NEW YORK
STATE OF
OPPORTUNITY.

Waste Advisory Panel

Meeting 4

January 14, 2021

Agenda

- Introduction and housekeeping items – Martin Brand (10 min)
- Presentation by John Fischer, MassDEP, on the Massachusetts food program (15-20 min + questions)
- Presentation by Bridget Anderson, DSNY, on NYC's food program (15-20 min + questions)
- Waste Emissions Advisory Panel draft recommendations slides discussion
- Future meetings
  - 1/19 CAC report out
  - Future panel meetings

New York Climate Action Council: Waste Advisory Panel

John Fischer

January 14, 2021

Waste Ban Status

- Massachusetts waste bans go back to 1990
- Implemented via regulation under statutory authority
- Commercial organics > 1 ton/week effective 10/1/14
- Proposed reduced threshold of ½ ton per week
  - MassDEP held public comment and hearings this fall
  - Currently reviewing comments received
  - Had been proposed for 10/1/21

Food Waste Diversion Data

Processing Type	2016 Tonnage	2017 Tonnage	2018 Tonnage	2019 Tonnage
Compost	79,586	52,991	42,321	40,569
Animal Feed	26,250	26,777	39,593	40,014
Anaerobic Digestion	48,234	87,856	159,563	187,947
Other	13,277	12,819	8,065	9,552
Food Donation	22,712	25,940	26,637	27,703
Total	**190,059**	**206,382**	**276,180**	**305,785**

Compliance & Enforcement

- Inspections conducted at solid waste facilities
- As of fall 2019 - 82 NONs + 8 penalties
  - Almost all since start of 2018
- Will continue to send formal information requests to targeted generators

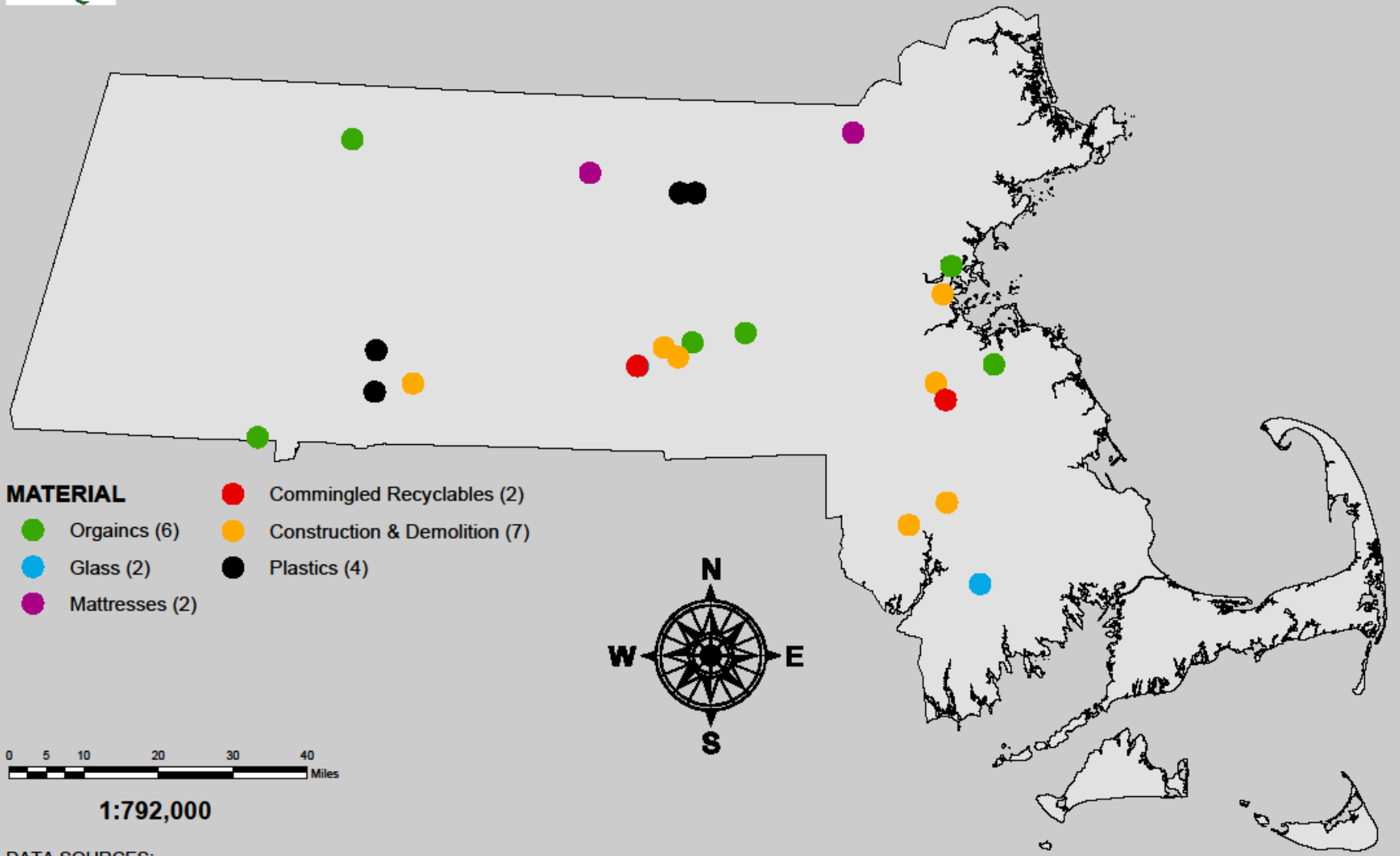
Recycling Works in Massachusetts

- FY20 Food Waste Work
  - TA to 84 businesses for food waste reduction
    - >800 tons food waste diversion
    - 39 tons donation (78,000 lbs.)
  - 170 hotline inquiries
  - Presented at 18 events
  - Posted 20 blog posts
  - Continued to update web pages

