On-Site Wastewater Treatment Programs in the Watershed – A Status Update

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Presentation Outline

• Program partners
• Population and wastewater use in NYC Watershed
• Potential water quality issues and various means of wastewater treatment and disposal
• Programs to improve treatment and disposal in the NYC Watershed
• Program expenditures and cost effectiveness
Partners

- County Government
- Municipal Government
- Local Development Corporations
- State and Federal Agencies

New York State Environmental Facilities Corporation

- CATSKILL WATERSHED CORPORATION
- DOH
- UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
- [Logo]
New York City water is provided by a 2,000 square mile watershed and travels up to 125 miles before reaching the 9 million downstate consumers.
Watershed Population

• Population in the watershed is approximately 250,000 people

• Approximately 80% of the residents live in the EOH portion of the watershed
Wastewater Generation

• Nationally, approximately 75% of wastewater flow is treated via WWTP

• In the NYC Watershed, approximately 25% of wastewater flow is treated via WWTP

• Those in sewer districts are treated by the over 120 treatment facilities with tertiary treatment or at WWTP facilities outside the watershed

• The remaining 75% of wastewater is treated via approximately 100,000 on-site subsurface sewage treatment systems (SSTS)
Potential problems associated with SSTS

- Insufficient lot size
- Inadequate soil conditions
- Runoff and groundwater levels
- Improper use maintenance
- Hydraulic overload
Potential Water Quality Issues

Improperly treated water may result in water quality impairments

• Pathogens
  o Cryptosporidium
  o Giardia

• Nutrients
  o Phosphorus
  o Nitrogen
Programs to address SSTSSs

- New wastewater treatment facilities

- Sewer extensions to existing wastewater treatment facilities inside or outside the watershed

- Septic repair/replacement
New wastewater collection and treatment facilities for watershed communities in priority areas

- Wastewater Treatment Plants
- Community SSTS
Wastewater Infrastructure

- 14 new wastewater treatment facilities have been constructed since 1997
- Elimination of over 2,600 SSTs
- Expenditure of over $151 million of City Funds
Wastewater Infrastructure

• 3 additional facilities are in the planning and design stage
• 5 additional communities are eligible to participate
Sewer Extensions

Connecting priority residences not already served by a public sewer system

- Treatment facilities inside the watershed
- Treatment facilities outside the watershed
Sewer Extensions

- 10 projects are complete or are in design
- Elimination of over 450 SSTs
Sewer Extensions

Expenditure of approximately $24 million of City Funds
Septic System Repair Programs

- Over 4,200+ residential SSTSSs repaired, replaced or part of a septic maintenance district
Septic System Repair Programs

- Expenditure of over $60 million of City Funds to date
- Vast majority of repairs have occurred through CWC
WOH Septic Program Status

- Residential properties in priority areas.
- Residential properties outside priority areas.
Program Implementation

Cost per SSTS repaired/eliminated

• New Wastewater Treatment Facilities
  o Per unit connection cost ranges from $35K to >$110K
  o Average cost nearly $60K

• Sewer Extension Program
  o Per unit connection cost ranges from $30K to >$110K
  o Average Cost ~$54K

• SSTS Repair Programs
  o Per unit repair/replacement cost between $15K and $20K
Comparison of Program Costs

Number of SSTS's Managed
- Septic Repair Programs: 36%
- Sewer Extensions: 6%
- New Wastewater Treatment Facilities: 58%

City Funding
- Septic Repair Programs: 64%
- Sewer Extensions: 10%
- New Wastewater Treatment Facilities: 26%
Summary

- Population in the watershed of approximately 250,000 people generate a significant volume of wastewater.
- The majority of wastewater in the watershed is treated by SSTS.
- More than $230M in City funds have been expended on programs to eliminate and/or repair SSTSs to continue to improve water quality.
- When septic repair/replacement is feasible, it is a more cost effective means of treatment.
Questions?