

Anaerobic Digestion in NYS

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New York City – both a voluntary and mandatory approach

- > **Voluntary collection from schools, residences, city agencies**
- > **Composting at Rikers Island, Fresh Kills Composting Facility, Community Compost Sites**
- > **Anaerobic digestion at Newtown Creek WWTP**

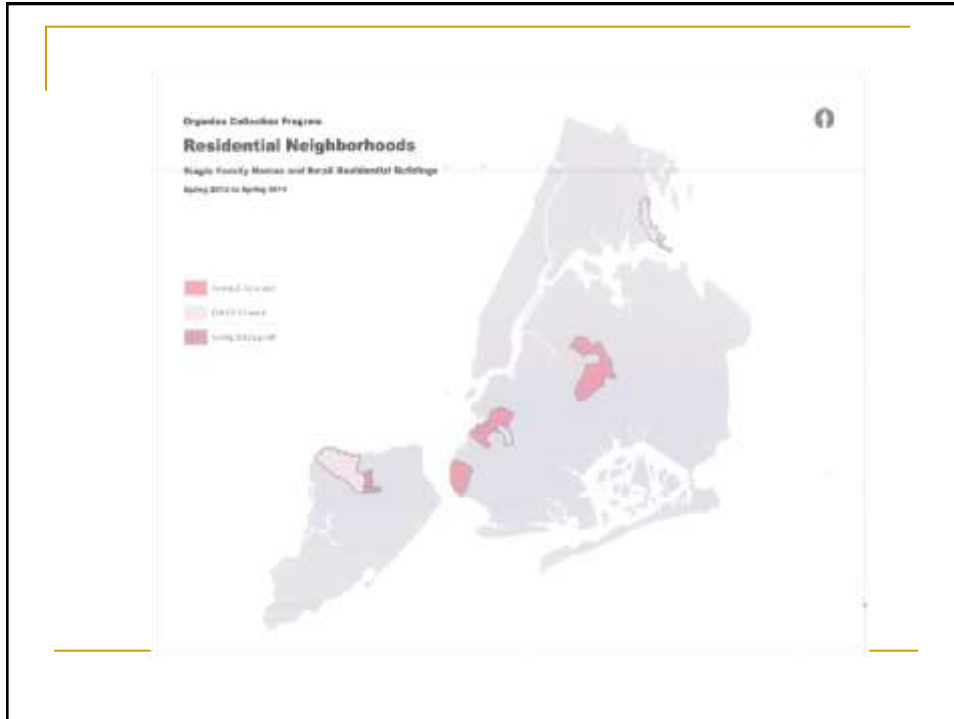
Anaerobic Digesters at Newtown Creek



New York City Organic Recycling

Organics Collection Program
Schools, City Agencies, and Large Residential Buildings



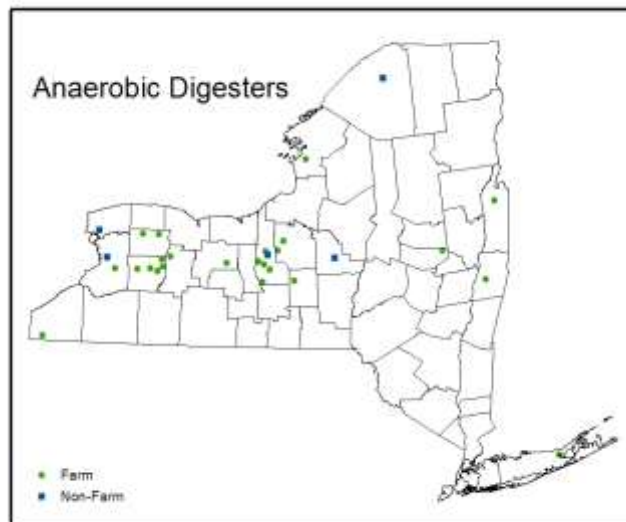


NYC Mandatory Food Waste Separation and Recycling

- > the Commissioner of Sanitation annually makes a determination if sufficient capacity exists within 100 miles and can mandate separation and recycling
- > applies to food manufacturers, food wholesalers, retail food stores, arenas, stadiums, hotels meeting size limitations (10,000 square feet for retail food stores, etc.)
- > law takes effect July 1, 2015

