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> Mitigation Strategies:

1. Wastewater Sector: To reduce methane emissions from septic tanks, eliminate septic tanks and convert to municipal sewer system collection where municipal system are readily available.
2. Wastewater Sector: Eliminate fugitive emissions of methane by reducing leaks from anaerobic digesters and poorly operated flares by using better monitoring, operation, and maintenance.
3. Wastewater Sector: Reduce methane emissions from landfills by increasing anaerobic digestion of food waste at wastewater treatment plants.
4. Wastewater Sector: Reduce methane emissions from landfilling of biosolids and increase carbon sequestration in soils by drastically increasing the recycling of biosolids.
5. Wastewater Sector: Recover nutrients (phosphorus, etc.) in wastewater to reduce greenhouse gas emissions from the extraction and management of commercial fertilizers.

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> Enabling Strategies:

1. Job training in construction trades to facilitate mitigating strategies 1, 2, 3, 4
2. Research to assist with mitigating strategies 1, 2, 3, 4, 5
3. Outreach and Education to assist with mitigating strategies 1, 2, 3, 4, 5

Mitigation strategy summary

Draft Material

Initiative #	Description	Action type	Emissions impact	Ease of implementation	Cost
1.	Wastewater Sector: To reduce methane emissions from septic tanks, eliminate septic tanks and convert to municipal sewer system collection where municipal system are readily available.	Financial	Low	Easy Hard	\$\$\$
2.	Wastewater Sector: Eliminate fugitive emissions of methane by reducing leaks from anaerobic digesters and poorly operated flares by using better monitoring, operation, and maintenance.	Regulatory, Financial	Low	Easy - Medium	\$\$
3.	Wastewater Sector: Reduce methane emissions from landfills by increasing anaerobic digestion of food waste at wastewater treatment plants.	Legislative, Financial	High	Easy - Medium	\$\$
4.	Wastewater Sector: Reduce methane emissions from landfilling of biosolids and increase carbon sequestration in soils by drastically increasing the recycling of biosolids.	Legislative, Financial	High	Medium	\$ - \$\$

Mitigation strategy – Initiative #1:

Overview

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Description:	Wastewater Sector: To reduce methane emissions from septic tanks, eliminate septic tanks and convert to municipal sewer system collection where municipal system are readily available.		
Action type:	Financial		
GHG reduction by 2030:	Low	GHG reduction by 2050:	Low
Cost and funding considerations:	\$ Cost is limited to the initial plumbing needed to connect to the public sewer. The cost would be prohibitive to many homeowners without financial support.		
Ease of implementation:	Hard. Each connection requires planning, design, and construction. Sewer users must be formally incorporated into existing sewer districts.		
Example case studies:	Long Island? Others? Don may have more detail.		
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> Existing Treatment plant proximity / New plant Decision requires responsible entity and referendum District Requires Legal Formation and Debt Obligation High up-front costs as compared to septic maintenance Private Property / Easement Access 	<ul style="list-style-type: none"> Some communities have high septic costs because of soil conditions and may be willing to transition State funding could be repurposed to support this particular water quality and methane emission reduction improvement Synergy with existing funding programs 		

Mitigation strategy – Initiative #1: Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Repurpose Septic Sewer Assistance Programs to include sewer hookups or utilize other funding mechanism	EFC??	1-5 years	NYSCDBG, NYSDOH, NYSDEC, NYSEFC, USDA-RD

Mitigation strategy – Initiative #1: Benefits and impacts

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Anticipated Benefits and Impacts

Disadvantaged communities	<ul style="list-style-type: none">• Poorly designed and operated septic systems are located in some EJ and disadvantaged communities and can lead to significant financial burden and potential health impacts.• Connection to an available public sewer without funding is cost prohibitive.• Connection increases Property Value• Connection reduces homeowner risk for future capital expenditures
Health and co-benefits	<p>In addition to reducing methane emissions from septic systems, removing these systems reduces potential surface and groundwater pollution caused by poorly sited or operated septic system. This is currently recognized as an environmental and human health hazard.</p>
Just transition: businesses and industries, workers	<p>The removal of septic systems and connection to public sewers will lead to an increase in local construction jobs. Opportunities exist for worker training and good paying jobs for local EJ and disadvantaged communities. Access to public sewer allows user growth</p>
Other	<p>This is a technique that has been used for decades and that is easy to implement if funding is available.</p>