Recycling Business Development Grants

- 6 grants for $1 million for food waste
- Next application deadline – November 20, 2020
- Includes food scraps as target material
- Grants from $50K to $400K
- Must be for processing, not collection
- Grants fund equipment & capital costs
- https://www.mass.gov/how-to/apply-for-a-recycling-business-development-grant

Recycling Business Development Grant Recipients



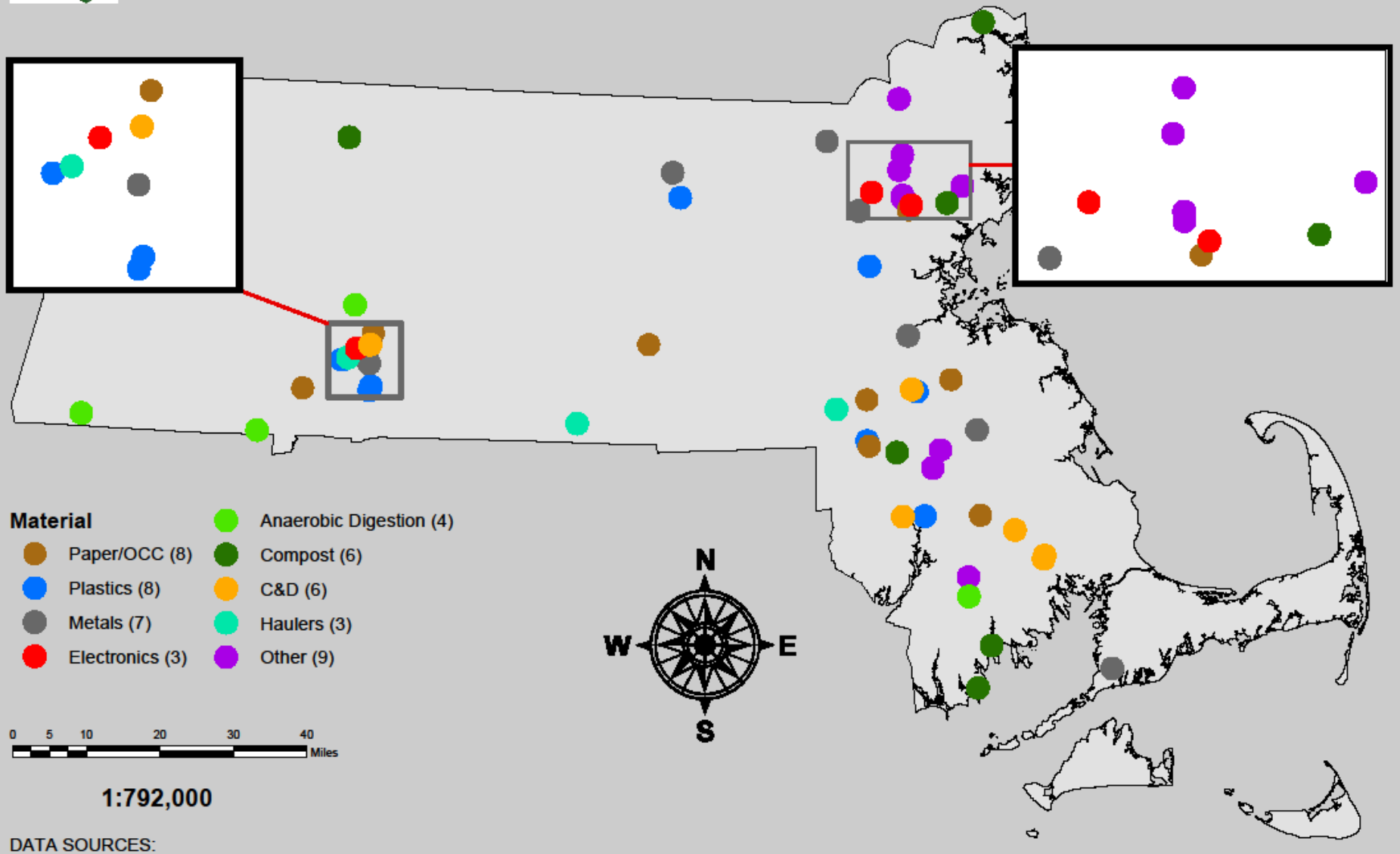
DATA SOURCES:
- RBDG Grantees: MassDEP BAW, January, 2019

Map Updated January, 2019

Recycling Loan Fund

- Have awarded 20 loans for $5.28 million for organics projects
- Loans from $50K up to $500K
- Broad eligibility for recycling, composting, AD activities, including collection
- http://www.bdcnewengland.com/programs/massachusetts-recycling-loan-fund/

Recycling Loan Fund Loan Recipients



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DATA SOURCES:
- RBDG Grantees: MassDEP BAW, January, 2019

Map Updated January, 2019

Reduction

- Source Reduction
  - Typical reductions from business tracking = 50%
  - 154 businesses with tracking systems
  - 448 tons reduction in 2019
- Food Donation and Rescue
  - 28,000 tons in 2019
  - 30% overall increase since 2014
  - Greater increase for food rescue

Collection & Processing

- Food Waste Collection
  - increase from 1,350 customers in 2014 to 2,900 in 2019
  - More than doubled
  - Grew 26% in 2019 (from 2,300 to 2,900)
- Compost and AD
  - About 150k TPY potential compost capacity
  - >600,000 TPY AD capacity (operational or under development)
  - 11 de-packaging operations (3 in neighboring states)
  - Growing infrastructure in neighboring states
    - Bans in CT, MA, NJ, NY, RI, VT

