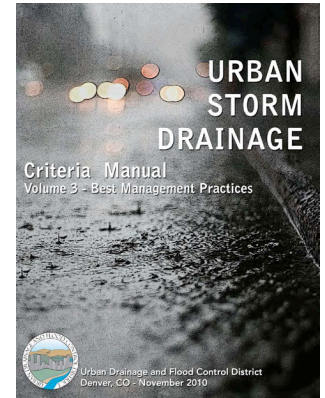


Update of Volume 3 (Water Quality) of the Denver Urban Drainage and Flood Control District's Urban Storm Drainage Criteria Manual



WWE has been involved in development of policy and criteria related to drainage and water quality since Kenneth R. Wright, P.E., the founder of our company, oversaw the development of the Urban Drainage and Flood Control District's (UDFCD's) Urban Storm Drainage Criteria Manual (USDCM) in 1969. WWE assisted with updates and additions to the manuals over the years, including the update of Volume 3, Best Management Practices, in 2010. WWE provided substantial revisions to the manual, which won a 2011 award from the Colorado Chapter of the American Public Works Association in the Environmental Design category. This process involved a collaborative effort with UDFCD and a large group of stakeholders throughout UDFCD's jurisdiction. WWE assembled a team of project advisors to provide assistance on the project. Representative aspects of the project included:

- Better integration of volume reduction and Low Impact Development (LID) strategies into Volume 3. This involved evaluation and review of "Step 1" (Volume Reduction, Minimizing Directly Connected Impervious Area) and developing opportunities to provide incentives, credits or requirements for this step, including both computational and policy components.
- Development and inclusion of a BMP Selection Guidance/Decision Making Process, basically a "decision support system" for BMPs.
- Development and integration of a new LID chapter that addresses issues such as enhanced design details, implementation concerns in areas with clay soils, vegetation selection and long-term maintenance.
- Guidance on how to integrate volume reduction measures into EPA Stormwater Management Model (SWMM). These include the ability, on a sub-basin by sub-basin basis, to route flows from impervious areas to pervious areas before they go to the conveyance element. Other opportunities include modifications to the watershed depression storage parameter.
- Policies and guidance related to proprietary devices, such as circumstances under which use of proprietary devices may be acceptable, and maintenance requirements for such devices.
- General updates of the manual based on user input, including better integration of full spectrum detention strategies.

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