Mitigation strategy – Initiative #2:

Overview

Draft Material

Description:	Wastewater Sector: Eliminate fugitive emissions of methane by reducing leaks from anaerobic digesters and poorly operated flares by using better monitoring, operation, and maintenance.		
Action type:	Regulatory, Financial. In addition to funding, DEC regulations may need to be revised to require monitoring and remediation.		
GHG reduction by 2030:	Low	GHG reduction by 2050:	Low
Cost and funding considerations:	\$\$\$. Larger municipal utilities may be able to absorb some costs, but medium and smaller municipalities do not have the funding to accomplish without state funding.		
Ease of implementation:	Easy – Medium, depending on funding available and monitoring capabilities.		
Example case studies:	Digester tank reconstruction at Wards Island WRRF, Flares at Coney Island WRRF, [Upstate examples?]		
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> Monitoring of emissions can be difficult without proper equipment and training Monitoring must be ongoing and continuous 	<ul style="list-style-type: none"> Some larger municipalities are already implementing these techniques and can provide guidance to others. Primarily a financial issue not a technical feasibility issue. 		

Mitigation strategy – Initiative #2:

Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Identify source of funding for monitoring and maintenance Capital investments for mitigation	EFC? / DEC? / PSC-regulated utilities (beneficial use)	1-5 years	DEC, municipalities, engineering consultants
Perform monitoring and system upgrades	Local municipality	6 months – 5 years	Municipalities, DEC
DEC Rulemaking to require monitoring and remediation (would be a new regulatory program – because not criteria pollutant and digesters are not technically sources in air permits)	DEC (Division of Air)?	1 – 2 years	Municipalities

Mitigation strategy – Initiative #2: Benefits and impacts

Draft Material

Anticipated Benefits and Impacts

Disadvantaged communities	Wastewater treatment plants are often located in EJ and disadvantaged communities. Poorly controlled emissions lead to odors that significantly impact quality of life for those communities and potential health impacts. (taking WRRFs off grid to some extent can help constrained systems)
Health and co-benefits	Emissions from wastewater treatment plants lead to odors and potential health impacts which have a significant impact on neighboring communities. Reducing these leaks will improve air quality in these communities.
Just transition: businesses and industries, workers	Local engineering, construction, and operation employment will be positively impacted by improving operations at these treatment facilities. These treatment plants are located throughout New York State, in large and small communities, providing widespread local employment opportunities.
Other	Reducing leaks will increase the amount of methane that is captured and can be used to generate renewable energy for use at the treatment plant and locally.

Mitigation strategy – Initiative #3:

Overview

Draft Material

Description:	Wastewater Sector: Reduce methane emissions from landfills by increasing anaerobic digestion of food waste at wastewater treatment plants.		
Action type:	Legislative, Financial		
GHG reduction by 2030:	High	GHG reduction by 2050:	High
Cost and funding considerations:	\$\$ Funding will be needed to collect and prepare food waste for digestion and potentially upgrade the digestion system. Also includes funding for new digestion systems at treatment plants. Many treatment plants do not currently have digesters.		
Ease of implementation:	Easy - Medium		
Example case studies:	NYC DEP Newtown Creek Codigestion Program, Oneida-Herkimer, California Carollo Organics Study		
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> • The treatment plant must insure that addition of food waste does not impact ability to comply with their discharge permit (SPDES permit) • Increased truck traffic at treatment plant • Collection remains a challenge • Requires preprocessing of food waste to remove plastics, etc., which isn't currently done at most treatment plants 	<ul style="list-style-type: none"> • Decreases truck traffic for food waste sent to landfills • New technologies to “clean” food waste prior to digestion are becoming more common • Collection techniques are increasing 		

