6.40 Miscellaneous Measures: DEWATERING

DESCRIPTION

Dewatering encompasses various methods used to remove and discharge excess water from a construction site. The most common method is to pump water out of areas where it does not otherwise drain off, such as excavated areas, sediment basins and sediment traps. Dewatering may also include methods, such as sand point wells, used to lower the ground water table to provide a stabilized area for construction. Cofferdams and diversion structures may be used to keep water from a dewatered area or a site.

PURPOSE

Dewatering may be used during construction to remove accumulated water and sediments from sediment traps and basins to ensure their effectiveness throughout the project. At the end of the project, dewatering of sediment traps and basins is appropriate prior to removing the last sediment-control measures. Water remaining in excavated areas may be eliminated by dewatering so that construction can proceed on schedule.

PLANNING CONSIDERATIONS

These projects may need state, federal or local permits, so check with the appropriate agencies for their requirements.

Water pumped out of cofferdams, excavations, footings and other areas where water can accumulate may contain high concentrations of suspended solids. The solids are sometimes already suspended in the water, or the pumping process can mix the solids into the water. Water that is pumped from a sand point for dewatering operations can also contain high levels of sediment, especially at first. In either case, adequate sediment control must be provided before the pumped water is discharged. If the pumped water is running clear or begins to run clear, the sediment-control devices may be bypassed as long as sediment is not re-introduced into the system.

Discharging pumped water that contains suspended sediment can cause substantial amounts of pollutants to enter Minnesota's surface waters. Sediment smothers aquatic organisms, covers habitat and provides nutrients that cause excessive weed and algal growth. It can be related to processes that raise the water temperature, reduce the amount of dissolved oxygen, and hinder successful fish spawning.

Sediment-laden water affected by construction or other activity must be treated by temporary sedimentation traps, basins, geotextile filters or other appropriate BMPs. These guidelines include several suggested types of dewatering structures, which have different applications, depending on site conditions and types of operation.

DESIGN RECOMMENDATIONS

Water not affected by construction activity can be diverted around a construction site or removed by well points and discharged to a stable outlet without treatment. However, treatment of waters affected by construction activity must be provided. We recommend the following measures be considered diversion structures, well points, filtered sump pits, sediment traps, treatment ponds, and other dewatering systems that are appropriate for the discharge and effectiveness of the system. The appropriation and discharge of water may require additional local, state or federal permits.

OPERATIONS

A dewatering structure must be sized (and operated) to allow pumped water to flow through the device at the appropriate rate, without exceeding the design criteria for the treatment system.

Design criteria specific to each particular dewatering device should be developed.

MAINTENANCE

1. The dewatering system must be inspected frequently and repaired or replaced if sediment buildup recurs or if the structure does not function as designed.

2. The accumulated sediment that is removed from a dewatering device must be spread onsite and stabilized, used as fill or disposed of at an approved disposal site.

Examples of construction-site dewatering practices that are <u>not</u> acceptable include:

1. straight pipe pumping sediment-laden water directly to a lake, pond, river, stream, brook, wetland or marsh;

2. straight pipe pumping sediment-laden water directly to a storm drain inlet or catch basin; and

3. discharging water in a manner that causes erosion of the site or receiving channels.