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Maine Department of Environmental Protection Sewer Separation for Combined Sewer Systems

Maine Department of Environmental Protection

Maine Bureau of Land and Water Quality

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

SEWER SEPARATION FOR COMBINED SEWER SYSTEMS

During the past decade there has been increasing concern with the effect of combined sewer overflows (CSOs) and separate stormwater on receiving water quality. Combined sewer overflows discharge diluted untreated human and industrial wastewater, mixed with stormwater, in many cases causing water quality violations for bacteria of human origin, aesthetics and other criteria. Although separate stormwater theoretically contains no human waste, cross connections occasionally go undetected. Also, studies by the U.S. Environmental Protection Agency (EPA) and others have shown that separate stormwater can contribute extremely large quantities of pollutants, such as heavy metals, oil and grease, gasoline, solvents, sand and grit and other contaminates from roads, parking lots and roofs. Nutrients, pesticides, herbicides and soil can come from lawns and agricultural areas (non-point sources). The contaminates in stormwater can, in some cases, cause the same violations in water quality standards as combined sewer overflows.

Historically, the first efforts to deal with these problems concentrated on CSOs, due to the obvious human health concerns from untreated human sewage. Municipalities have spent large sums of money to separate combined sewers into purely sanitary sewers, carrying only human waste, and separate storm sewers, to carry storm runoff. Relatively little concern was focused on stormwater. More recently, however, that has changed.

Combined Sewer Overflow still are of prime concern. The Maine Department of Environmental Protection (DEP) and the U.S. EPA Region 1, through the licensing process, are requiring all muncipalities with CSOs to complete a CSO Facility Plan to determine the extent of the CSOs and their effect on receiving water, investigate cost-effective solutions, and complete a Master Plan outlining specific goals and projects to abate CSOs. The Maine DEP is providing 25% grants to assist municipalities in completing these CSO Facility Plans. In regard to stormwater, currently the EPA is requiring all municipalities with a population of over 100,000 and major industries and other specific activities to obtain NPDES permits for their stormwater discharges.

Permits for smaller municipalities may be required pending the outcome of further EPA studies to determine the extent of pollution from stormwater discharges from such municipalities. The State of Maine currently does not regulate pollution from separate municipal stormwater discharges.

In their CSO Facility Plans many municipalities are investigating the option of sewer separation to abate their CSOs. The DEP is concerned that without proper investigation and forethought, the pollution from the new separate storm discharges may continue to degrade receiving water quality resulting in no environmental gain. Municipalities could

spend millions of tax dollars in separation, only to find in the future that more tax dollars will be needed to address stormwater pollution.

When investigating sewer separation to abate CSOs, the Maine DEP encourages municipalities to thoroughly evaluate the effects of storm water, both existing discharges and new separate storm discharges that would result from separation. Will this storm water violate water quality standards and impair uses? Seriously consider storage and treatment options for CSOs and stormwater. Use best management practices (BMPs) for stormwater management. The DEP has a Stormwater BMP Manual and encourages municipalities and consultants to obtain copies. Consider options that will prevent storm runoff from entering drainage pipes. Investigate the use of swales, level lip spreaders, constructed wetlands and other methods to treat storm runoff before it enters the receiving water. The Nonpoint Source Unit of DEP's Water Bureau can assist municipalities in determining which BMPs would be applicable in each case.

Consider the mass balance of pollutants when investigating sewer separation.

Separation is most suited to situations where:

1) land use is less intensitive and pollutant loadings in run-off are less,

2) BMP's can be used effectively,

3) stormwater treatment can be applied (applicable in limited situations).

Sewer separation can be a cost effective and proper option in some instances. However, water quality must be the primary concern. Municipalities should consider all sources of pollution, point and non-point, when determining their long range plans to improve water quality.