Anaerobic Digestion

- 20 on-farm ADs
- 2 private regional ADs – Quasar
- 1 municipal regional AD – Cayuga County
- 2 POTWs taking off-site organics :
Johnstown-Gloversville taking FAGE whey
- Pilot AD – City of Watervliet
- Design stage regional AD – Long Island
- NYC??
- ~ 130 ADs at POTWs





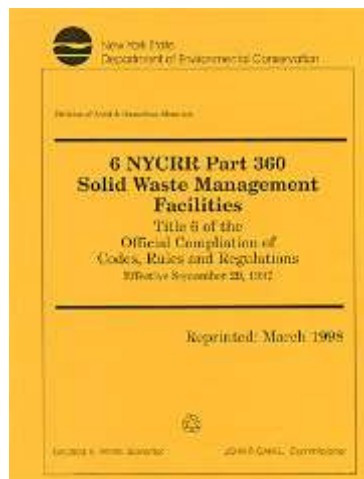
NYSERDA & NYPA

- Promoting ADs through funding and technical assistance
- \$23.6 million (NYSERDA) + \$ 5 million (NYPA)
- \$2 million cap per project + payment per kwh
- Consultant contract to provide assistance to farms to develop projects

Regulation of ADs in NYS

- Division of Air Resources – engine emissions
- Division of Water – CAFOs
- Division of Materials Management – solid waste regulations

Solid Waste Regulations

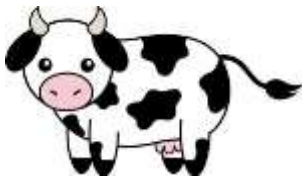


6 NYCRR Part 360 Solid Waste Management Facilities

- 360-4 Land Application Facilities
- 360-5 Composting Facilities
- www.dec.ny.gov/regs/4411.html



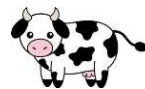
Part 360 vs. CAFO Rules



CAFO Farm –

CAFO rules apply regardless of the type or quantity of waste applied

Part 360 may apply in limited circumstances



Non-CAFO Farm

Part 360 rules apply only if waste is accepted from off-site

The type of Part 360 regulation depends on the type and quantity of waste

Levels of Regulation Under Part 360

- Exemption
- Registration
- Permit

Exempt Facilities

- On-Site ADs (not for sludges)
- ADs for farm wastes
- ADs on CAFOs (no sanitary, >50% manure)



Registered Facilities

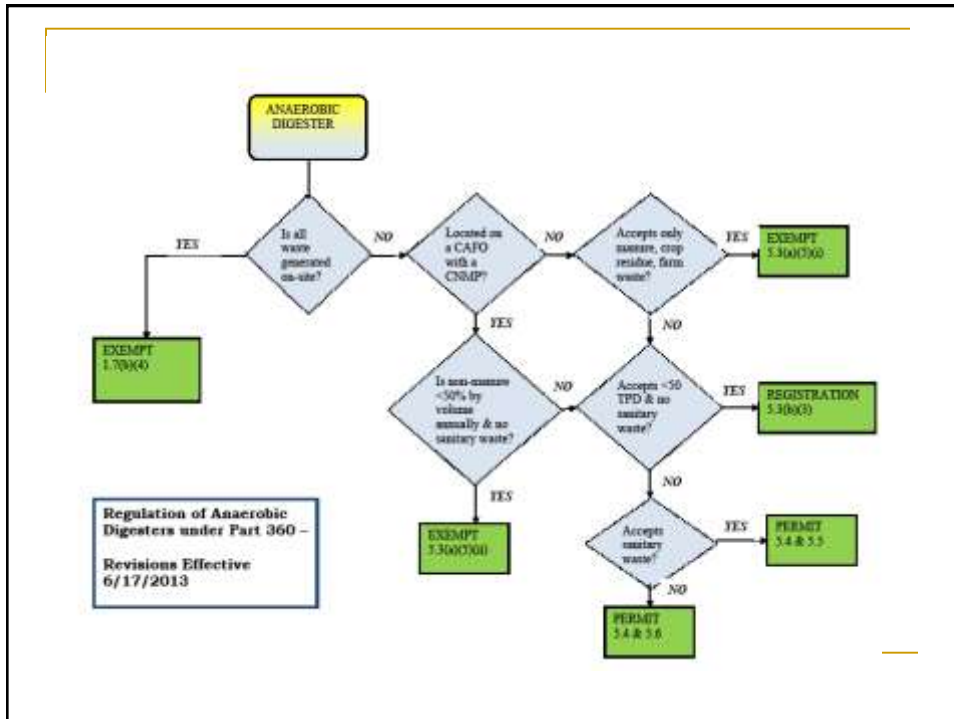
- ADs < 50TPD (no sanitary)