Food Waste in Trash

- 2016
  - 26% of trash
  - MSW disposal = 4.6 million tons
  - Food waste in trash = 1.2 million tons
- 2019 21% of trash
  - MSW disposal (2018) = 4.5 million tons
  - Food waste in trash = 950K tons
- Decrease of about 250K tons
- Municipal waste combustor waste characterization data

Food Waste in Trash

- 2019 estimate of 950K tons
- About 55% commercial = 525K tons
- About 45% residential = 425K tons

Sector	Annual sector-wide tonnage subject to current ban	Annual sector-wide tonnage subject to proposed ban
Hospitals	20,747	23,528
Nursing Homes and Residential Facilities	985	2,177
Full Service Restaurants	91,158	120,000
Limited Service Restaurants	7,180	25,813
Supermarkets	101,672	105,677
Warehouse Clubs and Supercenters	7,533	7,533
Hotels	17,357	20,507
Correctional Facilities	1,455	1,560
Schools, Colleges, and Universities	28,793	29,116
Manufacturers and Processors	614,848	649,006
Distributors and Wholesalers	66,944	70,663
Primary and Secondary Schools	0	867
Total	**958,670**	**1,056,445**

For More Information

- https://www.mass.gov/guides/commercial-food-material-disposal-ban
- Mass Food Systems Collaborative Local Food Action Plan
- www.recyclingworksma.com
- John Fischer, MassDEP
  - John.fischer@mass.gov

NY Climate Waste Advisory Panel – NYC Food programs

January 14, 2021

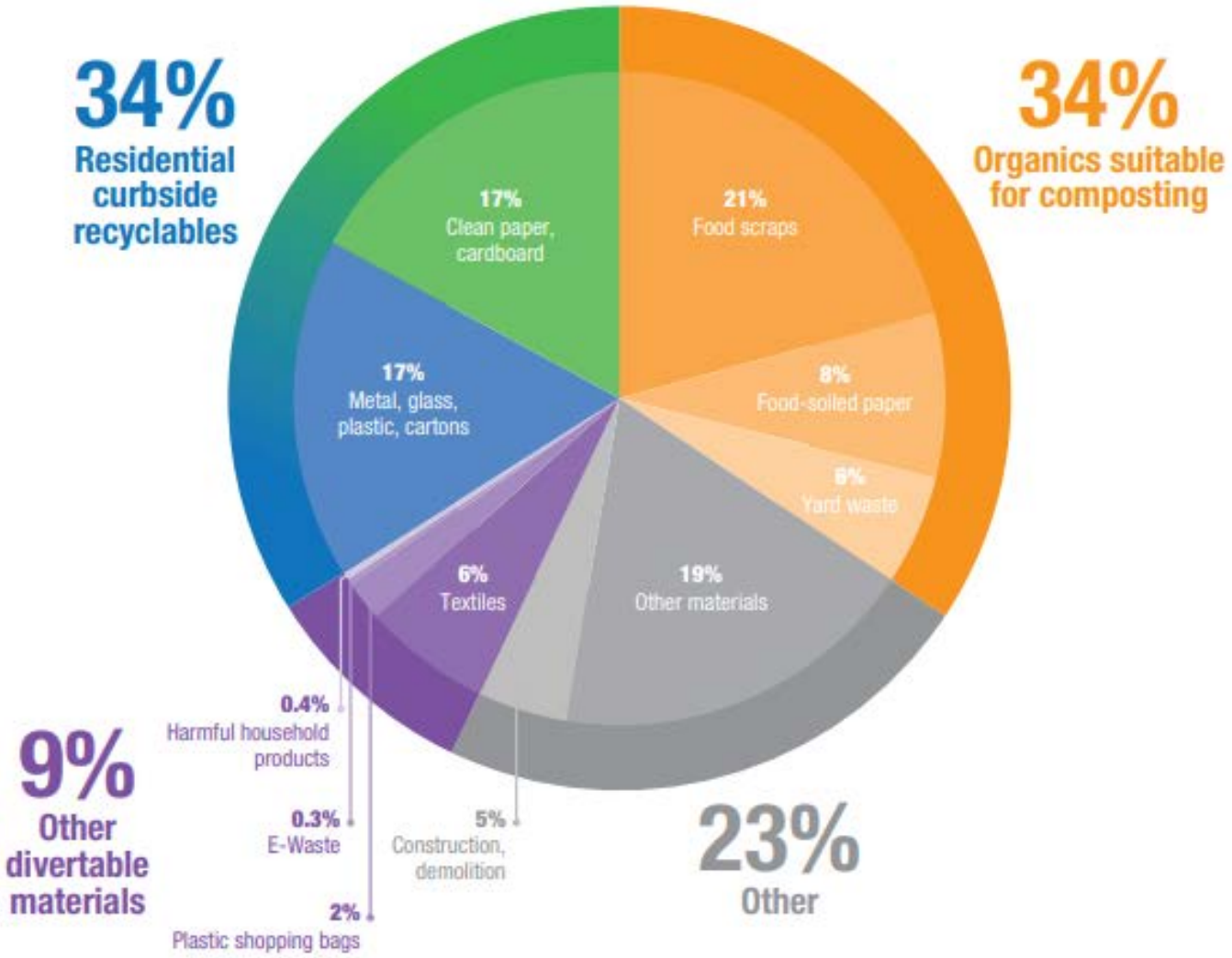
Bridget Anderson
Deputy Commissioner
Recycling and Sustainability

sanitation

“We are living climate change.”