Mitigation strategy – Initiative #3: Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Funding to municipalities to upgrade or build digesters to handle food waste	EFC??	1 -5 years	
Amend Food Donation and Food Scraps Recycling Law to require greater diversion of food waste from landfills	Legislative	1 year	Food waste generators, waste management companies, engineering consultants, municipalities

Mitigation strategy – Initiative #3: Benefits and impacts

Draft Material

Anticipated Benefits and Impacts

Disadvantaged communities	Landfills may be located EJ and disadvantaged communities. Food waste in landfills leads to odors that significantly impact quality of life for those communities and potential health impacts. Removing food waste from landfilling will reduce truck transport to the landfill and odors.
Health and co-benefits	Odors from landfills have an impact on neighboring communities. Reducing these odors will improve air quality in these communities.
Just transition: businesses and industries, workers	Bringing locally generated food waste to a local treatment plant increasing the potential for job creation for smaller scale collection businesses. Upgrades to existing digesters and the construction of new digesters at treatment plants will increase local employment in the construction industry.
Other	Increasing digestion will increase the amount of methane that is captured and can be used to generate renewable energy for use at the treatment plant and locally.

Mitigation strategy – Initiative #4: Overview

Draft Material

Description:	Wastewater Sector: Reduce methane emissions from landfilling of biosolids and increase carbon sequestration in soils by drastically increasing the recycling of biosolids		
Action type:	Legislative, Financial		
GHG reduction by 2030:	High	GHG reduction by 2050:	High
Cost and funding considerations:	\$ - \$\$\$. Converting biosolids to compost or otherwise treated to allow for recycling will cost municipalities to upgrade existing treatment plants.		
Ease of implementation:	Medium		
Example case studies:			
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> • Landfilling is currently cheaper alternative (though price is increasing) • Local opposition to land application • Concerns about emerging contaminants 	<ul style="list-style-type: none"> • Expanded consumer product bans on emerging contaminants will reduce these contaminants in biosolids 		

Mitigation strategy – Initiative #4: Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Legislation to support the diversion of biosolids from landfills	Legislative	1 – 2 years	Municipalities, solid waste companies
Financial support for municipalities to upgrade biosolids treatment systems	EFC??	1 – 5 years	

Mitigation strategy – Initiative #4: Benefits and impacts

Draft Material

Anticipated Benefits and Impacts

Disadvantaged communities	Landfills may be located EJ and disadvantaged communities. Biosolids in landfills leads to odors that significantly impact quality of life for those communities and potential health impacts. Removing biosolids from landfilling will reduce truck transport to the landfill and odors.
Health and co-benefits	Odors from landfills have an impact on neighboring communities. Reducing these odors will improve air quality in these communities.
Just transition: businesses and industries, workers	Increasing biosolids recycling will lead to construction and operation jobs at local treatment plants.
Other	Biosolids recycling improves soil quality and can save farmers money by reducing the cost for fertilizer. It also reduces the greenhouse gas impacts from the production and management of commercial fertilizer.

Mitigation strategy – Initiative #5: Overview

Draft Material

Description:	Wastewater Sector: Recover nutrients (phosphorus, etc.) in wastewater to reduce greenhouse gas emissions from the extraction and management of commercial fertilizers.		
Action type:	Financial		
GHG reduction by 2030:	Low	GHG reduction by 2050:	Low
Cost and funding considerations:	\$		
Ease of implementation:	Medium. Technologies are evolving to increase feasibility of recovery of the nutrients.		
Example case studies:	?		
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> Technologies are evolving Cost effectiveness is not clear without financial incentives 			

Mitigation strategy – Initiative #5: Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financial assistance to treatment plants to advance nutrient removal technologies and marketing.	EFC?	1 -5 years	DEC

