

## 6.0 Erosion and Sediment Control

### 6.1 Issue Statements

Sediment, in terms of volume, ranks above domestic sewage, industrial wastewaters and chemicals as a major contributor to water pollution. Suspended sediment – fine particles of soil, dust and dirt carried in moving water – results from stormwater runoff from streets and parking lots, and abounds when erosion occurs. This sediment load clouds lakes and streams, thereby disturbing aquatic habitats. In addition to filling stream channels, ponds, and lakes, sediment reduces the oxygen content of water and is a major source of phosphorus, which is frequently bound to the fine particles.

Construction activities (e.g., development and redevelopment projects) in the Bassett Creek watershed will result in increased sediment concentrations in runoff, unless effective sediment control measures are implemented. Increased sediment concentrations are also associated with runoff from streets, parking lots, and other impervious surfaces associated with development.

In recognition of these issues, the BCWMC established standards for erosion and sediment control, and reviews construction erosion and sediment control plans for certain projects. These standards are aimed at preventing or slowing the transport of fine soil, dust and dirt particles into the watershed's water resources. The BCWMC requires the implementation of BMPs on individual construction sites throughout the watershed.

The BCWMC member cities are also required to address construction site stormwater runoff control, including ordinances or regulatory mechanisms, site inspection and enforcement, as part of their NPDES Phase II Storm Water permit and Storm Water Pollution Prevention Plan (SWPPP). The Phase II rules also require owners and operators of construction sites disturbing one to five acres to obtain a NPDES stormwater permit for construction activity.

## 6.2 Goals and Policies

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### 6.2.1. Erosion and Sediment Control Goals

Prevent erosion and sedimentation to the greatest extent possible to protect the BCWMC's water resources from increased sediment loading and associated water quality problems.

Implement soil protection and sedimentation controls whenever necessary to maintain health, safety, and welfare.

### 6.2.2. Erosion and Sediment Control Policies

- A. The BCWMC will encourage land use planning and development that minimizes sediment yield, through compliance with established BCWMC policies.
- B. The BCWMC will review projects and developments for compliance with BCWMC erosion and sediment control standards. The types of projects that must be submitted to the BCWMC for review, the BCWMC's review procedures, submittal requirements, guidelines, design criteria, etc. are provided in the BCWMC document *Requirements for Improvements and Development Proposals* (BCWMC, November 1998, as revised) (Appendix F). This is a part of the BCWMC's annual water quality and flood control program (see Table 12-4).
- C. The BCWMC will require preparation of erosion control plans for construction projects. Erosion control plans shall show proposed methods of retaining waterborne sediments onsite during the construction period, and shall specify methods and schedules to for restoring, covering, or revegetating the site after construction (Appendix B).
- D. The BCWMC will perform regular erosion and sediment control inspections and inform member cities of improvements needed for effective erosion and sediment control. This is a part of the BCWMC's annual water quality and flood control program (see Table 12-4).
- E. The member cities must adopt, administer, implement, and enforce ordinances addressing erosion and sediment control, including the permitting and inspection of such controls. These ordinances must also address erosion and sediment control at individual building sites.
- F. The member cities' ordinances must include the requirements and procedures for reviewing, approving, and enforcing erosion control plans.

- G. The BCWMC will require local watershed management plans to describe existing and proposed city ordinances, permits, and procedures addressing erosion and sediment control and preparation of erosion control plans.
- H. The BCWMC will review local watershed management plans for compliance with this Plan's goals and policies regarding erosion and sediment control.

### **6.3 Background**

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When a construction site is cleared and graded, the rate and volume of stormwater runoff from the site increases. The vegetation that intercepted rainfall and slowed down stormwater runoff rates (allowing more time for runoff to infiltrate into the soil) is removed. Natural depressions that provided temporary storage of rainfall are filled and graded. Soils are exposed and compacted resulting in increased sedimentation and decreased infiltration (*Minnesota Urban Small Sites BMP Manual*). The increased stormwater runoff rates and volumes cause increased soil erosion. This erosion can be a significant sediment source to the BCWMC's water resources, resulting in decreased water depth and degraded water quality. Erosion also results in channelization of stormwater flow, increasing the rate of stormwater runoff. Stormwater ponds can be degraded as a result of erosion and sedimentation, pointing to the need for cities to develop maintenance plans to prevent future degradation.

The deposition of sediment released during the erosion process can wholly or partially block culverts, manholes, storm sewers, etc., causing flooding. The sediment deposited in detention ponds and wetlands reduces the storage volume capacity, causing flood levels to rise and reducing the amount of water quality treatment provided. Water quality, aesthetics, and fish and wildlife habitat also suffer as a result of sedimentation in water bodies.

The Metropolitan Council requires cities to have stormwater ordinances in place that include provisions for erosion and sediment control before the Metropolitan Council will allow the cities to put their comprehensive plans into effect.

In addition to city ordinances and the BCWMC standards, owners and operators of construction sites disturbing one or more acres of land are required to obtain from the MPCA a NPDES stormwater permit for construction activity. The NPDES permit covers both temporary and permanent erosion and sediment controls. Also, the BCWMC member cities must implement a SWPPP as part of their NPDES Phase II stormwater permit. The SWPPP must include six minimum control measures, with

appropriate BMPs and measurable goals for each BMP defined. One of the control measures requires construction site stormwater runoff control, including ordinances or regulatory mechanisms, site inspection and enforcement. The ordinances/regulatory mechanisms must be in place by March 11, 2005. See Section 4.3.1 for more information regarding the NPDES permits.