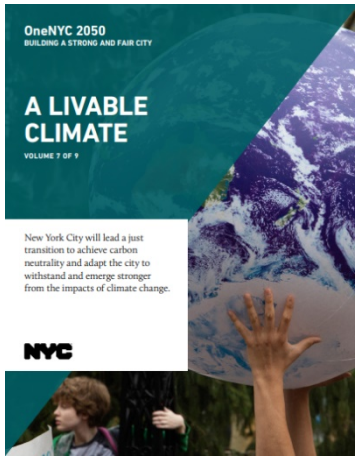
--Dan Zarrilli, Chief Resiliency Officer, NYC

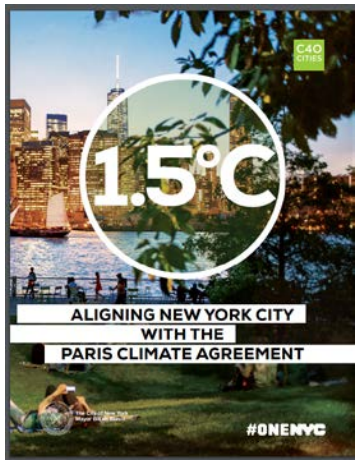
2017 Residential Waste Characterization Study (next one in 2023)



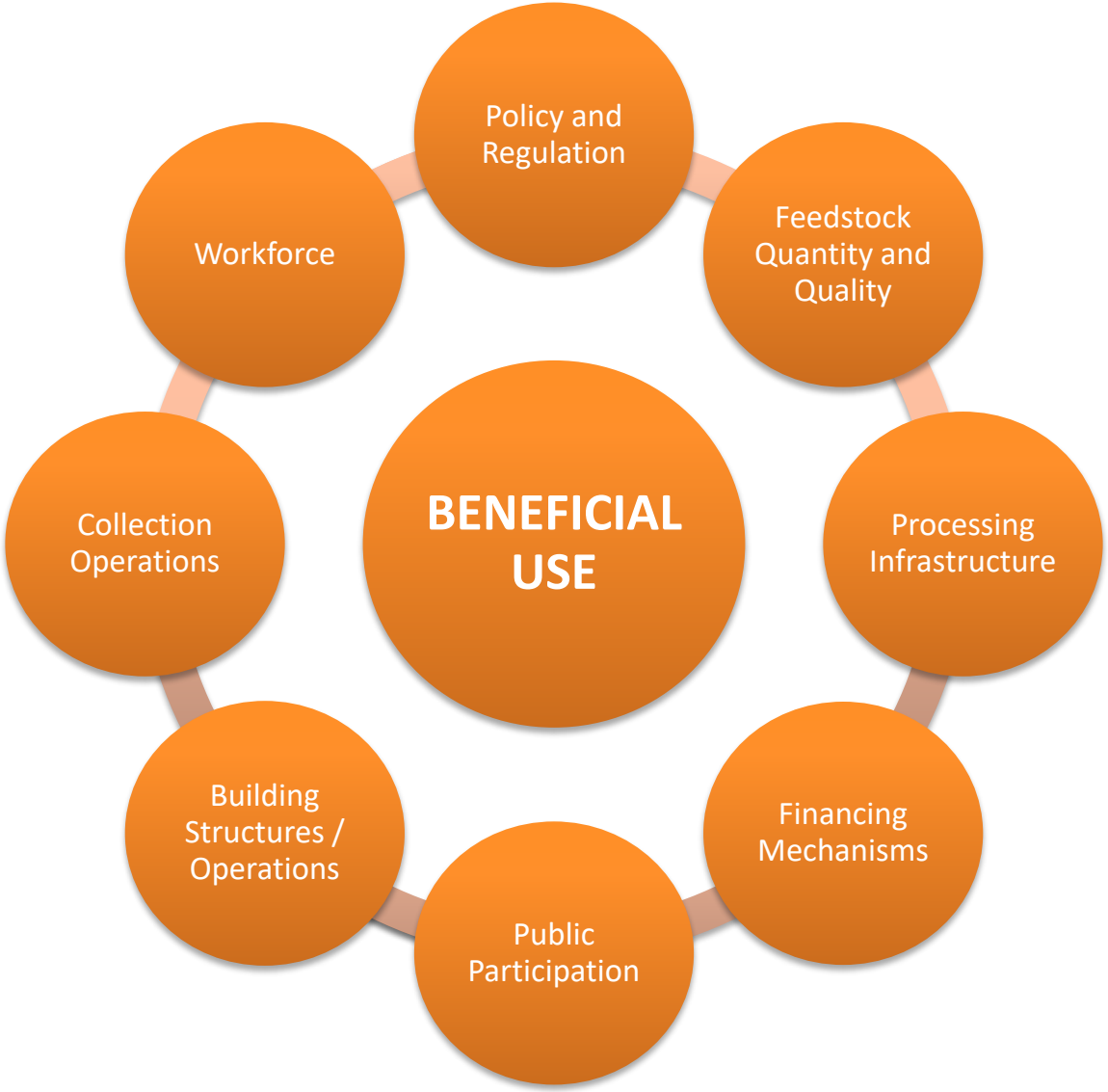
NYC waste strategy today guided by…

- **Local Laws** for example:
  - 1989 Mandatory Recycling (1992 Commercial)
  - Local Law 77 of 2013 Res organics pilot
  - Local Law 70 of 2016 Commercial organics
  - Local Law 199 of 2019 (Comml Waste Zones)
- **2006 Solid Waste Management Plan**
  - Borough-based equity, Multi-modal transportation, Long-term recycling contracts, Commercial waste study
  - 20 year – expires October 2025
- **OneNYC – A Livable Climate**
  - Mayoral strategic vision
  - Zero waste to landfills
  - Reduce Commercial waste disposal by 90%
- **1.5°C: Aligning New York City with the Paris Climate Agreement**
  - Strategic vision
  - Organics separation is listed to have “Major GHG Reduction Potential”





