



C A S F M

## TECHNICAL PAPER NO. 5

# STORMWATER QUALITY EDUCATION - A 4-STEP STRATEGY

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In 1989, the City of Boulder completed a Comprehensive Drainage Utility Master Plan (CDUMP). One of the programs which evolved out of CDUMP was a Stormwater Quality Program, which addresses stormwater runoff and related water quality issues. A large component of the City's stormwater quality program is public education.

In designing the public education program, four steps were followed: 1) identify the message; 2) identify the audience; 3) choose educational tools; and 4) evaluate the effectiveness of the education program.

### **Step #1: THE MESSAGE**

City staff identified several topics as critical elements of a public education campaign. These topics include the storm sewer system, non-point source pollution, surface water quality, aquatic and riparian habitats, and household and industrial hazardous waste disposal.

Each topic is presented to illustrate the message - water quality degradation affects quality of life and individuals must become involved in solutions. For example, information about the City's storm sewer system: where it is, how it functions, and how it relates to surface water quality, creates an understanding of the direct connection between actions (pouring pesticide in the gutter) and environmental impact (fish die-off).

The City's storm drain stenciling program is one example of conveying the cause and effect "message". The stenciling program is modeled after the City of Bellevue, Washington's program. The caption, "DISPOSE NO WASTE, DRAINS TO CREEK" is painted on storm drains throughout the City. Stenciled storm drains alert residents to the potential impacts of their activities on the environment.

### **Step #2: THE AUDIENCE**

An audience must be identified in order for public education materials to be effective. Boulder's Stormwater Education program targets various "groups" including the residential and commercial

community, governmental entities, agricultural businesses, schools, and special interest groups.

These groups were chosen because of the activities they are involved in which directly or indirectly are responsible for various pollutants found in urban runoff. For example, City residents receive materials relating to household hazardous waste disposal, pesticide and fertilizer use, automotive product disposal, litter control, and land use issues such as stream side erosion. Materials distributed to the business/commercial community cover issues related to illegal connections, erosion control measures, stormwater regulations involving industrial activities, and Best Management Practices (BMPs).

Schools present an opportunity to teach the community's youth about water pollution and stream ecology. The City's Traveling Aquarium Program (TAP) has proved to be a great way to take advantage of this opportunity.

The TAP program uses an aquarium, a small resource library, and a series of activities to teach students about water quality. The 75-gallon aquarium used in the TAP program is filled with warm-water species of fish common to Boulder County. TAP also includes books and videos related to aquatic ecology, riparian habitat and fish biology to supplement the students' first-hand observations.

TAP also provides a variety of guest lecturers and activities to bring water quality lessons to life. Activities included stream or pond water quality studies, interpretive riparian walks, tours of Boulder's wastewater and water treatment facilities, trash clean-up projects along creeks and ponds, and stenciling projects around the school's neighborhood.

### **Step #3: TOOLS**

Several "tools" may be used to present environmental information. Materials or methods used in Boulder's Stormwater Education program include: adult workshops, school programs (teach-ins, lectures, TAP), special projects (storm drain stenciling), event tie-ins (Earth Day, Boulder Creek Festival), printed material (brochures, newsletters, or fact sheets), newspaper articles (advertisements, announcement, feature stories), speaker bureau, and video (public service announcement, or educational video).

An example of a subtle method for delivering information to the public is the City's "Fish Van". The Fish Van is really a 3/4 ton van which is used for water quality monitoring. The van has several large fish graphics and the caption, "Protect Boulder's Creeks". The purpose of the Fish Van is to publicize water quality protection.

**Step #4: EVALUATION**

An evaluation of any public education program is important to determine if the program is achieving stated goals and to determine future needs. Currently, spill responses are monitored to evaluate trends in the number and types of spills involving the City's storm sewer system and surface water. By monitoring spill responses, we hope to measure the effectiveness of the Stormwater Quality Education Program.

**FOUR STEPS**

In developing the City's Stormwater Education Program, a four-step strategy was used to identify what needed to be said (the message), who needed to get the message (the audience), how the message should be delivered (educational tools) and how to determine if the message is understood (evaluation).

This four-step approach helped to focus limited resources and increase the effectiveness of public education programs.