Enabling strategy summary

Draft Material

Initiative #	Description	Action type	Ease of implementation	Cost
1.	Job training in construction trades to facilitate mitigating strategies 1, 2, 3, 4	Financial	Easy	\$
2.	Research to assist with mitigating strategies 1, 2, 3, 4, 5	Financial	Easy	\$
3.	Outreach and Education to assist with mitigating strategies 1, 2, 3, 4, 5	Financial	Easy	\$

Enabling initiative – Initiative #1: Overview

Draft Material

Description:	Job training in construction trades to facilitate mitigating strategies 1, 2, 3, 4
Action type:	Financial
Cost and funding considerations:	\$ Training system already exist, cost is relatively low.
Ease of implementation:	Easy
Example case studies:	

Risks / Barriers to success	Possible mitigants

Enabling initiative – Initiative #1: Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financial assistance for job training in construction to address the increased need to implement treatment plant upgrades.	Labor??	1 – 2 years	

Enabling initiative – Initiative #2: Overview

Draft Material

Description:	Research to assist with mitigating strategies 1, 2, 3, 4, 5
Action type:	Financial
Cost and funding considerations:	\$
Ease of implementation:	Easy
Example case studies:	

Risks / Barriers to success	Possible mitigants

Enabling initiative – Initiative #2: Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financing research to: Increase markets for organics products Develop a statewide strategy for organics management Refine methods to extract nutrient from wastewater Develop better methods for monitoring methane leaks	DEC? ESD?	1 – 2 years	

Enabling initiative – Initiative #3: Overview

Draft Material

Description:	Outreach and Education to assist with mitigating strategies 1, 2, 3, 4, 5
Action type:	Financial
Cost and funding considerations:	\$
Ease of implementation:	Easy
Example case studies:	

Risks / Barriers to success	Possible mitigants

Enabling initiative – Initiative #3: Components of the strategy

Draft Material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Outreach and education on: Food waste generators – maintaining clean waste streams Treatment plants – options for biosolids recycling, digestion Other?			

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> Mitigation Strategies:

1. Waste Sector: To reduce methane emissions from landfills, increase food donation and food scraps recycling.
2. Waste Sector: To reduce fugitive emissions of methane from landfills by increasing monitoring and reducing leaks.
3. Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by enacting broader Extended Producer Responsibility (EPR)/Product Stewardship requirements to cover plastics, paper, carpets, tires, textiles, solar panels, batteries, appliances, etc.
4. Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by targeting education and funding waste reduction and reuse initiatives, including local reuse centers, etc.

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> Mitigation Strategies:

5. Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by supporting a robust local reuse and recycling systems (local food scraps collection and composting, etc.).

6. Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by supporting domestic, especially New York State, markets for recyclables, renewable natural gas, compost, digestate, construction debris components, etc.

7. Waste Sector: Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by requiring a \$ per ton surcharge on waste generated in New York State that is landfilled or combusted, to support recycling and local initiatives.

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> Enabling Strategies:

1. Job training to facilitate mitigating strategies 1, 2, 4, 5, 6
2. Research to assist with mitigating strategies 1, 2, 6
3. Outreach and Education to assist with mitigating strategies 1, 3, 4, 5, 7

Mitigation strategy summary

Draft material

Initiative #	Description	Action type	Emissions impact	Ease of implementation	Cost
1.	Waste Sector: To reduce methane emissions from landfills, increase food donation and food scraps recycling.	Legislative, Financial	High	Easy	\$
2.	Waste Sector: To reduce fugitive emissions of methane from landfills by increasing monitoring and reducing leaks.	Regulatory	High	Easy - Medium	\$
3.	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by enacting broader Extended Producer Responsibility (EPR)/Product Stewardship requirements to cover plastics, paper, carpets, tires, textiles, solar panels, batteries, appliances, etc.	Legislative	High	Easy - Medium	\$\$
4.	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by targeting education and funding waste reduction and reuse initiatives, including local reuse centers, etc	Financial	Low	Easy	\$