Waste Management: Urban Planning & Design



Budget Crisis from COVID = Difficult decisions

…and there will be more

- **Collections:**
  - *Intact:* refuse and recycling
  - *Suspended:* composting
- **Street Cleaning:** ~60% cut
- **Snow:** emergency priority, but with a tighter workforce
- **Other diversion programs**:
  - *Suspended:* HHW event and drop-off sites, ewaste pickup program
  - *Partially restored:* food scrap drop off sites
  - *Intact:* Public-private "No-cost" contracts
    - refasionNYC (textile recycling)
    - ecycleNYC (e-waste recycling)

Fiscal crisis pushing NYC to focus on "core operations"

Organics: How we ask people to participate

Waste Reduction, help New Yorkers

Donate prepared food & canned goods.

Drop off fruit & vegetable scraps in your area.

Stepping stone, community engagement

Original strategy and still a tool

Compost food scraps & yard waste at home.

Set out food scraps & yard waste at the curb.

How to get to scale

DSNY Waste Management Network: Organics

- Evolving
- Local and Regional
- Two main processing strategies
  - Industrial Scale Composting
  - Anaerobic Digestion
- Mid-scale educational sites
  - Small throughput, but critical for buy-in

Landscaper Program – source & buyer

Local-Scale Diversion and Climate Justice

Subgroup Members:

> Dr. Tok Michelle Oyewole, NYC Environmental Justice Alliance (lead)

> Brigitte Vicenty, Inner City Green Team

Mitigation strategies

1. Scope: Maximize waste diversion in low-income communities	
Strategy under consideration	Explore innovative solutions to capture and divert recyclable materials from waste stream
Rationale	To reduce exposure to environmental contaminants in BIPOC
Equity considerations	Ensure climate and environmental justice in waste collection and processing. Including reduced reliance of waste transfer station, landfills, incinerators, trucks Support capacity and capital building with CJ and EJ organizations. Include local organizations to help create new policies and ensure enforcement
Potential Implementation challenges	Buy-in and financial support from municipalities and local governments
Issues to explore	What can be done to sustain grassroot initiatives? Engage youth in green job sector Green City Force presentation Resident incentivization
Additional thoughts	

Materials Management Subgroup

Subgroup Members:

> Resa Dimino, Resource Recycling Systems (lead)

> Steve Changaris, National Waste and Recycling Association (co-lead)

> Dereth Glance, Onondaga County Resource Recovery Agency

> Allen Hershkowitz, Sport & Sustainability International

Mitigation strategies

1. Scope: Waste Reduction and Recycling	
Strategy under consideration	Expand Extended Producer Responsibility (EPR) / Product Stewardship and the Returnable Container Act (Bottle Bill)
Rationale	EPR shifts the responsibility for managing targeted products and/or packaging at the end of its useful life to product manufacturers. EPR includes recycling mandates to divert waste from the landfill, therefore reducing GHG emissions. To maximize GHG benefits, EPR policies should target packaging and printed paper, carpets, clean energy products and appliances. The Bottle Bill, NY's first EPR policy, drives high levels of reuse and recycling and should be expanded for additional GHG benefit.
Equity considerations	Consumers will benefit from better product and packaging design and reduced waste disposal burdens. Additional recycling infrastructure can be supported, potentially producing green jobs.
Potential Implementation challenges	Legislative action is needed. Broad EPR framework has been difficult to pass in the past and has focused on specific products each time. In the short term, significant momentum exists for EPR for packaging and printed paper.
Issues to explore	EPR should be structured to ensure improved recycling and reduced GHG emissions, and not merely a cost shifting strategy. EPR framework rules allowing additional products to be added easily in the future, and provides consistency for the addition process, should be explored.
Additional thoughts	Example products that would currently benefit from EPR legislation: packaging and printed paper, carpet, clean energy products (e.g., solar panels, batteries, wind turbine blades), appliances, and refrigerants. Bottle bill additions include wine, liquor, and other beverage containers.

Mitigation strategies

2. Scope: Waste Reduction and Reuse	
Strategy under consideration	Materials Exchange and Repair Investments
Rationale	Financial incentives, grants and contracts to support reduction and reuse as a waste prevention and landfill diversion strategy for methane producing wastes (e.g., single-use service ware and packaging, furniture, textiles, and other materials) by NGOs, local governments and other entities.
Equity considerations	Reuse and repair resources allow consumers to save money by making use of existing products instead of buying new and reduces the burden of waste disposal on communities. Promotion of reuse and repair fosters those small community-oriented businesses. Skills training programs furthers a local green workforce.
Potential Implementation challenges	Need to determine best incentive methods to be effective and efficient (e.g., tax programs, grants, etc.)
Issues to explore	Example incentive programs to encourage source reduction, reuse, and repair: • Replacement of single-use food service ware and packaging with durable alternatives; • Foster deconstruction projects for building material reuse (lumber, wood furniture, etc.); • Reusable packaging used to transport or distribute goods; • Repair skills training for schools and vocational programs to enhance workforce development through skills that encourage waste prevention and diversion from landfill; and • Develop sharing platforms and online directories for reuse options to connect residents, businesses, and local resources.
Additional thoughts	

Mitigation strategies

3. Scope: Recycling and Reuse of Construction & Demolition (C&D) Debris	
Strategy under consideration	Establish requirements and incentives for reuse and recycling of C&D materials and deconstruction/building materials reuse
Rationale	Removes C&D debris, some of which contains methane producing wastes, from disposal; reduces the GHG impacts of production of new products by reusing and recycling C&D debris
Equity considerations	Supports local green jobs and businesses in building/construction and reuse industry.
Potential Implementation challenges	Need to collaborate with DASNY, OGS, NYCHA, and local governments on revising any building codes/permits as well as the market development for deconstructed or recycled materials.
Issues to explore	Needs to focus on responsibility of the builder/developer to plan for recovery and ensure performance-based diversion goals are met.
Additional thoughts	Example: CA requires building projects over a certain size (permitting, regulatory) to plan for recovery.

