

Treatment Control Operation and Maintenance Guidance for Mosquito Control

The following information has been extracted from SMCWPPP's Vector Control Plan dated June 1, 2004. The term vector is used primarily to mean mosquitoes.

Operation and Maintenance of Stormwater Treatment Control Measures

Routine and timely maintenance is critical for suppressing mosquito breeding as well as for meeting local water quality goals. If maintenance is neglected or inappropriate for a given site, even structures designed to be the least "mosquito friendly" may become significant breeding sites. Although general principles of vector control are described here, maintenance guidelines for individual treatment measures are often site-specific.

Vector-control personnel throughout the United States have found that aquatic habitats that last only three to five days generally do not provide sufficient time for complete mosquito larvae development (Metzger et al., 2003). With the exception of certain treatment measures designed to hold permanent water (e.g., CDS units and wet ponds), all treatment control measures should drain completely within 72 hours to effectively suppress vector production.

The following list itemizes some maintenance principles for post-construction stormwater treatment control measures that may reduce the mosquito population. These principles should be incorporated, as appropriate, in maintenance plans developed for stormwater treatment control measures and in the ongoing maintenance and inspection of treatment controls.

GENERAL MAINTENANCE PRINCIPLES

- With the exception of certain treatment control measures designed to hold permanent water, treatment controls should drain completely within 72 hours to effectively suppress vector production.
- Site inspections of newly constructed projects should be routinely conducted by member agencies to avoid the inadvertent approval of improperly constructed measures.
- Any circumstances that restrict the flow of water from a system as designed should be corrected. Debris or silt build-up obstructing an outfall structure should be removed. Under drains and filtration media should be inspected periodically and cleaned out or replaced as needed.

- Conduct maintenance activities regularly, in accordance with a municipality-approved maintenance plan.

VEGETATION MANAGEMENT MAINTENANCE PRINCIPLES

- Conduct annual vegetative management, such as removing weeds and restricting growth of aquatic vegetation to the periphery of wet ponds.
- Remove grass cuttings, trash and other debris, especially at outlet structures.
- Avoid producing ruts when mowing (water may pool in ruts).

DRY SYSTEM MAINTENANCE PRINCIPLES

- Extended detention basins are usually designed to detain water for periods less than 72 hours. If they detain water for longer than five days, they are poorly maintained.
- If a detention basin has been installed at an inappropriate location (e.g., on a site where the water table is too close to the surface), if elimination or modification of the system isn't possible then mosquitoes must be controlled with larvicides. The larvicide operation, in order to be effective, must be supported by a quality inspection program.

UNDERGROUND STRUCTURE MAINTENANCE PRINCIPLES

- Prevent mosquito access to underground treatment control measures that may have standing water (i.e., seal openings that are 1/16-inch in diameter or greater).
- Provide vector control agencies access to underground measures that may have standing water.

INFILTRATION AND FILTRATION DEVICE MAINTENANCE PRINCIPLES

- Infiltration trenches and sand filter structures should not hold water for longer than 24 hours. If they retain water for longer than 48 hours, they are poorly maintained.