Mitigation strategy summary

Draft material

Initiative #	Description	Action type	Emissions impact	Ease of implementation	Cost
5.	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by supporting a robust local reuse and recycling systems (local food scraps collection and composting, etc.).	Financial	Medium	Medium	\$
6.	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by supporting domestic, especially New York State, markets for recyclables, renewable natural gas, compost, digestate, construction aggregate, etc.	Financial, Legislative	High	Easy to Medium	\$ - \$\$
7.	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by providing a \$ dollar per ton surcharge on waste that is generated in New York State that is landfilled or combusted, to support recycling and local initiatives.	Legislative	High	Easy	\$

Mitigation strategy – Initiative #1:

Overview

Draft material

Description:	Waste Sector: To reduce methane and carbon dioxide emissions from landfills and combustors, increase food donation and food scraps recycling.		
Action type:	Legislative, Financial		
GHG reduction by 2030:	High	GHG reduction by 2050:	High
Cost and funding considerations:	\$\$ Cost are associated with the development of infrastructure for additional food donation and increased food scraps recycling, however costs are shifted from waste disposal		
Ease of implementation:	Easy. The technologies exist the challenges are financial (e.g., investment & end markets), behavioral, and logistical (siting, etc.).		
Example case studies:			
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> • The relatively low cost of landfilling makes alternatives difficult. • Sufficient and economically viable markets must exist for compost, biogas, digestate, and other organics products. • Requires significant and broad-based behavior change. • May create impacts in transportation and handling. 	<ul style="list-style-type: none"> • As more organics recycling facilities and collection systems are established the cost should decrease. • Examples of successful existing systems are available. • Low carbon approaches to collection and transportation. • Reliable end markets / market outlets 		

Mitigation strategy – Initiative #1:

Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Amend Food Donation and Food Scraps Law to include smaller food scraps generators, eliminate mileage limit for organics recycling facilities and eliminate the financial hardship exemption.	Legislative	1-2 years	DEC, Food waste generators, DOH, Planning units
Phase in a ban on the disposal of food scraps and other organics in landfills and waste to energy facilities, in concert with an organics recycling mandate	Legislative / Regulatory	2-10 years	DEC, Planning units, Food waste generators
Provide financial assistance for emergency food providers and establishment of food waste recycling facilities.	DEC	1 – 5 years	DOH, Emergency Food Providers, Waste management companies

Mitigation strategy – Initiative #1: Benefits and impacts

Draft material

Anticipated Benefits and Impacts

Disadvantaged communities	Landfills and associated transfer facilities may be located in EJ and disadvantaged communities. Food waste in these facilities leads to odors that significantly impact quality of life for those communities and potential health impacts. Removing food waste will reduce truck transport to the landfill and odors.
Health and co-benefits	Odors from landfills and transfer facilities have an impact on neighboring communities. Reducing these odors will improve air quality in these communities.
Just transition: businesses and industries, workers	Increasing food donation will assist those in need and increasing food waste recycling will increase job opportunities, including local jobs for recycling facilities located close to the source.
Other	The technologies are readily available if the requirements, financing and end markets are available.

Mitigation strategy – Initiative #2:

Overview

Draft material

Description:	Waste Sector: Significantly reduce fugitive emissions of methane from landfills by increasing monitoring and reducing leaks.		
Action type:	Regulatory		
GHG reduction by 2030:	High	GHG reduction by 2050:	High
Cost and funding considerations:	\$.		
Ease of implementation:	Easy – Medium, depending on monitoring technologies employed and the cost to fix leaks.		
Example case studies:			
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> Monitoring of emissions can be difficult without proper equipment and training Monitoring must be ongoing and continuous 	<ul style="list-style-type: none"> Technologies to monitor are improving rapidly. 		

Mitigation strategy – Initiative #2: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Perform monitoring and system upgrades	Landfill owners	6 months – 5 years	DEC
DEC Rulemaking to require monitoring and remediation	DEC	1 – 5 years	Landfill owners

Mitigation strategy – Initiative #2: Benefits and impacts

Draft material

Anticipated Benefits and Impacts

Disadvantaged communities	Landfills may be located in EJ and disadvantaged communities. Poorly controlled emissions lead to odors that significantly impact quality of life for those communities and potential health impacts.
Health and co-benefits	Emissions lead to odors and potential health impacts which have a significant impact on neighboring communities. Reducing these leaks will improve air quality in these communities.
Just transition: businesses and industries, workers	Local engineering, construction, and operation employment will be positively impacted by improving operations at these facilities.
Other	Reducing leaks will increase the amount of methane that is captured and can be used to generate renewable energy for use.

