

# Sanitary Sewer Overflows and Peak Flows Listening Sessions

US Environmental Protection Agency  
Office of Water



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**Webcast Event Number: 220806**

# US Environmental Protection Agency Office of Water

Office of Wastewater Management

Water Permits Division

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# EPA's Goal of this Listening Session (via Webcast)

## ➤ Input from the Public

- Seeking input on modifications we are considering to the NPDES program concerning sanitary sewer overflows and peak flows

## ➤ Five Sessions

- June 24, Seattle
  - June 28, Atlanta
  - June 30, Kansas City
  - July 13, Washington, D.C.
  - July 14, Webcast
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# Agenda for Listening Session

## 12:00 p.m. – 4:00 p.m.

- EPA introduction and short presentation
- 3-minute oral comments by registered participants
- Break (if necessary)
- If time allows, additional oral comments and open discussion

### Facilitating today's meeting:

- Facilitator and time keeper
- Notetakers – summary of oral comments will be posted to the docket
- Streamin audio for listening

Submit written comments to [www.regulations.gov](http://www.regulations.gov),

Docket ID No. EPA-HQ-OW-2010-0464 by August 2, 2010

# Wastewater Sewer Types

- Separate Sanitary Sewers (wastewater only)
    - 15,800 POTWs
      - with at least 5,000 municipal satellite collection systems
  - Combined Sewers (stormwater and wastewater)
    - 616 POTWs (853 communities)
- 

# Aging Sewer Systems



- Older and improperly maintained sewer systems are more susceptible to infiltration and inflow
- During wet weather events, infiltration and inflow enters the pipes and can cause:
  - overflows in the sewer system
  - increased influent at the treatment plant
    - exceeds capacity of secondary treatment units
    - leads to diversions, or bypasses, around treatment units to prevent upset of biological process

# Sewage in the Neighborhood

- Overflows – release of sewage before the headworks of a treatment facility
  - Raw sewage contains pathogens, viruses, bacteria, and protozoa
  - Humans can contract infections, flu, diarrhea, cholera, hepatitis, cryptosporidiosis
- People are exposed via:
  - Ponding in streets, yards, and parks
  - Basement backups
  - Local O&M crews
  - Recreational use
  - Fish and shellfish consumption



# Overflows

- Causes
  - 50% caused by blockages
  - 25% caused by wet weather infiltration and inflow
  - 25% caused by mechanical/electrical failures
- 23,000 – 75,000 SSO events/year
- May be similar number of basement backups/year
- 3-10 billion gallons/year



# Municipal Satellites

## ➤ Background

- Municipal satellite systems generally:
  - Are owned and operated by a different entity than the treatment facility
  - Most are not typically covered by NPDES permits at present
  - Send wastewater to a “regional collection system operator” that may only operate major interceptors