Permitted Facilities

- Everything that is not exempt or registered
- Any amount of biosolids, septage, MSW





Environmental Concerns – AD

- Odor
- Surface and groundwater impacts
- Product quality
 - Pathogen reduction
 - Vector attraction reduction
 - Maturity
 - Pollutant standards
- Incoming waste quality
 - Heavy metals

Regulation of Digestate (Solids, Liquids, or both)

- Depends on:
 - > what goes in the AD (biosolids, manure, food, etc.)
 - > how is the AD operated (Class B, Class A, neither)
 - > is there any additional treatment after AD (composting, etc.)
 - > how will it be used:
 - * land application
 - * composting
 - * animal bedding
 - * topsoil blending
 - * other?

Regulation of Digestate

- Exempt – use of digestate if the AD only accepts manure and crop residues
- Exempt – use of digestate if the AD is located on CAFO and no sanitary waste is accepted. Land application must be under a CNMP
- Exempt – use as bedding or topsoil from a Registered AD, composting requires Registration
- AD accepts sanitary waste – digestate regulated as biosolids (Class B or Class A)
- Registration – composting or land application of digestate from a permitted AD (no sanitary), exempt use for bedding or topsoil

Pathogen Reduction Standards

- Two Classes : Class A and Class B
- Class B: at least one log (90%) reduction
- Class A: reduced to below detectable levels (at least two log – 99% reduction)

Class B Options

- Anaerobic Digestion: 15 days 35C or greater; 60 days at <35C but >20C
- Fecal coliform count: geometric mean of 7 samples are <2,000,000 CFU

Class B Restrictions

- Public access restricted for 30 days to one year
- Human food crops can not be grown for 14 months if the edible part is above soil, 38 months if below soil
- Feed can not be harvested for 30 days
- No grazing for 30 days

Class A Options

- Composting after AD: 3 days at 55C, 15 days at 55C for windrow
- Organism testing- viruses, helminth ova
- Thermophilic digestion:
 - $D = 131,700,000/10^{0.14t}$ or $D=50,070,000/10^{0.14t}$

Use of digestate is a form of recycling

- However, this fact does not guarantee public acceptance.....



“DEC permits are fast-tracked for Equate”

“**Marilla board votes to extend equate ban**”

“Quasar plan reminds residents of Love Canal, threatens local produce sales”



**DEC Accused of Breaking the Law by
Niagara County Lawmakers**

**Chemists tells concerned Wheatfield
residents the EPA's rules on sludge are
outdated**

Buffalo News: Ceretto, Cliffe rip DEC over
biosolids regulation

Don't poison our land by spreading
biowaste - Opinion - The Buffalo News

Wheatfield residents assail fertilizer from
sewage sludge

**Wheatfield passes ban on future use
and storage of biosolids**

Quasar sues to overturn Wheatfield
biosolids ban

