



NYC DEP Biosolids Program

A Review and Update

10/12/2016

Today's discussion

- DEP's NYC WWTP Operations
- Beneficial Use in the 1990s
- Current Program - Landfilling
- Future of DEP's Biosolids Program



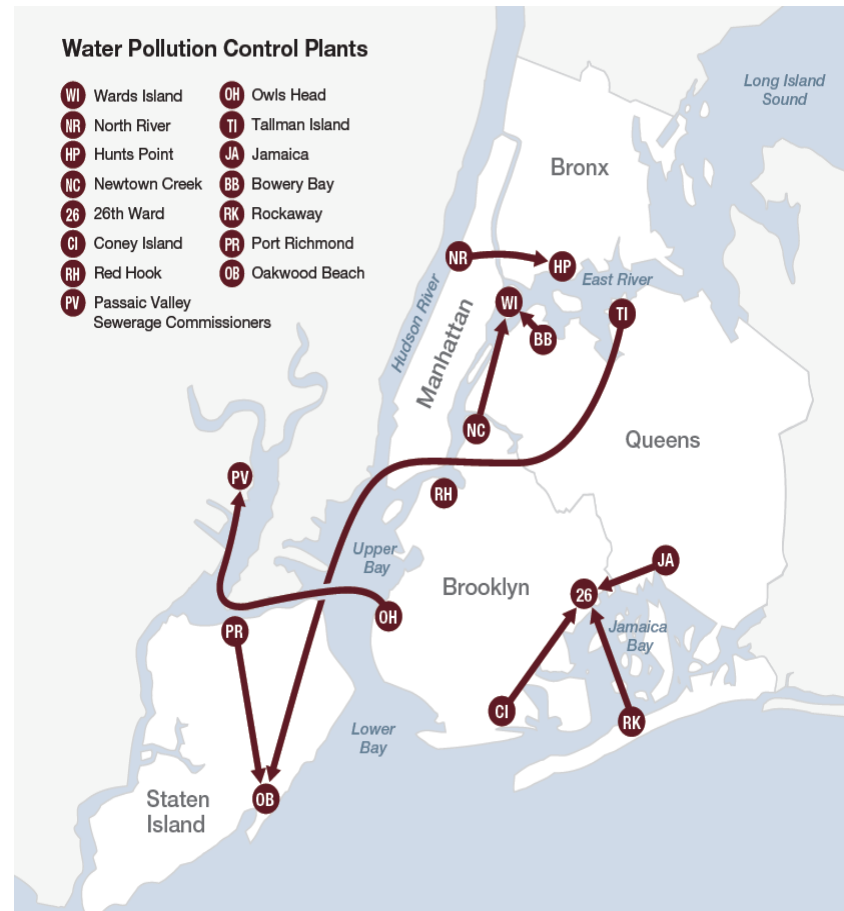
DEP's NYC Wastewater Treatment Plants

- 14 Water Treatment Plants treat over 1.3 billion gallons of wastewater per day
- Biosolids production varies between 1,000 and 1,400 Wet Tons Per Day
- Average daily loading is 1,200 Wet Tons



DEP's Dewatering Operation

- 6 Dewatering facilities
- 5 Sludge Vessels and 3 Force Mains
- 24/7 365 Disposal Program
- On Site Storage Capacity Limited



NYC Biosolids Program – 1990s

- 1988 Congress Passed the Ocean Dumping Ban Act an amendment to the Marine Protection Research and Sanctuaries Act
- 1992 EPA Consent Decree
 - 100% Beneficial Use Program, 1992-1999



Background of NYC's Biosolids Program



1992 NYC DEP begins land management of biosolids

- Over \$100,000,000 per year program
- 50% land applied in Colorado and Texas
- 50% to Pelletization plant in the Bronx (1993-2010)

Move to Landfill

2009 Budgetary Concerns led to a re-evaluation of Landfill Disposal

- Economic downturn reduced the amount of construction debris headed to landfills
- Landfilling less expensive than beneficial use



NYCDEP Biosolids Program - 2016

- 5 contracts for biosolids removal and disposal
- Removal of approximately 300 tons per day
- Contracts have 3 to 5 years duration (to 2019)



Landfill Challenges

- Contracts written with the intent to prioritize low cost led to all of our eggs in one basket
- 2 Waste Management Landfills in Pennsylvania ceased accepting NYC biosolids: odor complaints and violations
- Other landfills are further distance from NYC
 - Contractors no longer able to have a single driver perform 2 pick-ups on one shift



- PlaNYC and OneNYC
 - 80 x 50
 - Energy Neutrality
 - Eliminate Landfilling
- DEP
 - Aging Infrastructure
 - Old and New Technology Opportunities
 - Need to Diversify Biosolids Handling and Disposal Options



Benefits of Improving Biosolids Process

Improved thickening and anaerobic digestion leads to:

- Achieving PSRP, allows for diversification and land disposal
- Greater biogas production - renewable energy options
- Reduced biosolids production - reduced disposal costs
- Reduced odors – increased disposal/land application options
- Reduced Greenhouse Gas emissions



Various Biosolids Options

- Energy generation - incineration
- Pyrolysis – Gasification – Biochar
- Biogas production
- Alkaline Treatment
- Pelletization
- Composting
- Mine Reclamation
- Agriculture
- Soil amendment
- Landfilling



Partnering with Waste Management on Co-Digestion Project

- Successful Pilot Project
- Started Demonstration Project
- Potential Full-Scale Project

Partnering with National Grid on Gas Injection Project

- Use biogas generated in excess of boiler use
- National Grid will scrub biogas and inject into their local natural gas distribution line



Conclusions

- DEP BWT core mission is wastewater treatment, moving toward water resource recovery
- Goals to decrease GHG and energy consumption as well as minimize landfilling
- Evaluating ways to optimize our biosolids process