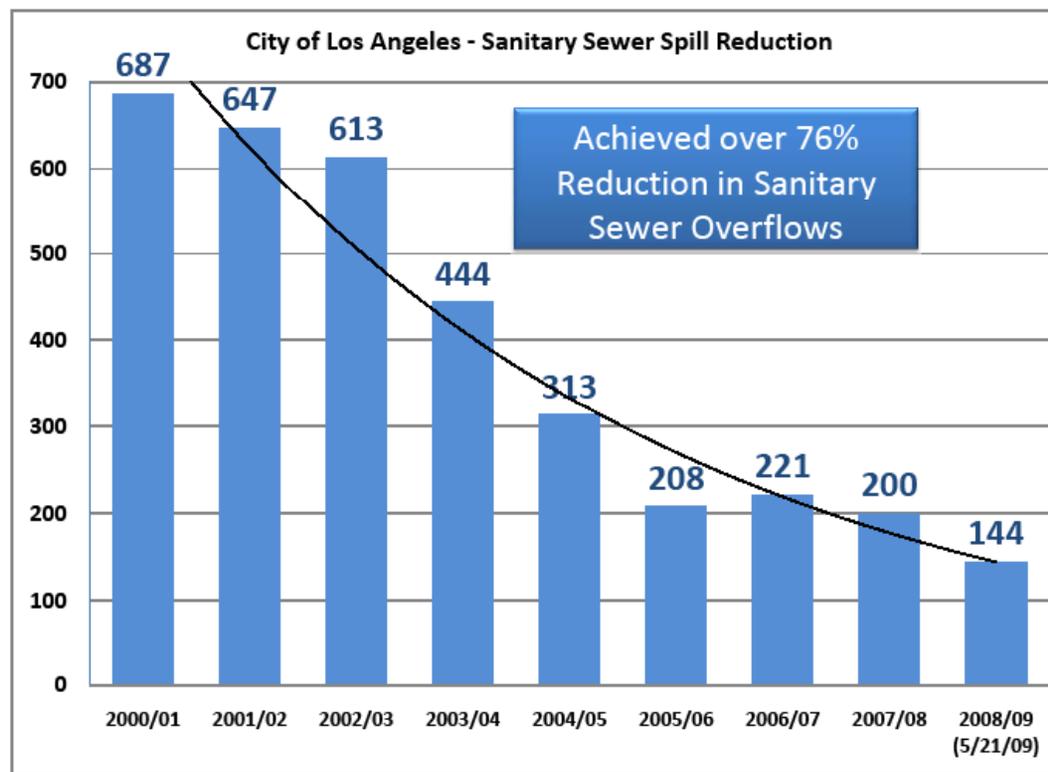
# Issues with NPDES Permits

- No requirements to notify public of SSOs
- Municipal satellites generally not covered
- Regulations are unclear about reporting and record keeping requirements for certain types of SSO's
- Permits contain general requirement to 'properly operate and maintain all facilities', but does not identify specific permittee actions
- NPDES regulations do not provide framework for enforcement discretion or defense for 'unavoidable' SSOs by the regulated entity
- Noncompliance with secondary treatment limits in permits for treatment facilities in collection systems

# SSO Rulemaking - Background

- Developed proposed rule in 2001; would
  - Require capacity, management, and O&M (CMOM) program for sanitary sewers
  - Clarify reporting and recordkeeping requirements; require public notification
  - Clarify SSO permit requirements to municipal satellite collection systems
  - Allowed the permittee to establish defenses under limited conditions
- Developed through FACA Process
- Signed by Administrator, but withdrawn prior to publication

