

During the 1970's and 1980's the nation's municipal wastewater infrastructure dramatically expanded and improved, particularly with respect to treatment plants. In 1968, 72 percent of the Nation's municipal wastewater plants were providing secondary treatment and less than one percent were providing greater than secondary treatment (out of 14,051 facilities). By 1996, 59 percent of the Nation's municipal wastewater plants were providing secondary treatment and 27 percent were providing greater than secondary treatment (out of 16,024 facilities). During this time, the overall number of people served by municipal wastewater treatment facilities increased from 140.1 million in 1968 to 189.7 million in 1996 (a 35 percent increase).

In the mid-1980's and 1990's EPA increased its emphasis on addressing wet weather conditions and discharges from municipal collection systems and at treatment facilities. In 1989, EPA published the National Combined Sewer Overflow (CSO) Control Strategy which provided recommendations for NPDES permits for CSOs. See 54 FR 37370 (September 8, 1989). In 1994, EPA issued the CSO Control Policy to provide greater national clarity and consistency in the way NPDES requirements apply to flows in combined sewers and to CSO discharges. See 59 FR 18688 (April 19, 1994). In addition, the Agency increased compliance assistance and enforcement activities associated with sanitary sewer overflows (SSOs) during the 1990s. In 2000, EPA issued the Compliance and Enforcement Strategy Addressing Combined Sewer Overflows and Sanitary Sewer Overflows. This strategy called for each EPA Region to develop an enforcement response plan, including an inventory of SSO violations and a description of how 20% of the priority systems with SSO violations would be addressed each year.

Reducing the frequency and volume of collection system overflows and backups of sewage into buildings, and improving the structural integrity of collection systems have been some of the major objectives of EPA's emphasis on wet weather discharges. Typically, an important component of strategies to reduce collection system overflows and backups into buildings is to increase the conveyance of wet weather flows to the treatment plant. The volume of wet weather flows delivered to treatment facilities can also be increased by measures that reduce exfiltration of wastewater out of a collection system. Increased wet weather flow volumes at

treatment plants, along with increased attention to water quality problems caused by wet weather flows have lead to increased attention to the manner by which POTWs manage wet weather flows.

As these issues received greater attention, regulatory agencies, municipal operators of POTWs, and representatives of environmental advocacy groups have expressed confusion over and requested clarification regarding the proper interpretation of certain regulatory provisions in the context of wet weather flow management at POTW treatment plants. Of particular concern are National Pollutant Discharge Elimination System (NPDES) permit requirements for peak wet weather discharges from a publicly owned treatment works (POTW) treatment plant when the portion of the flow that exceeds the capacity of the biological treatment units is routed around biological treatment units and blended with the flows from the biological units (or other advanced treatment units) prior to discharge. Such re-routing where the capacity of biological (or other advanced) treatment units is exceeded might be necessary to avoid damaging the treatment units. Questions have focused primarily on the situation where the final discharge of these blended waste streams would meet effluent limitations based upon the secondary treatment regulations and any more stringent limitations necessary to meet water quality standards.

Today's proposed policy may affect certain actions under consideration by NPDES permit authorities to address comprehensive sewer collection system and treatment activities by POTWs. The Agency seeks comment on what, if any, impact today's proposed policy may have on Federal or State enforcement actions under the CWA or citizen suit actions under section 505 of the Act, including assurance of implementation of the various criteria identified in the proposed interpretation and draft guidance.

After review of public comments, and following any appropriate revisions, EPA intends that ultimately such policy would provide a framework that (1) ensures appropriate management of wet weather flows at a POTW consistent with generally accepted good engineering practices and criteria for long-term design, (2) clarifies technology-based requirements (3) uses water quality-based effluent limitations to address residual site-specific health and environmental risks, and (4) provides appropriate safeguards,

including comprehensive monitoring and protection for sensitive waters.

B. Sewage Treatment Issues Associated With Wet Weather Flows

Although a number of sewage treatment processes are used to comply with Clean Water Act requirements, most municipalities typically use a series of unit operations and processes to treat wastewater prior to discharge. The typical series of unit processes includes: preliminary treatment or screening to remove large solids; primary clarification (or preliminary sedimentation) to remove floating and settleable solids; and biological treatment units (also referred to as secondary treatment units) to remove biodegradable organic pollutants and suspended solids. The most common type of conventional biological treatment unit, an activated sludge process, typically consists of aerator tanks (also called reactors) followed by separate settling basins or clarifiers. Many treatment facilities also provide disinfection to deactivate pathogens and achieve microbial water quality standards. Some facilities also provide advanced treatment which are designed to reduce constituents, such as nitrogen and phosphorus, that are not significantly removed by biological treatment processes, or are designed to provide greater solids and pathogen reductions than traditional biological treatment processes.

During periods of wet weather, flows received by a POTW's collection system and treatment facility typically increase. Significant increases in influent flow caused by wet weather conditions (e.g., due to infiltration and/or inflow of water into the collection system) can create operational challenges for treatment facilities and potentially adversely affect treatment efficiency, reliability, and control of unit process operations with a treatment plant. Activated sludge systems are particularly vulnerable to high volume peak flows. Peak flows that approach or exceed design capacity of an activated sludge unit can shift the solids inventory from the aeration basin to the clarifier(s), and can result in excessive solids losses from the clarifier(s) (i.e., wash out the biological mass necessary for treatment). The shifting of solids from an aeration basin to a clarifier diminishes treatment rates until after flows have decreased and the solids are returned to the aeration basin. If a clarifier experiences excessive loss of solids, treatment efficiencies can be lowered for weeks or months until the biological mass in the aeration basins is reestablished. In addition to these