

## **Disclaimer**

The following guidance document has been signed by EPA: "Experts Forum on Public Health Impacts of Blending at Publicly Owned Treatment Plants." EPA is submitting this guidance for publication and while we've taken steps to ensure the accuracy of this Internet version of the guidance, it's not the official version of the guidance. Upon publication you will be able to obtain the official copy of this guidance at [www.epa.gov/npdes/peakflowsforum](http://www.epa.gov/npdes/peakflowsforum).

**ENVIRONMENTAL PROTECTION AGENCY****[FRL – XXXX]****Stakeholder Input; Experts Forum on Public Health Impacts of Blending at Publicly Owned Treatment Plants****AGENCY:** Environmental Protection Agency (EPA).**ACTION:** Notice.

**SUMMARY:** The Environmental Protection Agency is announcing plans to hold a forum of public health experts in June 2014 to discuss the public health implications of discharges of ‘blended’ effluent from publicly owned treatment works (POTWs) served by separate sanitary sewers into waterways. The discussion will include public health implications of such discharges.

Today’s notice asks for recommendations of public health experts that would be interested and qualified to participate in the forum. In addition, today’s notice seeks recommendations of wastewater treatment plant design and operation experts to serve as advisors to the public health forum participants. Today’s notice also provides the public with an opportunity to submit data regarding the performance of municipal wastewater treatment plants during wet weather conditions.

Blending is a practice used by some POTWs to manage wastewater when flows to the plant exceed the capacity of the secondary treatment units, which happens most often during wet weather conditions. POTWs engaged in the practice of blending divert excess flow around secondary treatment units and subsequently blend the diverted flows to the portion of flow that received secondary treatment. In some cases the diverted flows receive some additional treatment before blending. The Agency is interested in evaluating the public health implications

of different blending scenarios, including scenarios where the diverted flow is subject to supplemental physical/chemical treatment prior to blending and where the diverted flows do not receive any additional treatment prior to blending.

The Agency is undertaking this outreach to help advance the Clean Water Act (CWA) objective to restore and maintain the chemical, physical and biological integrity of the nation's waters (CWA, Section 101(a)).

**DATES:** Suggestions on experts should be made on or before [insert date 14 days after publication in the Federal Register.] Other technical information requested in this notice should be provided on or before [insert date 30 days after publication in the Federal Register.] We expect to hold the public health forum during June of 2014.

**ADDRESSES:** Submit your recommendations for experts or other input by one of the following methods:

- Email to [weiss.kevin@epa.gov](mailto:weiss.kevin@epa.gov)
- Mail: Kevin Weiss

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**FOR FURTHER INFORMATION CONTACT:** EPA will post the date and location of the public health experts' forum at: [www.epa.gov/npdes/peakflowsforum](http://www.epa.gov/npdes/peakflowsforum).

For further information about this notice, contact Kevin Weiss, EPA Headquarters, Office of Water, Office of Wastewater Management at tel.: 202-564-0742 or e-mail:

[weiss.kevin@epa.gov](mailto:weiss.kevin@epa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **I. Background**

Wastewater collection systems collect wastewater from homes and other buildings and convey it to wastewater treatment plants for proper treatment and disposal. The collection and proper treatment of municipal wastewater is vital to the public health in our cities and towns and to the viability of our receiving waters.

During and immediately after wet weather events, flows to wastewater collection systems and to treatment facilities typically increase. Significant flow increases in a wastewater collection system can cause overflows of untreated wastewater and sewage backups into buildings. For some municipalities, an important component of their strategy to reduce collection system overflows and backups into buildings is to increase the conveyance of wet weather flows to a treatment plant. Significant increases in flow at the treatment facility can cause operational challenges, especially for biological-based secondary treatment units. 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). 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 hydraulic concerns, wastewater associated with peak flows may have low concentrations of oxygen-demanding pollutants, which can also decrease treatment efficiencies. Biological nutrient removal processes typically have an increased sensitivity to the hydraulic and loading fluctuations associated with wet weather flows.