Mitigation strategies

4. Scope: Improve Recyclables Markets	
Strategy under consideration	Support markets for recovering and utilizing aggregate, compost, and other recycled products
Rationale	While the feedstocks and infrastructure exist for alternative aggregate and soil amendment recycling options, they lack reliable, robust and consistent end-markets. Local municipalities often operate these facilities on a deficit. Increasing the economic feasibility of recycled materials use will encourage more diversion of these materials from disposal.
Equity considerations	Supports green business, local municipalities, and construction/highway programs.
Potential Implementation challenges	Engaging multiple agencies to evaluate procurement and permitting policies for opportunities to incentivize or require use of recycled materials will be a challenge.
Issues to explore	Work should be done collaboratively between DEC, DOT, DAM, and other relevant agencies. Product standards should be developed to match materials to specifications.
Additional thoughts	Markets should be supported by the State through procurement and site development permitting requirements (regulatory, legislative).

Mitigation strategies

2. Scope: Improve Traditional Recyclables Markets	
Strategy under consideration	Expand domestic markets and recycling capacity in NYS
Rationale	Financial incentives to support markets and maximize the capture of all recyclables (but specifically those for methane producing wastes) such as mixed paper, cardboard, large-volume items (e.g., film plastics and textiles) will divert these materials from disposal.
Equity considerations	Supports green jobs from the increased local recycling infrastructure.
Potential Implementation challenges	Cost to build facilities, competition with low-cost virgin materials
Issues to explore	Appropriate mechanisms (e.g., financial, etc.) to support recycling infrastructure within the state.
Additional thoughts	May require regional collaboration, and / or national focus. Work to ensure market development investments facilitate stabilization of municipal recycling programs through contract mechanisms, such as floor pricing for guaranteed supply.

Mitigation strategies

1. Scope: Organic Waste Reduction and Recycling	
Strategy under consideration	Expand food donation, food waste reduction, and food scraps recycling strategies statewide
Rationale	Reducing the quantity of organics disposed by first feeding hungry people and then recycling will significantly reduce GHG emissions from disposal.
Equity considerations	Increased food donation and statewide financial support of food rescue organizations will benefit food insecure New Yorkers. Reducing organic materials from being disposed at landfills (potentially located in Environmental Justice communities) will help reduce odors, truck traffic, and other site impacts.
Potential Implementation challenges	Current lack of available capacity to process significant quantities of food scraps and cost to develop new infrastructure.
Issues to explore	Potential collaboration with agricultural sector on AD development on farms
Additional thoughts	Strategies to consider: • Amend the Food Donation and Food Scraps Recycling Law to include smaller generators and implement a tiered approach, eventually including residents • Funding for food rescue organizations to support the donation of edible food to hungry New Yorkers • Explore potential surcharge on the disposal of organics and other methane producing wastes • Funding or other financial incentives to facilitate new development of facilities • Support education and other efforts to implement food waste reduction programs and intiatives

Landfills and Organics Diversion Subgroup

Subgroup Members:

> Lauren Toretta, CH4 Biogas (lead)

> John Casella, Casella Waste Systems (co-lead)

> Eric Goldstein, Natural Resources Defense Council

> Michael Cahill, Germano & Cahill, P.C.

> Steve Changaris, National Waste and Recycling Association

> Dereth Glance, Onondaga County Resource Recovery Agency

Mitigation strategies

1. Scope: Reduce methane and other emissions from landfills and waste management facilities	
Strategy under consideration	Using an all-of-the-above strategy to manage waste with the least impact to the climate by: • establishing/supporting performance standards of waste facilities, • enhancing source separation practices, and energy recovery for streams where source separation cannot be achieved; • supporting co-locating and local comprehensive waste management facilities, as well as energy or heat users such as greenhouses, industrial facilities, and similar; • Utilization of the data and methodologies of the USEPA Electronic Greenhouse Gas Reporting Tool (e-GGRT) to standardize baseline and site-evaluation modeling • Improving monitoring and funding for better data collection of actual emissions beyond general modeling, and to inform decision making using these emissions measurements; • Encourage and incentivize facilities to implement best management practices relating to onsite fuels, compost/mulch usage, and vegetation management for oxidation of emissions; • Develop holistic solutions for biosolids and organics management considering land application, composting, and landfill disposal with emissions controls. Create the financial incentives for distributed infrastructure and the use of best-in-class technologies to help manage organics better which will reduce emissions on an immediate and on-going basis. With the right financial incentives, technologies can be deployed to build or improve infrastructure to handle a variety of organic wastes. Create incentives for technology and public-private partnership and investment to help minimize the burden to the municipalities acting alone and allow for specialized technology and operations as/when needed.
Rationale	Technologies exist that can reduce the fugitive emissions. The right incentives need to be applied to promote investment and upgrading of infrastructure.
Equity considerations	All communities should have access to best-in-class technologies and high-quality infrastructure investment.
Potential	Biogas and other recovered energy sources need to be recognized as a renewable source of energy.