Mitigation strategy – Initiative #3:

Overview

Draft material

Description:	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by enacting an Extended Producer Responsibility (EPR)/Product Stewardship framework, or specific requirements to cover packaging and printed products, carpets, tires, textiles, solar panels, batteries, appliances, etc. These programs require the product manufacturer or brand to take responsibility for their products at the end of their useful life.		
Action type:	Legislative		
GHG reduction by 2030:	High	GHG reduction by 2050:	High
Cost and funding considerations:	\$\$ Funding will be provided by the product manufacturers and shared by the consumer. Costs will be shifted from the taxpayer – municipality, to the consumer – producer.		
Ease of implementation:	Easy – Medium		
Example case studies:	Current beverage container, electronic waste, thermostat, and battery programs in New York State.		
Risks / Barriers to success		Possible mitigants	
<ul style="list-style-type: none"> • May requires the development of infrastructure to collect and recycle. • Manufacturers are located across the globe. • Certain industries may oppose taking responsibility 		<ul style="list-style-type: none"> • Successful programs in New York State and elsewhere already exist using this model. 	

Mitigation strategy – Initiative #3: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Legislation to create a framework for extended producer responsibility / product stewardship, or individual legislation targeting products with the greatest GHG impact (e.g., Packaging and Printed Paper, Carpet, Textiles, Solar Panels, Batteries, etc.)	Legislative	1 – 4 years	DEC, Manufacturers

Mitigation strategy – Initiative #3: Benefits and impacts

Draft material

Anticipated Benefits and Impacts

Disadvantaged communities	Reduction in landfilling will also reduce the need for transfer facilities and will reduce truck traffic that can impact EJ and disadvantaged communities. These facilities can significantly impact quality of life for those communities and potential health impacts.
Health and co-benefits	Reduction in truck traffic and transfer facilities can reduce emissions and will improve air quality in these communities.
Just transition: businesses and industries, workers	Requiring manufacturers to establish collection systems for recycling will lead to local jobs associated with those collection systems.
Other	Requiring manufacturers to take responsibility for materials management leads to product designs that have less waste at the end of their useful life.

Mitigation strategy – Initiative #4:

Overview

Draft material

Description:	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by education and funding waste reduction and reuse initiatives, including local reuse centers, repair cafes, etc. including a structure to establish a statewide system to facilitate the establishment and operation of these centers, etc.		
Action type:	Financial		
GHG reduction by 2030:	Low	GHG reduction by 2050:	Low
Cost and funding considerations:	\$. The cost is very low compared to other solid waste initiatives but the education component, especially for young people, is high. Reuse centers also assist those in need as a low or no cost source for household goods, etc. Repair cafes assist people in maintaining their household goods.		
Ease of implementation:	Easy		
Example case studies:			
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> • Having sufficient funding to establish and operate. • A Business Plan and administrator for a broader statewide networking/franchising system is challenging. 	<ul style="list-style-type: none"> • A consistent and sufficient funding source will lead to greater success. • Energized grass roots volunteer and faith-based organizations already exist to implement. 		

Mitigation strategy – Initiative #4: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financial support for local reuse centers and waste reduction education.	DEC	1 – 5 years	Municipalities, educational institutions, faith based organizations

Mitigation strategy – Initiative #4: Benefits and impacts

Draft material

Anticipated Benefits and Impacts

Disadvantaged communities	Education on waste reduction (means to maximize the use of food, etc.) can have a positive financial impact on EJ and disadvantages communities. Local reuse centers can be a source for free or low cost household items. Repair cafes help individuals keep their household items working, reducing the need to purchase new appliances, etc.
Health and co-benefits	Education on cooking techniques for vegetables and fruits can lead to health benefits. Obtaining household goods (appliances, etc.) at lost cost can improve quality of life and ability to use food supplies.
Just transition: businesses and industries, workers	Local reuse centers can be a source of local employment without extensive training needed, job training skills, and life skills.
Other	Many examples of successful programs exist.