# Example of SSO Reduction

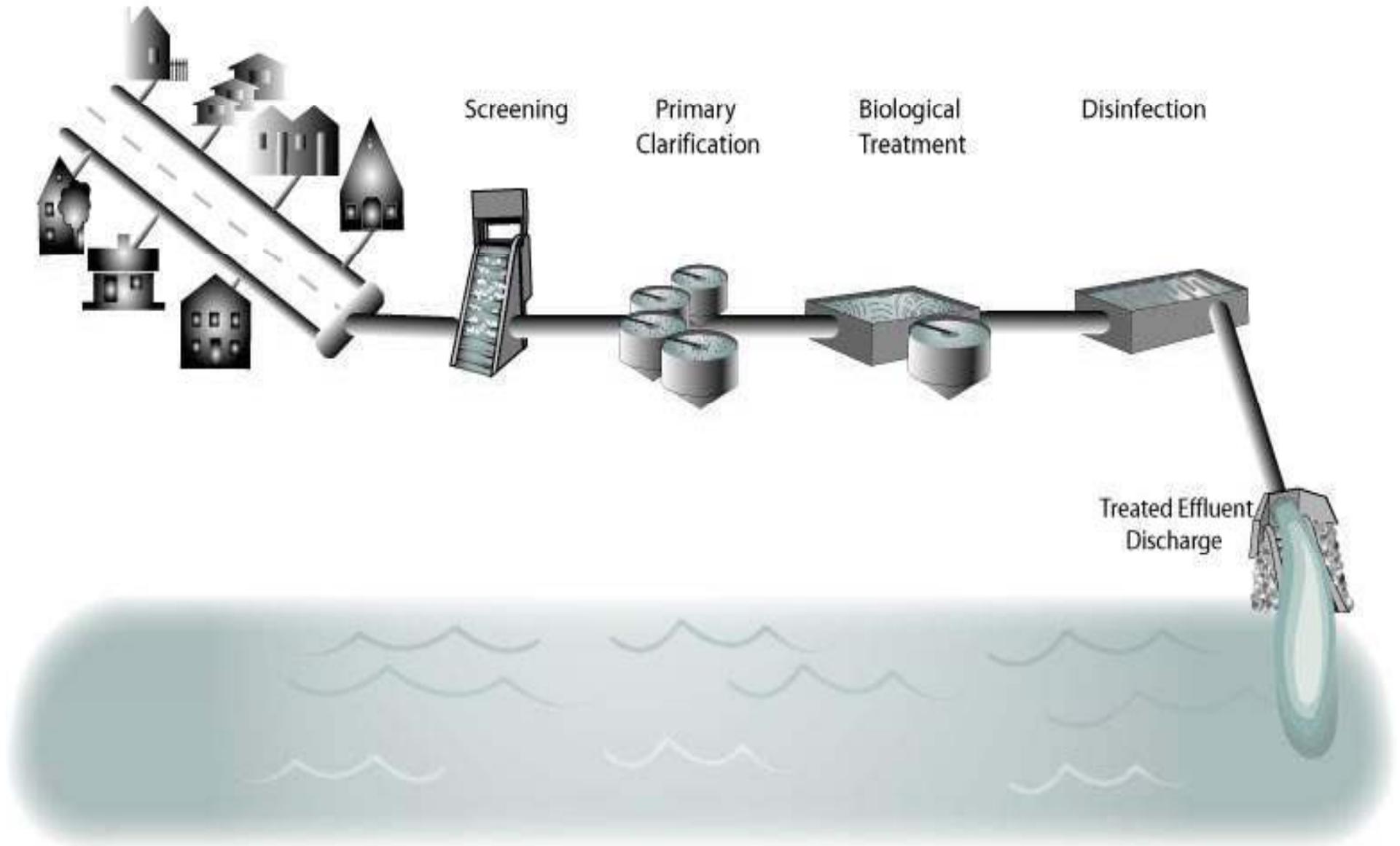


# Peak Flows

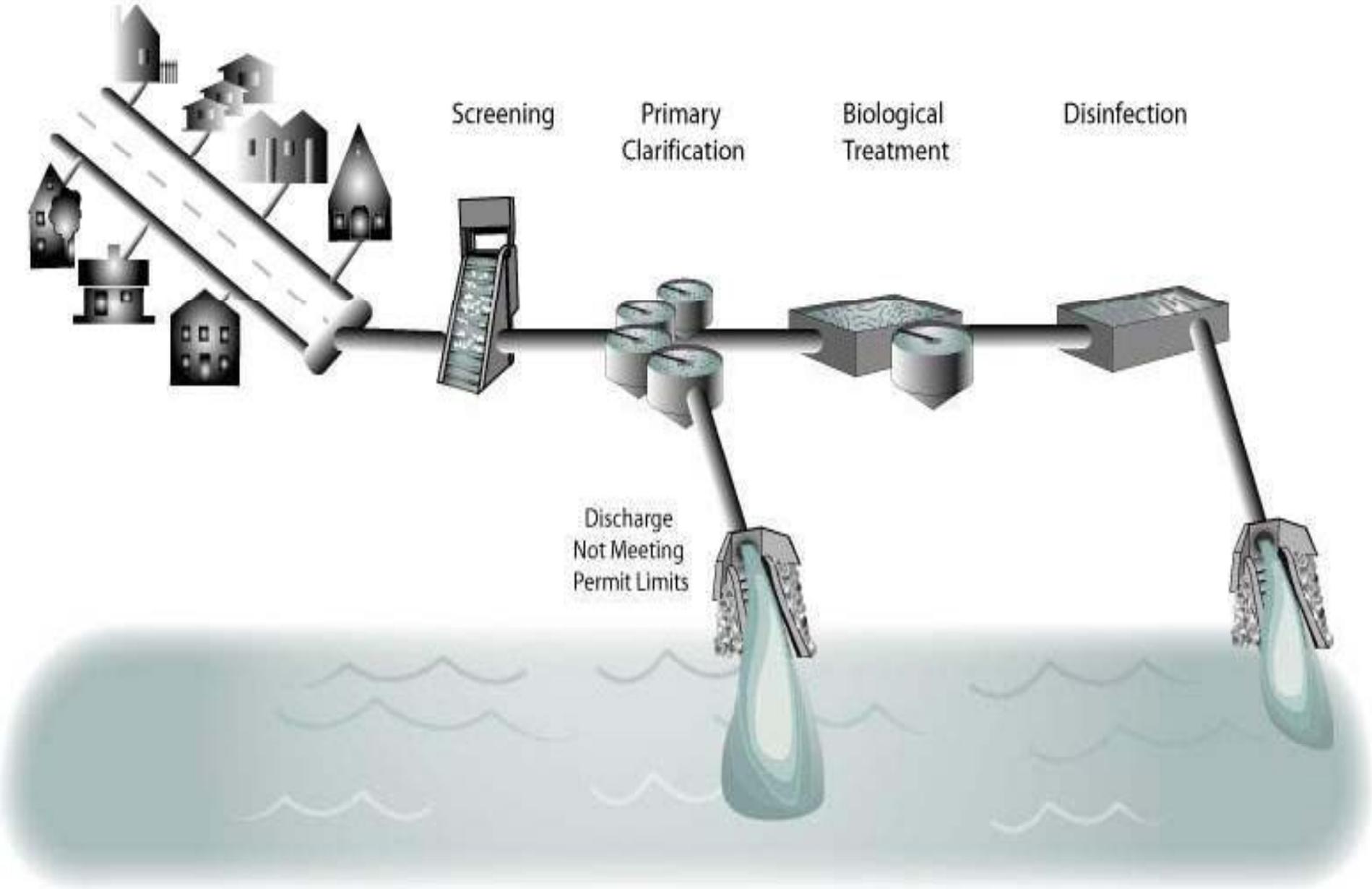
- Occur at the treatment plant after the head works during extreme wet weather
  - Flows exceed the capacity of biological units
  - Diverted (bypassed) around secondary units
  - Discharged to receiving waters
    - After being blended with secondary effluent
- Or
- After separate treatment and then blended with effluent