Mitigation strategies

2. Scope: Increase organic waste diversion and reduce disposal	
Strategy under consideration	Build markets and demand for compost or biosolids created through the organics treatment process. Establish standards for NY food-growing grade biosolids.
Rationale	Reducing food waste is in the top five strategies to greenhouse gas emissions now. Sustainable material management is dependent upon reliable markets to moved finished products. NYS through procurement could require compost to be used in construction, brownfield remediation and road building activities effectively creating a more consistent demand for compost.
Equity considerations	Proximity of composting or biosolid treatment facilities to population centers is important in reducing vehicle miles traveled; operations of these facilities can produce odors at time. Co-location at exisiting waste management facilities offers financial and efficiency benefits.
Potential Implementation challenges	Building this infrastructure is costly. Compost requires reliable markets to ensure material movement is relatively consistent. Recognition of energy benefits from Anerobic Digestion helps offset costs of processing organics, allowing the market to signal lower-cost disposal for source separated organics.
Issues to explore	Identify financial incentives to encourage development of organic waste management facilities in urban, rural, and suburban areas.
Additional thoughts	Regulations to implement the ban on the disposal of source separated organics should be released as soon as possible to help signal markets to expand capacity and encourage producers to source separate organics for more sustainable and cost-efficient solid waste solutions.

Mitigation strategies

2. Scope: Align and expand incentives for energy recovery from waste

Strategy under consideration	Establish financial incentives that are needed to build and improve infrastructure to support the management of organics and its diversion for higher purpose
Rationale	Level setting creates opportunities for fossil fuels offset, emissions reductions Biogas as a renewable source of energy enables a stable market that will bring in best in class technologies and investment infrastructure that will address wastes that couldn't be used for a higher purpose. Technologies can significantly reduce emissions.
Equity considerations	Creates jobs and further investment and upgrading of infrastructure that will improve public health. All communities should have access to technology and infrastructure advancements.
Potential Implementation challenges	Without a stable energy market, there will be no investment in technologies that can substantially reduce emissions and in the infrastructure to support organics diversion and waste management.
Issues to explore	Examine opportunities to handle waste locally or on a distributed basis Engage local planning to level the playing field and establish the need Examine all options and technologies that are best suited for that community/region Look for opportunities to reduce "long-hauling" of waste that will add emissions Support the use of energy related byproducts on a distributed basis
Additional thoughts	There are opportunities for public private investment.

Mitigation strategies

3. Scope: Ensure waste infrastructure exists to serve the needs of communities	
Strategy under consideration	Promote best in class technologies to recover resources from waste, including Material Recovery Facilities, Composting, Anerobic Digestion, and encourage their co-location as well as providing low-emission vehicles for collection and containers for increased source separation.
Rationale	There is a need for multiple technologies to best serve the waste needs to achieve the best environmental and long-term solution.
Equity considerations	All communities should have access to best-in-class technologies and high-quality infrastructure investment. This will increase jobs and enhance overall public health. Communities should have options and engagement on the services available to them.
Potential Implementation challenges	Solid waste management practices vary significantly at the local level. Harmonizing Public Education with local access to the best options available for managing key compononets of the waste stream is needed to explain that multiple strategies are needed to manage our waste, and that no single solution will solve all problems.
Issues to explore	Opportunities to work locally and regionally, and in public-private partnership.
Additional thoughts	Waste is resource worth recovering. Enhance technology and inovation in sustainable materials management by expanding partnerships with SUNY's Centers for Sustainable Material Management, Regional Economic Councils, etc. to ensure materials are recovered for their highest use and continue to circulate in our local and regional economy.

Mitigation strategies

2. Scope: Energy Floor Price for Expedited Infrastructure Build-out	
Strategy under consideration	Establish Energy Floor Price for In-state waste power producers. Implement through NYSERDA Public Opportunity Notice (PON). Producers eligible if i) capital investment is made in new capacity or efficiency improvements and ii) producers transfer their rights to market RECs from improvements that are recognized in out-of-state markets to NYSERDA, for revenue to NYS.
Rationale	• Infrastructure need for Methane Producing Waste (MPW) is urgent. Trade-off of energy floor prices for waste RECs would provide incentive without sacrificing voluntary RECs. Specific facility improvements can be confirmed by contract, without regulation that would render them involuntary. • Would provide incentive for new and improved capacity at traditional WTE and Digestor facilities. • Increased energy revenue would fund improvements without increases in gate fees and would diminish export of organic waste, and corresponding methane releases to other states
Equity considerations	Would not relax siting or operational requirements, should improve performance, reduce adverse impacts.
Potential Implementation challenges	Must identify funding source for PON. Must establish floor price sufficient to induce capital investment.
Issues to explore	What are current and expected values of RECs from waste to energy marketed out of state? What capital investments would produce greatest reduction in GHG emissions? What index should determine long term energy price ceilings and floors? System Benefit charge? Link to Social Cost of Carbon? Other?
Additional thoughts	Organics will remain in the waste stream. Waste to energy capacity in NYS is aging and inefficient compared to new European and Asian facilities. Modern efficiencies for conventional pollutant control will accompany GHG reduction.