Mitigation strategy – Initiative #5:

Overview

Draft material

Description:	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by supporting a robust local reuse and recycling systems (local food scraps collection and composting, etc.).		
Action type:	Financial		
GHG reduction by 2030:	Medium	GHG reduction by 2050:	Medium
Cost and funding considerations:	\$		
Ease of implementation:	Medium.		
Example case studies:	BK Rot		
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> Primarily financial. Infrastructure to compost or recycle locally. Local market prices are affected by global market conditions, leading to periods of significant market volatility. The value of materials is not always sufficient to cover all collection and processing costs. 	<ul style="list-style-type: none"> Financial assistance. A focus on New York State and domestic market development. Extended Producer Responsibility can help establish and stabilize domestic markets. 		

Mitigation strategy – Initiative #5: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financial assistance to assist local level collection and processing such as bikes for food waste collection and neighborhood composting systems.	DEC and/or ESD	1 -5 years	Local communities.

Mitigation strategy – Initiative #5: Benefits and impacts

Draft material

Anticipated Benefits and Impacts

Disadvantaged communities	Local systems provide a potential job opportunity locally.
Health and co-benefits	Local low-tech collection leads to less health impacts associated with truck traffic.
Just transition: businesses and industries, workers	Local collection systems and recycling centers lead to local jobs.
Other	Examples of successful programs exist.

Mitigation strategy – Initiative #6: Overview

Draft material

Description:	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by supporting domestic markets for recyclables, renewable natural gas, compost, digestate, construction aggregate, etc., through policy (e.g., procurement) and legislation (e.g., mandatory minimum recycled content) Recycling cannot succeed without sustained markets with sufficient pricing.		
Action type:	Financial, Legislative, Regulatory		
GHG reduction by 2030:	High	GHG reduction by 2050:	High
Cost and funding considerations:	\$ - \$\$		
Ease of implementation:	Easy to Medium.		
Example case studies:	?		
Risks / Barriers to success	Possible mitigants		
<ul style="list-style-type: none"> Some markets are currently international and subject to severe fluctuations. Markets may exist but the price paid is not enough to sustain the cost of material collection and processing. 	<ul style="list-style-type: none"> Growth in domestic markets will reduce unforeseen product pricing. Market pricing can be increased by subsidies, mandates and other means. 		

Mitigation strategy – Initiative #6: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financial assistance to develop recycling markets.	EFSD	3 -10 years	Recycled material end users
Legislation to require the use of recyclables (compost, construction aggregate, etc.) by State and local entities and those contracting with the government.	Legislative	1 – 5 years	DEC, OGS, DOT, Thruway Authority
Financial assistance to research, develop standards, and increase the use of organic products (compost, digestate, etc.) in agriculture and other markets.	DEC?	1 – 5 years	Cornell, Ag&Markets
Legislation to require a minimum level of recycled content in certain products and packaging to support end markets	Legislative	1-5 years	Recycled material end-users; DEC

Mitigation strategy – Initiative #6: Benefits and impacts

Draft material

Anticipated Benefits and Impacts

Disadvantaged communities	Local systems provide a potential job opportunity locally.
Health and co-benefits	Local low-tech collection leads to less health impacts associated with truck traffic.
Just transition: businesses and industries, workers	Local collection systems and recycling centers lead to local jobs.
Other	Examples of successful programs exist.