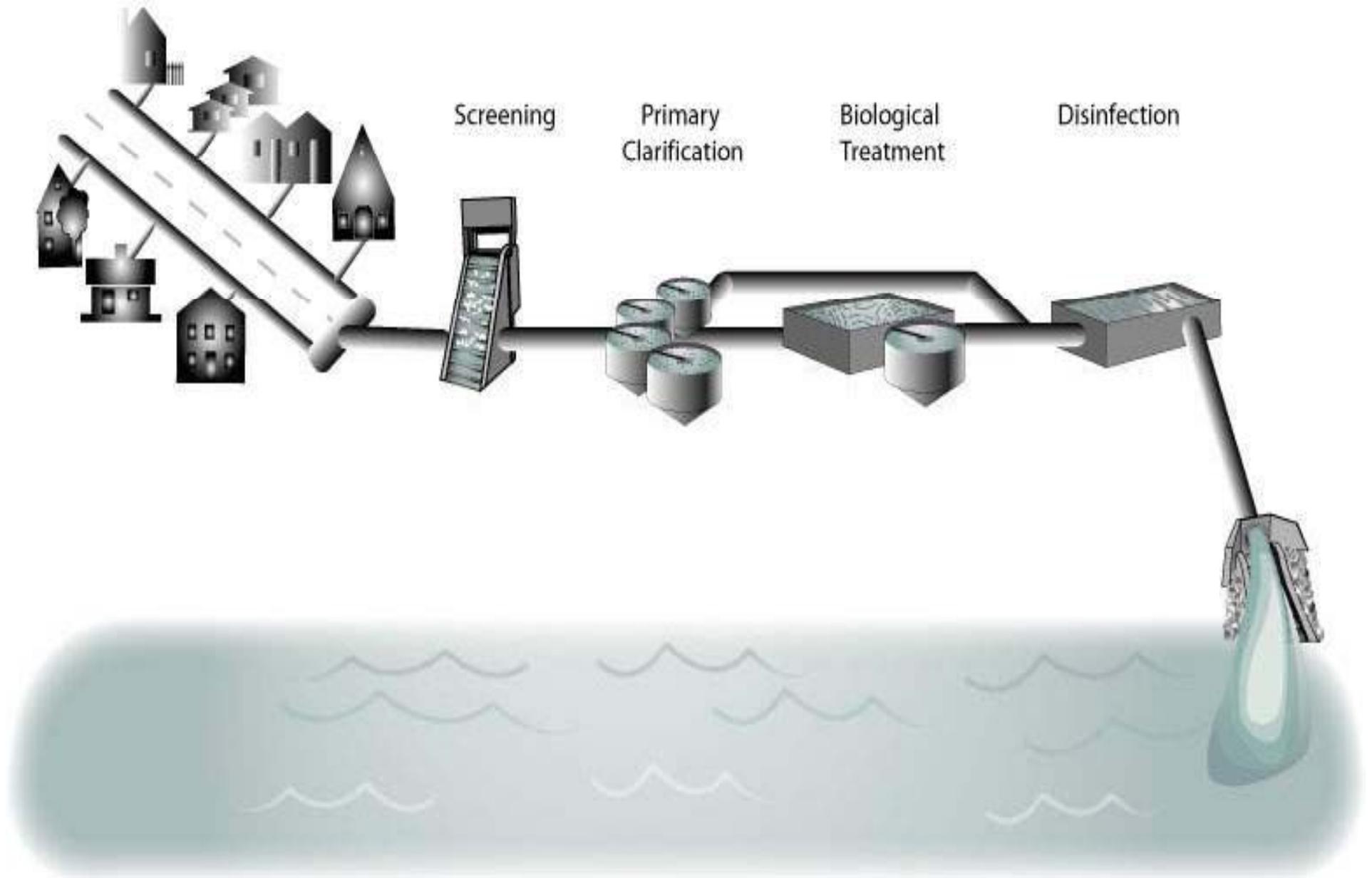
# All Flow Through Biological Treatment



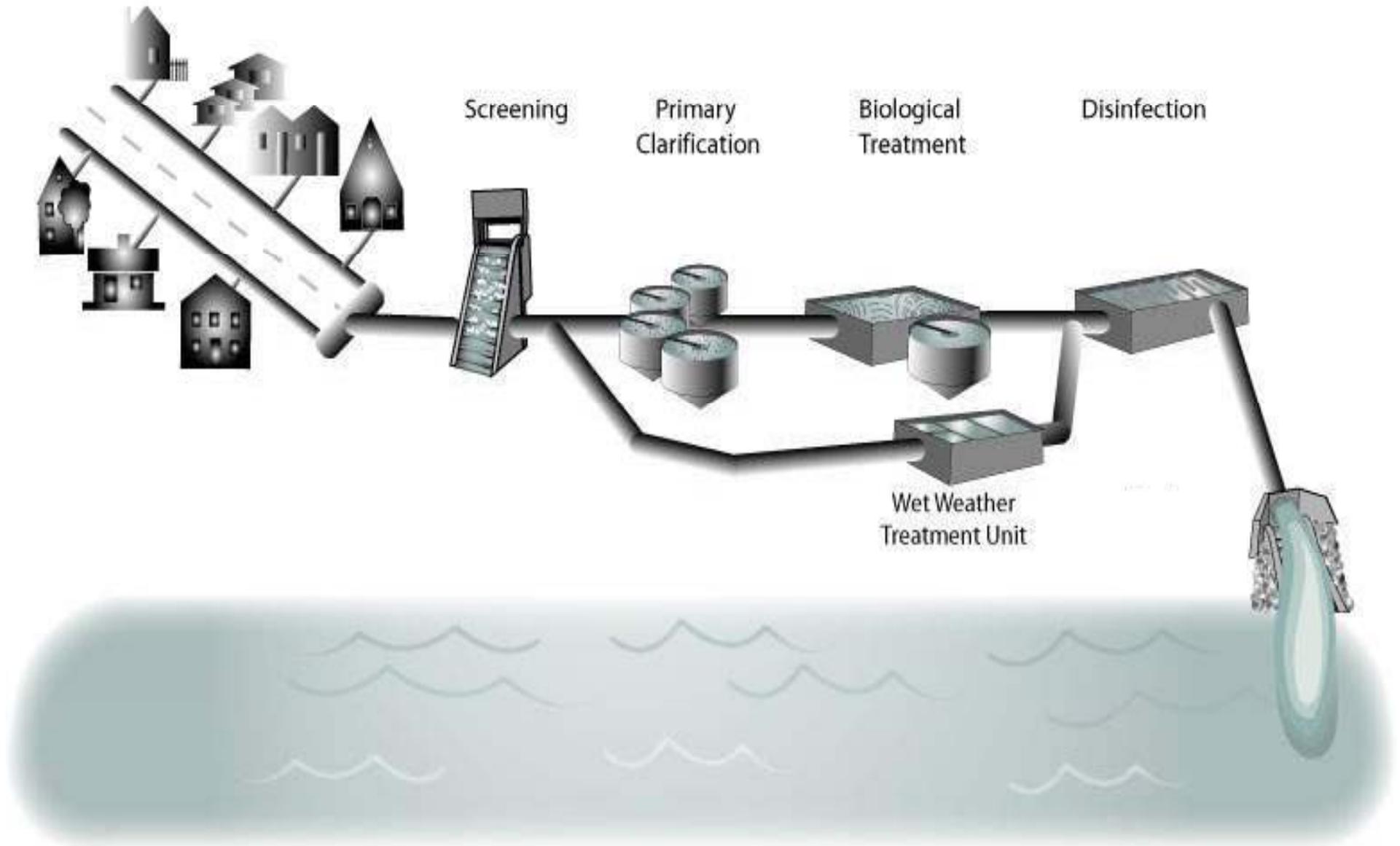
# Bypass Scenario



# Blending Scenario



# Blending Scenario With Alternative Wet Weather Treatment



# The Bypass Regulation

## 40 CFR 122.41(m)

- Defines bypass as “intentional diversion of waste streams from any portion of a treatment facility”
- Prohibits bypass and allows enforcement unless:
  - Bypass unavoidable to prevent severe property damage, personal injury
  - There were no feasible alternatives
  - The NPDES authority was notified
- Allows bypasses that meet permit limits if for “essential maintenance to assure efficient operation”

# 2003 Draft Blending Policy

- Would have provided an interpretation of the 'bypass regulation' that blending was not a bypass and could be authorized by a permit if six criteria were met
- Draft policy received significant opposition
  - 98,000 comments
  - Congressional interest
  - Concern about public health risks