Mitigation strategies

2. Scope: Measuring Effectiveness	
Strategy under consideration	Develop Industry-wide standards to assess the effectiveness of actions to capture or divert methane producing waste to different disposal technologies. Identify the technologies that produce the best results.
Rationale	The technologies that are most effective should receive more resources and incentives.
Equity considerations	Neutral.
Potential Implementation challenges	Varying assessments of measured emissions at facility types should be resolved with participation of all interested parties. Concensus may be diffiicult, but agreement on a range of impacts should be pursued.
Issues to explore	Emission sources and models for different technologies should be developed
Additional thoughts	

Water Resource Recovery Facilities (WRRFs)

Subgroup Members:

> Jane Gajwani, NYC Department of Environmental Protection (lead)

> George Bevington, Barton & Loguidice

Mitigation strategies

1. Scope: Minimize Fugitive GHG Emissions from wastewater	
Strategy under consideration	Mitigate fugitive emissions of methane through (1) routinely inspecting WRRF gas handling systems for leaks and taking actions to resolve, (2) funding state-of-good-repair work to stop leaks, and (3) encouraging conversion of home septic systems in densely populated areas to sewered systems.
Rationale	While anaerobic systems at WRRFs are designed to control and contain methane formation, state-of-good-repair issues can cause leaks. Routine inspection of these systems will identify leakage issues, and funding to repair underlying issues can reduce fugitive emissions to nearly zero. NYS has approximately 1.5 million septic systems which emit methane unmitigated. Where sufficient population density supports it, recommend converting to sewered systems that release far less methane per capita.
Equity considerations	State-of-Good-Repair issues at WRRFs often result from constrained financial resources limited by the need to keep water rates affordable. Financial assistance to repair leaks or incentivize the beneficial use of the biogas would help municipalities prioritize this work. Hook-up fees for conversion from septic systems can be expensive for homeowners. Assistance with these fees can help mitigate the financial burden, while mitigating GHG emissions and improving local water quality.
Potential Implementation challenges	The decision to sewer also requires that a legal entity be formed and the measure voted upon by the affected community.
Issues to explore	Subgroup is still investigating fugitive emissions of nitrous oxide at WRRFs
Additional thoughts	

Mitigation strategies

2. Scope: Recovery Energy from Wastewater	
Strategy under consideration	Incorporate energy recovery and beneficial use at WRRFs
Rationale	There is a tremendous amount of energy entrained in wastewater, that would convert to methane if not recovered or otherwise reduced. This strategy provides the opportunity to harness a renewable source of energy from waste, offsetting fossil fuels and avoiding uncontrolled methane formation later. Fund feasibility study to incorporate or improve energy recovery through anaerobic digestion or other energy recovery methods, and the subsequent beneficial use of the recovered energy. Financially assist implementation where deemed feasible.
Equity considerations	Beneficial use of the recovered energy should be evaluated for the highest and best use for the community where the WRRF is located. While recovered energy is typically used on-site at the WRRF to meet heat and power needs, it may be deemed more beneficial to use the recovered energy to heat local homes or businesses, or as transportation fuel for difficult-to-electrify fleets.
Potential Implementation challenges	Unclear where will funding come from. This recovered energy (eg, biogas, syngas) is not classified as renewable energy in the CLCPA and, therefore, not eligible for special tariffs through the Public Service Commission.
Issues to explore	
Additional thoughts	

Mitigation strategies

3. Scope: Recognize the climate benefits of beneficially using WRRF biosolids	
Strategy under consideration	Divert biosolids from landfills
Rationale	Landfilled biosolids release significant levels of methane emissions. Biosolids also contain resources (e.g., nitrogen and phosphorus) that can be recycled or recovered. Diverting biosolids from landfills will reduce methane emissions, sequester carbon in plant material, and offset synthetic fertilizers that are fossil fuel intensive.
Equity considerations	Landfills are often located in Environmental Justice communities. Diverting biosolids from landfills will reduce impacts on these communities.
Potential Implementation challenges	Even though most farmers that use biosolids report better crops, along with improved soil microbes and water retention capacity, biosolids continue to carry a stigma that can make finding land application sites challenging. Unless this perception shifts, biosolids need to be made into "bioproducts" that meet the demands of the market.
Issues to explore	Will discuss educational efforts to spread the word about the merits of biosolids, as well as discuss products beyond conventional biosolids (e.g., composts, soil amendments, biochars), and potential markets beyond agriculture (forest land, mine land reclamation, roadside plantings). Would be helpful to discuss with Agriculture and
Additional thoughts	Would be helpful if NYS could help grow biosolids/bioproduct markets

Mitigation strategies

4. Scope: Provide a local outlet for recycling organics and other high strength waste through co-digestion at WRRFs	
Strategy under consideration	Divert organics and other high strength waste from landfills and extract energy content through co-digestion at WRRFs
Rationale	Landfilled organics and other high strength waste are significant sources of methane emissions. Co-digestion of these waste streams will recover energy and also significantly reduce the volume of waste stream for disposal. The recovered energy should be 100% beneficially used, offsetting fossil fuel usage.
Equity considerations	While diverting waste streams from landfills to WRRFs generally reduces trucking miles overall, it can increase truck traffic in the immediate vicinity of the WRRF. Mitigation of this effect needs to be considered: minimizing trucks by transporting a concentrated material, electrified or other clean-burning trucks to minimize emissions impacts, investigate other forms of transport (rail, barging)
Potential Implementation challenges	The most challenging aspect of organics diversion is how to separate it from the waste stream to begin with. Suggest starting with food manufacturing waste, depackaged food waste, and large food waste producers (arenas, hotels) before addressing residential food waste. WRRFs require waste material to be a pumpable slurry – this pre-processing is a critical step that most WRRFs will not want to perform themselves.
Issues to explore	Work with the Organics and Landfill Diversion subgroup to coordinate efforts and opportunities
Additional thoughts	Extracted energy needs to be used beneficially - "highest and best use" for the community

Next Steps

> January 19th CAC report out

> Future panel meetings

> Public comment meeting (aiming for February)

> Public mailbox: waste.climate.comments@dec.ny.gov