Mitigation strategy – Initiative #7:

Overview

Draft material

Description:	Waste Sector: Reduce methane and carbon dioxide emissions from landfills and combustors by requiring a \$ per ton surcharge on all waste generated in New York State that is landfilled or combusted, to support recycling and local initiatives.		
Action type:	Legislative		
GHG reduction by 2030:	High	GHG reduction by 2050:	High
Cost and funding considerations:	\$ The fee would generate millions of dollars annually to support local recycling. Fee should be tied to GHG impact of waste being disposed.		
Ease of implementation:	Easy		
Example case studies:	Approximately half of the states currently use a similar approach.		
Risks / Barriers to success		Possible mitigants	
<ul style="list-style-type: none"> Perceived cost to consumers in increased waste management fees. 		<ul style="list-style-type: none"> The actual cost is very minimal per year for each New York State resident. Scale the fee to reflect the GHG impact of the waste being disposed 	

Mitigation strategy – Initiative #7: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Legislation to require a fee on each ton of waste generated that is landfilled or combusted, to support local waste reduction, reuse, and recycling infrastructure. Scale the fee to reflect the GHG impact of materials being disposed.	Legislative	1 -2 years	Local communities.

Mitigation strategy – Initiative #7: Benefits and impacts

Draft material

Anticipated Benefits and Impacts

Disadvantaged communities	Redirecting financial aid to local recycling programs will provide additional job opportunities in EJ and Disadvantaged Communities.
Health and co-benefits	Increased local recycling can lead to less potential impacts associated with odors from landfills.
Just transition: businesses and industries, workers	Local collection systems and recycling centers lead to local jobs.
Other	

Enabling strategy summary

Draft material

Initiative #	Description	Action type	Ease of implementation	Cost
1.	Job training to facilitate mitigating strategies 1, 2, 4, 5, 6	Financial	Easy	\$
2.	Research to assist with mitigating strategies 1, 2, 6	Financial	Easy	\$
3.	Outreach and Education to assist with mitigating strategies 1, 3, 4, 5, 7	Financial	Easy	\$

Enabling initiative – Initiative #1: Overview

Draft material

Description:	Job training to facilitate mitigating strategies 1, 2, 4, 5, 6
Action type:	Financial
Cost and funding considerations:	\$ Training system already exist, cost is relatively low.
Ease of implementation:	Easy
Example case studies:	

Risks / Barriers to success	Possible mitigants

Enabling initiative – Initiative #1: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financial assistance for job training to address the increased need for local jobs.	DEC	1 – 2 years	

Enabling initiative – Initiative #2: Overview

Draft material

Description:	Research to assist with mitigating strategies 1, 2, 6
Action type:	Financial
Cost and funding considerations:	\$
Ease of implementation:	Easy
Example case studies:	

Risks / Barriers to success	Possible mitigants

Enabling initiative – Initiative #2: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Financing research to: Increase markets for recycled products Develop a statewide strategy for organics management Develop better methods for monitoring methane leaks	DEC and ESD	1 – 2 years	

Enabling initiative – Initiative #3: Overview

Draft material

Description:	Outreach and Education to assist with mitigating strategies 1, 3, 4, 5, 7
Action type:	Financial
Cost and funding considerations:	\$
Ease of implementation:	Easy
Example case studies:	

Risks / Barriers to success	Possible mitigants

Enabling initiative – Initiative #3: Components of the strategy

Draft material

Components required for delivery <i>(Brief description of action required)</i>	Implementation lead <i>(Entity responsible for completing)</i>	Time to implement <i>(Time required to implement)</i>	Other key stakeholders <i>(Entities that need to be engaged)</i>
Outreach and education on waste reduction, reuse, and recycling methods.	DEC	1 – 5 years	

[Case Study Name] Relevant case study

Draft material

Jurisdiction:	<i>[Insert location and government]</i>
Context:	<i>[Please describe any relevant background information, including the history of why entity wanted to introduce new policies, date of action, key stakeholders]</i>
Description of action(s):	
Type of action(s):	<i>[Legislative, Financial, Regulatory, Executive, other]</i>
Impact:	<i>[Please include the resultant GHG emissions impact, economic impact (e.g. jobs, economic growth), local pollution and health impact, impact on disadvantaged communities, and other impacts as relevant]</i>
Cost and bearer of cost:	
Ease of implementation:	