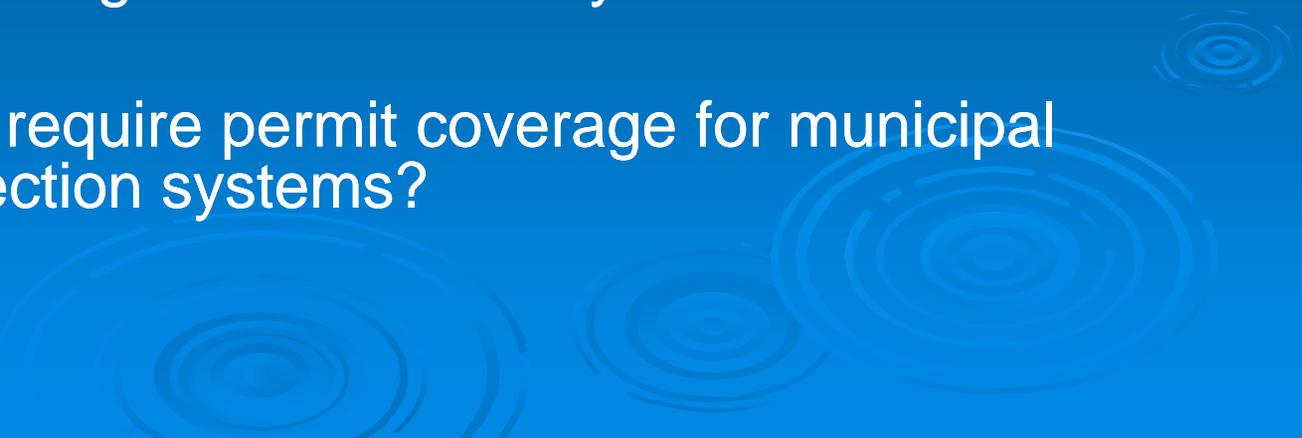
December 22, 2005

## Draft Peak Flows Policy

- Reflects NRDC/NACWA recommendation
  - Clarifies that blending is a bypass that can only be approved in permit if there are no feasible alternatives
  - Most commenter's were supportive
  - Policy was never finalized



# Seeking Input on Seven Questions

1. Should EPA clarify its standard permit conditions for SSO reporting, recordkeeping and public notification?
  2. Should EPA develop a standard permit condition with requirements for capacity, management, operations, and maintenance programs based on asset management principles?
  3. What are the costs and benefits of CMOM programs and asset management of sanitary sewers?
  4. Should EPA require permit coverage for municipal satellite collection systems?
- 

# Seeking Input on Seven Questions

5. What is the appropriate role of NPDES permits in addressing unauthorized SSOs that are caused by exceptional circumstances?
6. How should EPA address peak flow diversions at POTW treatment plants?
7. How should municipalities balance all of the needs to meet water quality requirements?



# 1. Should EPA clarify its standard permit conditions for SSO reporting, recordkeeping and public notification?

## ➤ Some ideas:

- Provide notification to parties with a reasonable potential for exposure
  - Maintain an overflow response plan
  - Provide immediate notification of high-risk overflows to permitting authority, health authority, and the public
  - Make an annual report of all overflows available to the public
- 

2. Should EPA develop a standard permit condition with requirements for CMOM programs based on asset management principles?

➤ Some ideas:

- Properly manage, operate and maintain collection system at all times
- Provide adequate capacity
- Take all feasible steps to prevent SSOs
- Develop Capital Improvement Programs for assets reaching the end of use
- Define the level of service provided to customers

### 3. What are the costs and benefits of CMOM programs and asset management of sanitary sewers?

#### ➤ 10 years of CMOM Experience

- Economic Analysis
- Defined Health Benefits
- Reductions in SSOs

#### ➤ Principles of Asset Management

- Relationship between CMOM and Asset Management



## 4. How should EPA clarify permit coverage for municipal satellite collection systems?

### ➤ Some ideas:

- Municipal satellite must have permit; or
- Permit for Regional operator must require Regional operator to implement CMOM, reporting and other provisions in satellite systems
- Include satellite systems as co-permittees and require all co-permittees to implement CMOM provisions
- Use a general permit for each State

5. What is the appropriate role of NPDES permits in addressing unauthorized SSOs that are caused by exceptional circumstances?

➤ Some ideas

- SSO discharges remain prohibited
- Enforcement defenses analogous to bypass/upset provisions
  - For wet weather SSOs, enforcement discretion if:
    - Severe natural conditions, and
    - No feasible alternatives
    - Does not contain advanced approval language but specific criteria (e.g. design storm) could possibly be in permit
  - For other SSO's, affirmative defense if notice and:
    - SSO was an exception, beyond reasonable control, and
    - Took all reasonable steps to stop and mitigate

## 6. How should EPA address peak flow diversions at POTW treatment plants?

### ➤ Some Ideas

- Finalize the draft Peak Flows Policy
- Incorporate the Peak Flows Policy into SSO rulemaking
- Finalize draft Implementation Guidance (including Utility Analysis Guidance)

## 7. How should municipalities balance all of the needs to meet water quality requirements?

- How should priorities be established for all water quality needs?
- What is the appropriate role of green infrastructure or nontraditional approaches?
- What is the appropriate role of enforcement?
- What is the appropriate role of permitting?

