



BROWN AND CALDWELL

Required and Recommended Temporary and Permanent BMPs

1 Who is the Authority?



The Cherry Creek Basin Water Quality Authority (Authority) is a referral agency that will be reviewing your land use application because your development is within the Cherry Creek Reservoir Basin. This referral is to assist local land use agencies in implementing their stormwater requirements and those of the Authority.



The Authority is a quasi-municipal organization and political subdivision of the State that has primary responsibility for water quality in the Cherry Creek Reservoir Basin. The Authority is specifically empowered to develop and implement plans for water quality controls for the Reservoir and watershed.

This fact sheet is part of **The BMP Series**, a program developed by the Authority to provide education on BMP requirements within the Cherry Creek Reservoir Basin. Authority manager: 303-779-4525

*Information presented in this fact sheet is based on the Authority's *Cherry Creek Reservoir Watershed Stormwater Quality Requirements*, February 16, 2000

Best Management Practice = things we can do or build to maintain or improve water quality

2 What do I need to know?

The Authority's Requirements*

The *Requirements* identify measures to control the quality of stormwater runoff in the Cherry Creek Reservoir Basin from private and public property and to reduce the loads of contaminants reaching Cherry Creek and Cherry Creek Reservoir for the health, safety, and general welfare in the Cherry Creek Reservoir Basin.

What to submit to your land use agency:

Construction BMP Plan (for temporary construction erosion and sediment controls)

Permanent BMP Plan (may be separate document or incorporated with erosion and sediment control or drainage reports)

Must have approval prior to:

Implementation of any BMPs
or
Commencement of land disturbances

If your property is an **industrial facility**, the Permanent BMP Plan should include additional **Industrial Permanent BMP Requirements***. Contact your planner for specific submittal requirements.



A land disturbance in a **Stream Preservation Area** has **additional requirements***, such as constructed wetland basin or channels. **Stream Preservation Areas include** Cherry Creek Reservoir, all of Cherry Creek State Park, drainage and discharge to the park within 100 feet of the Park Boundary; lands overlying the Cherry Creek alluvium; and all lands within the 100-year floodplain, as defined by Urban Drainage and Flood Control District (UDFCD). (Note: If the specific floodplain for Cherry Creek and its tributaries is not currently mapped by UDFCD, please reference the Requirements* or contact the Authority for assistance in defining the Stream Preservation Area.)

In the event that the BMP measures in these *Requirements** conflict with other state or local drainage or stormwater quality requirements, the most stringent requirements shall govern.

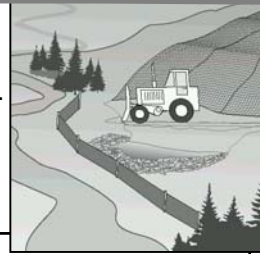


3 What do I need to do?

Be aware of the **Construction BMPs** and **Permanent BMPs** required for land disturbance and development activities.

Construction BMPs:

It is important to consider site-specific conditions and know which BMPs are appropriate. In addition to guidance from your land use agency on choosing site-specific and appropriate BMPs, UDFCD, *Urban Storm Drainage Criteria Manual, Volume 3* provides detailed guidance on BMP selection, application, limitations, and specifications.



Categories of BMPs In-Place Before Construction

1. Phase construction	Minimize the total amount of soil exposed to reduce accelerated soil erosion.
2. Reduce stormwater runoff flow to non-erosive velocities	Swales, roadside swales, slope diversion dikes, terracing/contouring, slope drains, check dams.
3. Protect drainageways from erosion and sediment damages	Waterway crossing protection, inlet protection, outlet protection, temporary diversions.
4. Control sediment before it leaves construction site	Sediment entrapment: silt fences, filter strips, sediment basins, straw bale barriers; vehicle tracking: grates, vehicle tracking control pads.

Categories of BMPs Installed During Construction

5. Stabilize soils	Mulching, erosion control mats, blankets, and nets, seeding, soil binders, cover crops, surface roughening.
6. Revegetate disturbed soils	Temporary or permanent revegetation (drought alternatives available – consult your planning department).

Permanent BMPs:

Minimum Water Quality Capture Volume (WQCV). For all land disturbances, developers should install and operate Permanent BMPs, or approved combination BMPs, that provide WQCV designed to capture and treat, at a minimum, the 80th percentile runoff event (in accordance with UDFCD Volume 3).

Developers are encouraged to collaborate with other developments to establish **regional facilities**. Regional facilities, which accomplish the WQCV and pollutant removal requirements for all tributary areas, may be:

- more cost-effective than individual-site BMPs,
- integrated into open space, parks, and golf courses, and/or
- useful to offset on-site BMP requirements, except if the land disturbance is in a Stream Preservation Area.

The Authority supports the use of regional facilities, and will review new and innovative ideas.



Permanent BMPs

- Extended-Detention Basins (Dry Ponds)**
- Retention Ponds (Wet Ponds)**
- Constructed Wetlands Basin**
- Porous Pavement Detention
- Porous Landscape Detention
- Sand Filter Extended Detention Basin

**Examples of regional facilities.



(courtesy of the Cherry Creek Corridor Major Drainageway Master Plan project)

Combination BMPs

- Grass swale preceded by porous pavement detention or porous landscape detention.
- Constructed wetland channel preceded by modular block porous pavement.
- Constructed wetland channel, in conjunction with extended detention, basin, retention pond, constructed wetlands basin, porous pavement detention, porous landscape detention, or sand filter extended detention basin.