Design and operational options that are routinely employed to maintain the effective capacity of biological-based secondary treatment units include:

- Providing alternative feed patterns in the aeration basin(s);
- Increasing the returned activated sludge rate relative to those needed for steady flow;
- Increasing the size of secondary clarifiers; and
- Damping peak flows to biological-based secondary units by providing flow equalization (i.e. storage) prior to the biological-based secondary unit either at the plant or before flows get to the plant.

These options may temporarily decrease treatment efficiencies for the biological-based secondary treatment units and may have limited applicability to biological nutrient removal processes. As a result, there are limitations on the variation in flow volumes and influent strength that biological-based secondary treatment units can accommodate.

Many POTW treatment plants have been designed with primary treatment capacity that is significantly greater than the biological-based secondary treatment capacity. These plants typically provide screening and primary clarification of all flows entering the plant. In order to protect biological-based secondary treatment units during wet weather events, flows that exceed the capacity of the biological-based secondary treatment units are diverted around the biological-based secondary treatment units after they receive primary treatment. At some treatment facilities diverted flows are disinfected and discharged directly to a surface water from a separate outfall. Other facilities blend the diverted flows with flows that receive biological-based secondary treatment and discharge the combined flow after it has been disinfected. Some

facilities provide some additional treatment of the diverted flows while other facilities provide no additional treatment, other than disinfection.

Operators of treatment facilities have several design and operational options that can be used to increase pollutant removals during high flow conditions, including:

- Adding chemicals to the primary treatment process that increase solids removals;
- Providing additional primary treatment capacity, thereby lowering overflow rates in the facility's primary treatment units;
- Providing structural changes to primary treatment units, such as the installation of lamella settlers;
- Providing supplemental side stream physical/chemical treatment units, such as high rate clarification systems or fine screen systems, to provide supplemental treatment to flows that are diverted around biological-based secondary treatment units.

EPA is particularly interested in the relative risks associated with pathogens, sediments, nutrients, pharmaceuticals, toxics and other contaminants that may be discharged under blending scenarios.

EPA is seeking nominations of public health experts to participate at a forum to discuss these issues. The experts should be nationally recognized in the fields of evaluating the risks associated with various levels of water quality and/or of effluent from wastewater treatment plants. EPA, in consultation with key stakeholders, will identify wastewater treatment plant design and operation experts to serve as advisors to the public health forum participants. EPA is soliciting nominations for these experts as part of this Federal Register notice.

After EPA selects the participants it will provide the participants with more detailed information to read prior to the forum and will provide specific questions on which participants will be asked to provide input.

## **II. Purpose of Public Health Experts' Forum**

The purpose of this forum is to enlist public health experts from federal agencies, local health departments and academia in an effort to ensure that EPA has appropriate health-based information associated with different engineering options available to address wet weather blending at POTWs served by separate sanitary sewers. EPA does not intend that this meeting be a forum for debating the application of the Agency's bypass regulation at 40 CFR 122.41(m) going forward. Rather, this forum is solely concerned with the potential public health impacts of blended discharges from POTWs.

Further, it is not EPA's objective during the forum to establish consensus among the parties or to obtain a collective set of recommendations. Rather, it is EPA's intention to obtain individual input from knowledgeable experts so that the Agency can better understand the differences and commonalities among the individual recommendations. In this regard, EPA has determined that this workshop is not subject to the requirements of the Federal Advisory Committee Act, 5 U.S.C. Appendix 2.

## **III. Additional Information on the Forum**

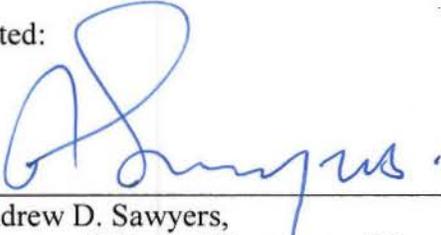
EPA plans to schedule the forum in June, 2014. Information regarding the date and location of the forum, along with other logistics information, when available, will be posted at [www.epa.gov/npdes/peakflowsforum](http://www.epa.gov/npdes/peakflowsforum).

Members of the public are invited to participate as observers in the forum as capacity allows. Additional details concerning the participation of observers will be posted on this web page

when the location and time of the forum is set.

Authority: Clean Water Act, 33 U.S.C. 1251 et seq.

Dated:

 4/9/14

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Andrew D. Sawyers,  
Director, Office of Wastewater Management.