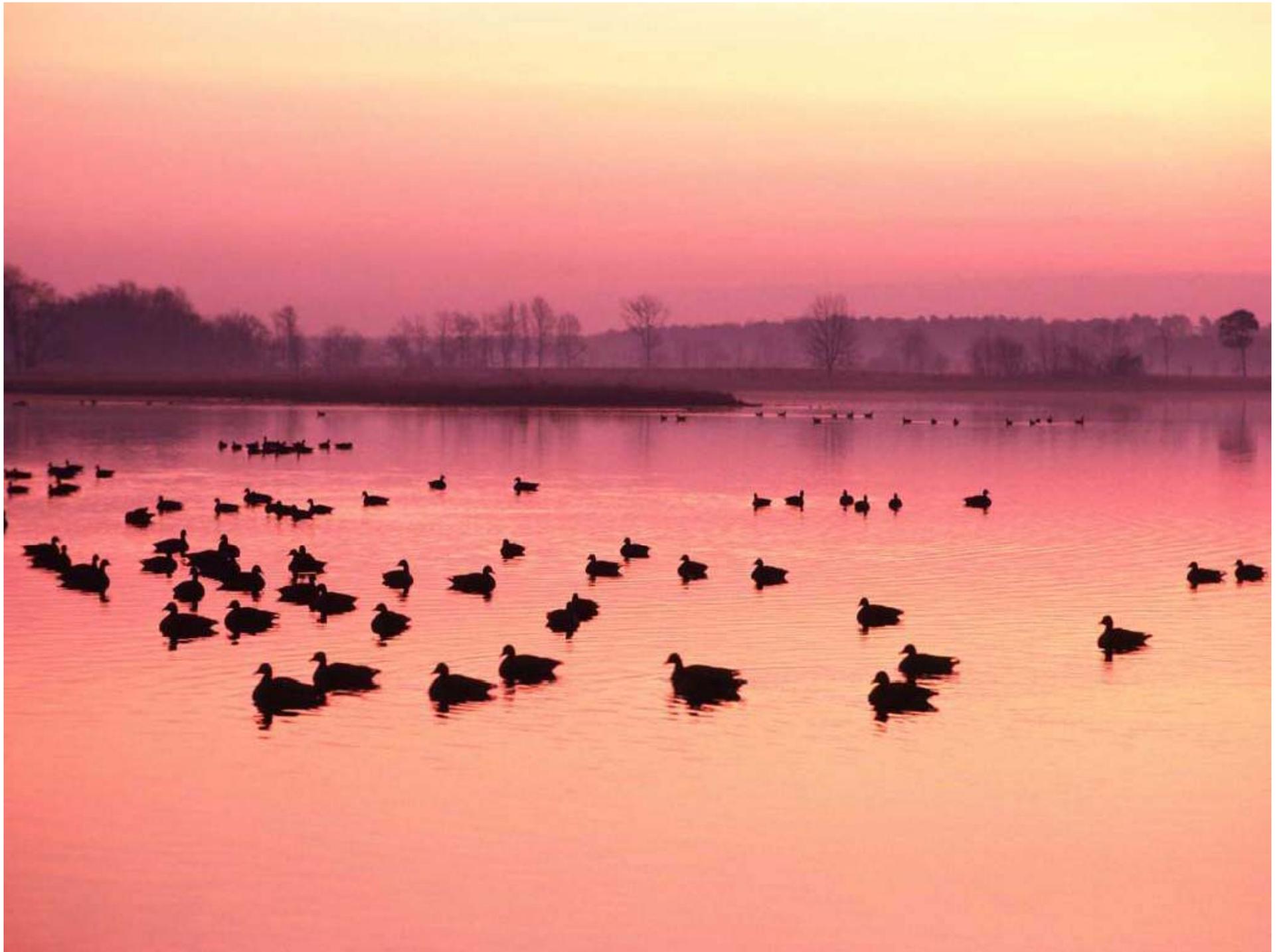


# Additional Information

➤ EPA website on rulemaking

[www.epa.gov/npdes/sso](http://www.epa.gov/npdes/sso)





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5 Minute Break



# Today's SSO Webcast has Ended.

For more information about the SSO program visit:

[www.epa.gov/npdes/ss0](http://www.epa.gov/npdes/ss0)

Submit written comments to [www.regulations.gov](http://www.regulations.gov),

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