce City, Adams Co.	Love & Assoc.	5% Complete
Second Creek (Lower) MP Update	Adams Co., Brighton & Commerce City	Kiowa	5% Complete
Fairmount Area OSP	Jefferson Co., Golden	n/a	Mapping Done
NE Sheridan OSP	City of Sheridan	n/a	Mapping Done
High Line Canal – Marcy G. to Mississippi Ave.	Denver WD & WMD, Greenwood Village, S. Suburban Park & Rec. Dist. Littleton, Cherry Hills Village, Arapahoe Co.	n/a	Mapping Under Way, Start Engineering in 2002
Cherry Creek MDP u/s of Cherry Cr. Reservoir	Parker, Douglas Co., Arapahoe Co.	n/a	Mapping RFP Out
Rocky Mtn Ditch	Denver & Lakewood	n/a	Mapping RFP Out
Kinney Creek & Foster Draw	Douglas Co.	n/a	Start in 2002
Third Creek (Lower) MP Updates	Adams Co., Commerce City, Brighton	n/a	Start in 2002
Preble & Sack Creek Updates	Broomfield	n/a	Start in 2002
Lower Brantner Gulch Update	Adams County, Thornton	n/a	Start in 2002

Release of the Updated Urban Storm Drainage Criteria Manual

The effort we began in 2000 to update Volumes 1 and 2 of our *Urban Storm Drainage Criteria Manual (Manual)* was completed in June of this year. Wright Water Engineers, Inc., under the leadership of Jonathan E. Jones, P.E., was the lead consultant that helped us to totally update and modernize these two volumes.

This was a major effort that included the participation and assistance from practically every community within the District and some local governments outside our District boundaries. We also received valuable comments from the State of Colorado, U.S. EPA and the U.S. Corps of Engineers. The *Manual's* development process included eight meetings with the Working Group and four meetings with the Milestones Group of the Stormwater Manual Advisory Committee. A seminar attended by 230 was held in March to introduce this document to the public and to take comments before it was finalized.

The full list of those that served on the *Manual's* Advisory Committee and others that provided materials or helped by review of this document is in the Acknowledgements section of the document. Our sincerest and heartfelt thanks go to all of these people. It was a truly cooperative effort by the majority of the municipalities along the front range of Colorado.

The updated Manual is in two volumes, both in printed form and on a CD. The CD contains a number of spreadsheets to assist engineers with many of the calculations, several software packages that do the same and a number of AutoCAD™ details. Order forms for its purchase may be downloaded from our web page at www.Udfcd.org/usdcm_orders.htm.

We will also continue to update the Manual and the software, spreadsheets and design details that help the users with its technical aspects. You can help to improve this document by reporting to us about any errors you find and by making suggestions on how to improve this package. All future updates and errata to the *Manual* will be accessible through the District's web site. They will be posted under "Software, Drawings, Specifications, etc." button or the "Downloads" note on our home page at www.udfcd.org. We will not be sending out any of these updates to manual owners and will rely on their initiative to visit our web page to stay current.

District Software News

By Ben Urbonas, P.E.

***CUHP* & *UDSWM* Software**

We have been struggling for over a year to convert the District's supported software to run under the Windows operating system. Student interns are doing much of the programming work under the guidance of an experienced software developer, John O'Brian, author of several DOS versions of the District's supported software; Dr. C.Y. Guo; and myself. Initially, each package was been posted on our web page as a beta test version and as a final version when ready. All the District's supported software is available to download, free of charge, from our web page www.udfcd.org.

By the time you read this article, we hope to have a much more stable and friendly final beta test version of the *CUHP* software and a final version out by early in 2002. After its final release we will continue to work on improving its 'friendliness" features.

This has not been a trouble-free effort. We encountered more problems than anticipated, which was frustrating for us and for the users. However, the *UDSWM* software is now sufficiently stable for release as Version 1.0.

***UDSEWER* & *UDPOND* Software**

John-Michael O'Brian has rewritten, also under the guidance of the above-mentioned team, *UDPOND* and *UDSEWER* in Visual Basic. The latter will be known as *NeoUDSEWER*. It has the same math engine as the original *UDSEWER* and provides virtually identical answers. It also has a graphical interface with drop-down forms for data entry and can import input data from the old version. Until recently it was available as a test version, but should be posted on our web page as Version 1.0 by the time you read this article. We also hope to release Version 1.1 in 2002 that will plot, at the user's request, sewer and hydraulic grade-line profiles.

UDPOND is a totally rewritten detention basin sizing program. Although it is based on the same mathematics as the old software, its math engine is new, very stable and offers users choices of how precise they want the calculations to be.

The user can chose to pre-size the detention volume using the Rational Formula-based modified FAA method. For final design purposes it requires an input hydrograph and uses the modified Puls method with reduced time steps to develop the outflow hydrograph. It permits the user to input as many outlet control elements (i.e., vertical and horizontal orifices, weirs and spillways) as needed for final design, or to input known composite stage-storage and stage-discharge curves. *UDPOND* is available as a beta test version at this time and we hope to have it ready for final release in spring of 2002.

Future Plans

Over the next six months we hope to have a graphical interface developed for the *UDSWM* package so that the users can assemble and code the drainageway system (i.e., pipes, gutters, channels, etc.) and then input each element's parameters via drop-down forms. This should significantly reduce errors in the coding of drainageway system connectivities.

In time we hope to integrate the *CUHP* and *UDSWM* into a single package with a continuous simulation option. In addition, we hope to integrate the *UDPOND* input features into the consolidated *CUHP-UDSWM*. That will take another year of development time.

New staff member

Steve Materkowski has joined the District as an Engineering Inspector in the South Platte River Program. A student intern with us since early 2000, Steve is currently finishing his senior year at the University of Colorado, Denver. He is majoring in Civil Engineering with a minor in Economics. Steve is also a member of the Golden Key International Honor Society. Steve's prior experience includes 10 years as an Environmental Control Technician for the U.S. Postal Service and an enlistment in the United States Navy as a Nuclear Power Technician/Electrician's Mate. Steve is a native of Northern Michigan but has lived in Colorado since the late 80's.